October 2024

General Conservation Plan for the Desert Tortoise in California

Draft Environmental Impact Statement

U.S. Fish and Wildlife Service

Carlsbad Fish and Wildlife Office

2023-0022820

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

In Reply Refer To:
Docket No. FWS-R8-ES-2023-0084

Dear Reader:

Enclosed is the draft general conservation plan (GCP) and associated draft environmental impact statement (EIS) for the desert tortoise in California. The US Fish and Wildlife Service (Service), Carlsbad Fish and Wildlife Office prepared this draft GCP and EIS pursuant to the requirements of the National Environmental Policy Act of 1969; Council on Environmental Quality regulations for implementing the National Environmental Policy Act; section 10(a)(1)(B) of the federal Endangered Species Act, as amended; and other applicable laws.

The purpose of the draft GCP is to provide a more holistic and strategic process that would allow private individuals, local and state agencies, and other nonfederal entities engaged in covered activities to meet the statutory and regulatory requirements of the Endangered Species Act.

The Service encourages the public to provide information and comments pertaining to the analysis presented in the draft GCP and EIS. The Service is interested in any new information that would help the Service as it develops the final GCP and EIS. The Service will accept comments on the draft GCP and EIS for 60 calendar days following the Environmental Protection Agency's publication of a Notice of Availability of the draft GCP and EIS in the *Federal Register*.

Your review and comment on the content of the draft GCP and EIS are critical to the success of this effort. If you wish to submit comments on the draft GCP and EIS, the Service requests that you make your comments as specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies, and reference to a section or page number. The Service will review and consider all comments received on the draft GCP and EIS, but comments containing only opinion or preferences will not receive a formal response from the Service.

Comments can be submitted online at http://www.regulations.gov. Follow the instructions for submitting comments on Docket No. FWS–R8–ES–2023–0084. Comments may also be mailed to Public Comments Processing, Attn: Docket No. FWS–R8–ES–2023–0084; U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803. To facilitate analysis of comments and information submitted, the Service strongly encourages you to submit comments in an electronic format via the Regulations.gov website.

Before including your address, phone number, email address, or other personally identifying information in your comment, be advised that your entire comment—including your personally identifying information—may be made publicly available at any time. While you can ask the Service in your comment to withhold your personally identifying information from public review, the Service cannot guarantee that it will be able to do so.

The Service plans to host two virtual public meetings during the 60-day comment period. The dates and registration information for these meetings will be announced at least 15 days in advance on Regulations.gov, through press releases, and via social media.

For more information on the draft GCP and EIS or on the commenting process, please contact team lead Peter Sanzenbacher by email at peter_sanzenbacher@fws.gov or via phone at (442) 222-0165.

Sincerely,

Michael Senn
Assistant Regional Director
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California-Great Basin Region

General Conservation Plan for the Desert Tortoise in California
Environmental Impact Statement

1. Responsible agency: United States Department of the Interior
   US Fish and Wildlife Service

2. Type of action: Administrative (X) Legislative ( )

3. Document status: Draft (X) Final ( )

4. Abstract:

The General Conservation Plan (GCP) for the Desert Tortoise in California Environmental Impact Statement describes and analyzes alternatives for compliance with section 10 of the federal Endangered Species Act. The planning area includes most desert tortoise habitat in California and consists of a variety of landownership types. The planning area covers approximately 15,241,600 acres across seven counties in southern California.

The purpose of the action is to provide a mechanism by which the US Fish and Wildlife Service can increase efficiency and streamline compliance with section 10(a)(1)(B) of the Endangered Species Act for activities on certain nonfederal lands in the planning area that have the potential to incidentally take desert tortoises. The GCP would fulfill a need for better conservation of the desert tortoise within the California desert in a more comprehensive and consistent manner. It would also substantially reduce the time and effort expended by Service staff in processing individual incidental take permits while maintaining the appropriate standards for protection of desert tortoises in permit areas and furthering the species' recovery in mitigation areas.

Alternative 1 is the no action alternative that continues the current process for section 10 permitting across the desert tortoise's range in California. Alternative 2 is the approval and use of the proposed GCP. Proponents would be able to use the GCP to apply for incidental take permits for the desert tortoise for certain covered activities on nonfederal lands within the planning area that are outside desert tortoise conservation areas (the permit area). Mitigation resulting from issuance of incidental take permits under the GCP would occur within Bureau of Land Management conservation lands, National Park Service lands, and other conservation areas or easements managed for desert tortoises. Alternative 3 is the same as alternative 2 except that some lands, such as areas of critical environmental concern, would not be eligible for mitigation.

5. For further information, contact the following:

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Website: https://www.regulations.gov/search?filter=FWS-R8-ES-2023-0084
https://www.virtualpublicmeeting.com/usfws-desert-tortoise-gcp-eis

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Executive Summary

ES.1 Introduction

The United States Department of the Interior, Fish and Wildlife Service (Service) is proposing to approve and use a general conservation plan (GCP) for the desert tortoise (*Gopherus agassizii*) in California. This proposal would streamline issuance of incidental take permits for covered nonfederal activities in the desert tortoise's range in the state. In cooperation with the Bureau of Land Management (BLM), the Service has prepared this environmental impact statement (EIS) to evaluate the potential environmental effects from approval and use of the GCP. The EIS has been prepared in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality regulations for implementing NEPA, and section 10(a)(1)(B) of the federal Endangered Species Act (ESA), as amended.

ES.2 Purpose and Need

The purpose of the proposed GCP is to provide a mechanism by which the Service can increase efficiency and streamline compliance with section 10(a)(1)(B) of the ESA for activities on certain nonfederal lands in the planning area that have the potential to incidentally take desert tortoises. Instead of a lengthy and complicated processing of individual incidental take permit applications and associated habitat conservation plans (HCPs) for proponents, the GCP would allow the Service to substantially reduce the time and effort needed to issue incidental take permits that meet the parameters established in the GCP, while ensuring project mitigation contributes to the long-term recovery for the desert tortoise.

The GCP would require use of minimization measures that have proven effective over time in reducing mortality of desert tortoises during various types of activities; these measures include the translocation of desert tortoises from nonfederal project sites to the mitigation area. The GCP would also direct required mitigation to fund or implement recommended actions in the revised recovery plan for the desert tortoise (Service 2011) and additional actions to ensure mitigation contributes to the species' long-term recovery.

The Service and potential proponents applying for an incidental take permit would greatly benefit if the Service were able to (1) streamline this process for desert tortoise incidental take permits, (2) provide specific direction to proponents to incorporate the most current measures to minimize the take of desert tortoises into their applications, and (3) better incorporate mitigation from incidental take permits into a comprehensive strategy that contributes to the desert tortoise's recovery.

The GCP would fulfill a need for better conservation of the desert tortoise within the California desert in a more comprehensive and consistent manner. It would also substantially reduce the time and effort expended by Service staff in processing individual incidental take permits, while maintaining the appropriate standards for protection of the desert tortoise in development areas and furthering the species' recovery in the mitigation area.

ES.3 Issues and Alternatives

Issues and concerns expressed during the scoping process and the scoping comment period in 2023 generally focused on topics such as covered activities, translocation, the incidental take permit process, the planning area boundaries, durability of mitigation lands, and desert tortoise biology, life history, and

literature. These concerns were brought forward in developing alternatives for analysis in the EIS. The EIS analyzes three alternatives in detail and dismisses five alternatives from detailed review.

ES.3.1 Alternative 1: No Action

Under the no action alternative, the Service would not approve and use the GCP to streamline the incidental take permit process for the desert tortoise in California. The Service would continue to consider applications for incidental take permits for desert tortoise on a case-by-case basis under section 10(a)(2)(A) of the ESA. The Service would continue to evaluate and process individual HCPs and prepare a NEPA document for each incidental take permit application; this process generally takes 12 to 24 months to complete.

ES.3.2 Alternative 2: Proposed Action

The proposed action is the Service's approval and use of the GCP for the desert tortoise in California, as presented in appendix A. The Mojave population of the desert tortoise is the only species that would be covered under the GCP. Activities covered by the GCP would include commercial, agricultural, residential, industrial, and infrastructure development on nonfederal lands in the permit area and certain existing rights-of-way on federal land where the federal agency no longer has discretionary authority. The GCP would also cover operations and maintenance associated with such activities.

The approximately 15.2-million-acre planning area covered by the GCP comprises a large portion of the desert tortoise's range in California. The planning area includes portions of Inyo, Kern, Los Angeles, San Bernardino, Riverside, San Diego, and Imperial Counties in southern California. Within the planning area, the Service has identified an approximately 2.6-million-acre permit area, which includes nonfederal lands outside of desert tortoise conservation areas where proponents can apply for incidental take permits for the desert tortoise for covered activities. The Service also has identified an approximately 8.6-million-acre mitigation area, which includes BLM conservation lands, National Park Service lands, and other conservation areas or easements managed for desert tortoises where mitigation resulting from issuance of incidental take permits under the GCP would occur.

ES.3.3 Alternative 3: Action Alternative

Under alternative 3, the Service would pursue approval of a GCP for the desert tortoise to facilitate its processing of incidental take permits, as described under alternative 2. The permit area, covered activities in the permit area, and measures to reduce the level of impact from covered activities would be as described under the proposed action.

Under this alternative, mitigation would only occur on lands within desert tortoise conservation areas within National Park Service lands, California Desert National Conservation Lands administered by the BLM, and nonfederal lands that either are in conservation management or that are acquired for conservation management. Other lands included in the mitigation area for the proposed action, such as areas of critical environmental concern, would not be eligible for mitigation; this would reduce mitigation area lands to approximately 7.7 million acres.

ES.4 Summary of Environmental Consequences

This section provides a comparison of impacts for the alternatives considered in the EIS.

ES.4.1 Desert Tortoise (Gopherus agassizii)

The Service would continue to process applications for incidental take permits under the no action alternative and both action alternatives. The primary difference between the no action alternative and the action alternatives is that the lack of standardized minimization, mitigation, and monitoring under the no action alternative precludes streamlining of the process and provides less coordination of overall recovery efforts for the desert tortoise. The only difference between the two action alternatives is the area in which mitigation would occur.

Under all three alternatives, if a proponent applying for an incidental take permit meets the issuance criteria in ESA section 10(a)(2)(A), the Service would issue an incidental take permit that would require the proponent to minimize and mitigate the effects of the incidental take on the desert tortoise to the maximum extent practicable. The incidental take permit would also require monitoring of the project's effects on the desert tortoise. Consequently, if the Service issues an incidental take permit for an activity, whether under the auspices of the GCP or on a case-by-case basis, the effects to individual desert tortoises would remain largely the same.

Under all three alternatives, the Service, BLM, and other conservation partners would continue to implement recovery efforts. The existing trend of the status of the desert tortoise is, overall, one of decline, although recent work on managing common ravens and fencing to protect desert tortoises has shown signs of improving conditions for the desert tortoise. Under the no action alternative, assessing the effects of human activities and implementing recovery actions for the desert tortoise would continue as they have in the recent past. Under the two action alternatives, the more focused and comprehensive approach to mitigating for the incidental take of desert tortoises in specific areas is likely to accelerate recovery efforts for the desert tortoises. This more aggressive and comprehensive approach is in line with the recommendation in the 2011 recovery plan (Service 2011) to apply more "aggressive management within existing (desert) tortoise conservation areas." Therefore, use of the GCP under alternatives 2 and 3 would better contribute to recovery efforts when compared with no action by providing for conservation of the desert tortoise in a more comprehensive and consistent manner.

ES.4.2 Other Wildlife, including Special Status Species

Impacts on other wildlife, including special status species, from construction and operation of proposed developments would be the same across all alternatives. The main difference in impacts on other wildlife and special status species across alternatives is due to the focused and comprehensive approach within the mitigation area. The GCP covers only the desert tortoise; if covered activities may result in take of individuals of any other federally listed wildlife species, the Service would recommend that project proponents apply for a separate incidental take permit for the non-covered species. Any other federally listed species that could be affected by a covered activity would continue to be addressed on a project-by-project basis and would require separate individual incidental take permit applications supported by associated project-specific, proponent-prepared HCPs.

Under the no action alternative, mitigation efforts would be implemented on a case-by-case basis. Under the action alternatives, mitigation resulting from the issuance of incidental take permits would be focused within the mitigation area. This would likely result in improved conditions for wildlife in those portions of the mitigation areas where habitat restoration occurs. This focused approach could indirectly enhance conservation efforts for other wildlife and special status species compared with the no action alternative but may limit the benefits to wildlife outside the mitigation area. The difference between alternatives 2

and 3 is the size of the mitigation area. The difference in effects on other wildlife across alternatives 2 and 3 is likely to be negligible, given that the impacts are indirect and the amount of mitigation likely to occur under the GCP would cover a relatively small portion of the mitigation area under either alternative.

ES.4.3 Vegetation, including Special Status Species, Invasive Plants, and Noxious Weeds

Effects on native plant communities and species from construction and operation of proposed developments would be the same across all alternatives. Mitigation resulting from the issuance of incidental take permits under alternatives 2 and 3 would have the same general effect on native plant communities and species, including those with special status, as under alternative 1, except that mitigation would occur only in the mitigation area. Habitat restoration and other mitigation actions within the mitigation area may indirectly result in improved conditions for native plant communities and species in those areas. Conversely, native plant communities and species that do not occur in the mitigation area would not benefit from mitigation for the desert tortoise.

These desert tortoise-associated measures would have beneficial effects on native plant communities and species in the mitigation area because measures to protect desert tortoises would extend to native plant communities and species, at least to some degree. These beneficial effects would not differ substantially among the three alternatives but would likely be greater under alternatives 2 and 3.

ES.4.4 Water Resources, including Floodplains and Riparian Areas

Under all alternatives, ground disturbance associated with preconstruction, construction, and operational activities would contribute to impacts on water resources, potentially including increased sedimentation and contamination and changes to runoff and water availability due to increased soil compaction, increased erosion, and altered drainage patterns and floodplains. Mitigation measures and best management practices required by the agency approving or permitting the action would reduce impacts on water resources; direct impacts on water resources could be avoided based on final siting and design of individual facilities.

Under alternative 1, mitigation activities developed on a case-by-case basis could lead to short-term localized impacts on water resources during mitigation activities such as habitat restoration or fencing. Over the longer term, mitigation activities may indirectly benefit water resources to the extent that habitat restoration reduced the potential for erosion or restored natural flow regimes in the area. Under alternatives 2 and 3, impacts on water resources from mitigation activities would be as described under alternative 1 but could occur to a greater degree if a comprehensive mitigation approach resulted in more lands conserved or restored through use of the GCP.

ES.4.5 Soil Resources

Under all alternatives, ground disturbance associated with preconstruction, construction, and operational activities from proposed development actions would disturb soils and potentially biological soil crusts, resulting in long-term detrimental impacts to soil resources. Mitigation measures and best management practices required by the agency approving or permitting the action would reduce these impacts, while direct impacts could be avoided based on final siting and design of individual facilities. Soil resources may indirectly benefit from mitigation activities that would restore desert tortoise habitat or protect lands from future development.

Under alternative 1, mitigation activities developed on a case-by-case basis could lead to short-term localized impacts on soil resources during habitat restoration, fencing, or other activities that disturbed

soils. Over the longer term, mitigation activities may indirectly benefit soil resources to the extent that habitat restoration reduces the potential for erosion. Under alternatives 2 and 3, impacts from mitigation activities would be as described under alternative 1 but could occur to a greater degree if a comprehensive mitigation approach resulted in more lands conserved or restored through use of the GCP.

ES.4.6 Air Quality, Greenhouse Gases, and Climate Change

Under all alternatives, construction activities would impact air quality through ground disturbance and operation of vehicles and machinery. Construction-related emissions would be temporary, affecting air quality directly or indirectly through atmospheric chemical reactions for the duration of construction, while operational impacts would occur over the life of the proposed development. The degree of effects would depend on the scope and scale of the proposed development, with impacts minimized through measures required by the agency approving or permitting the action developed during permitting and approval processes. Climate change impacts would result from greenhouse gas emissions and changes in carbon sequestration potential. Under all alternatives, impacts on air quality and climate change from minimization measures such as construction of exclusion fencing would be a minor source of emissions.

Under all alternatives, impacts on air quality from mitigation activities would be minor. While activities such as fencing or habitat restoration may have short-term, localized effects from ground disturbance or use of vehicles and equipment, restoration may improve air quality over the long term to the extent that any disturbed areas are reclaimed. In addition, habitat restoration could indirectly improve carbon cycling in the mitigation area, thereby partially offsetting the effects of climate change. These effects would likely occur to a greater degree under alternatives 2 and 3 than under alternative 1 due to the focused and comprehensive approach to mitigation under these alternatives.

ES.4.7 Cultural Resources

Under all alternatives, construction and operation of development activities would have the potential to impact cultural resources during ground-disturbing activities and through the use of vehicles and heavy equipment. Mitigation activities that require ground disturbance would have a similar potential for effect but to a much lesser degree. Cultural resource surveys and measures to avoid, minimize, and mitigate adverse effects, and to monitor for adverse effects where appropriate, are anticipated to be required for all future projects through the permitting and authorization processes required for these activities. Strategies used to mitigate impacts on cultural resources would be developed through consultation with the State Historic Preservation Officer and area tribes during local permitting processes. Compliance with section 106 of the National Historic Preservation Act (NHPA) would ensure that activities, including desert tortoise minimization and mitigation activities, would avoid or mitigate all impacts on potentially affected cultural resources.

ES.4.8 Native American Concerns

Under all alternatives, construction and operation of development activities have the potential to impact areas of concern to Native Americans through activities associated with ground disturbance as described above under cultural resources; similar but lesser effects may also occur from mitigation activities that require ground disturbance. Cultural resource surveys and measures to avoid, minimize, and mitigate adverse effects, and to monitor for adverse effects where appropriate, are anticipated to be required by the agency approving or permitting the action for all future projects through the permitting and authorization processes required for these activities. Tribal monitoring would likely occur during proposed activities that have the potential for impacts. Areas of Native American concern may indirectly

benefit from mitigation activities that would restore habitat conditions on mitigation lands. These beneficial effects would be greatest under alternatives 2 and 3.

ES.4.9 Human Health and Safety and Wastes (Hazardous and Solid)

Under alternative 1, the general elements of construction and operation of development activities would have the potential to impact human health and safety and wastes (hazardous and solid) through activities such as glint and glare effects from solar facilities, hazardous materials and waste management over the project's life, and waste generated on site. These activities would be managed to minimize potential impacts through measures such as safety and containment measures, waste management plans, and fugitive dust control methods required by the agency approving or permitting the action. Implementing the minimization and mitigation measures associated with incidental take permits for the desert tortoise would not generate hazardous waste.

Under alternatives 2 and 3, programmatic permitting under the GCP would not change the components of the covered activities that impact public health and safety; covered activities would still be assessed for human health and safety impacts at the implementation and site-specific level. Therefore, impacts on human health and safety under alternative 2 and 3 would be the same as alternative 1.

ES.4.10 Socioeconomics

Under alternatives 2 and 3, the streamlined application process would reduce the amount of time and cost for issuing and receiving incidental take permits for both the Service and the applicants, compared with alternative 1. The reduction in time and cost could impact the surrounding economies due to the expedited timeline for development. Under alternatives 2 and 3, the standardized minimization and mitigation measures could lead to greater levels of desert tortoise conservation than issuing incidental take permits on an individual project-by-project basis. The greater levels of desert tortoise conservation would likely lead to an increase in access and quality of nonmarket values for those individuals in communities of interest that value habitat conservation under alternatives 2 and 3 more than under alternative 1.

ES.4.11 Environmental Justice

Under all alternatives, there is no indication that any management decisions would lead to disproportionate and adverse impacts on environmental justice populations in the planning area. Development activities would be subject to regulations or guidelines for mitigation and control measures required by the agency approving or permitting the action, such as emission-control measures for reducing impacts on air quality and mitigation measures for cultural and tribal resources. Additional analysis of the impacts on environmental justice populations from covered activities would occur at the implementation and site-specific level during environmental reviews by state or local agencies.

ES.4.12 Noise

Under all alternatives, construction of development activities would expose sensitive receptors to temporary noise increases from construction equipment and traffic on area roadways. Most of the construction activities associated with the covered actions would be intermittent and would occur in defined construction areas with noise emanating from various points. Noise levels would be attenuated by distance as construction activities move farther away from receptors. Operational noise impacts would depend on the type of project developed and the equipment used on a daily basis but would be less than construction impacts for many types of developments. These activities would be subject to regulations or

guidelines required by the agency approving or permitting the action that require the implementation of noise emission-control measures. Compliance with these regulations would reduce or minimize the impact of construction noise on the surrounding environment. Under all alternatives, minimization and mitigation activities related to the desert tortoise at the project and mitigation site would be a short-term or negligible source of noise.

ES.4.13 Aesthetics

Under all alternatives, impacts on visual resources would occur for construction and operation of development activities. The impacts would be from the presence of vehicles, materials, and equipment, as well as the use of artificial light sources. It would also be from the disturbance of the soil surface and removal of vegetation. Impacts would continue to be specific to development activities implemented in the planning area. Strategies used to minimize or mitigate impacts would be developed through required permitting and authorization processes by the agency approving or permitting the action.

Under all alternatives, minimization activities for the desert tortoise and mitigation activities on off-site lands would cause minimal change to the visual environment where implemented. Any restoration activities undertaken may indirectly affect visual resources in the area to the extent that areas are restored to a more natural condition. This would contribute to natural-appearing landscapes. This beneficial effect would be greatest under alternatives 2 and 3.

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ACRONYMS AND ABBREVIATIONS

Acronym or Abbreviation	Full Phrase
ACEC	area of critical environmental concern
APCD	Air Pollution Control District
AQMD	Air Quality Monitoring District
BLM	United States Department of the Interior, Bureau of Land Management
BP	before the present
CAAQS	California Ambient Air Quality Standard
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CDNCLs	California Desert National Conservation Lands
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
DRECP	Desert Renewable Energy Conservation Plan
EIS	environmental impact statement
EPA	United States Department of the Interior, Environmental Protection Agency
ESA	Endangered Species Act
GCP	general conservation plan
HCP	habitat conservation plan
IPCC	Intergovernmental Panel on Climate Change
maf	million acre-feet
MCL	maximum contaminant level
MLRA	major land resource area
NAAQS	National Ambient Air Quality Standard
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
PM	particulate matter
$PM_{2.5}$	particulate matter with aerodynamic diameter of 2.5 micrometers or smaller
PM_{10}	particulate matter with aerodynamic diameter of 10 micrometers or smaller
ROW	right-of-way
Service	United States Department of the Interior, Fish and Wildlife Service
TCP	Trichloropropane
USC	United States Code

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Chapter 1. Introduction and Purpose and Need

1.1 INTRODUCTION

The United States Department of the Interior, Fish and Wildlife Service (Service) is proposing to approve and use a general conservation plan (GCP) for the desert tortoise (*Gopherus agassizii*) in California. This proposal would streamline the issuance of incidental take permits for covered nonfederal activities in a large portion of the desert tortoise's range in the state. In cooperation with the Bureau of Land Management (BLM), the Service prepared this environmental impact statement (EIS) to evaluate the potential environmental effects from the approval and use of the GCP. The Service prepared the EIS in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations for implementing NEPA, and section 10(a)(1)(B) of the federal Endangered Species Act (ESA), as amended.

A GCP is a mechanism that meets the specifications of a conservation plan under section 10(a)(2)(A) of the ESA. A GCP allows the Service to use a programmatic permitting and conservation process to address a defined suite of proposed activities over a defined planning area. As opposed to a habitat conservation plan (HCP) that addresses conservation on a project-by-project basis in response to individual incidental take permit applications, a GCP establishes a framework under which covered activities are reviewed for compliance with the standardized GCP requirements as applications are submitted. Use of a GCP would substantially reduce the time and effort expended by Service staff in processing individual incidental take permits. At the same time, it would maintain a high level of protection for individual desert tortoises in proposed development areas and increase the species' recovery in the mitigation area. As such, the GCP would provide for conservation of the desert tortoise in a more comprehensive and consistent manner over the life of the GCP compared with evaluating and processing individual HCPs.

The Service's Carlsbad Fish and Wildlife Office prepared the proposed GCP in accordance with section 10(a)(2)(A) of the ESA; the GCP is included as appendix A. The proposed GCP would allow private individuals, local and state agencies, and other nonfederal entities engaged in covered activities to meet the statutory and regulatory requirements of the ESA by applying for an incidental take permit and complying with the requirements of the GCP, including all applicable minimization, mitigation, and monitoring actions. This EIS provides the required NEPA documentation for the proposed federal action to approve and use a GCP for the desert tortoise in California. It provides the baseline environmental conditions (affected environment) and a discussion of impacts on the human and natural environment (environmental consequences) that may occur as a result of issuing individual incidental take permits under the proposed GCP at a programmatic level of detail.

The analysis in this EIS is limited to the evaluation of the proposed GCP as a mechanism to streamline the Service's incidental take permit issuance for covered activities. The EIS neither evaluates nor results in the approval of site-specific development projects or activities; the Service would issue individual incidental take permits for the desert tortoise under GCP guidance when proponents meet the issuance criteria contained therein. NEPA compliance for issuance of individual permits will use this EIS as appropriate. Local or state agencies with appropriate jurisdiction over an individual project site would continue to be

responsible for land use approval(s) and state regulatory requirements, including evaluating the full range of environmental resources pursuant to the requirements of the California Environmental Quality Act (CEQA).

1.2 BACKGROUND

Desert tortoise (*Gopherus agassizii*)

The Service listed the Mojave distinct population segment of the desert tortoise as threatened on April 2, 1990 (55 *Federal Register* 12178). Section 9 of the ESA and its implementing regulations prohibit "take" of fish and wildlife species that are listed as endangered or threatened (16 United States Code [USC] 1531–1544). The ESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Incidental taking" means any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, carrying out an otherwise lawful activity (50 Code of Federal Regulations [CFR] 17.3). In other words, "incidental taking" refers to the killing or capturing, as examples, of a federally listed animal species as a result of an otherwise lawful activity.

While take of a protected species is prohibited, a proponent may obtain lawful exceptions through consultation with the Service under section 7 or permitting under section 10 of the ESA. Section 7 consultation occurs when a proposed project will be authorized, funded, or carried out by a federal agency; this is called having a federal nexus. Projects that occur on federal lands or that must obtain a federal permit are examples of projects with a federal nexus. Under section 7, the applicable federal agency consults with the Service on undertakings with the potential to affect a federally listed endangered or threatened species. When a proposed project has no federal nexus, proponents may comply with the ESA by applying for an incidental take permit from the Service under section 10 of the ESA. The Service is proposing the GCP to facilitate and streamline the section 10 process for the desert tortoise in California.

Absent a GCP, to receive an incidental take permit, the proponent must submit a conservation plan (an HCP) to the Service under section 10(a)(2)(A) that specifies:

1. the impact that will likely result from such taking;
2. the steps the proponent will take to minimize and mitigate that take to the maximum extent practicable and the funding that will be available to implement such steps;
3. the alternative actions to such taking that the proponent considered and the reasons why such alternatives are not being utilized; and
4. other measures that the Service may require as being necessary or appropriate for the purposes of the HCP.

The Service must issue an incidental take permit if the proponent meets the following issuance criteria listed under section 10(a)(2)(B) of the ESA:

1. the taking will be incidental to otherwise lawful activities;
2. the proponent will, to the maximum extent practicable, minimize and mitigate the impacts of such taking;
3. the proponent will ensure that adequate funding for the plan will be provided;
4. the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and
5. the proponent will carry out any other measures that the Service may require as being necessary or appropriate for the purposes of the HCP in support of issuance of an incidental take permit.

Under standard practices, proponents are responsible for developing the HCP required by section 10(a)(2)(A) of the ESA; the development of the HCP and iterative reviews require substantial time and effort for the proponents and for Service staff. The Service must then prepare a NEPA document for public review, address any comments received from the public, conduct an internal consultation pursuant to section 7(a)(2) of the ESA, and conclude the NEPA process before reaching a decision on whether to issue the incidental take permit. In almost every incidental take permit that the Service has processed since the listing of the desert tortoise in 1990, the proponent and the Service have agreed on the most appropriate means of minimizing, mitigating, and monitoring the effects of take on desert tortoises soon after the proponent has contacted the Service. However, the standard practices described above generally require at least 12 to 24 months to complete.

1.3 PURPOSE AND NEED

The purpose of the proposed GCP is to provide a mechanism by which the Service can increase efficiency and streamline compliance with section 10(a)(1)(B) of the ESA for activities on certain nonfederal lands in the planning area that have the potential to incidentally take desert tortoises. Instead of a lengthy and complicated processing of individual incidental take permit applications and associated HCPs for proponents, as described above in section 1.2, using a GCP would allow the Service to substantially reduce the time and effort needed to issue incidental take permits that meet the parameters established in the GCP while ensuring project mitigation contributes to the long-term recovery for the desert tortoise.

The GCP would require that proponents use minimization measures that have proven effective over time in reducing mortality of desert tortoises during various types of activities; these measures include the translocation of desert tortoises from nonfederal project sites to the mitigation area. The GCP would also direct required mitigation to fund or implement recommended actions in the revised recovery plan for the desert tortoise (Service 2011) and additional actions to ensure that mitigation contributes to the species' long-term recovery.

The Service and potential proponents would greatly benefit if the Service were able to (1) streamline this process for desert tortoise incidental take permits, (2) provide specific direction to proponents to incorporate the most current measures to minimize the take of desert tortoises into their applications, and (3) better incorporate mitigation from incidental take permits into a comprehensive strategy that contributes to the desert tortoise's recovery.

The GCP would fulfill a need for better conservation of the desert tortoise within the California desert in a more comprehensive and consistent manner. It would also substantially reduce the time and effort expended by Service staff in processing individual incidental take permits while maintaining the appropriate standards for protection of desert tortoises in development areas and furthering the species' recovery in the mitigation area.

1.4 SCOPE OF THE ANALYSIS

1.4.1 Geographic Scope

The geographic scope of the EIS, termed the planning area, comprises most of the desert tortoise's range in California (figure 1-1). The planning area encompasses approximately 15.2 million acres in seven counties in southern California (table 1-1). Within the planning area, the Service has identified a permit area and a mitigation area,[1] also described in table 1-1.

Table 1-1. Planning Area

County	Planning Area (acres)	Permit Area (acres)	Mitigation Area (acres)
Imperial	569,400	30,300	387,000
Inyo	1,920,000	2,300	774,100
Kern	1,043,700	600,600	298,000
Los Angeles	500,500	472,500	23,800
Riverside	1,843,100	26,600	1,199,000
San Bernardino	8,865,300	959,600	5,928,300
San Diego	499,300	498,900	0
Total[1]	**15,241,300[2]**	**2,590,800**	**8,610,100**

Source: Service GIS 2023

[1]Acres are rounded to the nearest 100 and may not sum due to rounding.

[2]The planning area includes areas of desert tortoise habitat outside the permit and mitigation areas; therefore, permit and mitigation area acres do not total the planning area acres.

The permit area includes primarily nonfederal lands within the planning area where proponents could use the GCP to apply for incidental take permits for the desert tortoise (figure 1-2). These lands include nonfederal lands outside desert tortoise conservation areas, as described in the recovery plan for the desert tortoise (Service 2011). The Service considers recovery of the desert tortoise on the nonfederal lands within the permit area to be infeasible due to land-ownership patterns and existing disturbance of habitat. The permit area also includes existing rights-of-way (ROWs) in the planning area where the federal agency no longer has discretionary authority; consequently, interagency consultation, pursuant to section 7(a)(2) of the ESA, does not apply in these areas. The GCP would apply to such ROWs that cross federal lands, whether they are within or outside of mitigation areas. Within conservation areas, the GCP would be available only for projects that intended to improve the safety and functionality of the existing ROW; the Service will not consider its use appropriate if the proposed action changes the basic function of the existing ROW.

Mitigation resulting from issuance of incidental take permits under the GCP would occur within the mitigation area (figure 1-3). The mitigation area includes desert tortoise conservation areas, which the

[1] Unless otherwise noted, mitigation area refers to the larger mitigation area under the proposed action and not the mitigation area under another alternative.

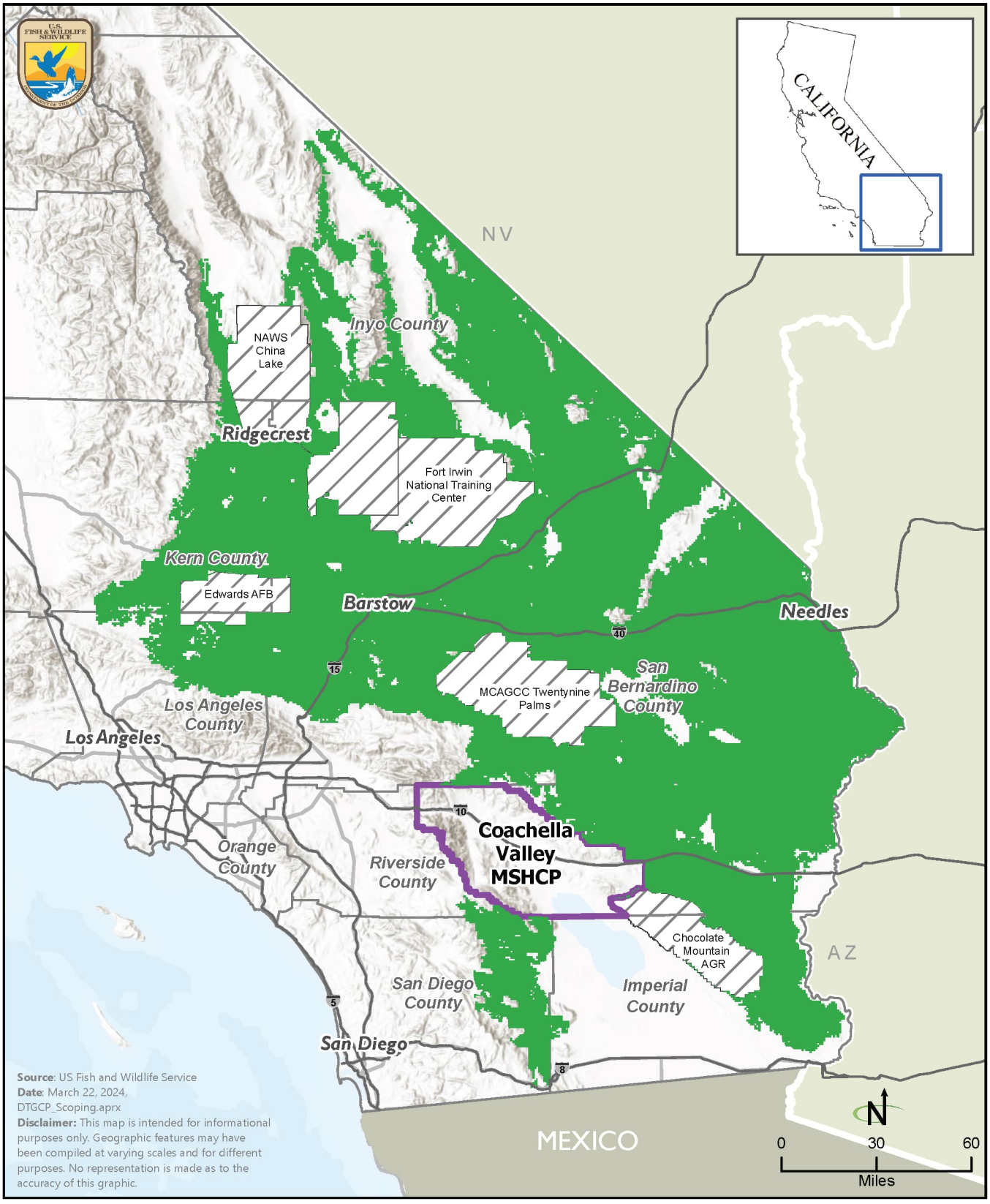

Figure 1-1 Planning Area

Planning area

Coachella Valley MSHCP boundary

Department of Defense Lands

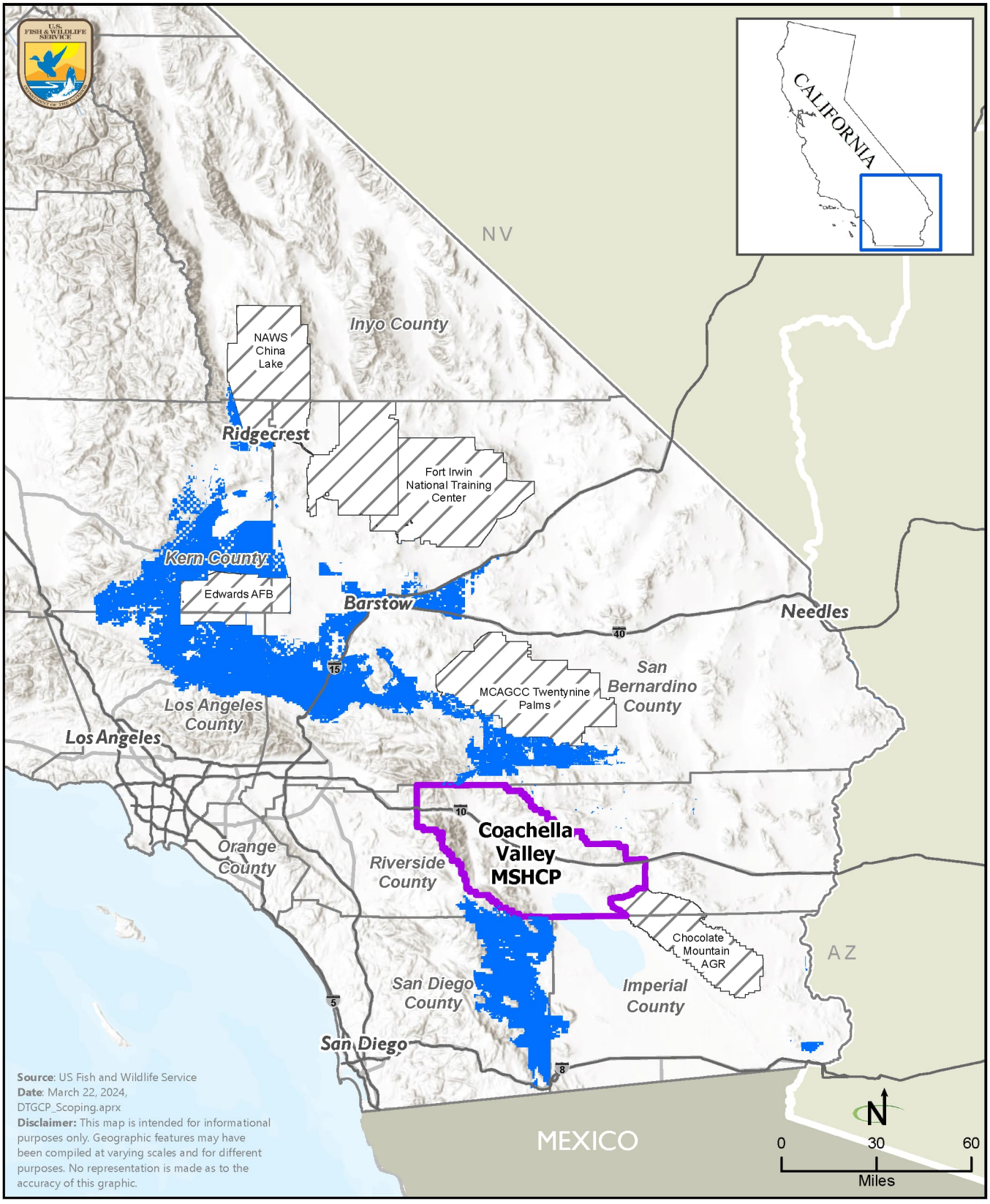

Figure 1-2 Permit Area

Permit area

Coachella Valley MSHCP boundary

Department of Defense Lands

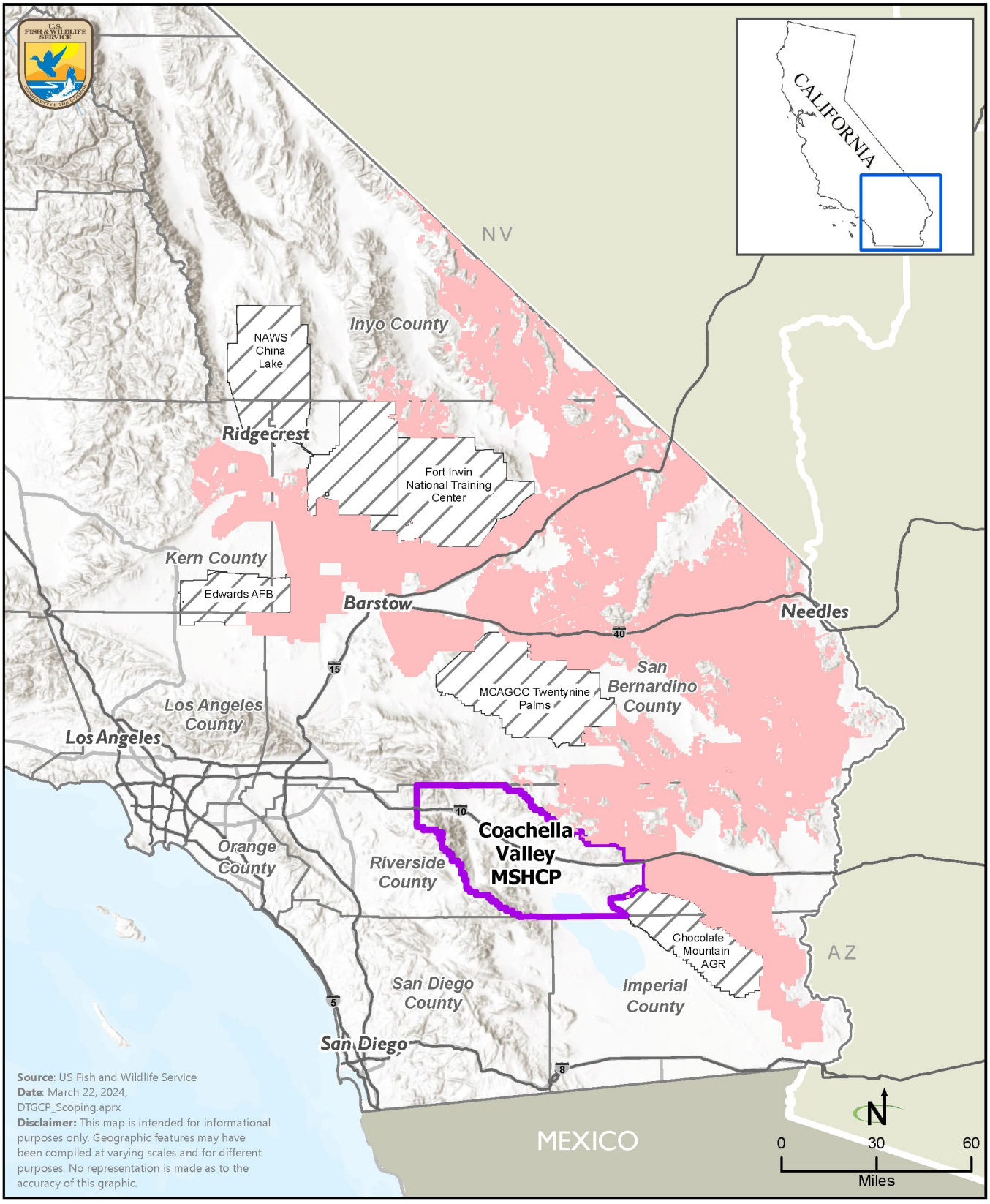

Figure 1-3 Proposed Action Mitigation Area

Proposed action mitigation area

Coachella Valley MSHCP boundary

Department of Defense Lands

recovery plan for the desert tortoise describes as BLM conservation lands (California Desert National Conservation Lands [CDNCLs] and areas of critical environmental concern [ACECs]), as identified in the California Desert Conservation Area Plan, as amended by the Desert Renewable Energy Conservation Plan (DRECP; BLM 2016). The mitigation area also includes National Park Service (NPS) lands and other conservation areas or easements managed for desert tortoises.

The planning area does not include lands within military bases or the area covered by the Coachella Valley Multiple Species Habitat Conservation Plan. In addition, any regional or local HCP could supersede the GCP when the Service issues a section 10(a)(1)(B) incidental take permit for that specific area.

The acreages and areas mapped for this EIS analysis are based on best available geographic information system (GIS) data and may not match on-the-ground boundaries. If approved, the Service would follow the spirit and intent of the GCP when a proponent applies to use the GCP. Specifically, the GCP would be available to facilitate the issuance of incidental take permits for the desert tortoise for activities that occur on nonfederal lands outside desert tortoise conservation areas and certain existing ROWs on federal lands where the federal agency no longer has discretionary authority. Mitigation required for the issuance of an incidental take permit would occur within the mitigation area, as defined above and in the GCP.

1.4.2 Scope of Covered Activities

Covered activities are those activities for which a proponent would be eligible to use the GCP to support an application for an incidental take permit. The GCP would cover commercial, agricultural, residential, industrial, and infrastructure development on nonfederal lands within the planning area and certain existing ROWs on federal lands where the federal agency no longer has discretionary authority. The GCP would also cover operations and maintenance associated with such activities. Other future activities that would have the same general effects on the desert tortoise as those described in the GCP and analyzed in this EIS may also be eligible for coverage. Conversely, the Service may recommend that the nonfederal entity pursue an individual incidental take permit if the scope of the proposed activity is likely to affect desert tortoises in a manner greater than what is considered in the GCP and analyzed in this EIS.

Activities along existing ROWs in the California desert where the federal agency no longer has discretionary authority are covered under the GCP because interagency consultation, pursuant to section 7 of the ESA, does not apply in these areas. Within the mitigation area, the GCP would be available only for such projects along existing ROWs intended to improve the safety and functionality of the existing ROW; the Service would not consider use of the GCP appropriate if the proposed project were to change the basic function of the existing ROW. For the sake of brevity, future reference to "the permit area" in this document includes these nonfederal ROWs, unless noted otherwise.

All covered activities associated with each project must comply with all the requirements of local and state jurisdictions.

1.4.3 Scope of Covered Species

The Mojave population of desert tortoise is the only species proposed for coverage under the GCP. Separate authorizations would be required for projects that have the potential for take of additional federally listed species.

1.4.4 Scope of the Analysis

As described previously, this EIS is limited to the evaluation of the proposed GCP as a mechanism to streamline incidental take permit issuance for covered activities; it does not evaluate in detail or result in the approval of site-specific development projects or activities. Given the nature of the proposed action to approve and use a GCP for the desert tortoise, the EIS provides a detailed analysis of potential impacts on the desert tortoise and its habitat from approval and use of the GCP under alternatives 2 and 3. It generally analyzes the nature and types of impacts on other affected resources that could occur from the development of covered activities and from the implementation of potential mitigation measures that could be required pursuant to the issuance of incidental take permits under the GCP. Impacts on such resources are evaluated at a broad, programmatic level of detail in chapter 3.

Local or state agencies with jurisdiction over an individual project site would continue to be responsible for land use approvals and state regulatory requirements, including evaluation of the full range of environmental resources pursuant to the requirements of the CEQA and compliance with all applicable state and local laws and regulations governing the protection of human and natural resources. The BLM, NPS, or other land management entity would continue to be responsible for approving mitigation activities on the lands they administer.

1.5 REGULATORY REQUIREMENTS

1.5.1 Regulatory and Consultation Requirements of the Service

Federal Endangered Species Act

The 93rd United States Congress enacted the ESA in 1973 to protect and recover imperiled species and their ecosystems. The ESA provides for the conservation of federally listed plant and animal species and their habitats. It directs federal agencies to conserve listed species and imposes an affirmative duty on these agencies to ensure their actions are not likely to jeopardize the continued existence of a listed species or adversely modify its designated critical habitat. The ESA does not protect species that are proposed for listing or candidates for listing.

Section 9(a)(1)(B) of the ESA prohibits the "take" of federally listed animal species. The ESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Section 10(a)(1)(B) of the ESA authorizes the Secretary of the Interior to permit taking, otherwise prohibited by section 9(a)(1)(B), if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Section 10(a)(1)(B) of the ESA establishes a process for obtaining an incidental take permit, which authorizes nonfederal entities to incidentally take federally listed wildlife or fish subject to certain conditions. Preparation of a conservation plan is required for all section 10(a)(1)(B) permit applications.

Section 7 of the federal ESA requires that federal agencies consult with the Service to ensure their actions are not likely to jeopardize the continued existence of listed species and are not likely to result in the destruction or adverse modification of designated critical habitat for listed species; consequently, the Service must consult internally on the approval of the GCP to comply with section 7 of the ESA.

The federal ESA definition of "take" does not apply to listed plants. Consequently, if a development or mitigation project to be considered under the GCP may affect individuals of a federally listed plant species or their critical habitat, the Service would follow a process that differs from that described in chapter 2 of this document. Specifically, the Service would consult internally, pursuant to section 7(a)(2) of the ESA,

to ensure the issuance of an incidental take permit for the desert tortoise is not likely to jeopardize the continued existence of this plant species or result in the destruction or adverse modification of critical habitat. The Service would also work with the proponent and would recommend protective measures for the species and its critical habitat to be implemented during the project.

National Environmental Policy Act

In 1969, the United States Congress enacted NEPA, which requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. NEPA documents describe the environmental effects of federal actions and determine whether the actions would have a significant effect on the human environment. The Service intends to use this GCP EIS as the basis for meeting its future obligations under NEPA when issuing incidental take permits pursuant to the GCP. The BLM will evaluate its NEPA obligations for mitigation activities proposed on BLM-administered lands at the time such actions are proposed.

National Historic Preservation Act

All federal agencies are required to take into account the effects of their undertakings on historic properties, including issuance of incidental take permits for the desert tortoise under the GCP. This requires consultation with the State Historic Preservation Officer and appropriate federally recognized Native American tribes under section 106 of the National Historic Preservation Act (NHPA). The Service would comply with section 106 of the NHPA during consideration of individual permit applications by following the implementing regulations (36 CFR 800.2(c)(4)) that allow the federal agency to authorize a proponent or group of proponents to initiate consultation regarding section 106 with the State Historic Preservation Officer, Tribal Historic Preservation Officer, and others. The Service would remain responsible for government-to-government relationships with Indian tribes. Pursuant to the NHPA and regulations, the Service would also remain legally responsible for all findings and determinations regarding historic properties.

Prior to the issuance of any incidental take permit, the Service would require the project proponent to provide evidence that the proponent has complied with California Assembly Bill 52 through the CEQA process (see section 1.5.2, below). Prior to the issuance of an incidental take permit, the project proponent must demonstrate to the Service that the proponent has met the requirements under Assembly Bill 52; the Service would then assess whether the project proponent has also met the requirements of section 106. If a project proponent does not require approval from a local agency and is not undergoing review under the CEQA, the Service would follow the standard procedures to comply with section 106 of the NHPA.

1.5.2 External Regulatory and Consultation Requirements for Nonfederal Covered Activities

Use of the GCP to support incidental take permit applications would not require discretionary approval action by a state or local agency; however, any proposed development activities the GCP would cover would continue to require regulatory review and compliance prior to discretionary approval by a state or local agency. Key regulations guiding project-specific review and approval are identified below.

California Environmental Quality Act

Land use approvals for individual nonfederal covered activities would be the responsibility of the local or state agency with the appropriate jurisdiction over an individual project site. As such, most nonfederal

covered activities would require compliance with the CEQA, which requires local or state agencies, or both, to identify any significant environmental impacts of actions and to avoid or mitigate those impacts, as feasible. Similar to NEPA, the CEQA provides a multitiered process for impact assessment, public comment, and overall environmental review and discretionary approval of the project. This review includes historic resources, which are considered part of the environment, and the regulations governing how to determine the significance of impacts on historic resources (14 California Code of Regulations 15064.5).

Additionally, California Assembly Bill 52 established requirements "to ensure that local and tribal governments, public agencies, and project proponents would have information available early in the project planning process to identify and address potential adverse impacts to tribal cultural resources." The lead agency for compliance with the CEQA must "consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. That consultation must take place prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project."

California Endangered Species Act

The California Endangered Species Act (CESA) is a California environmental law that conserves and protects plant and animal species at risk of extinction. Plant and animal species may be designated threatened or endangered under the CESA after a formal listing process by the California Fish and Game Commission. Approximately 250 species are currently listed under the CESA. A CESA-listed species, or any part or product of the plant or animal, may not be imported into the state, exported out of the state, "taken,"[2] possessed, purchased, or sold without proper authorization. The CESA generally parallels the provisions of the ESA and provides for the state designation of native species or subspecies of plants, fish, and wildlife as endangered or threatened.

Section 2080 of the CESA prohibits the take of State-listed endangered, threatened, or candidate species; however, it allows for the incidental take of such species as a result of otherwise lawful development projects under sections 2081(b) and (c). The California Department of Fish and Wildlife (CDFW) is also responsible for designating and tracking species of special concern, which include sensitive native wildlife that exists in small, isolated populations; show marked population declines; and depend on habitat that has shown historical or recent declines.

Unlike the federal ESA, "take" under the CESA does apply to endangered, threatened, or candidate plants. Section 2081 subdivision (b) of the Fish and Game Code allows the CDFW to authorize take of species listed as endangered, threatened, or candidate pursuant to the CESA. Also, the California Code of Regulations allows the CDFW "to authorize take of plants listed as rare pursuant to the Native Plant Protection Act, if that take is incidental to otherwise lawful activities and if certain conditions are met" (CDFW 2024a). If the project proponent has not already done so, the Service would advise the proponent to contact the CDFW. The Service would pursue the same course of action regarding the western Joshua tree (*Yucca brevifolia*), which is protected under California's Western Joshua Tree Conservation Act.

[2] Section 86 of the California Fish and Game Code defines "take" as hunting, pursuing, catching, capturing, killing, or attempting to do any of these.

During discussions with a proponent regarding the proponent's project, the Service would coordinate with the CDFW to ensure protective measures for the desert tortoise and any State-listed plant and/or western Joshua tree do not conflict.

1.6 RELATIONSHIP TO EXISTING PLANS

1.6.1 California Desert Conservation Area Plan, as Amended by the Desert Renewable Energy Conservation Plan

The California Desert Conservation Area is a 25-million-acre expanse of land in southern California designated by Congress in 1976 through the Federal Land Policy and Management Act and defined in section 601 of that act. The BLM administers approximately 10 million acres of the California Desert Conservation Area under its California Desert Conservation Area Plan. The DRECP identified CDNCLs, in accordance with the Omnibus Public Land Management Act of 2009. CDNCLs are nationally significant landscapes within the California Desert Conservation Area with outstanding cultural, ecological, and scientific values. CDNCLs are a permanent addition to the National Landscape Conservation System, as per the direction to the BLM in the Omnibus Public Land Management Act.

The land use plan amendment for the DRECP also identified ACECs, which are areas where special management attention is applied to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes. Unlike CDNCLs, the BLM can alter ACEC boundaries or allowable actions within the ACECs through a land use plan amendment.

The GCP would not alter the California Desert Conservation Area or the DRECP in any way. The mitigation area in the GCP is based on the land use allocations developed by the BLM in the DRECP.

1.7 PUBLIC ENGAGEMENT

Public engagement is a vital part of the NEPA process. It facilitates environmental disclosure and provides the opportunity for those affected by federal undertakings to take part in the decision-making process. Guidance for implementing public engagement under NEPA is codified in 40 CFR 1501.9 (and 40 CFR 1506.6 in the 2022 regulations), ensuring that federal agencies make a diligent effort to involve the public in the process. Public engagement in an EIS process generally occurs at three formal stages: public scoping, review of the draft EIS, and review of the record of decision. However, the public is invited to engage the Service at any point in the process.

1.7.1 Scoping

NEPA and its implementing regulations require agencies to use an early and open process "to determine the scope of issues for analysis in an [EIS], including identifying the important issues and eliminating from further study unimportant issues" (40 CFR 1502.4). Thus, scoping is an early and open process for determining the extent of issues to be addressed and for identifying the potential significant issues to be evaluated in the EIS.

The public scoping period for this EIS began with the publication of the notice of intent to prepare an EIS in the *Federal Register* on July 17, 2023 (88 *Federal Register* 45437). The 45-day scoping period ended on August 31, 2023. The Service held a virtual public scoping meeting on July 25, 2023, and on July 27, 2023. The Service also held one in-person meeting in Victorville, California, on August 10, 2023. At the scoping

meetings, the Service gave an informational presentation and held a question-and-answer session for those who attended.

The Service received 15 total comment letters from federal, state, local, and tribal governments, as well as private groups and individuals. The comments received and evaluated during the scoping period were considered in formulating the alternatives and conducting initial impact evaluations. A scoping report (appendix B) documents the results of the scoping process.

1.8 AGENCY AND TRIBAL COORDINATION

The Service is engaging in ongoing collaboration with federal, tribal, state, and local governments as part of this EIS process. As required by law, this collaboration includes government-to-government consultation with affected federally recognized Native American tribes, the participation of cooperating agencies, and consultation with regulatory agencies. Chapter 4, Consultation and Coordination, provides more information about this involvement.

1.8.1 Cooperating Agencies

The Service invited the BLM and the NPS to serve as cooperating agencies for this EIS process. The BLM accepted and signed a memorandum of understanding on January 4, 2023, to become a cooperating agency. BLM staff have been present at and have a standing invitation to the Service's coordination calls. The BLM also had a representative present at all the scoping meetings to address the public's questions pertaining to the BLM. The NPS declined the invitation to participate as a cooperating agency in this process.

1.8.2 Tribal Collaboration

The Service has offered to consult with federally recognized Native American tribes in accordance with section 106 of the NHPA and internal Service policies. The Service mailed letters in July 2023 to each tribal executive official of 26 federally recognized tribes inviting them to participate in formal government-to-government consultation with the Service. The letters described the GCP and the EIS process and detailed how the Service intends to comply with its responsibilities under section 106 of the NHPA during future issuance of individual incidental take permits under the GCP. The Service also sent letters to five non-federally recognized tribes to inform them of the process. The Service included a preliminary draft GCP as an attachment with these letters. Chapter 4, Consultation and Coordination, includes a list of the tribes contacted during this NEPA process. During the scoping period, the Colorado River Indian Tribes provided a response that outlined their concerns to be addressed in the draft EIS.

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Chapter 2. Proposed Action and Alternatives

2.1 Introduction

This chapter provides the details of the proposed action and the alternatives to the proposed action. It also provides a discussion of the alternatives considered but eliminated from detailed analysis.

The Service developed the proposed action, which is the approval and use of a GCP for the desert tortoise in California, through extensive internal coordination; regular discussions with the BLM, the CDFW, the NPS, and other agencies; and outreach to the public through a pre-scoping process on a conceptual GCP and a scoping process on a preliminary draft of the GCP. The current draft of the GCP is presented in appendix A.

In developing the alternatives to the proposed action, the Service held internal alternatives development workshops with Service and BLM staff and considered public comments during the pre-scoping and scoping processes. Scoping identified issues that introduced opportunities for alternative courses of action, while the purpose and need for action provide sideboards for determining the reasonableness of such alternatives.

2.2 Alternative 1: No Action

Under the no action alternative, the Service would not approve and use the GCP to streamline the incidental take permit process for the desert tortoise in California. The Service would continue to evaluate and process individual applications and prepare a NEPA document for each incidental take permit application; this process generally takes 12 to 24 months to complete. The Service would not develop a standardized, comprehensive strategy that provides specific direction to proponents. Thus, the process of issuing and receiving an incidental take permit would continue to be a lengthy process for both the Service and proponents.

The proponent would also continue to develop conservation measures, including any compensatory mitigation, on a project-by-project and piecemeal basis. Thus, the benefits of cohesive planning for species recovery efforts may not be achieved. While the no action alternative would not meet the purpose and need described in section 1.3, Purpose and Need, this alternative is being evaluated pursuant to CEQ regulations (40 CFR 1502.14(c)) requiring evaluation of a no action alternative. The no action alternative provides a baseline for comparison of environmental effects and demonstrates the effects that could occur if the proposed action is not adopted.

As described in section 1.1, Introduction, of this EIS, local or state agencies with appropriate jurisdiction over an individual project site would continue to have the responsibility of land use approval(s) and state regulatory requirements for individual projects, including evaluating the full range of environmental resources pursuant to the requirements of the CEQA. Permits and approvals often required for a proposed project are described in table 2-1. A key element of permits and authorizations is the legally binding terms and conditions of approval imposed by the granting entity to avoid, minimize, mitigate, or require monitoring for adverse effects associated with a proposed activity.

Table 2-1. Typical Permits and Authorizations for Nonfederal Actions in California

Permit or Regulatory Requirement*	Issuing Agency	Description
State Permits and Authorizations		
CEQA Authorization (California Public Resources Code, Section 21000 et seq.)	State or local lead agency	This is an environmental review to disclose and mitigate the environmental impacts of discretionary projects.
Lake or Streambed Alteration Agreement (California Fish and Game Code, Sections 1602 and 1603)	CDFW	An authorization for diversion, or obstruction of the natural flow of; change to the bed, bank, or channel of; use of material from; or depositing or disposal of materials into any river, stream, or lake may be required.
Incidental Take Permit or Consistency Determination (California Fish and Game Code, Section 2081)	CDFW	This is a permit or concurrence authorizing activities that may incidentally take any candidate, threatened, or endangered species listed under the CESA. The permit includes binding mitigation measures to fully minimize and mitigate the impacts on the species.
Western Joshua Tree Conservation Act Incidental Take Permit (California Fish and Game Code, Section 1927.2)	CDFW	This permit allows for the "take" of western Joshua trees if the proponent meets certain conditions.
Construction General Stormwater Permit (Federal Clean Water Act, Section 402)	State Water Resources Control Board permit administered by the Regional Water Quality Control Board	This is a pre-published general stormwater permit that would be required for construction activities at the site.
Waste Discharge Requirements Order (California Water Code: Porter-Cologne Water Quality Act)	Regional Water Quality Control Board	This is a permit to discharge fill into waters of the State that are not subject to federal requirements.
Encroachment Permit, Traffic Control Plan (California Vehicle Code)	California Department of Transportation	This is a permit for an easement and ROW onto state highways.
Portable Engine Registration for specified nonmobile portable engines	California Air Resources Board (CARB)	This registration is required for portable equipment such as that for well drilling, concrete batch plants, and rock crushing, as well as portable pumps and compressors.
Cultural Resources Use Permit, Field Use Authorization, or Archaeological Resources Protection Act Permit	State Historic Preservation Officer	These permits, if required, must be obtained prior to construction.
Fish and Game Code 1600	California Department of Fish and Game	Projects would be required to demonstrate compliance with this legislation which finds and declares that the protection and conservation of the fish and wildlife resources of this state are a matter of public interest.
Local Permits and Authorizations		
Conditional Use Permit	Applicable city or county department	This is a discretionary permit allowing a specific land use.
Building Permit	Applicable city or county department	This is a permit to construct a building or structure.

Permit or Regulatory Requirement*	Issuing Agency	Description
Grading Permit	Applicable city or county department	This is a construction permit typically required for excavation, fill, or other earthwork.
Flood Control/Drainage Channel Encroachment/Crossing Permit	Applicable city or county department	This is a permit required for work in or affecting designated floodplains.
Encroachment Permit	Applicable city or county department	Encroachment permits may be required for use of county roads and ROW.
Sanitation Permit	Applicable city or county department	This is a permit for proposed septic systems for sanitary waste disposal.
Authority to Construct and Permit to Operate – New Stationary Source	Air Pollution Control District (APCD)	This is a permit required in order to construct and operate the proposed facility.
Fugitive Dust Permit	APCD	This is a permit required by the APCD prior to construction.
Permit for Storage of Gasoline, Diesel or Other Organic	Applicable city or county department	This is a permit to store fuel.

*Specific permits and authorizations depend on the location and type of project for which an incidental take permit would be required.

2.3 ALTERNATIVE 2: PROPOSED ACTION

The proposed action is the Service's approval and use of the GCP for the desert tortoise in California, as presented in appendix A. The planning area covered by the GCP comprises a large portion of the desert tortoise's range in California, which includes approximately 15,241,600 acres in portions of Inyo, Kern, Los Angeles, San Bernardino, Riverside, San Diego, and Imperial Counties in southern California. This area is within the area of responsibility of the Service's Carlsbad Fish and Wildlife Office.

As described in section 1.4.1, Geographic Scope, the planning area for the GCP includes both permit and mitigation areas. Nonfederal lands outside desert tortoise conservation areas in southern Inyo County, eastern Kern County, northern Los Angeles County, the desert portion of San Bernardino County, eastern Riverside County, eastern San Diego County, and portions of Imperial County comprise the permit area.

The mitigation area is where mitigation resulting from issuance of incidental take permits would occur; the mitigation area would also contain recipient sites for translocation. Mitigation would occur on lands within desert tortoise conservation areas that model as "good" desert tortoise habitat within NPS lands and within CDNCLs and ACECs administered by the BLM. Mitigation would also occur on nonfederal lands that either are in conservation management or that are acquired for conservation management. The GCP includes approximately 2,590,800 acres of permit area and 8,610,100 acres of mitigation area (see table 1-1 in chapter 1).

The Mojave population of the desert tortoise is the only species that would be covered under the GCP; thus, the EIS will only discuss impacts on the desert tortoise and its conservation. Any other federally listed species that could be affected by a covered activity would continue to be addressed on a project-by-project basis and would require separate individual incidental take permit applications supported by associated project-specific, proponent-prepared HCPs.

2.3.1 Covered Activities in the Permit Area

The GCP would cover a range of activities, including, but not limited to, commercial, agricultural, residential, industrial, and infrastructure development, as well as operation and maintenance of these activities. These activities would have to take place within the permit area or meet the GCP requirements and the spirit and intent of the GCP (see section 1.4.1). All covered activities associated with each project would be required to comply with all the requirements of local and state jurisdictions, including all land use authorizations and permitting requirements, such as those described in table 2-1.

The Service selected the range of activities that would be covered under the GCP as those activities considered to have the same general effects on the desert tortoise regardless of the activity being proposed. Thus, all covered activities share common elements of ground disturbance that could affect the desert tortoise. For the purposes of analysis, the Service assumed that proposed activities under the GCP would be likely to individually affect between approximately 120 and 8,600 acres based on the incidental take permits that the Service has issued to date (appendix A, table 2); the actual acreages may differ based on future specific proposals. The size and scale of proposed projects would be among the factors the Service would consider when assessing the availability of the GCP for a specific project. For the purpose of analysis, table 2-2 describes the general elements related to project construction and operation of covered activities. Note that the Service does not have authority over the construction or operation of covered activities except as construction or operation pertains to incidental take permits for the desert tortoise.

Table 2-2. General Elements of Construction and Operation of Covered Activities

Element	Description
Preconstruction and Construction	
Geotechnical investigations	Geotechnical investigations involve drilling bores or excavating test pits to characterize the geology and soil conditions of a project site. The depth and density of such activities vary based on site conditions and the proposed covered activity. Disturbance is typically short term. Equipment used typically includes augers, rotary drilling equipment, excavators, and vehicles for overland travel.
Site clearing and preparation	Preparing a site for construction generally includes vegetation removal and site grading. The amount of vegetation removal and site grading depends on the site topography and proposed use of the site. Site uses that require more level surfaces, such as a solar facilities and commercial developments, or that include belowground infrastructure or deeper foundations may require more extensive earthmoving than uses such as transmission line development. Site preparation may include developing temporary or permanent drainage and erosion-control features, such as culverts and retention basins, specific to state and local requirements. Heavy equipment that may be used in the site preparation phase generally includes bulldozers, graders, excavators, scrapers, front-end loaders, trucks, cranes, rock drills, chain saws, chippers, trenching machines, and equipment for blasting operations, if required. Most covered activities would result in both temporary and permanent disturbances, though the degree of each would depend on the activity proposed. Site preparation is short term in nature.
Utility services	Utility services would be required for most or all covered activities. These may include electrical distribution, natural gas lines, septic fields or sewer pipelines, telecommunication lines, and water wells or municipal water supply lines. Trenching and filling would generally occur prior to the start of facility construction.

Element	Description
Facility construction	Permanent structures and ancillary facilities, such as fencing, roads, and parking lots, are developed using standard building and construction techniques per the requirements of the jurisdiction where such activity is occurring. Temporary construction areas, including laydown yards, on-site construction trailers, and material storage, are used to receive and store materials needed during construction. Facility construction generally requires less heavy equipment use than the site preparation phase, but it requires more vehicle traffic related to material deliveries and worker trips. Typical equipment use during facility construction includes tractor trailers for material hauling, cranes, forklifts, generators, concrete batch plants, and power tools. Some activities, such as transmission line development, may require the use of helicopters. Equipment is also needed for final paving and landscaping.
Operations and Maintenance	
Facility operations	Operational activities depend on the type of covered activity. For some covered activities, such as the development of houses, commercial buildings, or warehouses, operations involve no ongoing ground disturbance. For uses such as these, operational activities include vehicle traffic, landscaping activities, operation of utilities, and the use of smaller equipment such as forklifts for materials handling. For other covered activities, such as solar facilities and transmission lines, operations may involve ground disturbance from travel on unpaved surfaces; however, these are low levels of vehicle travel because fewer workers are needed, when compared with facility construction. In some cases, operational activities would be more extensive. Agricultural uses, such as planting and harvesting of crops; mining facilities; or quarries would involve ongoing surface disturbances as integral parts of their operations.
Integrated pest management, including trapping and regulated use of pesticides and herbicides	For some covered activities, pesticides may be applied during the operation of a project to control pests and weeds. Such applications must comply with the Federal Insecticide, Fungicide, and Rodenticide Act and state equivalent requirements.
Solid and hazardous waste handling and disposal	Most covered activities would generate some form of domestic or hazardous wastes that would be handled per local, state, and federal laws and disposed of in facilities permitted to receive such wastes.

2.3.2 Minimization Measures and Monitoring in the Permit Area

Measures Related to Other Resources

Minimization measures are those measures that are implemented to reduce the level of impact from a covered activity. Construction and operation of covered activities would be subject to the terms and conditions of all local and state permits and authorizations and any federal regulations regarding materials handling and worker health and safety. These terms and conditions would be determined during the applicable approval processes at the state and local level for each covered activity.

Examples of measures that are typically applied include measures to reduce fugitive dust during site disturbance, erosion- and stormwater-control measures, measures to ensure projects comply with local noise ordinances, and measures to avoid or minimize impacts on sensitive species. The application of these measures are outside the Service's authority, but they can reasonably be presumed to be required at the state or local level.

Minimization Measures and Monitoring for the Desert Tortoise

Section 10(a)(2)(A) of the ESA requires that a GCP specify the measures that the proponent would take to minimize, to the maximum extent practicable, the impacts of the taking of any federally listed wildlife species as a result of covered activities addressed by the GCP. In accordance with section 10(a)(2)(B) of the ESA, the GCP includes minimization measures to achieve its biological goals and objectives and to ensure the impacts of covered activities would be minimized to the maximum extent practicable. In contrast to the no action alternative, the GCP would standardize minimization measures and ensure they are applied consistently throughout the GCP planning area.

Table 2-3 shows the measures to minimize impacts. These are the measures that would be applied, as applicable, at the location of the proposed project (see appendix A, section 5.3). If these generalized protective measures do not address a specific concern during the review of a proposed project, the Service and the proponent could develop additional protective measures for that project.

Table 2-3. Measures to Minimize Impacts on the Desert Tortoise

Measure Number	Measure Description
1	Depending on the nature and location of the proposed action, the proponent may conduct pre-project surveys of the project area according to the Service's current protocol or a modified protocol agreed upon by the Service for the specific action; the proponent may also use the regional density as determined by the Service's range-wide monitoring. The proponent and Service would determine the appropriate course of action through discussions prior to submitting an application package. The purpose of these surveys is to assess the number of desert tortoises that may be present.
2	The proponent would employ authorized biologists, monitors, and/or desert tortoise exclusionary fencing, as necessary and appropriate, to protect desert tortoises during implementation of the proposed project. Biologists requesting designation as authorized biologists for each activity must have sufficient training and experience to resolve any issue that may arise from the specific activity on which they are working. For example, if the activity involves the translocation of desert tortoises, at least one authorized biologist must have sufficient training and experience to conduct full health assessments and to implement the translocation according to the Service's guidance. For an activity where translocation is not needed, the authorized biologist need not have that specific training and experience. Monitors may work under the supervision of authorized biologists. Monitors may handle desert tortoises as determined to be appropriate by the authorized biologist; the authorized biologist would determine the protective measures the monitors may conduct and the level of supervision the monitors need to complete each task. The proponent would submit the credentials of biologists they propose as authorized biologists to the Service for review and approval at least 30 days prior to the onset of activities that could take a desert tortoise.

Measure Number	Measure Description
3	The proponent would employ authorized biologists and monitors to conduct clearance surveys to remove desert tortoises from work areas prior to the onset of ground-disturbing activities. Depending on the nature of the activity and circumstances, desert tortoises in work areas would either be moved from harm's way into adjacent suitable habitat or translocated (moved to suitable protected habitat on public or designated conservation lands); the translocation sites may include regional augmentation sites, as discussed in the recovery plan (Service 2011). The proponent would follow the Service's most recent guidance for handling, moving, and translocating desert tortoises; because of specific circumstances, the Service may recommend changes in the guidance that is in place at the time of a specific activity. In all cases, the proponent must obtain the Service's review and approval of the project-specific translocation plan. If the proposed recipient site is on land managed by a federal, state, or local agency, the Service would contact the land manager for approval prior to the proponent translocating desert tortoises. If the proposed recipient site is on land managed by a land conservancy or mitigation bank, the proponent would provide the Service with a letter from the landowner accepting the translocated desert tortoises prior to moving them. If the proposed project is located on a nonfederal ROW within a conservation area, desert tortoises in work areas would be moved from harm's way into suitable habitat within adjacent conservation lands. The proponent would mark all desert tortoises that it moves in a manner to be determined by the Service, unless the Service determines that marking is not needed in a specific situation.
4	The proponent would implement measures to reduce the attractiveness of work sites to common ravens (*Corvus corax*) and other subsidized predators by controlling trash and educating workers. The proponent and Service would discuss whether the proposed project is likely to attract common ravens over the project's active life. If the proposed project is likely to attract common ravens over its active life, the proponent would convey the appropriate fee to the National Fish and Wildlife Foundation for the management program for common ravens, as described in the Service's incidental take permit issued for the project.
5	The proponent would implement an education program for workers and all other participants in the activity to ensure they are aware of the protective measures in place for the desert tortoise.
6	The proponent would require that all workers, all contractors, and all other participants in the activity check under their vehicles or equipment prior to moving them when they are in areas where desert tortoises are likely to be active.
7	The proponent would follow the Service's most recent protocol for constructing fencing and gates to exclude desert tortoises. The proponent would also ensure the fencing and gates remain capable of excluding desert tortoises for the life of the activity unless otherwise notified by the Service.
8	The proponent would employ best management practices to reduce the likelihood that its actions would introduce nonnative, invasive plant species.
9	In any situation where a desert tortoise places itself in danger (for example, it enters a work area or access road or becomes trapped in an excavation), the proponent would undertake immediate action to protect the desert tortoise. If an authorized biologist or biological monitor is not immediately available on-site, the proponent would place the desert tortoise in a suitable container in a shaded location and contact an authorized biologist for additional guidance. The proponent may also contact the Service for further guidance, if needed. The authorized biologist and proponent would develop a procedure for such an occurrence, which the Service expects would not occur frequently, prior to the start of the activity. Under normal circumstances, authorized biologists (and the biological monitors that they designate) would be the only individuals allowed to handle desert tortoises.

Measure Number	Measure Description
10	The proponent would fill interstitial spaces of all rock-slope protection extending to and from culverts and undercrossings with substrate to prevent trapping of desert tortoises. The proponent would construct all culverts and undercrossings to allow for the passage of desert tortoises. For example, the entrances and exits of culverts and undercrossings would not contain steep or vertical inclines that desert tortoises would be unable to use.
11	The proponent would monitor translocated desert tortoises in a manner that is commensurate with the number of desert tortoises that require translocation. For example, the translocation of few desert tortoises into an augmentation area may require only monthly wellness checks on translocated individuals for the first year. The translocation of many desert tortoises from a single project may require more extensive pre-translocation work and intensive monitoring for years after translocation.
12	The Service intends to develop a program to conduct long-term monitoring of translocated desert tortoises. The Service may discuss with proponents methods for their monitoring to contribute to this effort.

The Service would require monitoring of the measures above as described in appendix A, section 5.5; use of adaptive management if desired outcomes are not being achieved, as described in appendix A, section 5.6; and implementation of additional measures, as needed, to address changed circumstances, as described in appendix A, section 5.7.

2.3.3 Mitigation Activities in the Mitigation Area

Mitigation measures are those measures that the proponent would take to mitigate the impacts of the taking of desert tortoises as a result of covered activities addressed by the GCP. Mitigation measures would offset the impacts of the take to help meet recovery criteria and support the desert tortoise's long-term viability. To mitigate impacts on the desert tortoise, the Service would require proponents to acquire, restore, and/or manage habitat to ensure conservation benefits for the desert tortoise within conservation areas. Conservation benefits may include measures to reduce the mortality of desert tortoises (such as installation of highway fencing) and to improve habitat conditions (such as through the restoration of disturbed habitat within conservation areas). Mitigation activities on BLM, NPS, or other conservation lands would be subject to conformance with the applicable land use plan for the area where the mitigation activity would occur. The proposed GCP and this EIS do not seek to change any land use plan designations or impede any lawful activity that occurs in the areas in which mitigation activities would occur.

Measures in the GCP that are proposed to mitigate impacts on desert tortoises are described below (appendix A, section 5.4):

- The proponent would fulfill its mitigation obligation through non-acquisition (that is, restoration and enhancement), land acquisition (that is, habitat preservation), mitigation bank credits, other actions needed to protect and conserve desert tortoises, or a combination of these options. At a minimum, the amount of land acquisition would generally follow the guidelines in the BLM's DRECP (BLM 2016, table 18).[3]

[3] Table 18 presents biological resources compensation ratios for the impacts of activities in the DRECP land use plan amendment decision area. The standard compensation ratio is 1:1, while compensation in desert tortoise designated critical habitat is 5:1.

- For land-acquisition options, the proponent may directly purchase lands or purchase them through a third party (such as a land trust); in either case, the Service would review lands proposed for acquisition. The proponent must place acquired lands under a conservation easement and provide for long-term management and funding to ensure in-perpetuity conservation.
- The proponent may choose to donate acquired lands to the BLM or NPS. These agencies would follow relevant statutes, regulations, and land use plans when accepting land donations.
- For mitigation banking options, the proponent may directly purchase credits from a mitigation bank that the Service has approved. If the bank lacks approval from the Service, the proponent may provide the bank's enabling instrument to the agency to request approval.
- For non-acquisition options, the proponent must work with the Service to identify any appropriate recovery action(s) to fulfill its mitigation obligations. The proponent would either directly fund implementation of the project or place funds into a regional recovery account to provide for its implementation by a Service-approved entity. The Service would work with the proponent to identify the appropriate funding assurances and durability mechanisms, when appropriate, to meet permit issuance criteria.
- If the Service and proponent are interested in pursuing a non-acquisition option on lands managed by the BLM, they would work with the BLM to find an area within CDNCLs or an ACEC within a mitigation area as defined by the GCP.
- The proponent could also provide funding to the recovery account for desert tortoises held by the National Fish and Wildlife Foundation, after determining the appropriate amount of funding with the Service. The National Fish and Wildlife Foundation would combine this funding from other sources and issue annual requests for proposals to implement recovery actions for the desert tortoise.

As with the minimization measures described in section 2.3.2, the Service would require monitoring of mitigation measures, as described in appendix A, section 5.5; use of adaptive management if desired outcomes are not being achieved, as described in appendix A, section 5.6; and implementation of additional measures, as needed, to address changed circumstances, as described in appendix A, section 5.7.

2.4 ALTERNATIVE 3: REDUCED MITIGATION AREA

Under alternative 3, the Service would approve and use a GCP for the desert tortoise to facilitate the issuance of incidental take permits, as described under the proposed action. The permit area, covered activities in the permit area, and minimization and mitigation measures for desert tortoise would be as described under the proposed action.

Under this alternative, mitigation would only occur on lands within desert tortoise conservation areas that model as "good" desert tortoise habitat within NPS lands, CDNCLs administered by the BLM, and nonfederal lands that either are in conservation management or that are acquired for conservation management. Other lands included in the mitigation area for the proposed action, such as ACECs, would not be eligible for mitigation; this would reduce mitigation area lands from 8,610,100 to 7,664,800 acres (see figure 2-1).

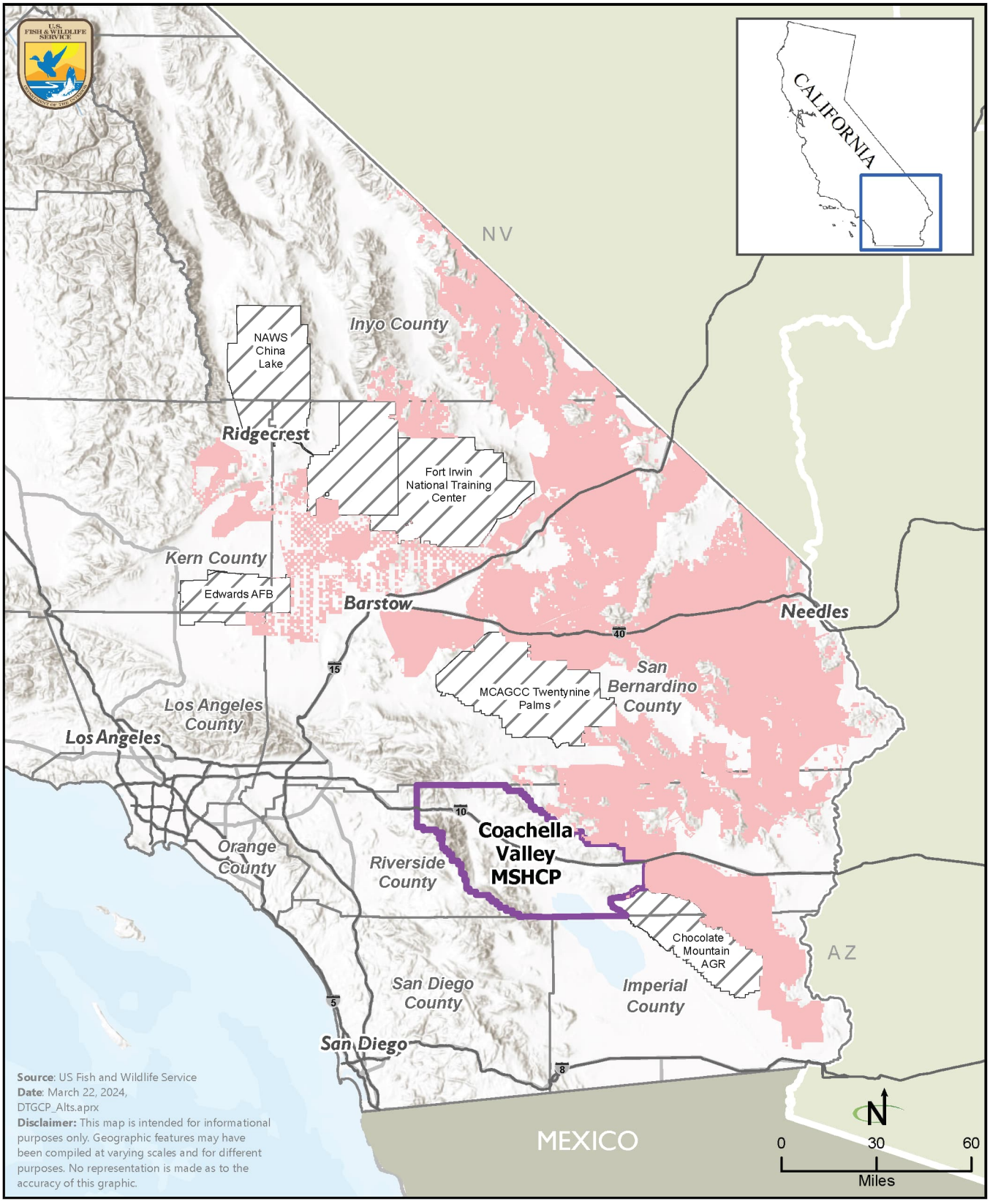

Figure 2-1 Reduced Mitigation Area

Reduced mitigation area

Coachella Valley MSHCP boundary

Department of Defense Lands

2.4.1 Comparison of Action Alternatives

Table 2-4 provides a comparison of the action alternatives by county.

Table 2-4. Comparison of the Action Alternatives by County

County	Permit Area	Mitigation Area	
	Alternatives 2 and 3 (acres)	Alternative 2 (acres)	Alternative 3 (acres)
Imperial	30,300	387,000	385,200
Inyo	2,300	774,100	773,300
Kern	600,600	298,000	189,400
Los Angeles	472,500	23,800	22,400
Riverside	26,600	1,199,000	1,087,300
San Bernardino	959,600	5,928,300	5,207,200
San Diego	498,900	0	0
Total	**2,590,800**	**8,610,100**	**7,664,800**

Source: Service GIS 2024

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The internal and external scoping processes brought forward alternatives to the proposed action that were preliminarily evaluated during the project planning process. The Service considered these alternatives but eliminated them from detailed analysis for the reasons described in table 2-5, below.

Table 2-5. Alternatives Considered but Eliminated from Detailed Analysis

Alternative	Rationale
Recreation as a covered activity	Commenters suggested recreation as a potential covered activity for this GCP. The Service considered the types and locations of recreational activities that occur in the planning area. Some forms of recreation may have the potential to take desert tortoises. However, no entity has ever applied for an incidental take permit for a recreational activity. Additionally, various types of recreation could take desert tortoises in ways that differ substantially from how take is reasonably certain to occur during most development projects; the Service cannot reasonably foresee these various forms of take and provide minimization and mitigation measures to address them. For these reasons, the Service eliminated this alternative from further consideration and dismissed this alternative from detailed analysis.
Including additional covered species	The Service considered including other federally listed species that occur in the planning area as covered species; however, these species generally do not overlap in habitat type with the desert tortoise (see table 3-6). The Service did not include State-listed species, such as the Mohave ground squirrel (*Xerospermophilus mohavensis*), that occur in the planning area. The Service eliminated such species because such an alternative would not meet the GCP's purpose and need. The Service will continue to coordinate with the CDFW when specific projects overlap both species' ranges.

Alternative	Rationale
Including take thresholds	During internal scoping, the Service considered an action alternative based on the use of one or more upper thresholds of desert tortoise mortality resulting from incidental take permits issued under the GCP after which we would not use the GCP. However, rather than including a separate alternative based on thresholds, the Service incorporated a threshold into both action alternatives. Specifically, if the threshold described in the GCP (i.e., five large desert tortoises die because of activities for which incidental was permitted under the GCP in any calendar year) is met, the Service would stop issuing permits under the GCP and assess the adequacy of the minimization measures in the GCP. If administrative changes to the minimization measures in the GCP, or the specific minimization measures associated with the individual incidental take permits, are not practical, the Service will not approve additional incidental take permits under the GCP in that calendar year unless it amends the GCP.
Increasing the planning area to include the full range (other states)	Commenters proposed an alternative during scoping that would include the full range of the Mojave population of the desert tortoise (California, Nevada, Arizona, and Utah) in the GCP. The Service dismissed this alternative from detailed analysis because large areas of desert tortoise habitat in Nevada and Utah are managed under existing multispecies conservation plans.
Reducing the mitigation area to only include private land acquisitions and conservation easements	Commenters suggested an alternative to include only private land acquisitions and conservation easements during public scoping. However, those lands are too small and scattered to meaningfully contribute to recovery of the desert tortoise. This alternative would not fulfill the need to better incorporate mitigation from incidental take permits into a comprehensive strategy that contributes to the desert tortoise's recovery. Therefore, the Service dismissed this alternative from detailed analysis.

Chapter 3. Affected Environment and Environmental Consequences

This section evaluates the baseline condition of the environment (i.e., resources identified during internal and external scoping as requiring analysis) potentially affected by implementation of the alternatives. The evaluation describes the current condition (affected environment) of identified resource issues and discloses the direct, indirect, and cumulative impacts for each resource (environmental consequences) from implementing the alternatives described in chapter 2.

Prior to initiating the analysis described in this chapter, the Service completed agency and public scoping to determine the issues that require analysis in the draft EIS (refer to section 1.7). Table 3-1 identifies the resources that were evaluated and were determined to be either not present or not impacted by the alternatives analyzed in this draft EIS. Resources not present or not impacted are not addressed in the analysis for those actions indicated.

Table 3-1. Resources Dismissed from Analysis

Resource	Rationale
Land Use	The alternatives would not change authorizations for land use. The Service would issue incidental take permits for actions that conform to local and federal land use plans; therefore, the alternatives would have no impact on land use.
Livestock Grazing	The alternatives would not change authorizations for livestock grazing; therefore, the alternatives would have no impact on livestock grazing.
Recreation	Implementing the GCP would not change authorized recreation uses. Thus, the alternatives would have no impact on authorized recreation.
Special Designations	The alternatives would not change any designations of lands, including those administered by the BLM and NPS; therefore, the alternatives would have no impact on special designations.

The Service based the analysis for all resources on the following:

- Most construction, operation, and maintenance activities associated with covered actions under the GCP would occur on nonfederal lands within the permit area under all alternatives.
- All authorized uses would comply with agency restrictions and regulations pertaining to that use.
- The Service used the best available data in the preparation of the analysis contained in the draft EIS. The Service gathered the data from a variety of sources, including the BLM and Service staff, other agencies, published reports, databases, and websites. The nature of geospatial calculations, which might include processing byproducts and differences in spatial reference, may cause minor rounding errors and variance in agency databases, resulting in minor differences in area and length results.
- The scope of the impact analysis is commensurate with the level of detail of the management actions presented in chapter 2 and the availability, quality, or both, of data necessary to assess impacts. Where appropriate, quantitative data are presented for each resource or resource use to further describe current conditions and potential impacts. However, certain information may

not be available for some resources. Therefore, some impacts can be discussed only in qualitative terms.

Cumulative Impacts Assessment Approach

The evaluation of potential cumulative impacts considers how incremental impacts of the proposed action (that is, approval and use of the GCP) overlap in place and time with the impacts from past, present, and reasonably foreseeable future actions; the evaluation may be resource specific. As previously described, this EIS neither evaluates nor results in approval of nonfederal covered activities, rather it evaluates a streamlined permitting process related solely to the issuance of incidental take permits which are a component permit for overall project approval. Land use approval(s) for individual projects would continue to be the responsibility of the local or state agency(ies) with appropriate jurisdiction(s) over an individual project site.

The cumulative impacts discussion that follows considers the alternatives in the context of the broader human environment within the planning area. Cumulative impacts are generally required to be considered at the global, national, regional, and local scales. The Service considered these contexts when determining potential impacts and determined that the proposed action would not affect any of the resources at the global or national scale given the limited and programmatic nature of the proposed action. Therefore, unless otherwise specified for a resource, the appropriate context in which to consider cumulative effects of the proposed action is at the regional scale, which equates to the defined planning area. While covered activities may affect resources at the local scale, implementing best management practices; avoidance, minimization, or mitigation measures; and design features required by the state or local permitting agency with authority over the proposed project as a whole would minimize, but not completely avoid, the contribution to cumulative impacts at the project-specific level. Therefore, the cumulative impacts from covered activities are also discussed for each resource.

The timeframe used for the cumulative impacts analysis is the period over which the GCP would be available for use, likely several decades.

Past, Present, and Reasonably Foreseeable Future Actions

Projects and activities identified as having the greatest likelihood to generate potential cumulative impacts when added to the alternatives are displayed in table 3-2, below. It is assumed that these past, present, and reasonably foreseeable future actions would continue under all alternatives and for all resources. Additional analysis of local projects will occur at the site-specific level during implementation.

Table 3-2. Past, Present, and Reasonably Foreseeable Future Actions within the Planning Area

Type	Project
Past and Present Actions	
Human Developments	Human developments, such as roads, ROWs, mining and materials sites, grazing and other agricultural uses, energy projects (such as solar), utility projects (for example, transmission lines), and commercial and residential construction, have removed native habitats, often reducing habitat value for many species. This has contributed to habitat fragmentation and changes in wildlife habitat-use patterns; it also has contributed to the increase in invasive plant introduction and spread.

Type	Project
Conservation Actions	Governmental agencies and nongovernmental organizations have acquired over a million acres of lands within the planning area for conservation purposes. This has contributed to increased habitat protection for the desert tortoise and other resources in the planning area.
Other HCPs	HCPs for the desert tortoise have been implemented in the planning area for nonfederal activities. HCPs can provide permanent protection and management of habitat. The identified mitigation measures in each HCP may extend in perpetuity.
Resource Management/ Land Use Plans	Multiple land use plans dictate the management of certain areas within the planning area. Goals, objectives, and strategies for managing wildlife habitat and improving habitat conditions are described in specific comprehensive plans and vary among them. Land use plans will continue to dictate the management of certain areas within the planning area, with impacts varying based on specific plan goals and objectives. Plans will continue to be updated to reflect best management decisions for current conditions.
Recreation	Visitors to the planning area participate in a variety of dispersed, concentrated, and organized recreation. Dispersed activities, such as hiking, occur throughout the planning area with typically localized, short-term changes to resource conditions. Organized and concentrated activities generally take place near roads, trails, waterbodies, and developed recreation areas with more intense resource impacts compared with dispersed recreation.
Reasonably Foreseeable Future Actions	
Other Developments, Roads, and ROWs	Urban development patterns, the continuing growth of vehicle-based recreation, planned road and highway projects, infrastructure and ROW development (such as pipelines, electrical transmission lines, and wind energy projects), and population growth are expected to increase demand for, and construction of, transportation routes in the planning area. Continued use of transportation corridors is expected to increase the risk of vehicle collisions with desert tortoises, increase habitat fragmentation, and further spread invasive species. Examples of future development projects within the planning area include the Boron Commercial Development Project (40 acres) and the Mojave Specific Plan (31,000 acres) in Kern County, Inyo Farms (30 acres) in Inyo County, and the Glamis Specific Plan Zone Change (143 acres) in Imperial County.
Mining	Future mining projects, such as the Gen Hill Quarry Project (82 acres) in Kern County, are expected to continue. Impacts associated with mining and development relate to surface and subsurface disturbance from exploration and development actions and infrastructure developed to support mining and development activities.
Renewable Energy	Renewable energy projects, such as the JVR Energy Park in San Diego, are expected to continue to be developed throughout the planning area. Impacts associated with renewable energy development relate to surface disturbance during construction of energy facilities and ancillary components such as roads and transmission lines.
Recreation	All forms of dispersed, organized, and concentrated recreation would continue throughout the planning area. There would continue to be specific management for certain activities per the recreation management allocations in individual BLM and NPS resource management plans. Recreation projects, such as building, expanding, and maintaining recreation facilities, would continue. Overall visitation to the planning area, including BLM- and NPS-administered lands, is expected to increase; however, the number of visitors would vary by season, year, location, and type of activity.

3.1 DESERT TORTOISE (*GOPHERUS AGASSIZII*)

3.1.1 Affected Environment

The Service listed the Mojave population of the desert tortoise as threatened on April 2, 1990 (55 *Federal Register* 12178). The Mojave population of the desert tortoise, which is a distinct population segment as

defined by Service policy, exists north and west of the Colorado River in Arizona, Utah, Nevada, and California. Unless otherwise noted, the information in this section is from the revised recovery plan for the Mojave desert tortoise (Service 2011).

Adult desert tortoises weigh from 8 to 15 pounds and have shells from 4 to 6 inches high and from 8 to 15 inches long. The desert tortoise typically feeds on various annual plants, perennial grasses, cacti, and woody perennials. The desert tortoise obtains most of its water from moist spring food. Predators include coyotes (*Canis latrans*), kit fox (*Vulpes macrotis*), common ravens (*Corvus corax*), domestic dogs, red-tailed hawks (*Buteo jamaicensis*), and badgers (*Taxidea taxus*).

The desert tortoise spends most of its life in underground burrows, which it constructs; deep caves; rock and caliche crevices; or overhangs for cover (Bury et al. 1994 in Service 2011). Staying underground helps with temperature regulation, avoiding moisture extremes, and protection from predators. These burrows keep desert tortoises warm during winter hibernation and cool during summer estivation.[4] Desert tortoises can be active year-round (Zeiner et al. 1990). In late winter to early spring, desert tortoises emerge from their shelters and typically remain active through the fall to feed and drink. The species decreases its activity in summer by entering a state of estivation, spending up to 95 percent of its time in burrows; however, it will emerge after summer rainstorms to drink. During summer, desert tortoises reduce their metabolism, conserve water, and consume little food. Desert tortoises can survive more than a year without access to water and can tolerate large imbalances in their water and energy budgets (Henen 1997).

The size of a desert tortoise's home range varies with the location and year. The size may serve as an indicator of resource availability (Berry 1986; O'Connor et al. 1994). Males generally have a large home range of up to 200 acres; female home ranges are half or less than half of males' home range (Harless et al. 2009). Over a desert tortoise's lifetime, it may use more than 1.5 square miles of habitat and occasionally range more than 7 miles at a time.

The desert tortoise has a lifespan of 50 to 80 years. It reaches sexual maturity between 13 and 20 years. The species has a low reproductive rate during a long period of reproductive potential (Service 2010). However, desert tortoise reproduction is tied to the amount of rainfall. High rainfall years increase the quality of food (plants that are higher in water and protein), which results in tortoises laying more eggs (Service 2010). During low rainfall years, the stress associated with foraging on plants with low water and nitrogen may make desert tortoises vulnerable to disease, thus lowering the reproductive rate.

Mating takes place in spring and fall when males compete for access to females. Desert tortoises lay 1 to 12 eggs per clutch, with an average clutch size of 5, between late May and July. The eggs take 3 to 4 months to hatch (Zeiner et al. 1990). When hatchlings emerge from the nest, they receive no parental care. Due to their soft shells and lack of care, they are at a particularly high risk from threats such as predation, dehydration, and starvation. Their risks from such threats decrease once they reach adulthood.

Habitat Requirements

The desert tortoise is found in a variety of habitats from flats and slopes dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) at lower elevations to rocky slopes in blackbrush scrub and juniper woodland habitats at higher elevations (Germano et al. 1994). It typically inhabits

[4] Estivation is defined as the state or condition of dormancy induced by the heat and dryness of summer.

elevations below 5,500 feet, although elevations can range from sea level to 7,300 feet. Within the Mojave Desert, the desert tortoise typically exists on terrain with gentle slopes and sandy-gravel soils with sparse cover of low-growing shrubs. Habitat must have soft-enough soil to allow for digging burrows, but the soil must be firm enough so the burrows do not collapse.

Threats

Urbanization, mining, military training, energy development, and other ground-disturbing activities pose a substantial threat to the desert tortoise due to the permanent habitat loss and associated fragmentation of remaining habitat (Service 2010). These activities also lead to an increase in vehicle use of paved and unpaved roads, illegal dumping, the introduction of invasive plant species and free-running pets, and wildfire. These associated activities contribute to habitat loss, population fragmentation, nutritional compromise, soil erosion, and indirect impacts such as illegal dumping, human subsidies for predators, and the introduction of toxins (Service 2010); also, they kill desert tortoises. As habitat is lost and fragmented, habitat patches and the population of desert tortoises become smaller, which increases the possibility of extinction (Service 2022b). Due to the desert tortoise's reproductive ecology, it requires years before measurable increases in population levels occur, absent the head starting of young individuals or other means of supplementing the number of desert tortoises in the wild.

The Service's 5-year review (Service 2022b) notes that desert tortoises are "essentially absent" from habitat within 0.62 miles of areas with greater than 10 percent development, including, but not limited to, urban areas, cultivated agriculture, energy facilities, mines and quarries, pipelines, transmission lines, and roads and railroads. Approximately 5 percent of modeled habitat within desert tortoise conservation areas (that is, BLM CDNCLs and ACECs, NPS lands, and other conservation areas or easements managed for desert tortoises) has development levels that exceed this 10 percent threshold (Service 2022b).

Additionally, desert tortoises near urban areas do not exhibit the range of age classes observed in less disturbed areas (Turner et al. 1987). In urban areas, few of the desert tortoises observed during pre-project and clearance surveys are hatchlings or juveniles; most individuals are large, which indicates that recruitment is not occurring at a rate that can sustain the population. For example, none of the 27 desert tortoises translocated from the Hyundai Motor Group California Proving Ground[5] to the east of the town of Mojave in 2004 were smaller than 9.4 inches maximum carapace length (Karl 2007).

Many solar projects have been approved, are pending, or are proposed within the desert tortoise's range. Construction of solar facilities and their associated generator tie-in lines provide nesting, roosting, and perching opportunities for common ravens. Predation from native predators alone would not be expected to cause dramatic population declines, but extreme predation from common ravens due to human activity may negatively affect the desert tortoise (Service 2011). The lack of smaller individuals at the Hyundai site and other near-urban areas is likely a result of an overabundance of common ravens.

Large solar projects and other activities can fragment desert tortoise habitat. The potential long-term effects of fragmentation caused by large-scale developments are not yet known. To date, most solar projects are fenced to exclude desert tortoises. Recently, the fences around some projects have been designed to allow desert tortoises to pass through or to use remaining habitat within the solar fields. The

[5] Testing facility for Hyundai Motors Group located in California City, California.

effectiveness of this measure is not known; however, maintenance activities within solar fields, such as vegetation removal or vehicle use, could kill or injure desert tortoises.

Off-highway vehicle activities, roads, livestock grazing, and agricultural uses can also kill desert tortoises. These activities also allow for the introduction and spread of nonnative, invasive plant species. As a result, decreases in native plant abundance can compromise the physiological health of desert tortoises and make them more vulnerable to drought, disease, and predation (Service 2011). Extensive areas of desert tortoise habitat have been burned by wildfire fueled by invasive grasses that have altered the habitat structure and food availability.

Disease poses a threat to desert tortoise populations; the most common disease is the upper respiratory tract disease from the *Mycoplasma agassizii* pathogen (Service 2022b). Upper respiratory tract disease has a complex host-disease relationship and generally requires extensive contact between tortoises over many days. A desert tortoise's response to the disease can be highly variable, and exposure may be influenced by environmental stress, human impacts, exposure to heavy metals and other toxins, and the escape or release of captive tortoises (Service 2022b). In its 5-year review, the Service noted that "current research suggests that direct disease management of wild [desert] tortoise populations is less important (other than in translocations of [desert] tortoises between populations) than managing factors that affect their habitat and its capacity to support healthy [desert] tortoises" (Service 2022b).

Climate change is likely to affect desert tortoises. The 5-year review (Service 2022b) notes that, in the southwestern United States, the 2000–2021 period was the driest 22-year period in over 1,200 years. Drought reduces the amount of annual plant forage for desert tortoises; over longer times, it will kill shrubs that desert tortoises rely on for cover. Increased temperatures may affect hatchling sex ratios. Changes in climate may shift the timing of egg production and extend the egg-laying period. This change in egg production may not compensate for changes in the environment, such as the length of time eggs spend above their critical thermal maximum temperature and whether forage is available to support the production of eggs and forage for hatchlings. If climate change results in an overall decrease in reproduction, human-subsidized predation on young desert tortoises, particularly by common ravens, would exacerbate issues with the recruitment of desert tortoises into the breeding population.

Recovery Plan

The Service issued a desert tortoise recovery plan in 1994 and a revised recovery plan in 2011. The initial recovery plan recommended that a desert tortoise monitoring plan be developed to determine whether the population shows an increase or remains stable for at least 25 years. The plan also recommended that enough habitat be protected within a recovery unit to ensure long-term viability of the species.

The revised recovery plan lists three objectives and criteria to achieve the delisting of the desert tortoise (Service 2011):

- Maintain self-sustaining populations of desert tortoises within each recovery unit.
- Maintain well-distributed populations of desert tortoises throughout each recovery unit.
- Ensure habitat within each recovery unit is protected and managed to support the long-term viability of desert tortoise populations.

The plan also recommends connecting blocks of desert tortoise habitat to maintain gene flow between populations and to avoid fragmentation.

Critical Habitat

On February 8, 1994, the Service designated critical habitat for the desert tortoise in Arizona, Utah, Nevada, and California (59 *Federal Register* 5820). The 12 critical habitat units encompass over 6,000,000 acres; each unit individually ranges from 220 to 4,131 square miles in portions of the Mojave and Colorado Deserts, primarily on federal lands (Service 2011). The seven critical habitat units that overlap the planning area are Superior-Cronese, Fremont-Kramer, Ord-Rodman, Pinto Mountain, Ivanpah Valley, Chuckwalla, and Chemehuevi.

The specific primary constituent elements[6] of desert tortoise critical habitat are:

- Sufficient space to support viable populations within each of the six recovery units and to provide for movement, dispersal, and gene flow
- Sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species
- Suitable substrates for burrowing, nesting, and overwintering
- Burrows, caliche caves, and other shelter sites
- Sufficient vegetation for shelter from temperature extremes and predators
- Habitat protected from disturbance and human-caused mortality

The final rule for critical habitat did not outline specific conservation roles or functions for each critical habitat unit. Instead, it referred to the strategy of establishing recovery units and desert wildlife management areas[7] recommended by the 1994 recovery plan to "mirror the variability in biotic and abiotic variability" found in the species' habitat across its range. The Service intended the 12 critical habitat units to highlight and protect these areas. Some critical habitats share boundaries and form contiguous blocks adjacent to smaller, isolated units. Within each critical habitat unit, natural and human-caused factors affect the function of the critical habitat's physical and biological features.

Incidental Take Permits

Since the listing of the desert tortoise in 1990, the Service has issued approximately 14 incidental take permits for the desert tortoise in the planning area. These incidental take permits have generally resulted in the translocation of few desert tortoises, as shown in table 3-3 (Service 2023b). To date, the Service is

[6] The Service no longer uses the term "primary constituent elements" when referring to the aspects of critical habitat that are essential for the species. To follow the ESA's wording more closely, the Service now refers to these aspects as the "physical and biological features" of critical habitat. This change did not affect how the Service develops this information while drafting critical habitat rules nor the analysis it conducts during section 7(a)(2) consultation.

[7] The BLM has not used "desert wildlife management areas" as an allocation in its land use plans. Instead, it has designated ACECs that overlap critical habitat on the land it manages. The boundaries of ACECs largely match those of the areas of critical habitat. ACEC boundaries often follow roads or other discernable boundaries, rather than the section lines used in some parts of the critical habitat designation. In some cases, the boundaries of the ACEC reflect landownership and on-the-ground habitat conditions.

unaware of any desert tortoises that have been killed or injured on any project for which the Service has issued an incidental take permit in the planning area.

Table 3-3. Incidental Take Permits that Resulted in the Translocation of Desert Tortoises in California

Project	Year Issued	County	Number of Desert Tortoises Found and Translocated
Borax	1999	Kern	1
Hyundai Test Track	2004	Kern	27
Copper Mountain College	2007	San Bernardino	~5
Cinco Solar	2013	Kern	3
High Desert Solar	2019	San Bernadino	8
Pacific Gas and Electric	2019	San Bernardino	0
California City Prison	1998	Kern	1
AGCON	2010	San Bernadino	2
Bellefield Solar	2022	Kern	5 (to date)
Total	—	—	**approximately 52**

Source: Service 2023b

Status within the Planning Area

No comprehensive monitoring of the desert tortoise's status has occurred on nonfederal lands in the GCP's permit area. However, based on the results of past pre-project and clearance surveys conducted within the permit area (Service 2023b), the area likely supports relatively few desert tortoises. In general, the permit area is closer to existing development than federal or other protected lands. Consequently, desert tortoises in the permit area have already been subjected to substantial amounts of human activities' direct and indirect effects.

The mitigation area generally includes desert tortoise conservation areas, including CDNCLs, ACECs, NPS lands, and other conservation areas or easements managed for desert tortoises. These conservation areas include undeveloped land containing desert scrub habitat with a high potential for desert tortoise habitat. Based on range-wide monitoring, the Service concluded that "some annual density estimates in [desert tortoise conservation areas] since 2014 have been higher and some lower than projected from past trends" (Service 2022b).

3.1.2 Environmental Consequences

Impacts Common to All Alternatives

The Service would continue to process applications for incidental take permits under the no action alternative and both action alternatives. The primary difference between the no action alternative and the action alternatives is that the lack of standardized minimization, mitigation, and monitoring under the no action alternative precludes streamlining of the process and provides less coordination of overall recovery efforts for the desert tortoise. The only difference between the two action alternatives is the area in which mitigation would occur.

Under all three alternatives, if a proponent for an incidental take permit meets the issuance criteria in ESA section 10(a)(1)(B), the Service would issue an incidental take permit that would require the proponent to minimize and mitigate the effects of the incidental take on the desert tortoise to the maximum extent

practicable. The incidental take permit would also require monitoring of the project's effects on the desert tortoise. Consequently, if the Service issues an incidental take permit for an activity, whether under the guidance of the GCP or on a case-by-case basis, the effects on individual desert tortoises would remain largely the same.

Capture and Translocation of Desert Tortoises

Desert tortoises are likely to be found within the boundaries of projects for which the Service issues an incidental take permit. Under all alternatives, the Service would require that the project proponent move these desert tortoises to safe habitat, using the Service's translocation protocol.

The first step in the translocation of desert tortoises involves their capture. In some cases, the authorized biologists may find the animals aboveground or near the mouth of their burrow. The Service would require that authorized biologists conduct activity-specific biological monitoring during preconstruction, construction, operations, and maintenance to ensure minimization measures are appropriately implemented and are effective. In such cases, authorized biologists could easily pick up the desert tortoises and transfer them to a container for transport. If desert tortoises are deeper in their burrows, the authorized biologists would excavate the burrow; excavating desert tortoises from deep in their burrows is likely more stressful for the desert tortoises than being captured on the surface of the ground.

The capture and holding of desert tortoises can subject them to stress; stressed desert tortoises occasionally void their bladders. Desert tortoises store water in their bladders; this water is important to desert tortoises, particularly during times of low rainfall, in maintaining their life functions. Consequently, desert tortoises that void their bladders are at an increased risk of dying after their release. Averill-Murray (2002) found that desert tortoises that urinated during handling had lower survival rates than those that did not. Because the Service would require project proponents to follow its translocation protocol, the authorized biologist would hydrate desert tortoises prior to their release and otherwise employ the methods described in the protocol to reduce the likelihood that desert tortoises would be killed or injured during translocation.

The Service acknowledges that in every phase of a proposed activity's implementation, including during translocation, desert tortoises are at risk of being killed or injured when workers, including authorized biologists and biological monitors, drive outside areas that have been fenced and cleared of desert tortoises. Small desert tortoises are at greater risk than larger animals because they are more difficult to see. This factor will generally be the case for every activity, and will not be repeated throughout the following discussion.

In a review of literature on threats to the desert tortoise, Boarman (2002) stated that the adverse effects of translocation include increased risk of mortality, spread of disease, and reduced reproductive success. The tendency for translocated desert tortoises to spend more time aboveground, moving through their environment, than animals within their home ranges exacerbates at least some of these threats. Recent research, using comparisons among resident desert tortoises (animals within their home ranges with translocated individuals nearby) and control desert tortoises (animals within their home ranges with no translocated individuals nearby), has provided substantial information on this issue.

Field et al. (2007), Nussear (2004), and Nussear et al. (2012) found that translocated animals seem to reduce movement distances following their first post-translocation hibernation to a level that is not

significantly different from resident populations. As time increases from the date of translocation, most desert tortoises change their movement patterns from dispersed, random patterns to more constrained patterns, which indicate an adoption of a new home range (Nussear 2004).

In general, desert tortoises that are moved shorter distances (especially within their home ranges) exhibited more limited movement patterns after translocation. Desert tortoises that spend less time aboveground are less vulnerable to predation and environmental extremes. Regardless of the distance desert tortoises would be moved, the Service expects that translocated animals would spend more time moving, at least during the first year, which means they would be more vulnerable to predators, adverse interactions with other desert tortoises, and weather conditions than resident animals (see, for example, Burroughs 2013 for evidence of such impacts). During the first year of increased movement, desert tortoises would also be more likely to engage in fence-pacing behavior, which can lead to hyperthermia and death.

Depending on the specific goal of translocating desert tortoises, translocating animals either short or long distances is likely to have differing effects. Hinderle et al. (2015) found that desert tortoises translocated less than 2 kilometers (approximately 1.2 miles) are likely to attempt to return to the point of capture. If those returning animals cannot regain access to the habitat from which they were removed, they are likely to wander more extensively or pace fence lines; both activities increase the likelihood that the desert tortoises may be attacked by predators or die from exposure to extreme temperatures. Therefore, when desert tortoises will not be able to regain access to their point of capture, translocating them to suitable habitat more than 2 kilometers (approximately 1.2 miles) away is likely to prevent them from returning.

Because translocated desert tortoises spend more time moving, individuals that are moved during the summer months outside their active season (that is, from June to August) could be overexposed to heat and die from hyperthermia. Cook et al. 1978 (in Nussear et al. 2012) stated summer releases have previously been reported to be potentially lethal to translocated desert tortoises, often with high mortality within days of release. The Service would require project proponents to follow the most recent translocation protocol. The Service recommends in its current guidance that translocation not occur in the summer; therefore, desert tortoises would not be exposed to this threat. Absent new information that indicates translocation in the summer does not pose a threat to desert tortoises, the Service is unlikely to alter this protocol.

Predation is likely to be the primary source of post-translocation mortality (Nussear 2004; Field et al. 2007). The level of winter rainfall may dictate the amount of predation observed on desert tortoises (Drake et al. 2010; Esque et al. 2010). Drake et al. (2010) documented a statistically significant relationship between decreased precipitation and increased predation of translocated desert tortoises at Fort Irwin.

The Service is aware of two instances where monitoring of large numbers of control and resident desert tortoises accompanied the translocation of desert tortoises (Fort Irwin and Ivanpah Solar Electric Generating System). At Fort Irwin, Esque et al. (2010) found that "translocation did not affect the probability of predation: translocated, resident, and control tortoises all had similar levels of predation." At the Ivanpah Solar Electric Generating System, Scherer et al. (2016) "found no statistical difference in estimates of four-year (cumulative) survival probability" among translocated, resident, and control desert tortoises in each size class. Predation by canids is the greatest source of mortality among translocated, resident, and control animals at several projects. Drought conditions seem to affect translocated and resident desert tortoises similarly (for example, see Field et al. 2007).

Research has found that, in the first year since translocation, the mean reproductive effort for translocated desert tortoises was slightly less than that of residents; however, in the second and third years after translocation, the mean number of eggs was not different between resident and translocated desert tortoises (Nussear et al. 2012). Another study found that 4 years after translocation, most (if not all) hatchlings had been fathered by resident male desert tortoises, even though translocated males were well represented in the population (Walde and Boarman 2013). The reason for this difference is currently unknown. This lack of representation of the translocated males is not appreciably negative, at least in the short term, because minimal differentiation among subpopulations of desert tortoises occurs even at low levels of gene flow, such as less than one migrant per year or even one migrant every few decades (Latch et al. 2011). Translocated males would ultimately begin siring offspring within the population during their lifespan.

Translocating desert tortoises may also adversely affect resident desert tortoises within the translocation area due to local increases in density. Increased densities may result in increased incidence of aggressive interactions between individuals, increased competition for available resources, increased incidence of predation that may not have occurred in the absence of translocation, and increased spread of upper respiratory tract disease or other diseases. However, research has found no difference in stress hormone levels among resident, control, and translocated desert tortoises (Drake et al. 2012). Density-dependent effects on resident populations would be likely minor because the Service would require translocations to occur according to its protocol, which establishes the maximum recipient and translocated density for each recovery unit.

The Service based its guidance for the upper limit of the number of desert tortoises translocated into an area on the density of large animals. The Service generally recommends that the number of small desert tortoises released into a translocation area not exceed the number of released large individuals. As noted previously, few small desert tortoises likely occur in the permit area; therefore, few are likely to be translocated. As a result, the Service does not expect translocating small desert tortoises according to its guidance is likely to result in density-dependent adverse effects.

Upper respiratory tract disease and other pathogens spread by direct contact between desert tortoises. Consequently, increasing the density of desert tortoises in the recipient areas has the potential to exacerbate the spread of diseases because, presumably, animals that occur in higher densities would have more opportunity to contact one another. Several circumstances likely reduce the magnitude of the threat of disease prevalence being exacerbated by translocation. First, the Service would require project proponents to use experienced biologists and approved handling techniques that would be unlikely to result in substantially elevated stress levels in translocated animals; animals are less likely to succumb to disease when they are not stressed. Second, desert tortoises on project sites are currently part of a continuous population with the resident populations of the adjacent recipient sites and are likely to share similar pathogens and immunities. Third, Drake et al. (2012) indicated that translocation does not seem to increase stress in desert tortoises. Fourth, density-dependent stress is unlikely to occur for the reasons discussed previously in this section. Finally, biologists who have been trained by the Service (or other specialists) would perform health assessments using Service-approved protocols and would not translocate any desert tortoise showing severe clinical signs of disease.

During translocations to date, the Service has detected few desert tortoises that were unsuitable for translocation. For any project for which it issues an incidental take permit, the Service would determine

the appropriate course of action depending on the site-specific conditions. Desert tortoises that are unsuitable for translocation could be placed in a Service-approved quarantine facility or used for research; extremely ill individuals could be euthanized.

Based on this information, the Service anticipates that post-translocation survival rates would not significantly differ from those of animals that have not been translocated. The Service expects that translocated desert tortoises would be at greatest risk when they spend more time aboveground than resident animals. The Service cannot precisely predict the level of post-translocation mortality because regional factors that the Service cannot control or predict (such as drought and predation related to a decreased prey base during drought) would likely exert the strongest influence on the mortality rate and affect translocated and resident desert tortoises similarly. When occupied habitat cannot be avoided, translocation is an effective means of minimizing adverse effects on desert tortoises during project implementation.

Construction of Nonlinear Facilities

With few exceptions, including differences in the amount of ground disturbance associated with different types of activities, the construction of nonlinear facilities would affect desert tortoises in a similar manner regardless of the type of facility developed. Some activities could result in the exclusion of desert tortoises from work areas temporarily (for example, repair of underground pipelines). In these instances, perennial plants may be reestablished, and the substrate may become suitable for burrowing. Other activities, such as mines and communication sites, would result in the long-term exclusion of desert tortoises from such areas due to habitat loss and degradation. The size of the exclusion area would vary, depending on the proposed action; communication sites would affect a few acres, while solar facilities would likely affect thousands of acres.

The Service would require project proponents to install fencing to preclude desert tortoises from entering work areas prior to removing all individuals that they can locate on the project site. During construction of the perimeter fencing and during other ground-disturbing activities that are outside the fenced facility (that is, access roads), the authorized biologists would perform pre-activity clearance surveys and move desert tortoises out of harm's way if the desert tortoises reenter work areas.

Some potential always exists that surveyors could miss desert tortoises during clearance surveys and construction monitoring. It is impossible to predict how many desert tortoises the clearance surveys and construction monitoring would miss. However, the number is likely to be small because of the depressed number of desert tortoises in the permit area; also, project proponents would use qualified biologists authorized by the Service for the clearance surveys. Weather conditions can also affect the number of animals detected during surveys; warm weather after average or above-average rainfall would lead to more activity in desert tortoises, which would facilitate their detection.

In some cases, desert tortoises that have been fenced out of their home ranges make repeated efforts to return and follow fence lines for long periods. Desert tortoises would die when exposed to harsh conditions (cold or hot temperatures) while pacing fences. Desert tortoises whose home ranges have been affected by projects would be most likely to pace fences.

The installation of fencing may also reduce the home range size of some individuals that inhabit areas immediately adjacent to the fence alignments or that overlap the project footprint. This reduction could

result in future injury or mortality of these individuals as they expand their home range into adjacent areas where unknown threats may occur or where adverse social or competitive interactions may occur with neighboring desert tortoises. Larger projects would likely destroy the territories of more desert tortoises; however, given the low density of desert tortoises in the permit area, individual activities would not likely destroy numerous territories.

The Service would require proponents to follow its guidelines for clearance surveys. These guidelines call for the excavation of all desert tortoise burrows within construction footprints prior to the onset of ground disturbance. Consequently, the biologists could detect at least some nests and eggs. Overall, the detection of eggs would be unlikely because the buried nests are difficult to find. Because hatchlings can take shelter in burrows of all sizes and are difficult to see due to their small size, surveyors are less likely to detect them than they are larger desert tortoises. Consequently, most hatchlings and eggs would be likely to remain in the work areas during construction. Construction would likely kill these desert tortoises. Because construction activities would likely occur year-round, they would likely affect both hatchlings and eggs. Eggs and small desert tortoises, even those that are larger than hatchlings, are always more difficult to detect than larger animals; therefore, they would be more likely to be killed during every type of activity.

Numerous variables complicate the Service's estimates of the number of desert tortoises on a project site. For example, the precise number of desert tortoises on-site, the size of those individuals, whether eggs will be present at the time of construction, the time of year that construction occurs, and the weather before or during construction are usually unknown. Regardless of these factors, few large desert tortoises would be likely to be killed or injured during construction because the Service would require proponents to implement measures that have proven effective in the past in reducing mortality and injury.

Small desert tortoises would likely be killed or injured in greater numbers because they are more difficult to find. However, because activities would occur in areas of lower density, the Service does not expect large numbers of small desert tortoises to be killed or injured. The loss of small desert tortoises is also not as deleterious to the population as the loss of reproductive animals; this is because small desert tortoises require up to 20 years to reach sexual maturity, they have low reproductive rates during a long period of reproductive potential, and individuals experience relatively high mortality early in life (Service 2011).

Construction of Linear Facilities

Linear facilities have different effects on desert tortoises relative to construction of large blocks of habitat. Construction of linear facilities, such as access roads, water pipelines, and transmission lines, and installation of fences along access roads often take place outside the permanent perimeter fencing. Consequently, the primary adverse effect associated with the construction of linear features is not the loss of habitat; it is the greater potential to kill desert tortoises with vehicles and other equipment. Additionally, if trenches or holes are left uncovered, desert tortoises could become entrapped and die of exposure or be killed by predators.

During construction of linear components, the proponent would move desert tortoises out of harm's way into adjacent habitat. These animals would remain within their territories because they would be moved short distances, and the minor habitat disturbance would not remove their territories. Generally, the construction of linear facilities in the permit area would not be likely to kill or injure numerous desert

tortoises because of the low densities of desert tortoises in that area and because of the monitoring by authorized biologists. However, depending on the local density of desert tortoises and the length of the linear component, the use of access roads during construction could result in the death or injury of numerous individuals because vehicles frequently use these roads, which are usually not fenced.

The Service may require the proponent to fence a linear feature during construction in specific circumstances. For example, if desert tortoises are particularly active at the time of construction (for example, if work occurred during a spring with abundant wildflowers), temporary fencing could prevent numerous deaths and injuries.

The Service would require project proponents to monitor activities, check under vehicles before moving them, and not exceed a speed limit of 15 miles per hour when working outside desert tortoise exclusion fencing. These minimization measures should reduce the number of desert tortoises that are killed or injured outside fences.

Overall, the construction of linear facilities would likely injure or kill relatively few desert tortoises. The number of desert tortoises that these activities may affect cannot be quantified because it is impossible to know how many animals would enter linear work areas during construction. Also, monitors would be able to detect and protect most desert tortoises.

Operations and Maintenance of Nonlinear Facilities

Occasionally, desert tortoises are able to enter fenced facilities, such as a pump station for a gas pipeline or a solar field, through gaps under the fencing or open gates. Floods can damage fences to the point where desert tortoises may be able to enter the facilities. Once inside the fencing, desert tortoises would be at risk of being killed or injured by operations or maintenance. The Service's incidental take permits would require post-construction monitoring to reduce this risk.

Over the life of the project, proponents would be likely to conduct ground-disturbing maintenance activities outside fenced areas. These activities have the potential to injure or kill desert tortoises primarily by vehicle strikes, as workers travel to and from work sites outside fenced areas. A limited possibility exists that desert tortoises could be injured or killed by equipment or workers moving around a work site.

Maintenance activities associated with repair of desert tortoise exclusion fencing would likely kill or injure few, if any, desert tortoises for the following reasons. First, fence repairs would likely result in minimal ground disturbance in localized areas. Second, at least a portion of the work area would be on disturbed areas within the fenced project site. Third, the permanent perimeter roads, located outside the perimeter fencing, would allow access to most repair locations with minimal off-road travel. Finally, the proponent would implement protective measures to reduce the potential for injury or mortality of desert tortoises.

The operations and maintenance of nonlinear facilities would be likely to injure or kill relatively few desert tortoises because the majority of these activities would occur within areas that have been cleared of desert tortoises and have been fenced to prevent their entry. The number of desert tortoises that these activities could affect cannot be quantified because it is impossible to know how many animals workers would encounter during operations and maintenance. Also, authorized biologists would be able to detect and protect most desert tortoises.

Some future projects, such as solar fields, could be designed to allow desert tortoises to pass through or use remaining habitat within them. The effectiveness of these measures is not known. Although desert tortoises are likely to traverse such areas, it is unclear if desert tortoises would establish burrows or territories inside such areas. Although at least some minimization measures would likely be in place under such conditions, maintenance activities within such project sites could kill or injure desert tortoises.

Operations and Maintenance of Linear Facilities

The primary adverse effect associated with the operation and maintenance of linear facilities would likely be the greater potential to kill or injure desert tortoises with vehicles and other equipment while traveling along the access route. The level of risk would depend on the local density of desert tortoises, the length of the linear facility, the time of the year, and the amount of use of the facility.

If a desert tortoise is encountered on a linear facility, depending on the nature of the activity, an authorized biologist, biological monitor, or worker may move the desert tortoise out of harm's way into adjacent habitat. These animals would remain within their territories because they would be moved short distances out of harm's way and would not be removed from their territories. Alternatively, the Service may direct that desert tortoises be allowed to move out of harm's way on their own accord; the specific circumstances would dictate the best action to take.

The Service would require project proponents to monitor activities, check under vehicles before moving the vehicles, and not exceed a speed limit of 15 miles per hour when working outside desert tortoise exclusion fencing. These minimization measures should reduce the number of desert tortoises that would be killed or injured outside project fences.

Overall, the Service expects that the operation and maintenance of linear facilities would likely injure or kill relatively few desert tortoises. However, activities along linear facilities pose a greater risk to desert tortoises than those associated with nonlinear facilities; the risk would be greatest in high-density areas and during the active seasons. The number of desert tortoises that these activities could affect cannot be quantified because it is impossible to know how many animals would enter linear facilities during operations and maintenance activities.

Common Ravens, Coyotes, and Other Predators

Construction and operation of linear and nonlinear facilities have the potential to attract common ravens, coyotes, and other mammalian predators; provide subsidies in the form of food, water, and shelter; and allow for an increase in abundance. These species prey on desert tortoises; increases in their numbers would increase the threat of predation on desert tortoises.

The Service would require project proponents to implement measures to reduce subsidies that activities may provide to predators. These measures would vary on a project-specific basis; however, they would include control of attractants (food, water, and shelter), monitoring and reporting programs, and implementing adaptive management techniques, such as devices to discourage the predators from using project-related structures.

The Service would require project proponents to participate in the regional management and monitoring program for common ravens. The Service developed this program in coordination with the Desert Managers Group, which is a consortium of land management agencies and other stakeholders in California,

and the Renewable Energy Action Team, which consists of the Service, BLM, California Energy Commission, and CDFW. To date, management actions undertaken as part of this program include surveys to determine where common ravens are most abundant, removal of birds that are known to be preying on desert tortoises, oiling of the eggs of common ravens to reduce their abundance, and hazing common ravens from feeding and roosting sites. These measures have directly reduced predation when predatory birds are removed and have indirectly reduced predation since common ravens are intelligent and learn behaviors from one another.

It is difficult to predict the amount of predation on desert tortoises that construction, operations, and maintenance would likely add to baseline levels within the action area. Generally, best management practices are effective in eliminating some, but not all, use of the project sites by predators. Contributions to the management program for common ravens would assist in recovery actions for the desert tortoise throughout the desert and, in that manner, further assist in reducing the effects of these predators.

Critical Habitat

To date, the Service has not issued any incidental take permits for projects in critical habitat in the planning area. The primary reason is that critical habitat largely overlaps lands managed by federal agencies. Consequently, actions proposed on those lands have had a federal nexus and have undergone consultation, pursuant to section 7(a)(2) of the ESA.

Applications for incidental take permits within critical habitat could occur under all alternatives. In such cases, the Service would analyze the effects on the physical and biological features of the critical habitat and consider the environmental baseline within the development area of each proposed project.

A proposed action within a nonfederal ROW could further reduce the amount of space within a critical habitat unit to support viable populations within that recovery unit and to provide for movement, dispersal, and gene flow; reduce the quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; disturb substrates for burrowing, nesting, and overwintering; disturb burrows, caliche caves, and other shelter sites; reduce the amount of vegetation for shelter from temperature extremes and predators; and disturb habitat protected from disturbance and human-caused mortality. As an example, because of the linear nature of the rail lines and aqueducts within the ROWs, they currently create barriers to desert tortoises' movement and thus gene flow (Dutcher et al. 2020). Under any alternative, the Service would evaluate the additional effects of a newly proposed action on that physical and biological feature of critical habitat, discuss ways of reducing such effects with the proponent, and complete an internal consultation to determine whether the issuance of an incidental take permit would violate section 7(a)(2) of the ESA.

Mitigation associated with the issuance of an incidental take permit could include the acquisition and management of lands and various other activities designed to conserve desert tortoises. The acquisition of lands would not kill or injure desert tortoises; the management of acquired lands and the implementation of other mitigation activities (for example, restoration of habitat and fencing of roads) would have some potential to kill or injure desert tortoises. However, these activities would disturb substantially less area than a construction project, and authorized biologists and biological monitors would be present to protect desert tortoises, as described above. Consequently, restoration of habitat and fencing of roads to protect desert tortoises would further the species' recovery.

Alternative 1: No Action

Under the no action alternative, the Service would not approve or use a GCP for the desert tortoise in California to streamline compliance with section 10(a)(1)(B) of the ESA. Since desert tortoises could move in the time between the pre-project survey and start of construction, the avoidance of take would involve an amount of risk for the proponent; a desert tortoise at the edge of a proposed activity could remain in the same place, move within the project's boundaries, or move farther away. Finally, a project proponent could decide to abandon the project. The Service has no information on the number of project proponents who abandoned projects entirely or modified their activities to avoid the take of desert tortoises. No effects on desert tortoises result when a project is abandoned.

Processing incidental take permit applications under these existing conditions would continue to require Service staff to conduct lengthy reviews of individual HCPs, including all proposed project-specific minimization, mitigation, and monitoring, submitted by individual incidental take permit proponents. Under this alternative, the desert tortoise would not benefit from the standardization of mitigation within the desert tortoise conservation area. Mitigation would likely, but not necessarily, occur within desert tortoise conservation areas; therefore, conservation of the species may be realized at a slower pace than under the action alternatives.

If the Service issued an incidental take permit for a specific project under the no action alternative, the effects on the desert tortoise and its critical habitat would be as described in *Impacts Common to All Alternatives*.

Alternative 2: Proposed Action

If the Service issued an incidental take permit for a specific project under the proposed action, the effects on the desert tortoise and its critical habitat would be as described in *Impacts Common to All Alternatives*, with the following exceptions. The Service would not accept any applications for incidental take permits within critical habitat under the GCP's guidelines unless the proposed action were within the boundaries of a nonfederal ROW. The nonfederal ROWs covered under alternative 2 generally provide for the operation and maintenance of rail lines and aqueducts; the presence of these features and their operations and maintenance have already affected, to some degree, the critical habitat's physical and biological features along their length. The GCP would also not be available for use in the permit area if adverse effects of the proposed project would occur within critical habitat. An example of such an effect would occur where a project in the permit area disrupted the function of a wash within critical habitat. Because most critical habitat occurs on federal lands, this difference with the no action alternative would likely be negligible.

Under the proposed action, the required mitigation would only occur within the mitigation area, as mapped in figure 1-3. The mitigation area, which overlaps desert tortoise conservation areas as described in the revised recovery plan for the desert tortoise (Service 2011), would contain lands that model as "good" desert tortoise habitat within NPS lands, ACECs for the desert tortoise and CDNCLs administered by the BLM, and nonfederal lands that either are in conservation management or that are acquired for conservation management. A large portion of the mitigation area also would overlap desert tortoise critical habitat.

These mitigation actions could include the acquisition and management of lands and various other activities designed to conserve desert tortoises. The acquisition of lands would not cause the take of desert tortoises; the management of acquired lands and the implementation of other mitigation activities (for

example, restoration of habitat and fencing of roads) would have some potential to take limited numbers of desert tortoises. However, this would be addressed through a recovery permitting process (that is, section 10(a)(1)(A) of the ESA), consultation under section 7 of the ESA associated with this GCP, existing permits and consultations, or separate project-specific processes.

Compared with the no action alternative, mitigation that is concentrated within the mitigation area would provide greater benefit to the desert tortoise and its critical habitat for two primary reasons. First, the mitigation area would consist primarily of federal lands and lands managed by other organizations for conservation purposes. This land base would allow federal agencies and conservation partners to manage a large landscape in a more comprehensive manner without expending most available funding on land acquisition. Second, the Service, BLM, and other agencies and organizations working on recovery of the desert tortoise would be able to integrate more fully the mitigation stemming from incidental take permits with mitigation from projects on federal lands and other recovery initiatives, such as the Recovery and Sustainment Partnership Initiative. This initiative is a partnership between the Departments of Defense and the Interior to "develop innovative regulatory approaches and tools for achieving [Endangered Species Act] objectives in a manner consistent with military needs and objectives." As part of this program, the Department of Defense has funded recovery actions within specific desert tortoise conservation areas.

Alternative 3: Reduced Mitigation Area

Under alternative 3, the permit area, covered activities in the permit area, and minimization measures would remain the same as described in alternative 2. Therefore, the effects on desert tortoises within the permit area are expected to be the same as described under the proposed action (alternative 2).

Effects on desert tortoises and their critical habitat within the reduced mitigation area are generally expected to be the same as those under alternative 2 (the proposed action). However, other lands included in the mitigation area under the proposed action, such as ACECs, would not be eligible for mitigation, which would reduce the mitigation area lands by approximately 945,300 acres. Further, excluding ACECs as areas to implement mitigation could lead to an uneven distribution of recovery efforts in the desert tortoise conservation area and thus decrease benefits to the overall conservation of desert tortoises. Conversely, other sources of funding, such as mitigation from projects on federal lands and the efforts of other conservation managers, may be able to fill the gap left by this alternative.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions within the cumulative impacts analysis area include conservation actions, resource management plans and land use plans, renewable energy projects, mining projects, other development such as roads and ROWs, and recreation. The impacts of past and present actions would be as described under *Affected Environment* for the desert tortoise.

Over a million acres of land have been acquired by the BLM and other organizations within the planning area. These lands include acquisitions by the BLM through the Land and Water Conservation Fund, mitigation resulting from past projects that have affected desert tortoises, and acquisitions by non-governmental organizations. Most of these acquisitions have been within critical habitat of the desert tortoise and the mitigation area of the GCP. Conservation actions on these lands have increased habitat protection for the desert tortoise within the mitigation area.

Within the planning area, multiple land use and resource management plans dictate the management of certain areas. The goals and objectives of these plans include managing wildlife habitat and improving habitat conditions.

The Service anticipates that renewable energy projects will continue to be proposed within all counties in the planning area. Mining will also continue in these counties. Cumulative impacts from these activities are expected to cause additional surface and subsurface disturbance from development activities and potential loss of habitat or mortality to individual desert tortoises present in these areas.

Development of planned road and highway projects, infrastructure, and ROWs is expected to occur within Kern, Inyo, and Imperial Counties, among other counties. Specific projects include the Boron Commercial Development Project, Inyo Farms, and Glamis Specific Plan Zone Change. These projects, including ROW development, can fragment desert tortoise habitat and cause injury or death.

In most cases where desert tortoises may be present at project sites, such as those described in the previous paragraphs, the project proponents will likely implement measures to minimize impacts on desert tortoises at the project site and to mitigate adverse impacts through mitigation elsewhere. The CDFW would likely engage with most of these projects during their planning processes.

Dispersed, organized, and concentrated recreation will continue in the planning area. Associated recreation projects, such as development, maintenance, and improvements, will likely continue in these areas due to the increase of visitation to NPS- and BLM-administered land within the planning area; parks managed by California State Parks also attract visitors. The development of recreational projects and increased visitation are expected to increase the amount of vehicle transportation and the chance of mortality of desert tortoises from vehicles in the area.

Increases in urban development and recreation in response to reasonably foreseeable future actions are expected to increase the demand for, and the construction of, transportation routes in the planning area. These projects will likely further increase the risk of vehicle collisions with desert tortoises, habitat fragmentation, and the spread of invasive plant species.

The Service's management for desert tortoise under all alternatives would continue to contribute to the recovery of the species. Use of the GCP under alternatives 2 and 3 would, in combination with other federal, state, local, and private conservation efforts, better contribute to recovery efforts when compared with no action.

Under all three alternatives, the Service, the BLM, and other conservation partners would continue to implement recovery efforts. The existing trend the desert tortoise's status is, overall, one of decline, although recent work on managing common ravens and fencing to protect desert tortoises have shown signs of improving conditions for the desert tortoise. Under the no action alternative, assessing the impacts of human activities and implementing recovery actions for the desert tortoise would continue as they have in the recent past. Under the two action alternatives, the more focused and comprehensive approach to mitigating for the incidental take of desert tortoises in specific areas would likely accelerate recovery efforts for the desert tortoise. This more aggressive and comprehensive approach would be in line with the recommendation in the 2011 recovery plan to apply more "aggressive management . . . within existing [desert] tortoise conservation areas" (Service 2011).

3.2 OTHER WILDLIFE, INCLUDING SPECIAL STATUS SPECIES

3.2.1 Affected Environment

The planning area is within the Mojave and Colorado Deserts of California. The planning area supports a large diversity of wildlife. Species vary according to the type of habitat in a region (such as alkali sinks, alluvial fans, and mountains) and regionally. Some species exist in both the Mojave and Colorado Deserts, and others are restricted to one desert.

Birds

A large diversity of birds can be found throughout the planning area. Common raptor species include turkey vulture (*Cathartes aura*), burrowing owl (*Athene cunicularia*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), prairie falcon (*Falco mexicanus*), red-tailed hawk (*Buteo jamaicensis*), and Cooper's hawk (*Accipiter cooperii*). Other common species include white-throated swift (*Aeronautes saxatalis*), common raven (*Corvus corax*), mourning dove (*Zenaida macroura*), phainopepla (*Phainopepla nitens*), and western kingbird (*Tyrannus verticalis*) (Basin and Range Watch 2011).

The planning area contains important bird areas. These sites include breeding and nonbreeding habitats and vital migratory stopover locations (Wells et al. 2005). Approximately 397,100 acres of important bird areas are in the planning area (National Audubon Society 2024).

The planning area is within Bird Conservation Region 33 (Sonoran and Mojave Deserts; USFWS 2021). The Birds of Conservation Concern 2021 publication (Service 2021) lists 27 species of migratory birds as birds of conservation concern within Region 33. These include the Costa's hummingbird (*Calypte costae*), Gila woodpecker (*Melanerpes uropygialis*), gilded flicker (*Colaptes chrysoides*), and LeConte's thrasher (*Toxostoma lecontei*) (Service 2021).

Mammals

Many large mammals and big game species can be found throughout the planning area. These include the coyote (*Canis latrans*), bobcat (*Lynx rufus*), kit fox (*Vulpes macrotis*), American badger (*Taxidea taxus*), mountain lion (*Puma concolor*), bighorn sheep (*Ovis canadensis*), elk (*Cervus canadensis*), black-tailed deer (*Odocoileus hemionus columbianus*), and mule deer (*O. h. hemionus*). Although distribution data are limited for big game species, occupied hunt zones occur within the planning area. These are shown in table 3-4, below.

Table 3-4. Acres of Big Game Hunt Zones in the Planning Area

Species	Acres[1]
Mitigation Area	
Bighorn sheep	2,050,200
Deer (mule and black-tailed)	8,609,900
Elk	69,300
Permit Area	
Bighorn sheep	72,400
Deer (mule and black-tailed)	2,590,800
Elk	273,200

Source: California State Geoportal GIS 2024

[1] Acres are rounded to the nearest 100.

Small mammals, such as the Arizona cotton rat (*Sigmodon arizonae*), black-tailed jackrabbit (*Lepus californicus*), California vole (*Microtus californicus*), desert woodrat (*Neotoma lepida*), little pocket mouse

(*Perognathus longimembris*), lodgepole chipmunk (*Neotamias speciosus*), and southern grasshopper mouse (*Onychomys torridus*), may also be found within the planning area. Large trees, snags, rocky cliffs, and caves in the surrounding area may provide roosting habitat for many bat species, including the big brown bat (*Eptesicus fuscus*), Brazilian free-tailed bat (*Tadarida brasiliensis*), California leaf-nosed bat (*Macrotus californicus*), cave myotis (*Myotis velifer*), long-eared myotis (*Myotis evotis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and pallid bat (*Antrozous pallidus*) (NatureServe Explorer PRO 2024).

Reptiles and Amphibians

A variety of snakes and lizards are known either to live or have the potential to live in the planning area, in almost every habitat type. Likely species include Baja California coachwhip (*Coluber fuliginosus*), Big Spring legless lizard (*Anniella campi*), Blainville's horned lizard (*Phrynosoma blainvillii*), California glossy snake (*Arizona elegans occidentalis*), Cope's leopard lizard (*Gambelia copeii*), Coronado skink (*Plestiodon skiltonianus interparietalis*), flat-tailed horned lizard (*Phrynosoma mcallii*), red diamond rattlesnake (*Crotalus ruber*), and sandstone night lizard (*Xantusia gracilis*) (NatureServe Explorer PRO 2024).

Potential habitats for amphibians within the planning area include low-elevation riparian corridors along perennial and intermittent streams in valleys of the warm desert regions. There are also springs and seeps, wetlands, and riparian zones that support amphibian species such as the red-spotted toad (*Anaxyrus punctatus*), Baja California treefrog (*Pseudacris hypochondriaca*), Kern Canyon slender salamander (*Batrachoseps simatus*), lowland leopard frog (*Lithobates yavapaiensis*), yellow-blotched salamander (*Ensatina eschscholtzii croceater*), and western spadefoot (*Spea hammondii*) (NatureServe Explorer PRO 2024).

Fish

The Service has never received an application for an incidental take permit for the desert tortoise in California that affected any species of fish. This is primarily because desert tortoises reside in upland habitat where perennial water is rare. Consequently, this EIS does not include a discussion of fish. If a future project to be considered under the GCP may affect fish, the Service would evaluate whether additional ESA compliance is necessary; the Service would also consider whether use of the GCP would be appropriate.

Invertebrates

The planning area supports a wide variety of invertebrates, including scorpions, spiders, butterflies, moths, beetles, ants, and terrestrial snails. Most species are active seasonally; the amount and timing of rainfall greatly influences the diversity and abundance of invertebrates.

Special Status Species

Special status species include those that have been listed or are being considered for listing under the federal ESA or the CESA, or both. Additionally, other agencies, such as the BLM, maintain lists of species that require special management attention.

Federally Listed, Proposed, and Candidate Species

The Service's Information for Planning and Consultation database identified 30 listed animal species in and adjacent to the planning area; it also identified critical habitat for nine of those species. Because the issuance of incidental take permits for the desert tortoise would not affect species or critical habitat outside the planning area, Service staff refined the list to only those species and critical habitats that occur within the planning area. Table 3-5 depicts the federally listed, proposed, and candidate species and critical habitat that occur in the planning area.

Table 3-5. Federally and State-Listed, Proposed, and Candidate Wildlife Species in the Planning Area

Common Name	Scientific Name	Status/ Critical Habitat	Permit or Mitigation Area	Status in the Planning Area
Amargosa vole	*Microtus californicus scirpensis*	FE CH SE	Mitigation	The Amargosa vole depends on, and is closely associated with, wetland vegetation in the vicinity of Shoshone and Tecopa (Service 2024c). Because of this species' habitat and location, use of the GCP is unlikely to affect this species.
Peninsular bighorn sheep	*Ovis canadensis nelsoni*	FE CH ST	Permit	The Peninsular bighorn sheep's range may overlap that of the desert tortoise south of the area covered by the Coachella Valley Multispecies Habitat Conservation Plan. Minimal potential exists for overlap of habitat in canyons extending from the mountains into the desert. Use of the GCP is unlikely to affect this species.
Mohave ground squirrel	*Xerospermophilus mohavensis*	ST	Permit and mitigation	The range and habitat of the Mohave ground squirrel overlap to a great degree with those of the desert tortoise in the western Mojave Desert. If a development or mitigation project could take Mohave ground squirrels, the Service would advise the proponent to contact the CDFW. Use of the GCP is unlikely to affect this species.
California condor	*Gymnogyps californianus*	FE, CH SE	Permit and mitigation	California condors fly over but do not nest or forage within desert tortoise habitat. Use of the GCP is unlikely to affect this species.
Least Bell's vireo	*Vireo bellii pusillus*	FE SE	Permit and mitigation	The least Bell's vireo migrates through the planning area and uses riparian habitat within it for breeding. Desert tortoises generally do not occur in or near riparian habitat. Use of the GCP is unlikely to affect this species.
Arizona Bell's vireo	*Vireo bellii arizonae*	SE	Permit and mitigation	The Arizona Bell's vireo breeds in riparian habitat along the Colorado River. Desert tortoises generally do not occur in or near riparian habitat. Use of the GCP is unlikely to affect this species.
Southwestern willow flycatcher	*Empidonax traillii extimus*	FT CH	Permit and mitigation	The southwestern willow flycatcher migrates through the planning area and uses riparian habitat within it for breeding. Desert tortoises generally do not occur in or near riparian habitat. Use of the GCP is unlikely to affect this subspecies.
Willow flycatcher (all subspecies)	*Empidonax traillii*	SE	Permit and mitigation	The willow flycatcher migrates through the planning area and uses riparian habitat within it for breeding. Desert tortoises generally do not occur in or near riparian habitat. Use of the GCP is unlikely to affect this species.

Common Name	Scientific Name	Status/ Critical Habitat	Permit or Mitigation Area	Status in the Planning Area
Yellow-billed cuckoo	*Coccyzus americanus*	FT SE	Permit and mitigation	The western yellow-billed cuckoo migrates through the planning area and uses riparian habitat within it for breeding. Desert tortoises generally do not occur in or near riparian habitat. Use of the GCP is unlikely to affect this species.
Yuma Ridgeway's rail	*Rallus obsoletus yumanensis*	FE ST	Permit and mitigation	The Yuma Ridgway's rail occupies wetlands, primarily around the edges of the Salton Sea and the Colorado River. Desert tortoises generally do not occur in or near riparian habitat. The Yuma Ridgway's rail also migrates through portions of the planning area. Use of the GCP is unlikely to affect this species.
California black rail	*Laterallus jamaicensis coturniculus*	ST	Permit and mitigation	The California black rail occupies wetlands, primarily around the edges of the Salton Sea and the Colorado River. Desert tortoises generally do not occur in or near riparian habitat. The California black rail also migrates through portions of the planning area. Use of the GCP is unlikely to affect this species.
Gilded flicker	*Colaptes chrysoides*	SE	Permit and mitigation	The gilded flicker's range overlaps that of the desert tortoise along the Colorado River and in and around Mojave National Preserve. Desert tortoises are not common at the lower elevations along the river. Only mitigation associated with the GCP would occur within Mojave National Preserve and in other desert tortoise conservation areas. If a development or mitigation project could take gilded flickers, the Service would advise the proponent to contact the CDFW. Use of the GCP is unlikely to affect this species.
Swainson's hawk	*Buteo swainsoni*	ST	Permit and mitigation	Swainson's hawks migrate through the planning area; a few also occasionally breed in the western Mojave Desert in areas that may overlap desert tortoise habitat. If a development or mitigation project could take Swainson's hawks, the Service would advise the proponent to contact the CDFW. Use of the GCP is unlikely to affect this species.
Bald eagle	*Haliaeetus leucocephalus*	SE	Permit	Bald eagles occasionally forage in artificial lakes in the permit area and do not occur in the same habitat as desert tortoises. Use of the GCP is unlikely to affect this species.
Desert tortoise	*Gopherus agassizii*	FT CH SE	Permit and mitigation	The desert tortoise occurs in various types of desert scrub habitat within the planning area at varying elevations and terrain.

Common Name	Scientific Name	Status/ Critical Habitat	Permit or Mitigation Area	Status in the Planning Area
Southwestern pond turtle	*Actinemys pallida*	PT	Mitigation	The southwestern pond turtle occupies wetland areas; its range may overlap to a small degree that of the desert tortoise in the planning area's western portion. Desert tortoises generally do not occur in or near riparian habitat. Use of the GCP is unlikely to affect this species.
Southern rubber boa	*Charina umbratica*	ST	Permit and mitigation	The range and habitat of the southern rubber boa overlap to some degree those of the desert tortoise in the western Mojave Desert. If a development or mitigation project could take southern rubber boas, the Service would advise the proponent to contact the CDFW. Use of the GCP is unlikely to affect this species.
Arroyo (arroyo southwestern) toad	*Anaxyrus californicus*	FE CH	Permit	The arroyo toad occupies riparian habitat along the West Fork of the Mojave River and its tributaries; it also occurs in Little Rock Creek. Desert tortoises generally do not occur in or near riparian habitat. Use of the GCP is unlikely to affect this species.
Mohave tui chub	*Siphateles bicolor mohavensis*	FE SE	Permit and mitigation	The Mohave tui chub occurs in several maintained ponds and a spring in the planning area. It does not overlap habitat with the desert tortoise. Use of the GCP is unlikely to affect this species.
Monarch butterfly	*Danaus plexippus*	FC	Permit and mitigation	The monarch butterfly may occur anywhere in the planning area during migration. It may breed where its host plants (milkweed) are sufficiently abundant. The monarch butterfly may occasionally overwinter at some locations in the planning area.

Sources: Service 2024a, 2024b

Note: FE = federally endangered; FT = federally threatened; PT = proposed threatened; FC = federal candidate; CH = critical habitat; SE = State of California endangered; ST = State of California threatened

Within the planning area, desert tortoise habitat generally does not overlap that of the other federally listed or proposed wildlife species that may exist in the planning area. Table 3-5 describes the habitat use of the other species. If a future project to be considered under the GCP is reasonably certain to take individuals of any other federally listed or proposed wildlife species, the Service would advise the proponent to apply for an incidental take permit for that species also.

State of California-Listed and Candidate Species

Table 3-5 depicts animal species listed by the State of California. The State of California originally listed the Mohave ground squirrel as rare in 1971 and reclassified it as a threatened species under the CESA in 1985. This species exists only in the western Mojave Desert in portions of Inyo, Kern, Los Angeles, and San Bernardino Counties where its range and habitat use overlap those of the desert tortoise more than any other federally or State-listed, proposed, and candidate wildlife species in the planning area (CDFW 2019).

The Mohave ground squirrel is active during the day primarily in the spring and summer; it spends most of the rest of the year in burrows. It feeds primarily on the foliage of annual plants and shrubs; it also eats seeds (CDFW 2019).

The CDFW has identified core population, peripheral population, and linkage areas for the Mohave ground squirrel (figure 1 in CDFW 2019). These areas lie largely within the planning area for the GCP; the portions of the Mohave ground squirrel's range that are not within the planning area lie within Department of Defense installations. Both the permit area and the mitigation area include core population, peripheral population, and linkage areas for the Mohave ground squirrel.

Defenders of Wildlife and others petitioned the Service to list the Mohave ground squirrel as a threatened species in December 2023 (Defenders of Wildlife et al. 2023). The Service is in the process of determining whether the petition contains substantial information that listing may be warranted. If the petition contains such information, the Service would begin a review of the Mohave ground squirrel's status, which generally takes 12 months. If the Service determines that listing is warranted, it would then either publish a proposed rule in the *Federal Register* or, if other species have higher listing priorities, designate the Mohave ground squirrel as a candidate species and review its status annually. See Service 2016 for a full description of the petition process.

BLM Sensitive Species

On BLM-administered lands in the planning area, the BLM is directly responsible for managing habitat for special status species and is indirectly responsible for the health of special status species that these habitats support. BLM Manual 6840 states that "BLM sensitive species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species." These species are animals and plants that require specific management attention because of population or habitat concerns.

Various special status species are likely to occur in the planning area vicinity. These species include bald eagle (*Haliaeetus leucocephalus*), California black rail (*Laterallus jamaicensis coturniculus*), California leaf-

nosed bat, California red-legged frog (*Rana draytonii*), Colorado desert fringed-toed lizard (*Uma notata*), flat-tailed horned lizard, fringed myotis (*Myotis thysanodes*), golden eagle, and Palm Springs little pocket mouse (*Perognathus longimembris bangsi*) (NatureServe Explorer PRO 2024).[8]

3.2.2 Environmental Consequences

Impacts Common to All Alternatives

Construction associated with development activities can lead to surface-disturbing actions that can negatively impact wildlife species and their habitats. Increased human disturbance during construction can result in temporary habitat avoidance or direct impacts, which cause mortality or injury. Direct impacts include habitat degradation from vegetation removal and an increased potential for the spread of noxious weeds. Operations associated with development can result in long-term impacts on wildlife populations and their habitats from displacement or noise-related disturbance.

Short-term, loud noise (such as vehicles or construction) and long-term, low-level noise (such as from industrial activities) can cause physiological effects on wildlife species, including increased heart rate; altered metabolism; changes in hormones, foraging, and anti-predator behavior; and reduced reproductive success, density, and community structure. Noise can also disrupt communication and environmental cues, impacting wildlife in both the short and long term.

Impacts on big game populations can result from disturbance and loss of seasonally important habitats—such as breeding, rearing, or foraging habitat—and migration routes. Interference with seasonal migration or movement patterns can decrease a species' ability to breed successfully, potentially leading to population declines.

The construction of power lines (transmission, generator tie-in, and distribution lines) can cause habitat fragmentation and disturbance for wildlife species along the ROW due to human activity, equipment, and noise. These lines can also provide predators with perches and nest sites, causing indirect negative impacts on prey species. Power lines in the desert have provided abundant nesting and perching sites for common ravens and a subsequent increase in the population and level of predation on desert tortoises. Transmission lines for gas and water can also reduce habitat quality or increase the establishment of invasive plants.

Renewable energy development and associated infrastructure, such as the associated generator tie-in lines, substations, and access roads, can have similar effects on wildlife species as those resulting from ROW management. These effects include habitat loss, habitat alteration, habitat fragmentation, direct injury or mortality, disturbance, and displacement. Large wind and solar energy fields also involve surface disturbance, which could permanently change the habitat structure and affect wildlife.

The construction, operation, and maintenance of roads generally affect wildlife and their habitats. Wildlife habitat is destroyed during construction and fragmented during the road's operation; maintenance activities can add to the disturbance of adjacent habitat over the life of the road. The construction of roads can kill or injure wildlife individuals that cannot move from harm's way. Likewise, vehicles using roads can kill or injure wildlife that attempts to cross the road; the amount of mortality varies with the road's width

[8] For more information regarding special status species and a full list of BLM California special status and sensitive species, please visit the BLM website at https://www.blm.gov/programs/fish-and-wildlife/threatened-and-endangered/state-te-data/california.

and level of vehicle use. Roadkill can provide a steady source of food for scavenging wildlife; however, scavengers are also at risk of being killed or injured given their proximity to roads.

Construction of wind turbines likely creates collision hazards for raptors, bats, and multiple avian species. Studies have documented deaths of avian and bat species from wind turbines, but collision levels vary based on habitat, terrain, elevation, and weather conditions.

The measures that a project proponent takes to avoid, minimize, or mitigate effects on the desert tortoise may benefit other wildlife species. For example, if a project proponent avoids construction in an area that supports desert tortoises, other wildlife in that area would not be killed, injured, or disturbed by that activity, and their habitats would not be disturbed or removed. Also, if a project proponent mitigates the effects of the proposed action because of an incidental take permit from the Service, the acquisition of habitat to be managed for conservation would protect other wildlife in that area. The restoration of habitat as a mitigation measure would also likely improve the value of the restored area for other wildlife.

Conversely, some actions that a proponent would undertake to reduce the take of desert tortoises in a project area could adversely affect other wildlife species. For example, constructing a fence to exclude desert tortoises from a work area and excavating burrows to protect desert tortoises from construction could disturb other wildlife species. However, the effects of such minimization measures on these species would be negligible in comparison to those of the project itself; also, the protective measures for the desert tortoise would occur in areas that are likely to be disturbed by the project. Restoration of desert tortoise habitat as mitigation has the potential to adversely affect other wildlife species; however, the Service and land manager would avoid adverse effects on these species as much as possible. Land acquisition and protection as mitigation would benefit wildlife species because it would remove any threat of future development.

Other than for federally listed species and migratory birds, the Service has no legal authority to require project proponents to avoid, minimize, or mitigate the effects of their activities on wildlife. The Service can provide advice to project proponents to avoid the take of migratory birds but does not issue incidental take permits for these species. If a proposed development plan is likely to take bald or golden eagles, the Service would recommend that the project proponent include the species in its permit application or apply for a permit under the authorities of the Bald and Golden Eagle Protection Act.

Local and state agencies evaluate the effects of proposed actions on wildlife species under the CEQA. Depending on various circumstances, these reviews could result in the avoidance, minimization, and/or mitigation of the development's effects on wildlife species.

In instances where a proposed development would likely result in the take of the Mohave ground squirrel, the CDFW would likely recommend that the project proponent seek an incidental take permit under section 2081 of the California Fish and Game Code. The CDFW may also require proponents to undertake other measures to protect special status species under its authorities.

Alternative 1: No Action

Under the no action alternative, the Service would continue to process applications for incidental take permits for the desert tortoise without the streamlining offered by the GCP. Effects on other wildlife species would be the same as those described in the *Impacts Common to All Alternatives* section.

Alternative 2: Proposed Action

Within the permit area, impacts on wildlife resulting from covered activities under alternative 2, the proposed development and approval of the GCP, would be the same as those described under *Impacts Common to All Alternatives*.

Mitigation resulting from the issuance of incidental take permits under alternative 2 would have the same general effect on other wildlife as described in the *Impacts Common to All Alternatives* section, except mitigation would occur only in the mitigation area as defined in the GCP. Concentrating mitigation within the mitigation area would likely result in improved conditions for wildlife there; this is because the effects of mitigation for the desert tortoise, as described in *Impacts Common to All Alternatives*, would occur in a smaller area than all desert tortoise habitat in California.

Conversely, other wildlife that does not exist in the mitigation area would not benefit from mitigation for the desert tortoise. Because mitigation under alternative 2 would only occur on lands that have conservation management as a primary goal and objective (that is, BLM ACECs and CDNCLs, NPS lands, and lands managed by other conservation groups that models suggest are high-quality desert tortoise habitat), the overall benefit of focusing mitigation on these lands would be greater than the negative effect of not implementing mitigation on the larger area of all desert tortoise habitat.

Alternative 3: Reduced Mitigation Area

Within the permit area, impacts on wildlife from covered activities under alternative 3 would be the same as those described under *Impacts Common to All Alternatives*.

Mitigation resulting from the issuance of incidental take permits under alternative 3 would have the same general effect on other wildlife as described in *Impacts Common to All Alternatives* and as under alternative 2 with one exception. Under alternative 3, mitigation stemming from incidental take permits issued under the GCP would not occur within the boundaries of the BLM's ACECs that are outside CDNCLs. Specifically, approximately 7,664,800 acres would be available for mitigation as opposed to the approximately 8,610,100 acres available under alternative 2.

As with alternative 2, concentrating mitigation within the mitigation area would likely result in improved conditions for wildlife there; this is because the effects of mitigation for the desert tortoise, as described in *Impacts Common to All Alternatives*, would occur in a smaller area than all desert tortoise habitat in California. Conversely, other wildlife that does not occur in the mitigation area would not benefit from mitigation for the desert tortoise. Because mitigation under alternative 3 would only occur on lands that have conservation management as a primary goal and objective (that is, CDNCLs, NPS lands, and lands managed by other conservation groups), the overall benefit of focusing mitigation on these lands would be greater than the negative effect of not implementing mitigation on the larger area of all desert tortoise habitat. However, the difference between alternatives 2 and 3 in beneficial effects on other wildlife would likely be negligible; this is because these benefits would be indirect, and the amount of mitigation likely to occur under the GCP would cover a relatively small portion of the mitigation area under either alternative.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions that have affected and would continue to affect wildlife, including special status wildlife, in the cumulative impacts analysis area are as follows: urban development, conservation actions, resource management plans and land use plans, renewable energy

projects, mining, other development such as roads and ROWs, and recreation. Construction, operation, and maintenance of renewable energy projects, mining, and other development actions have removed vegetation and disturbed soils, increased the potential for weed establishment and spread, degraded and fragmented habitat, and disturbed wildlife in the cumulative impacts analysis area; they will continue to do so. Those impacts on wildlife species are described in further detail under *Impacts Common to All Alternatives*.

Currently, lands within the planning area designated as ACECs or CDNCLs are managed with goals and objectives protecting natural and cultural resources, including wildlife and special status wildlife. Other lands acquired and managed by the BLM and other organizations are focused on conservation goals, which benefit wildlife species though increased habitat quality and connectivity. These conservation actions are aimed at increasing desert tortoise habitat protection, but they also benefit other wildlife species whose habitat ranges overlap that of the desert tortoise. These actions may help to improve management of wildlife species within the planning area.

Other multiple-use plans within the planning area are aimed at improving the quality of wildlife habitat, which benefit other wildlife species whose ranges fall outside desert tortoise habitat. These land use plans will continue to dictate the management of certain areas within the planning area, with impacts varying based on specific plans' goals and objectives. Those plans will continue to be updated to reflect best management decisions for current conditions.

Ongoing human uses of the planning area, such as recreation (including off-road recreation), dispersed camping, and other human uses, create noise disturbance, pollution, harassment and habituation of wildlife, and mortality or injury from vehicle collisions. Other impacts include localized ground disturbance and vegetation removal, which contribute to the ongoing and localized nonnative, invasive plant establishment and spread, which degrade wildlife habitats. Localized ground disturbance and vegetation removal would also result in periodic disturbance to wildlife species. Development, maintenance, and improvements associated with recreation projects will likely continue in these areas due to the increase in visitation to BLM- and NPS-administered land within the planning area. Thus, impacts on wildlife from recreation will likely increase.

The measures to minimize and mitigate impacts on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through use of the GCP (alternatives 2 and 3) would contribute to cumulative impacts on wildlife species, in combination with the impacts of the other past, present, and reasonably foreseeable future actions described above. The contribution to these cumulative impacts from the minimization and mitigation measures associated with the desert tortoise (for example, installing fences to protect desert tortoises and temporary disturbance while restoring habitat) would have a limited adverse impact on wildlife and wildlife habitat in the planning area relative to other human activities, such as the construction, operation, and maintenance of various types of facilities and recreation. These desert tortoise-associated measures would have beneficial impacts on wildlife and wildlife habitat in the mitigation area because measures to protect desert tortoises would extend to other species and their habitat, at least to some degree. These beneficial impacts would not differ substantially among the three alternatives but would likely have the greatest impacts under alternative 2 and the fewest impacts under the no action alternative.

3.3 PLANT COMMUNITIES, INCLUDING SPECIAL STATUS SPECIES AND NOXIOUS WEEDS

3.3.1 Affected Environment

The planning area is within the Mojave and Colorado Deserts of California. The planning area supports numerous plant communities, special status species, and noxious weeds; some of these occur in both the Mojave and Colorado Deserts while others are restricted to one desert.

Plant Communities

The Sonora-Mojave creosotebush-white bursage desert scrub is the most abundant plant community or land cover type in the planning area. This plant community exists in valleys and the lower foothills of mountains, which represent most of the terrain in the planning area. The dominant species are typically creosotebush (*Larrea tridentata*) and white bursage (*Ambrosia d*umosa). Other shrubs, dwarf shrubs, and cacti may also be dominant or form sparse understories. Herbaceous species are typically sparse but may be seasonally abundant. Mojave mid-elevation mixed desert scrub and North American warm desert pavement are the next most abundant plant communities; these communities generally lie above and below creosotebush-white bursage desert scrub, respectively. Table 3-6 describes the plant communities as land cover types, using LANDFIRE data (LANDFIRE 2024; NatureServe 2024).

Special Status Species

Special status species include those that have been listed or are being considered for listing under the federal ESA or CESA, or both. Additionally, other agencies, such as the BLM, maintain lists of species that require special management attention.

Federally Listed, Proposed, and Candidate Species

The Service considers whether plant species should be listed as threatened or endangered the same way it considers wildlife species. The Service's Information for Planning and Consultation database identified 14 listed plant species in and adjacent to the planning area. Because the issuance of incidental take permits for the desert tortoise would not affect species or critical habitat outside the planning area, Service staff refined the list to only those species and critical habitats that occur within the planning area. Table 3-7 depicts the federally listed plant species and their critical habitat that exist in the planning area.

To date, the Service has issued one incidental take permit for a project within the planning area where a federally listed plant was present. In January 1996, the Service issued an incidental take permit for desert tortoises for a 285-acre sand and gravel mine on the northern slope of the San Bernardino Mountains; the Parish's daisy was also present in the project area. However, the permittee did not implement the project for which the Service issued the incidental take permit.

State of California-Listed and Candidate Species

The State of California also maintains a list of threatened and endangered plant species. The State of California considers whether plant species should be listed as threatened or endangered the same way it considers wildlife species. Please see section 1.5.2, *California Endangered Species Act*, for a description of this process. Table 3-7 also depicts plant species listed by the State of California.

Table 3-6. Land Cover Types in the Planning Area

Land Cover Types and Descriptions	Proposed Action Mitigation Area Acres	Reduced Mitigation Area Acres	Permit Area Acres
Sonora-Mojave Creosotebush-White Bursage Desert Scrub: This land cover type occurs in broad valleys, lower bajadas, plains, and low hills in the Mojave and Sonoran Deserts. Shrubs form a sparse to moderately dense cover (2 to 50 percent), although the ground surface may be mostly barren. The dominant species are typically creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Other shrubs, dwarf shrubs, and cacti may also be dominant or form sparse understories. Herbaceous species are typically sparse but may be seasonally abundant.	4,563,500	4,059,700	711,200
Mojave Mid-Elevation Mixed Desert Scrub: This land cover type occurs in the Mojave Desert and in the transition zone into the southern Great Basin. Stands occur on upper bajada and lower piedmont slopes with smaller patches occurring on rocky ridges and outcrops.	1,522,100	1,403,100	332,700
North American Warm Desert Pavement: This land cover type consists of unvegetated to very sparsely vegetated (less than 2 percent plant cover) landscapes; these are typically flat basins where extreme temperature and wind develop ground surfaces of fine to medium gravel coated with desert varnish[9].	1,329,200	1,184,300	229,100
Sonoran Paloverde-Mixed Cacti Desert Scrub: This land cover type occurs on hillsides, mesas, and upper bajadas in southeastern California. The vegetation is characterized by a sparse, emergent tree layer of Saguaro cactus (*Carnegiea gigantea*) and/or a sparse to moderately dense canopy codominated by xeromorphic,[10] summer, deciduous, tall shrub yellow paloverde (*Parkinsonia microphylla*) and creosote bush.	437,000	417,600	800
North American Warm Desert Playa: This land cover type consists of barren and sparsely vegetated playas (generally less than 10 percent plant cover) found across the warm deserts of North America, extending into the extreme southern end of the San Joaquin Valley in California. Vegetation is adapted to droughty and saline environments.	205,000	417,600	138,100
North American Warm Desert Bedrock Cliff and Outcrop: This land cover type occurs on subalpine to foothill steep cliff faces, narrow canyons, rock outcrops, unstable scree, and talus slopes. It consists of barren and sparsely vegetated areas (generally less than 10 percent plant cover) with desert species, especially succulents. Lichens are predominant in some areas.	161,400	150,700	179,800

[9] Orange-yellow to black coating found on exposed rock surfaces in arid environments.
[10] Having characteristics that serve as protection against excessive loss of water.

Land Cover Types and Descriptions	Proposed Action Mitigation Area Acres	Reduced Mitigation Area Acres	Permit Area Acres
Sonora-Mojave Mixed Salt Desert Scrub: This land cover type contains extensive open-canopied shrublands of typically saline basins in the Mojave and Sonoran Deserts. Stands most often occur around playas and in valley bottoms or basins where evapotranspiration results in saline soils. Vegetation typically consists of one or more *Atriplex* species, such as four-wing saltbush (*Atriplex canescens*) or cattle spinach (*A. polycarpa*), along with other species of *Atriplex*.	93,000	52,300	145,800
Developed: This type can be low, medium, and high intensity.	38,200	31,800	265,700
North American Warm Desert Ruderal Scrub and Grassland: This land cover type contains disturbed, warm, semiarid grasslands and desert thorn scrub that occur in the southwestern US and northern Mexico. Habitat includes ruderal vegetation with a variable dense shrub canopy and/or an herbaceous layer dominated by annual or perennial grasses or forbs.	68,100	13,500	239,800
Western Warm Temperate Urban Shrubland: This land cover type contains areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses.	18,700	15,500	89,700
North American Warm Desert Badland: This land cover type is restricted to barren and sparsely vegetated (generally less than 10 percent plant cover) substrates typically derived from marine shale or mudstone (badlands and mud hills).	61,300	55,500	800
North American Warm Desert Volcanic Rockland: This land cover type occurs across the warm deserts of North America and is restricted to barren and sparsely vegetated (less than 10 percent plant cover) volcanic substrates, such as basalt lava (malpais) and tuff. Vegetation is variable and includes scattered creosote bush, desert holly (*Atriplex hymenelytra*), and other desert shrubs.	53,500	50,800	800
Southern California Coastal Scrub: This land cover type is dominated by drought-deciduous shrubs and at times can have characteristic (constant but not dominant) resprouting, deep-rooted shrubs. The most predominant shrubs include coastal sagebrush (*Artemisia californica*), California black sage *(Salvia mellifera)*, white sage (*S. apiana*), purple sage (*S. leucophylla*), California bush sunflower (*Encelia californica*), California buckwheat (*Eriogonum fasciculatum*), ashyleaf buckwheat (*E. cinereum*), coastal pricklypear (*Opuntia littoralis*), orange bush monkey-flower (*Diplacus aurantiacus*), deerweed (*Lotus scoparius*) (early seral after fire), and coyote brush (*Baccharis pilularis*) (in moister, disturbed sites).	0	0	53,100

Land Cover Types and Descriptions	Proposed Action Mitigation Area Acres	Reduced Mitigation Area Acres	Permit Area Acres
North American Warm Desert Active and Stabilized Dune: This land cover type consists of unvegetated to sparsely vegetated (generally less than 10 percent plant cover) active dunes and sand sheets. Vegetation includes shrubs, forbs, and grasses. This type includes unvegetated blowouts[11] and stabilized areas.	33,700	28,900	13,300
Western Warm Temperate Pasture and Hayland: This land cover type contains areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture and hay vegetation account for greater than 20 percent of the total vegetation.	500	500	33,300
Sonora-Mojave Semi-Desert Chaparral: This land cover type consists of evergreen shrublands or dwarf-woodlands on side slopes transitioning from low-elevation desert landscapes up into woodlands of the western Mojave and Sonoran Deserts.	10,100	9,300	15,900
Western Warm Temperate Developed Shrubland: This land cover type contains shrub-dominated vegetation in the urban settings of the western warm, temperate region. It includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses.	300	200	20,500
Western Warm Temperate Urban Herbaceous: This land cover type contains herbaceous vegetation in the urban settings of the warm, temperate region. It includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses.	3,100	2,500	11,800
California Ruderal Grassland, Meadow, and Scrub: This land cover type consists of nonnative-dominated annual or perennial grasslands and forblands, found in warm, temperate or mediterranean California. It occurs on the coastal plains, in the Central Valley, in the foothills, and in disturbed rural and urban areas.	0	0	14,900
Sierra Nevada Cliff and Canyon: This land cover type is found from the foothills to subalpine elevations throughout the Sierra Nevada and nearby mountain ranges. It includes barren and sparsely vegetated areas (less than 10 percent plant cover) of steep cliff faces, narrow canyons, and smaller rock outcrops of various igneous, sedimentary, and metamorphic bedrock.	100	100	12,700
Western Warm Temperate Fallow/Idle Cropland: This land cover type is cropland that has been removed from active production.	400	300	12,400
Western Warm Temperate Close Grown Crop: This land cover type contains areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops, such as orchards and vineyards. It also includes all land being actively tilled.	100	100	9,400

[11] A depression or hollow formed by wind erosion on a preexisting sand deposit.

Land Cover Types and Descriptions	Proposed Action Mitigation Area Acres	Reduced Mitigation Area Acres	Permit Area Acres
Southern California Dry-Mesic Chaparral: This land cover type occurs in dry-mesic to mesic site conditions comparable to mesic chaparral. During late summer, stand-replacing fires occur in these areas.	0	0	8,800
Quarries-Strip Mines-Gravel Pits-Well and Wind Pads: This land cover type contains areas of extractive mining activities with significant surface expression.	600	600	7,400
Great Basin Pinyon-Juniper Woodland: This land cover type occurs on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Habitat is typically found at lower elevations.	3,100	2,200	5,100
Western Warm Temperate Orchard: This land cover type contains orchards, vineyards, and other areas planted or maintained for the production of fruits, nuts, berries, or ornamentals.	300	300	6,200
Inter-Mountain Basins Semi-Desert Grassland: This land cover type occurs on a variety of aspects, slopes, and landforms, including swales, playas, mesas, alluvial flats, plains, and hillslopes.	3,400	2,800	2,300
Western Warm Temperate Row Crop: This land cover type contains areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops, such as orchards and vineyards. It also includes all land being actively tilled.	0	0	4,500
Northern and Central California Dry-Mesic Chaparral: This land cover type contains extensive areas on coarse-grained soils with annual precipitation up to 30 inches. These areas have supported extensive stand-replacing wildfires. This system is made up of a mixture of mostly obligate seeders.	0	0	4,300
California Mesic Chaparral: Common species include California scrub oak (*Quercus berberidifolia*), interior live oak (*Q. wislizeni* var. *frutescens*), smooth mountain mahogany (*Cercocarpus montanus* var. *glaber*), and California ash (*Fraxinus dipetala*). Most chaparral species are fire adapted, resprouting vigorously after burning or producing fire-resistant seeds.	0	0	3,000
Open Water	300	300	2,200
Western Warm Temperate Urban Deciduous Forest: This land cover type contains deciduous forest in low to moderately urbanized settings in the warm, temperate region. Forest vegetation results from succession following significant anthropogenic disturbance of an area.	900	700	700
Sonoran Granite Outcrop Desert Scrub: This land cover type occurs in foothills and is typically found on low- to mid-elevation granitic outcrops.	1,400	900	0

Land Cover Types and Descriptions	Proposed Action Mitigation Area Acres	Reduced Mitigation Area Acres	Permit Area Acres
North American Warm Desert Riparian Woodland and Shrubland: This land cover type consists of low-elevation riparian corridors along medium to large, perennial streams throughout canyons and desert valleys of the southwestern United States. These are disturbance-driven plant communities that require flooding, scour and deposition of sands and gravel, and a periodically elevated water table for germination and maintenance.	400	400	1,800
Western Warm Temperate Wheat: This land cover type contains areas used for the production of wheat. Crop vegetation accounts for greater than 20 percent of the total vegetation.	0	0	1,100
Southern California Coast Ranges Cliff and Canyon: This land cover type consists of barren and sparsely vegetated areas (less than 10 percent plant cover) of steep cliff faces, narrow canyons, and smaller rock outcrops of various igneous, sedimentary, and metamorphic bedrock types. Scattered vegetation may include shrub species from surrounding coastal chaparral, such as bigpod ceanothus (*Ceanothus megacarpus*), chaparral whitethorn (*Ceanothus leucodermis*), smooth mountain mahogany (*Cercocarpus montanus* var. *minutiflorus*), San Diego mountain mahogany (*Cercocarpus minutiflorus*), bigberry manzanita (*Arctostaphylos glauca*), and mission manzanita (*Xylococcus bicolor*).	0	0	900
Interior West Ruderal Riparian Forest and Scrub: Habitat includes coastal canyons, foothill and mountain slopes, valleys, and roadsides.	500	500	900
Western Cool Temperate Urban Shrubland: This land cover type contains shrub-dominated vegetation in an urban landscape. It includes areas with a mixture of some constructed materials but mostly vegetation in the form of lawn grasses.	0	0	800
Western North American Ruderal Marsh, Wet Meadow and Shrubland: This land cover type contains disturbed natural habitats such as wet meadows, emergent marshes, coastal backwater dunes, and sloughs. This type also contains waste areas that were once wetlands and are now dominated by nonnative species.	0	0	500
North American Warm Desert Wash Shrubland: This land cover type is typically characterized by an open layer of shrubs and small trees such as catclaw acacia (*Acacia greggii*), splitleaf brickellbush (*Brickellia laciniata*), broom baccharis (*Baccharis sarothroides*), and others. The vegetation cover ranges from sparse and patchy to moderately dense. It typically occurs along the banks, but it may occur within the channel.	0	0	500
Western Warm Temperate Developed Herbaceous: This land cover type contains herbaceous vegetation in the developed settings of the warm, temperate region. It includes areas with a mixture of some constructed materials but mostly vegetation in the form of lawn grasses.	0	0	500

Land Cover Types and Descriptions	Proposed Action Mitigation Area Acres	Reduced Mitigation Area Acres	Permit Area Acres
Western Warm Temperate Urban Evergreen Forest: This land cover type contains evergreen forest in low to moderately urbanized settings in the warm, temperate region. Forest vegetation results from succession following significant anthropogenic disturbance of an area.	0	0	400
North American Warm Desert Cienega: This land cover type consists of freshwater spring-fed wetlands characterized by nonfluctuating, shallow surface water. Plants are limited to low, shallow-rooted, semiaquatic sedges such as *Eleocharis* spp., *Juncus* spp., *Carex* spp., a few grasses, and more rarely, *Typha* spp.	100	100	300
North American Warm Desert Riparian Herbaceous: This land cover type consists of disturbance-driven plant communities that require annual or periodic flooding and associated sediment scour or an annual rise in the water table for growth and reproduction.	0	0	400
Western Warm Temperate Urban Mixed Forest: This land cover type contains mixed forest in low to moderately urbanized settings in the warm, temperate region. Forest vegetation results from succession following significant anthropogenic disturbance of an area.	200		100
Western Cool Temperate Urban Herbaceous: This land cover type includes areas with a mixture of some constructed materials but mostly vegetation in the form of lawn grasses. These areas most commonly include large-lot, single-family housing units; parks; golf courses; and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.	0	0	300
North American Warm Desert Riparian Mesquite Bosque Shrubland: This land cover type consists of low-elevation riparian corridors along perennial and intermittent streams in valleys of the warm desert regions of the southwestern US. Dominant shrub species include mulefat (*Baccharis salicifolia*), arrowweed (*Pluchea sericea*), and narrowleaf willow (*Salix exigua*).	0	0	200
Southern California Oak Woodland and Savanna: This land cover type occurs in coastal plains, intermountain valleys, and low mountains (such as the San Jacinto Mountains) from Ventura County, California, south into Baja California, Mexico. Dominant species in a mixed-closed or open canopy include California live oak (*Quercus agrifolia*), interior live oak, Engelmann oak (*Q. engelmannii*), California black oak (*Q. kelloggii*), and southern California walnut (*Juglans californica*).	0	0	200
Central and Southern California Mixed Evergreen Woodland: Conifers are relatively infrequent; coulter pine (*Pinus coulteri*) occurs in scattered stands. Characteristic tree species include canyon live oak (*Quercus chrysolepis)*, California live oak, California black oak, California laurel (*Umbellularia californica*), bigleaf maple (*Acer macrophyllum*), and Pacific madrone (*Arbutus menziesii*). Historically, fire was likely more frequent with higher flame lengths in this southern region.	0	0	200

Land Cover Types and Descriptions	Proposed Action Mitigation Area Acres	Reduced Mitigation Area Acres	Permit Area Acres
Western Warm Temperate Vineyard: This land cover type contains orchards, vineyards, and other areas planted or maintained for the production of fruits, nuts, berries, or ornamentals.	0	0	100
Western Warm Temperate Developed Evergreen Forest: This land cover type contains evergreen forest vegetation in urban settings. Forest vegetation results from succession following significant anthropogenic disturbance of an area.	0	0	100
Mediterranean California Foothill and Lower Montane Riparian Shrubland: This land cover type occurs as a mosaic of various communities that are tree dominated with a diverse shrub component and open shrublands. Dominant shrubs include narrowleaf willow (*Salix exigua*) and Arroyo willow (*S. lasiolepis*).	0	0	100
California Lower Montane Foothill Pine Woodland and Savanna: This land cover type is primarily found in the valley margins and foothills of the Sierra Nevada and Coast Ranges of California from approximately 360 to 3,600 feet in elevation. High-quality habitat consists of open, park-like stands of gray pine (*Pinus sabiniana*), with other various broadleaf tree and shrub species.	0	0	100
North American Warm Desert Riparian Mesquite Bosque Woodland: This land cover type consists of low-elevation riparian corridors along perennial and intermittent streams in valleys of the warm desert regions of the southwestern US. Dominant trees include honey mesquite (*Prosopis glandulosa*) and velvet mesquite (*P. velutina*).	0	0	100
North American Warm Desert Lower Montane Riparian Woodland: This land cover type occurs in foothill and mountain canyons and valleys of the warm desert regions of the southwestern US. The vegetation consists of a mix of riparian woodlands and shrublands.	0	0	100

Sources: NatureServe 2024; LANDFIRE 2024
Mitigation area acres for the proposed action.
Note: Acres rounded to the nearest whole number.

Table 3-7. Threatened and Endangered Vegetation Species in the Planning Area

Common Name	Scientific Name	Status/ Critical Habitat	Permit or Mitigation Area	Status in the Planning Area
Cushenbury buckwheat	*Eriogonum ovalifolium* var. *vineum*	FE CH	Permit	The Cushenbury buckwheat occurs on carbonate substrates in the San Bernardino Mountains, generally at higher elevations than desert tortoises. Less than an acre of its critical habitat overlaps the permit area. Desert tortoises are unlikely to exist within this species' habitat.
Cushenbury milk-vetch	*Astragalus albens*	FE	Permit	The Cushenbury milk-vetch occurs on carbonate substrates in the San Bernardino Mountains, generally at higher elevations than desert tortoises. Approximately 100 acres of its critical habitat overlap the permit area. Desert tortoises are unlikely to exist within this species' habitat.
Cushenbury oxytheca	*Oxytheca parishii* var. *goodmaniana*	FE	Permit	The Cushenbury oxytheca occurs on carbonate substrates in the San Bernardino Mountains, generally at higher elevations than desert tortoises. Desert tortoises are unlikely to exist within this species' habitat.
Parish's daisy	*Erigeron parishii*	FT CH	Permit	The Parish's daisy occurs on carbonate substrates in the San Bernardino Mountains, generally at lower elevations than the other carbonate species with habitat that slightly overlaps that of the desert tortoise. Approximately 100 acres of this species' critical habitat overlap the permit area.
Peirson's milk-vetch	*Astragalus magdalenae* var. *peirsonii*	FT	Permit and mitigation	The Peirson's milk-vetch occurs in the Algodones Dunes in eastern Imperial County. Desert tortoises may exist in low densities at the edges of this species' habitat.
Spreading navarretia	*Navarretia fossalis*	FT	Permit	One occurrence of the spreading navarretia occurs in the western Mojave Desert in Los Angeles County. Desert tortoises are unlikely to exist in the area of the desert where this species occurs.
Spring-loving centaury	*Centaurium namophilum*	FT	Mitigation	The spring-loving centaury occurs in alkaline soils of wet saltgrass meadows, springs, and seeps in the vicinity of Ash Meadows National Wildlife Refuge in Nevada. Some plants may occur in adjacent areas of California. Desert tortoises are unlikely to exist in this species' habitat.
Triple-ribbed milk-vetch	*Astragalus tricarinatus*	FE	Permit and mitigation	The triple-ribbed milk-vetch occurs in desert scrub habitat in San Bernardino and Riverside Counties. Desert tortoises may exist in this species' habitat.
Ash Meadows gumplant	*Grindelia fraxinopratensis*	FT CH	Mitigation	The Ash Meadows gumplant occurs in wetlands in the vicinity of the Amargosa River in eastern Inyo County. Approximately 300 acres of its critical habitat overlap the mitigation area. Desert tortoises are unlikely to exist in this species' habitat.
Amargosa niterwort	*Nitrophila mohavensis*	FE CH SE	Mitigation	The Amargosa niterwort occurs in alkali sink areas along the Amargosa River in eastern Inyo County. Approximately 1,100 acres of its critical habitat overlap the mitigation area. Desert tortoises are unlikely to exist in this species' habitat.

Common Name	Scientific Name	Status/ Critical Habitat	Permit or Mitigation Area	Status in the Planning Area
Lane Mountain milk-vetch	*Astragalus jaegerianus*	FE CH	Mitigation	The Lane Mountain milk-vetch occurs in desert scrub habitat in the western Mojave Desert in San Bernardino County. Approximately 13,800 acres of its critical habitat overlap the mitigation area. Desert tortoises exist in this species' habitat.
Mojave tarplant	*Deinandra mohavensis*	SE	Permit and mitigation	The range of the Mojave tarplant overlaps that of the desert tortoise to some degree along the western edge of the planning area.
Borrego bedstraw	*Galium angustifolium* ssp. *borregoense*	SR	Permit	The Borrego bedstraw occurs in creosote bush scrub in eastern San Diego County. Desert tortoises may exist in this species' habitat.
Algodones Dunes sunflower	*Helianthus niveus* ssp. *tephrodes*	SE	Permit and mitigation	The Algodones Dunes sunflower occurs in creosote bush scrub in eastern San Diego County and near the Algodones Dunes in eastern Imperial County. Desert tortoises may exist in this species' habitat.
Western Joshua tree	*Yucca brevifolia*	SC	Permit and mitigation	The western Joshua tree occurs in creosote bush scrub and Joshua tree woodlands in the western part of the planning area. Desert tortoises may exist in this species' habitat.

Sources: Service IPaC 2024; Service GIS 2024; CNDDB 2024; Calflora 2024
Note: FE = federally endangered; FT = federally threatened; CH = critical habitat; SE = State of California endangered; SR = State of California rare; SC = State of California candidate.

The State of California enacted the Western Joshua Tree Conservation Act in July 2023. This act "prohibits the importation, export, take, possession, purchase, or sale of any western Joshua tree in California unless authorized by CDFW." The information in this paragraph is from the CDFW (CDFW 2024b). The act allows the CDFW to issue incidental take permits for western Joshua trees if the proponent meets certain conditions. To obtain an incidental take permit, proponents may pay fees in lieu of conducting mitigation activities. The CDFW will use collected fees "solely for the purposes of acquiring, conserving, and managing western Joshua tree conservation lands and completing other activities to conserve the western Joshua tree." The act also requires the CDFW to "develop annual reports assessing the conservation status of the western Joshua tree." The Fish and Game Commission will use these reports and other information to determine whether the western Joshua tree, which is currently a candidate species, should be listed as threatened or endangered.

BLM Special Status Species

In California, the BLM maintains an extensive list of special status plant species (BLM 2023) that also includes plants listed under the CESA and species considered sensitive by the California Native Plant Society and the Nevada Division of Natural Heritage. In addition to the species noted in table 3-7, BLM special status plant species that may occur within the planning area in desert tortoise habitat include the Barstow woolly-sunflower (*Eriophyllum mohavense*), Orocopia Mountains spurge (*Euphorbia jaegeri*), and white-margined beardtongue (*Penstemon albomarginatus*). BLM Manual 6840 states that, among other responsibilities, the BLM will ensure that "land use and implementation plans fully address appropriate conservation of BLM special status species" and monitor "populations of Bureau special status species to determine whether management objectives are being met."

Noxious Weeds

The Federal Noxious Weed Act of 1974 defined noxious weed as a plant species that is "of foreign origin, is new to or not widely prevalent in the United States, and can directly or indirectly injure crops, other useful plants, livestock, or poultry or other interests of agriculture, including irrigation, or navigation or the fish or wildlife resources of the United States or the public health." Some weed species in the planning area include barbwire Russian thistle (*Salsola paulsenii*), bermudagrass (*Cynodon dactylon*), camelthorn (*Alhagi maurorum*), common Russian thistle (*Salsola tragus*), giant reed (*Arundo donax*), tamarisk (*Tamarix ramosissima*), tocalote (*Centaurea melitensis*), and white horsenettle (*Solanum elaeagnifoliu*) (Cal-IPC GIS 2024).

3.3.2 Environmental Consequences

Impacts Common to All Alternatives

Construction and operation associated with activities (as described in table 2-2) can lead to surface-disturbing actions that can negatively impact plant communities and species, including those with special status. Direct impacts include habitat degradation from vegetation removal and an increased potential for the spread of noxious weeds.

Construction and operation associated with activities would result in both temporary and permanent disturbances. Impacts on plant communities and species resulting from activities within desert tortoise habitat (such as construction of new facilities and maintenance of existing facilities) could include short-term effects resulting from physical disturbance (for example, removal or trampling) during construction and long-term effects resulting from habitat modification and fragmentation from the construction of linear

features such as roads, utility lines, and fencing. The degree of each impact would depend on the activity proposed.

Ground-disturbing activities can also initially exacerbate the spread of noxious weeds. Operations associated with activities can result in long-term impacts on plant communities and species as vehicles traveling to and from a site pose a continuing threat of introducing noxious weeds; also, the ongoing disturbance of substrates at a site can facilitate the noxious weeds' growth and spread off-site. Continued management activities would be necessary to prevent the spread of noxious weeds away from the project site, which, in turn, would benefit native plant community and species' resilience over the long term.

For some activities, proponents could apply pesticides during construction and operation to control noxious weeds. Such applications would comply with the Federal Insecticide, Fungicide, and Rodenticide Act and the State's equivalent requirements. Using pesticides as directed by label requirements should substantially reduce or eliminate the risk of noxious weeds spreading from a work area. The use of pesticides, particularly if not applied according to label requirements, would pose a threat to native plant communities and special status species, including federally listed species.

Project design features and strict compliance with label restrictions would likely eliminate the exposure of native plant communities and special status species, including federally listed species, to pesticides. If a federally listed plant species was present, the Service would work with the proponent to devise specific measures to avoid or limit exposure of the listed plant to the pesticide and consult internally, pursuant to section 7(a)(2) of the ESA, as described in section 1.5.1, *Federal Endangered Species Act*, to ensure the issuance of that incidental take permit was not likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of critical habitat.

Individuals of a BLM special status plant species may occur within a development or mitigation site. If the Service is aware of such occurrence on a project site in the permit area, it would recommend protective measures to the proponent. The Service has no legal authority over plant species that are not federally listed; consequently, it cannot require a proponent to implement protective measures or refuse to issue an incidental take permit if the proponent has met the issuance criteria. If the BLM special status plant species were present on BLM-administered land where mitigation is proposed, the BLM would address any issues that may arise during its review of the mitigation. If the BLM special status plant species were present in an area proposed for mitigation that the BLM does not manage, the Service would recommend protective measures for the project proponent to implement while conducting the mitigation.

The measures that a project proponent takes to avoid, minimize, or mitigate effects on the desert tortoise may affect native plant communities and species, including those with special status. For example, if a project proponent avoids construction in an area that supports desert tortoises, the plant community and species in that area would not be disturbed by that activity. Also, if a project proponent mitigates the effects of the proposed action because of an incidental take permit from the Service, the acquisition of habitat to be managed for conservation would protect plant communities and species in that area. The restoration of habitat as a mitigation measure may also improve the condition of the restored area for native plant communities and species.

Conversely, some actions that a proponent would undertake to reduce the take of desert tortoises may adversely affect native plant communities and species. For example, constructing a fence to exclude desert tortoises from a work area and excavating burrows to protect desert tortoises from construction would

disturb native plant communities and species. However, the effects of such minimization measures on native plant communities and species would be negligible in comparison to those of the project itself; also, the protective measures for the desert tortoise would occur in areas that are likely to be disturbed by the project. Restoration of desert tortoise habitat as mitigation has the potential to adversely affect native plant communities and species; however, the Service and land manager would avoid adverse effects on native plant communities and species as much as possible. Land acquisition and protection as mitigation would benefit native plant communities and species because it would remove any threat of future development.

Local and state agencies evaluate the effects of proposed actions on native plant communities and species, including those with special status, under the CEQA. Depending on various circumstances, these reviews could result in the avoidance, minimization, and/or mitigation of the effects of development on native plant communities and species.

Alternative 1: No Action

Under the no action alternative, the Service would continue to process applications for incidental take permits for the desert tortoise without the streamlining offered by the GCP. Effects on native plant communities and species, including those with special status, would be the same as those described in *Impacts Common to All Alternatives*.

Alternative 2: Proposed Action

Within the permit area, impacts on native plant communities and species, including those with special status, resulting from covered activities under alternative 2, the proposed approval and use of the GCP, would be the same as those described under *Impacts Common to All Alternatives*.

Mitigation resulting from the issuance of incidental take permits under alternative 2 would have the same general effect on native plant communities and species, including those with special status, as described in *Impacts Common to All Alternatives*, except that mitigation would occur only in the mitigation area as defined in the GCP. Concentrating mitigation within the mitigation area could likely result in improved conditions for native plant communities and species there; this is because the effects of mitigation for the desert tortoise, as described in *Impacts Common to All Alternatives*, would occur in a smaller area than all desert tortoise habitat in California. Conversely, native plant communities and species that do not occur in the mitigation area would not benefit from mitigation for the desert tortoise. Because mitigation under alternative 2 would only occur on lands that have conservation management as a primary goal and objective (that is, BLM ACECs and CDNCLs, NPS lands, and lands managed by other conservation groups that models suggest are high-quality desert tortoise habitat), the overall benefit of focusing mitigation on these lands is greater than the negative effect of not implementing mitigation on the larger area of all desert tortoise habitat.

Alternative 3: Reduced Mitigation Area

Within the permit area, impacts on native plant communities and species, including those with special status, from covered activities under alternative 3 would be the same as described under *Impacts Common under All Alternatives*.

Mitigation resulting from the issuance of incidental take permits under alternative 3 would have the same general effect on native plant communities and species, including those with special status, as described in *Impacts Common to All Alternatives* and as described under alternative 2 with one exception. Under alternative 3,

mitigation stemming from incidental take permits issued under the GCP would not occur within the boundaries of BLM ACECs that are outside CDNCLs. Specifically, approximately 7,664,800 acres would be available for mitigation as opposed to the approximately 8,610,100 available acres under alternative 2.

As with alternative 2, concentrating mitigation within the mitigation area would likely result in improved conditions for native plant communities and species, including those with special status. This is because the effects of mitigation for the desert tortoise, as described in *Impacts Common to All Alternatives*, would occur in a smaller area than all desert tortoise habitat in California. Conversely, native plant communities and species, including those with special status, that do not occur in the mitigation area would not benefit from mitigation for the desert tortoise. Because mitigation under alternative 3 would only occur on lands that have conservation management as a primary goal and objective (that is, CDNCLs, NPS lands, and lands managed by other conservation groups), the overall benefit of focusing mitigation on these lands would be greater than the negative effect of not implementing mitigation on the larger area of all desert tortoise habitat. However, the difference between alternatives 2 and 3 in beneficial effects on native plant communities and species, including those with special status, would likely be negligible; this is because these benefits would be indirect, and the amount of mitigation likely to occur under the GCP would cover a relatively small portion of the mitigation area under either alternative.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions that have affected and would continue to affect plant communities, special status species, and noxious weeds in the cumulative impacts analysis area are as follows: urban development, conservation actions, resource management plans and land use plans, renewable energy projects, mining, other development such as roads and ROWs, and recreation. Construction, operation, and maintenance of renewable energy projects, mining, and other development actions have removed vegetation and disturbed soils, increased the potential for noxious weed establishment and spread, degraded and fragmented habitat, and disturbed native plant communities and species in the cumulative impacts analysis area; these would also continue to do so. Those impacts on native plant communities and species are described in further detail under *Impacts Common to All Alternatives*.

Currently, lands within the planning area designated as ACECs or CDNCLs are managed with goals and objectives protecting natural and cultural resources, including plants and special status plants. Other lands within the planning area acquired and managed by the BLM or other organizations for desert tortoise conservation also benefit native plant communities and species whose habitat ranges overlap that of the desert tortoise. These actions may help to improve management of native plant communities and species within the planning area. These land use plans will continue to dictate the management of certain areas within the planning area, with impacts varying based on specific plan goals and objectives. These plans will continue to be updated to reflect best management decisions for current conditions.

Ongoing human uses of the planning area, such as recreation (including off-road recreation), dispersed camping, and other human uses, degrade habitat and destroy individual plants; motorized and nonmotorized vehicles, foot traffic, and equestrian use can cause these impacts. Other impacts include localized ground disturbance and vegetation removal, which contribute to the introduction and spread of noxious weeds, which degrade plant communities. Development, maintenance, and improvements associated with recreation projects will likely continue due to the increase in visitation to BLM- and NPS-administered land within the planning area. Thus, impacts on native plant communities and species from recreation will likely increase.

The measures to minimize and mitigate impacts on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through use of the GCP (alternatives 2 and 3) would contribute to the cumulative impacts on native plant communities and species, in combination with the impacts of the other past, present, and reasonably foreseeable future actions described above. The contribution to these cumulative impacts from the minimization and mitigation measures associated with the desert tortoise (for example, installing fences to protect desert tortoises and temporary disturbance while restoring habitat) would have a limited adverse impact on native plant communities and species in the planning area relative to other human activities, such as the construction, operation, and maintenance of various types of facilities and recreation. These desert tortoise-associated measures would have beneficial impacts on native plant communities and species in the mitigation area because measures to protect desert tortoises would extend to native plant communities and species, at least to some degree. These beneficial impacts would not differ substantially among the three alternatives but would likely have the greatest impacts under alternative 2 and the fewest impacts under the no action alternative.

3.4 WATER RESOURCES, INCLUDING FLOODPLAINS AND RIPARIAN AREAS

3.4.1 Affected Environment

Hydrologic Setting

The regional topography and climate shape the hydrologic setting. Approximately 94 percent of the planning area falls within the Basin and Range physiographic province,[12] which is characterized by intermittent mountain ranges and desert valleys (Planert and Williams 1995; NPS 2020). The western edge and southern portion of the planning area overlap the Cascade-Sierra Mountains, Lower California, and Pacific Border provinces. The elevation ranges from near sea level to approximately 7,300 feet above mean sea level.

The northwest portion of the planning area is within the South Lahontan region[13] and includes the Mojave Desert, which is characterized by extreme daily temperature ranges and low precipitation and humidity (CDWR 2014 2021). Annual rainfall averages 10 inches or less, and most precipitation falls during the winter months of November to March. Groundwater accounts for approximately two-thirds of the region's urban and agricultural supply (CDWR 2021).

The southeast portion of the planning area is within the Colorado River region and includes the Colorado/Sonoran Desert, which is lower in elevation, is typically hotter and drier, and seldom experiences subfreezing temperatures and frost, compared to the Mojave Desert. Average annual precipitation is approximately 6 inches in this region. A substantial portion of the annual rainfall in the Colorado/Sonoran Desert occurs during the monsoon season from July to late September (CDWR 2002, 2021). About 75 percent of the region's urban and agricultural water supply comes from the Colorado River. Groundwater provides an additional 8 percent of supply in normal years (CDWR 2021).

[12] The contiguous United States are divided into physiographic provinces according to their geomorphology. A physiographic province is a geographic region with a characteristic geomorphology in which the climate and geological factors have given rise to a variety of landforms different from those of surrounding regions. Each province has specific characteristics, topographic relief, and physical environments that contribute to its uniqueness (NPS 2020).

[13] State and regional water boards are responsible for protecting California's water resources. California is divided into nine hydrologic regions based on major watersheds.

Surface Water

The planning area spans seven six-digit hydrologic unit code (HUC 6) basins: 180902 (Northern Mojave), 181001 (Southern Mojave), 150301 (Lower Colorado), 181002 (Salton Sea), 160600 (Central Nevada Desert Basins), 180901 (Mono-Owens Lakes), and 180701 (Ventura-Gabriel Coastal). The majority of the planning area falls with the Northern Mojave (50 percent of the planning area), Southern Mojave (29 percent), and Lower Colorado (13 percent) basins. Major hydrologic features in the planning area include the Mojave River and numerous closed watersheds that drain to seasonally dry lake beds. There are approximately 40 miles of perennial streams and 1,400 miles of intermittent streams in the planning area. The primary water features are ephemeral drainages, which include approximately 34,900 miles of mapped ephemeral streams and washes. These surface water features function as areas of overland flow, collection, and recharge areas for the surrounding watershed (FWS GIS 2024; USGS 2023).

There are approximately 82 miles of US Environmental Protection Agency (EPA) 303(d)-listed impaired waters and approximately 100 acres of EPA 303(d)-listed impaired waterbodies within the planning area (Service GIS 2024; CDWR 2022). Several reaches of the Mojave River are listed as impaired for fluoride, sodium, sulfates, fluoride, manganese, dissolved oxygen, and total dissolved solids. Several reaches of the Amargosa River are listed as impaired for arsenic. Little Rock Creek Reservoir is listed as impaired for manganese, mercury, and polychlorinated biphenyls (CDWR 2022).

Approximately 446,900 acres (4 percent) of the planning area are in designated flood zones (FEMA 2023; Service GIS 2024). Flood hazards in Zone A, AE, AH, and AO areas overlap 3 percent of the planning area (327,300 acres). Zone A, AE, AH, and AO areas are considered high-risk areas and are classified as being susceptible to floods between the 100- and 500-year events. Flood hazards in Zone X areas overlap 1 percent of the planning area (119,500 acres). Zone X areas are considered low- to moderate-risk areas and are classified as being susceptible to floods between the 500-year events (FEMA 2023).

Based on the Southwest Regional Gap Analysis Project land cover data and the National Wetland Inventory wetland data, there are approximately 1,600 acres of forested/shrub riparian areas and 24,000 acres of palustrine wetlands[14] in the permit and mitigation area. These are summarized below in table 3-8.

Table 3-8. Wetland Types and Riparian Areas

Wetland and Riparian Type	Mitigation Area (acres)	Permit Area (acres)
Freshwater forested/shrub wetland	6,400	5,700
Freshwater pond	1,600	7,500
Freshwater emergent marsh	1,000	1,900
Forested/shrub riparian	200	1,400

Source: Service GIS 2024

[14] Palustrine wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 parts per thousand. They also include wetlands lacking such vegetation, but with all of the following four characteristics: (1) the area is less than 20 acres; (2) active wave-formed or bedrock shoreline features are lacking; (3) the water depth in the deepest part of the basin is less than 6.6 feet at low water; and (4) salinity due to ocean-derived salts is less than 0.5 parts per thousand (Service 1993).

Groundwater

The planning area encompasses 107 groundwater basins situated within the South Lahontan and Colorado River hydrologic regions (CDWR 2021). Table 3-9 summarizes the descriptions for the two hydrologic regions in the planning area.

Table 3-9. Hydrologic Regions in the Planning Area

	South Lahontan	Colorado River
Water use	0.58 maf	0.24 maf
Basins required to submit a groundwater sustainability plan	Indian Wells Valley	Borrego Valley – Borrego Springs, Coachella Valley – Indio, Coachella Valley – Mission Creek
Groundwater-level trends	Declining or stable	Declining
Groundwater contaminants	Arsenic, radon-222, iron, 1,2,3-Trichloropropane (TCP), gross alpha radioactivity, and uranium	Iron, 1,2,3-TCP, and 1,2-Dibromo,3-Chloropropane

Source: CDWR 2021

In the South Lahontan region, the annual average water consumption[15] is 0.58 million acre-feet (maf), constituting 1 percent of California's overall water usage. Groundwater contributes significantly to the region's water supply, accounting for 74 percent, yet it only comprises 2 percent of the statewide groundwater usage. Of the 81 basins of this region, the Sustainable Groundwater Management Act mandates one specific basin, Indian Wells Valley, to submit a groundwater sustainability plan. This basin is additionally labeled as critically over-drafted; it is in within the planning area (CDWR 2014, 2015, 2021).

The Colorado River region uses an average of 0.24 maf in annual groundwater consumption. Groundwater plays a minor role in this region, constituting only 6 percent of the total water supply; this is the lowest among all hydrologic regions. Among the 70 groundwater basins in the area, the Sustainable Groundwater Management Act mandates four to submit groundwater sustainability plans: Borrego Valley – Borrego Springs, Coachella Valley – San Gorgonio Pass, Coachella Valley – Indio, and Coachella Valley – Mission Creek. Notably, three of these basins—Borrego Valley – Borrego Springs, Coachella Valley – Indio, and Coachella Valley – Mission Creek—are within the planning area (CDWR 2021).

In areas of the South Lahontan region where groundwater data are available, the groundwater-level trends show a mix of declining and stable conditions. Between 1998 and 2018, 41 percent of wells exhibited a decreasing trend of up to 2.5 feet per year, while 44 percent maintained stable groundwater levels. Approximately 13 percent of wells displayed increasing levels of up to 2.5 feet per year, marking the second-highest percentage of increasing trends among all regions during this period. In the Colorado River region, where groundwater data are accessible, many wells are experiencing declining groundwater levels. Over the same period, 58 percent of groundwater-level monitoring wells in the region displayed a declining trend of up to 2.5 feet per year. Notably, no wells indicated a more severe decline than 2.5 feet per year, distinguishing this region as the only one in the state without such severe declines. The remaining 42 percent of wells in the Colorado River region were split between a stable trend (21 percent) and an increasing trend (21 percent), making it the region with the highest number of wells showing an increasing groundwater trend during this period (CDWR 2021).

[15] Annual average water consumption is the annual average amount of water withdrawn and used for industrial, agricultural, urban, and domestic purposes (CDWR 2021).

Information on groundwater quality conditions in California's hydrologic regions is available through the State Water Board's Groundwater Ambient Monitoring Assessment Program (CDWR 2021). In the South Lahontan region, between 2009 and 2018, arsenic was the most frequently detected chemical exceeding regulatory limits, surpassing its maximum contaminant level (MCL) in 14.7 percent of wells. Notably, the South Lahontan region had the highest percentage of wells detecting arsenic above its MCL compared to any other hydrologic region. Radon-222, found in 12.6 percent of wells, was the second-most detected chemical above regulatory limits during this period. Six chemicals (arsenic, radon-222, iron, 1,2,3-TCP, gross alpha radioactivity, and uranium) were above their MCL or secondary MCL in 10 percent or more of wells tested in the South Lahontan region between 2009 and 2018 (USGS 2012; CDWR 2021).

In the Colorado River region, iron, identified in 10.6 percent of water quality stations between 2009 and 2018, was the most frequently detected chemical above the secondary MCL. The second-most detected chemical above the regulatory limit during this period was 1,2,3-TCP, which was found above the MCL in 10.5 percent of wells tested. Only three chemicals (iron, 1,2,3-TCP, and 1,2-Dibromo,3-Chloropropane) were identified above their MCL or secondary MCL in 10 percent or more of water quality stations in the region between 2009 and 2018; this was the lowest occurrence among all of California's hydrologic regions (USGS 2014; CDWR 2021).

3.4.2 Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, individual development proposals with associated ground disturbance (as described in table 2-2) would contribute to impacts on water resources. Activities involving ground disturbance would result in soil disturbance and vegetation removal, increasing soil compaction and erosion. Soil compaction decreases infiltration rates and increases overland flow, encouraging the transport of pollutants and eroded sediment to water resources. These impair water quality due to increased contamination and turbidity.

Changes to drainage patterns and floodplains from surface disturbance and vegetation loss further impact water resources. As drainage patterns change, runoff critical to recharging streams, springs, associated riparian habitats, and locally important aquifers is redirected. As a result, sensitive areas can be dewatered; this compromises vegetation health while also degrading the proper function and condition of the watershed. Impacts would vary based on the duration, intensity, site conditions, and proposed activity during the preconstruction, construction, operations, and maintenance phases.

Individual development proposals would be subject to the terms and conditions of local and state permits and authorizations (see section 2.2, table 2-1, Typical Permits and Authorizations for Nonfederal Actions in California). Mitigation measures and best management practices required by the agency approving or permitting the action would reduce impacts on water resources and could include measures for erosion and sediment control, flood control, spill prevention, stormwater monitoring and response, total maximum daily loads implementation, proper integrated pest management, and proper waste handling and disposal. Direct impacts on water resources could be avoided based on final siting and design of individual facilities.

Impacts on surface water resources, floodplains, wetlands, and riparian areas from preconstruction and construction activities could include increased sedimentation from increased soil compaction and erosion due to ground-disturbing activities and vegetation loss. Increased sedimentation could also occur from

road runoff and modifying stream channels and floodplains from road crossings, bridges, and culverts. Accidental spills of harmful substances could also contaminate surface water resources, wetlands, and riparian areas, increasing water quality degradation. Activities that involve developing temporary or permanent drainage and erosion-control features would help mitigate extensive soil erosion and reduce impacts on surface water resources, floodplains, wetlands, and riparian areas.

Impacts on groundwater resources from preconstruction and construction would be limited, in that water requirements would be temporary and other options for sourcing water, such as piping or trucking water in, exist. Accidental spills of harmful substances could contaminate shallow groundwater resources, which would increase water quality degradation; however, measures to address this potential would be part of the state and local permitting processes for covered activities.

Impacts on surface water resources, floodplains, wetlands, and riparian areas from operations and maintenance activities would include increased sedimentation from ground-disturbing activities and road runoff. Impacts on groundwater resources from operations and maintenance activities could include groundwater drawdown due to withdrawal for facility operations related to agricultural uses or other covered activities. Accidental spills of harmful substances, the use of pesticides and herbicides, and improper waste handling and disposal could also contaminate surface water resources, wetlands and riparian areas, and shallow groundwater resources; these spills would increase water quality degradation. Operational impacts would be minimized through the terms and conditions of local and state permits and authorizations (see section 2.2, table 2-1, Typical Permits and Authorizations for Nonfederal Actions in California).

Alternative 1: No Action

Under the no action alternative, impacts on water resources would be as described under *Impacts Common under All Alternatives*. Impacts on water resources would continue to be specific to development activities implemented in the planning area. Strategies used to minimize or mitigate impacts on water resources would be developed through required permitting and authorization processes. Projects would continue to adhere to local and state regulations and comply with the CEQA and the Clean Water Act programs administered by the state. Minimization activities similar to those described in table 2-3 that involve ground disturbance, such as installing exclusion fencing and overland travel for desert tortoise monitoring, could lead to localized impacts on water resources in the development areas.

Off-site mitigation activities applied on a case-by-case basis would have limited short-term impacts on water resources that could be similar to those described above for minimization activities. Mitigation activities may indirectly benefit water resources over the longer term to the extent that additional lands are protected from future development or to the extent that habitat restoration reduced the potential for erosion or restored natural flow regimes in the mitigation area.

Alternative 2: Proposed Action

Under the proposed action, impacts on water resources from covered activities in the permit area would be the same as described under *Impacts Common to All Alternatives*. Minimization activities (table 2-3) involving ground disturbance, such as installing exclusion fencing and overland travel for desert tortoise monitoring, could lead to localized impacts on water resources in the permit area. These impacts could include increased sedimentation from soil erosion and compaction. The degree of these impacts would

depend on the specific activity, though they would be less considerable relative to impacts resulting from preconstruction, construction, operations, and maintenance activities (table 2-2).

Impacts on water resources from mitigation activities would be similar to those described under alternative 1 for mitigation areas. Indirect impacts on water resources from mitigation activities would also be as described under alternative 1 but could occur to a greater degree if a comprehensive mitigation approach resulted in more lands conserved or restored through use of the GCP. Additionally, these activities would align, if applicable, with the water resource conservation goals and mitigation measures outlined in the DRECP, California Desert Conservation Area Plan, California Water Plan, and California Watershed Management Initiative (BLM 2016; CDWR 2022, 2014, 2015).

Alternative 3: Reduced Mitigation Area

Under alternative 3, impacts on water resources from covered activities in the permit area would be the same as described under *Impacts Common to All Alternatives*. Impacts on water resources in the permit area, from minimization and mitigation measures for the desert tortoise, would also be the same as described under the proposed action.

Impacts on water resources from mitigation activities would be similar to those described under alternative 1 for mitigation areas. Benefits to water resources would be as described for alternative 2 but could occur in fewer areas given the reduced mitigation area of 7,664,800 acres for alternative 3, compared to the 8,610,100 acres for alternative 2 (see table 2-4. Comparison of the Action Alternatives by County).

Cumulative Impacts

The cumulative impacts analysis area for water resources is the 12-digit hydrologic unit code subwatersheds that overlap the planning area.

Projects and activities identified as having the greatest likelihood of generating potential cumulative impacts, when combined with the alternatives, are displayed in table 3-2. It is assumed that these past, present, and reasonably foreseeable future actions would continue under all alternatives and for all resources. Past, present, and reasonably foreseeable future actions affecting water resources in the cumulative impacts analysis area are as follows: human development, conservation actions, resource management plans and land use plans, recreation, renewable energy projects, mining projects, and other development such as roads and ROWs. Construction, operation, and maintenance of most of these actions have, and would continue to, disturb vegetation and soils, resulting in increased erosion, sedimentation, altered drainage patterns, surface water runoff, and consequent degradation of the quality and function of surface water resources, wetlands, riparian areas, and floodplains.

The development activities, whether under the no action alternative or one of the action alternatives, would minimally contribute to the cumulative impacts on water resources from past, present, and reasonably foreseeable projects in the planning area. The mitigation measures required by the state or local permitting agency with authority over the proposed project as a whole would minimize, but not completely avoid, the contribution to cumulative impacts at the project-specific level.

The measures to minimize and mitigate the impacts of incidental take on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through use a GCP (alternatives 2 and 3)

would contribute to cumulative impacts on water resources to, at most, a negligible degree when considered in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area. Based on past experience, the Service anticipates such minimization and mitigation measures would not affect water resources. Mitigation activities under alternatives 2 and 3, in combination with other conservation activities, may indirectly benefit water resources over the longer term more than under alternative 1 to the extent that restoration activities help restore natural flow regimes or conserve areas from future development.

3.5 SOIL RESOURCES

3.5.1 Affected Environment

The planning area contains mostly fine to gravelly sandy to loamy[16] soils and predominantly flat topography. Soils are well drained to excessively well drained and receive an annual average precipitation of 6 to 8 inches. Soils are derived from granitic to mixed alluvium. They are found on alluvial features, including fans, historical and active stream terraces, and floodplains of intermittent streams. Soils are aridic to xeric,[17] generally remaining dry with periods of moisture in the winter and spring, and intermittent moisture following summer thunderstorms.

The planning area does not contain major geological features, but notable geomorphic features throughout the planning area include river washes, playas, rock outcrops, and gravel pits (USDA NRCS 2024a). Previous reports state that the planning area also contains biological soil crusts, though these have not been mapped in detail (Service 2011). Biological soil crusts, or biocrusts, are present on soil surfaces in semiarid to arid ecosystems. They may consist of mosses, cyanobacteria, lichens, algae, and microfungi. Biocrusts provide ecological functions in soil and contribute to the organization of plant and soil communities. They also provide physical stability and structure to soils (USGS 2001; Belnap 2006).

Wind erosion is an important geomorphologic process in desert environments (Belnap et al. 2006). The United States Department of Agriculture Natural Resources Conservation Service categorizes soils by wind erodibility groups to indicate the groups' susceptibility to erosion by wind. Wind erodibility groups are numbered from 1 to 8, with soils assigned to group 1 being the most susceptible to wind erosion, and those assigned to group 8 being the least susceptible. The US Department of Agriculture has only mapped approximately 30 percent of the planning area, including 63 percent of the permit area and 10 percent of the mitigation area. Based on available data, roughly 26 percent and 18 percent of soils within the permit area are classified as wind erodibility groups 2 and 3, respectively (USDA NRCS 2024a). This is due to the widespread presence of very fine to fine sandy and loamy soils throughout the planning area; soils characterized by larger grain sizes tend to be more resistant to wind erosion (USDA NRCS 2002).

Soils on steep slopes (a gradient of at least 10 percent) may be particularly prone to destabilization and erosion when disturbed by wind, precipitation, or human activity. Much of the planning area would not be

[16] Sandy soils are defined as containing more than 85 percent sand-sized particles (between 0.06 to 2 millimeters, or 0.002 to 0.8 inches). Loamy soils are a combination of sand, silt, clay, and organic matter. More information regarding soil composition is provided by Needelman (2013) at https://www.nature.com/scitable/knowledge/library/what-are-soils-67647639/.

[17] Aridic soils are formed in dry conditions and experience little or no leaching of moisture. Xeric soils occur in climates characterized by hot, dry summers and cool, moist winters (USDA NRCS, n.d.). More information regarding soil classifications is provided by the US Department of Agriculture Natural Resources Conservation Service at https://www.nrcs.usda.gov/resources/guides-and-instructions/soil-classification.

vulnerable to slope erosion, as approximately 79 percent of the permit area and 74 percent of the mitigation area are characterized by slope gradients of 5 percent or less.

Soils may be susceptible to compaction from the operation of ground-based equipment for site preparation activities. Soil compaction occurs when soil particles are pressed together more closely relative to their original state. Soils are more susceptible to compaction when they are wet because saturated soils lack adequate strength to resist deformation inflicted by external pressure (USDA Soil Quality Institute 2003). Compaction reduces the abundance mostly of large pores in the soil by damaging the soil structure, which prevents water and air from infiltrating and percolating through the soil. Thus, compaction hinders soil's ability to hold water, in addition to increasing the soil strength, bulk density, and hardness.[18] In the long term, the decreased porosity and permeability lead to increased runoff and consequently increased soil erosion (USDA Soil Quality Institute 2003). These changes may also adversely affect plant growth because they create unfavorable conditions for root penetration and the storage of nutrients, air, and water (USDA NRCS 2024b).

Soil susceptibility to compaction depends on a variety of factors, including the soil composition, texture, and moisture (USDA NRCS 2003). Data related to soil susceptibility to compaction were incomplete or not available for the planning area. However, because soil saturation influences compaction, the estimated soil infiltration rate can be used to approximate susceptibility to compaction in wet conditions. The US Department of Agriculture created hydrologic soil groups based on estimates of runoff potential. Soils are assigned to one of four groups (group A, group B, group C, or group D) according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Some soils have a dual hydrologic group, such as "C/D." For these ratings, the first letter is for drained areas and the second letter is for undrained areas. Group A soils have a high infiltration rate when thoroughly wet, which decreases the likelihood of saturation following a precipitation event. The lack of or reduced saturation in turn may decrease soil susceptibility to compaction (USDA NRCS 2024b).

Only 63 percent of the permit area and 10 percent of the mitigation area have been mapped for hydrologic soil groups, which are shown in table 3-10. Approximately 38 percent of the permit area consists of group A soils, which is consistent with the widespread presence of soil units classified as well drained to excessively well drained. Roughly 13 percent of soils in the permit area are classified as group C, meaning they have a slow infiltration rate and may be more susceptible to compaction following precipitation events. Group B and group D soils each make up approximately 5 percent of the permit area.

Additionally, based on available information, it can be assumed that the sandy to loamy soils in the planning area would be at least somewhat susceptible to compaction, particularly following precipitation events.

[18] Soil strength and hardness refer to a soil's capacity to withstand a structural load without deformation. Soil bulk density is defined as the mass of dry soil per unit bulk volume, and can reflect the amount of open space present in a soil.

Table 3-10. Hydrologic Soil Groups in the Planning Area

Hydrologic Soil Group Classification*	Description	Acres in the Planning Area
Group A	Soils have a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well-drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.	Permit Area: 994,000 Mitigation Area: 481,900
Group B	Soils have a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained or well-drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.	Permit Area: 129,800 Mitigation Area: 65,500
Group C	Soils have a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.	Permit Area: 252,900 Mitigation Area: 79,600
Group D	Soils have a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.	Permit Area: 157,100 Mitigation Area: 206,100

Source: USDA NRCS 2024a, 2024b

* Note: The permit area also contains approximately 700 acres of Group C/D soils.

3.5.2 Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, individual development proposals with associated ground disturbance (see section 2.3.1) would contribute to soil compaction and erosion. Impacts are less likely to affect steep slopes or alluvial features; this is because development proposals would tend to occur on flat topography and avoid floodplains, washes, and fans.

The earthmoving operations that would comprise the preconstruction and construction activities described in table 2-2 would disturb and displace soils at varying depths, depending on site conditions and the proposed activity. Actions such as excavation, grading, and boring would entail considerable soil removal and loosening, which lead to localized erosion. Fine soils that are loosened would likely become more susceptible to wind erosion. Preconstruction and construction activities may also degrade or destroy biocrusts, which are on soil surfaces. Removal of biocrusts, which provide soil stability and structure, could leave underlying, less consolidated soils vulnerable to wind and water erosion. Literature suggests that the soil loss and disturbance that would result from these activities would be long term, on the scale of years to decades (Belnap 2006). Activities that involve developing temporary or permanent drainage and erosion-control features would help mitigate extensive soil erosion and soil loss.

Heavy equipment used for preconstruction and construction activities would also contribute to soil and biocrust compaction, which would vary depending on local soil characteristics (including soil texture, wetness, and bulk density) and the extent of equipment use.

Impacts from operations and maintenance activities involving ground disturbance would likely be limited to a relatively shallow depth compared to preconstruction and construction activities. They also would include localized disturbance, erosion, and compaction of topsoil. Long-term destabilization and loss of topsoil and biological soil crusts could result in erosion and further soil loss. Depending on the activity, disturbance from operations and maintenance activities could exacerbate wind erosion of fine topsoil as soil particles are dislodged by ground equipment, vehicles, and foot traffic. The movement and stationing of heavy equipment would contribute to localized soil compaction. In the long term, soils that become increasingly compacted over time would lose their capacity to retain water and become more prone to erosion.

Under all alternatives, development proposals would be subject to the terms and conditions of local and state permits and authorizations (see section 2.2, table 2-1). Mitigation measures and best management practices, including measures for erosion and sediment control, would reduce impacts on soil resources, while direct impacts on could be avoided based on final siting and design of individual facilities.

Alternative 1: No Action

Under the no action alternative, impacts on soil resources would be as described under *Impacts Common to All Alternatives*. Measures to minimize impacts would be developed through individual permitting and approval processes and required as conditions of approval, as described above. Desert tortoise minimization activities similar to those described in table 2-3 that involve ground disturbance, such as installing exclusion fencing and overland travel for desert tortoise monitoring, could lead to localized impacts on soil resources in the development areas through disturbance similar to other preconstruction and construction activities.

Off-site mitigation activities applied on a case-by-case basis would have limited short-term impacts on soil resources that could be similar to those described above for minimization activities. Mitigation activities may indirectly benefit soil resources over the longer term to the extent that additional lands are protected from future development or to the extent that habitat restoration reduced the potential for soil erosion.

Alternative 2: Proposed Action

Under the proposed action, impacts on soil resources from covered activities would be as described under *Impacts Common to All Alternatives*. Some minimization activities listed in table 2-3 may involve ground disturbance. Associated impacts on soil resources could include topsoil and biological soil crust disturbance and compaction localized to the area of the activity.

Impacts on soil resources from mitigation activities would be similar to those described under alternative 1 for mitigation areas. Indirect impacts on soil resources from mitigation activities would also be as described under alternative 1 but could occur to a greater degree if a comprehensive mitigation approach resulted in more lands conserved or restored through use of the GCP. In addition, these mitigation activities would adhere to any applicable soil conservation goals and mitigation measures outlined in the California Desert Conservation Area Plan and the DRECP for mitigation activities on BLM-administered lands, or to the requirements of applicable land use plans for lands under other jurisdictions.

Alternative 3: Reduced Mitigation Area

Under alternative 3, impacts on soil resources would be the same as those under alternative 2, except indirect benefits on soil resources from conservation and habitat restoration would occur in fewer areas given the reduced mitigation area.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions that would contribute to the highest degree of soil erosion, soil loss, and compaction include human developments, including roads and ROWs; mining; and renewable energy. Impacts from recreation, conservation actions, other HCPs, and resource management and land use plans would likely generate fewer cumulative impacts. However, these cumulative impacts would depend on the nature of the action. For example, recreational off-highway vehicle use would likely impact soils more than nonmotorized recreation.

Development of individual projects (alternative 1) and covered activities (alternatives 2 and 3) would minimally contribute to cumulative impacts on soil resources in the planning area. Implementing best management practices; avoidance, minimization, or mitigation measures; and design features required by the state or local permitting agency with authority over the proposed project as a whole would minimize, but not completely avoid, the contribution to cumulative impacts at the project-specific level.

The measures to minimize and mitigate the impacts of incidental take on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through use of a GCP (alternatives 2 and 3) involving ground disturbance as described above would contribute to cumulative impacts on soil resources to, at most, a negligible degree when considered in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area. Mitigation activities under alternatives 2 and 3, in combination with other conservation activities, may indirectly benefit soil resources over the longer term more than under alternative 1 to the extent that restoration activities help restore more natural soil regimes or conserve areas from future development.

3.6 AIR QUALITY, GREENHOUSE GASES, AND CLIMATE CHANGE

3.6.1 Affected Environment

Air Quality

Air quality is assessed by comparing the concentrations of air pollutants in the ambient atmosphere with national and local air quality standards. Ecological factors, such as wind, temperature, humidity, geographic features, and vegetation, as well as wildland fire and human-related activities, have the potential to affect air quality. Air pollutants addressed in this document include criteria air pollutants, hazardous air pollutants, fugitive dust, and sulfur and nitrogen compounds, which could contribute to visibility impairment and atmospheric deposition.

Under the Clean Air Act (42 USC 7401 et seq.), the EPA has the primary responsibility for regulating air quality. The EPA sets national ambient air quality standards (NAAQS) for six criteria pollutants: sulfur dioxide, nitrogen dioxide, carbon monoxide, ground-level ozone, particulate matter (particulate matter with aerodynamic diameter of 10 micrometers or smaller [PM_{10}] and particulate matter with aerodynamic diameter of 2.5 micrometers or smaller [$PM_{2.5}$]), and lead. The NAAQS established primary standards to protect public health and secondary standards to protect public welfare, which can include effects on the

environment.[19] Volatile organic compounds, which are a precursor to ozone, do not have NAAQS; however, because many are also hazardous air pollutants,[20] they are regularly monitored.

California has established the California ambient air quality standards (CAAQS)[21] that are more stringent than the NAAQS for most criteria pollutants. In addition, California has set standards for visibility-reducing particles, sulfate, hydrogen sulfide, and vinyl chloride, which are not addressed by the NAAQS. The CARB has the responsibility to regulate and monitor air quality in California and ensure compliance with the NAAQS and CAAQS. The planning area is within the Mojave Desert air basin, San Diego County air basin, Salton Sea air basin, and Great Basin Valleys air basin. An air basin generally has similar meteorological and geographic conditions throughout the basin.

California local air districts are the CARB's primary partners that are responsible for regional air quality planning, monitoring, and stationary source and facility permitting. The Imperial County Air Pollution Control District (APCD) oversees Imperial County, the Great Basin Unified APCD oversees Inyo County, the Eastern Kern APCD and the San Joaquin Valley APCD oversee Kern County, the Antelope Valley AQMD and the South Coast AQMD oversee Los Angeles County, the Mojave Desert AQMD and South Coast AQMD oversee Riverside and San Bernardino Counties, and the San Diego County APCD oversees San Diego County (CARB 2024a). The CARB and the air districts operate numerous ambient air monitoring stations in the planning area within each air basin (table 3-11).

Areas where air pollution levels persistently exceed the ambient air quality standards may be designated as "nonattainment." According to the data collected by the monitoring stations on background concentrations of criteria pollutants, the planning area overlaps nonattainment areas for the federal 8-hour ozone standard in Imperial, San Diego, Riverside, San Bernardino, Los Angeles, and Kern Counties. The planning area also overlaps nonattainment areas for the federal PM_{10} standard in Imperial, Riverside, San Bernardino, and Kern Counties (EPA 2023b). The entire planning area across all seven counties is designated as nonattainment for both 8-hour ozone and PM_{10} state standards (CARB 2024b).

The planning area has favorable conditions for high ozone production, such as high temperatures, intense solar radiation, and little precipitation. Large areas of barren lands and agricultural lands in the planning area contribute to higher particulate matter concentrations under high winds. Particulate matter concentrations are dominated by windblown dust from paved and unpaved roads, agricultural activities, construction activities, and dust transported from the nearby densely populated cities of Los Angeles, Riverside, San Bernadino, and San Diego.

[19] Current NAAQS tables can be found on the EPA's website at https://www.epa.gov/criteria-air-pollutants/naaqs-table.
[20] Hazardous air pollutants, also known as toxic air pollutants or air toxics, include 188 pollutants that are known or suspected to cause cancer and noncarcinogenic respiratory effects, as well as other serious health effects, such as reproductive effects or birth defects, and adverse environmental effects.
[21] Current CAAQS tables can be found on the CARB's website at https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards.

Table 3-11. County-Level Criteria Air Pollutant Concentration Estimates

County	Carbon Monoxide (ppm)[1]	Nitrogen Dioxide (ppb)[2]	Ozone (ppm)[3]	PM_{10} ($\mu g/m^3$)[4]	$PM_{2.5}$ ($\mu g/m^3$)[5]	Sulfur Dioxide (ppb)[6]
Imperial	3.1	10	0.077	8.1	11.1	6
Inyo	0.8	—	0.072	8.1	8.8	1
Kern	1.1	22	0.094	6.2	18.8	—
Los Angeles	3.4	25	0.102	0.7	13.4	3
Riverside	1.5	13	0.099	8.0	13.6	2
San Bernardino	1.4	29	0.113	2.8	14.0	2
San Diego	1.3	15	0.079	4.0	10.0	1

Source: EPA 2023a

[1] The level of the 1971 8-hour NAAQS for carbon monoxide is 9 parts per million (ppm) not to be exceeded more than once per year. The value is evaluated over a 2-year period (2021–22). Specifically, the value is the higher of each year's annual second maximum, nonoverlapping 8-hour average.

[2] The level of the 1971 annual NAAQS for nitrogen dioxide is 53 parts per billion (ppb). The design value is the 2022 annual average of the hourly concentration values.

[3] The level of the 2015 8-hour ozone NAAQS is 0.070 ppm. The design value is the 3-year (2020–22) average of the annual fourth-highest daily maximum 8-hour ozone concentration.

[4] The level of the 1987 24-hour PM_{10} NAAQS is 150 micrograms per cubic meter ($\mu g/m^3$). The NAAQS metric is the annual estimated number of exceedances, averaged over 3 consecutive years (2020–22).

[5] The level of the 2012 annual $PM_{2.5}$ NAAQS is 12.0 $\mu g/m^3$. The design value is the annual mean concentration, averaged over 3 consecutive years (2020–22).

[6] The level of the 1-hour NAAQS for sulfur dioxide is 75 ppb. The design value is the annual 99th percentile of the daily maximum 1-hour concentration values, averaged over 3 consecutive years (2020–22).

— denotes "not applicable" or "not available"

The Prevention of Significant Deterioration program (see 40 CFR 52.2) is a regulatory framework in the United States, established under the Clean Air Act. Its primary goal is to prevent the deterioration of air quality in areas that already meet the NAAQS. The Prevention of Significant Deterioration regulations apply to a major new source or modification of an existing major source within an attainment or unclassified area. Proponents for Prevention of Significant Deterioration permits are required to conduct air quality impact assessments, considering factors like visibility and deposition, especially in Class I areas (areas designated to have the highest level of air quality protection, allowing very little deterioration of air quality). Congress has recognized the severity of potential visibility impacts in mandatory Class I areas, deeming it necessary to implement special provisions to safeguard this specific air quality concern. In compliance with section 169A of the Clean Air Act, the EPA has established regulations (40 CFR 51 Subpart P). These regulations mandate that states with mandatory Class I areas must submit implementation plans, ensuring both the prevention of future visibility impairment and the correction of existing visibility issues.

As a matter of policy, the EPA recommends that the permitting authority notify the federal land managers when a proposed Prevention of Significant Deterioration source would be located within 62 miles of a sensitive Class I area. There are nine Class I areas within the planning area: Cleghorn Lakes Wilderness Area, Dead Mountains Wilderness Area, Death Valley National Park, Funeral Mountains Wilderness Area, Joshua Tree National Park, Nopah Range Wilderness Area, San Gorgonio Wilderness, Sheephole Valley Wilderness, and South Nopah Range Wilderness Area (Service GIS 2024). The planning area is also within 62 miles of nine additional Class I areas: Agua Tibia Wilderness, Cucamonga Wilderness, Domeland Wilderness, John Muir Wilderness, Kings Canyon National Park, San Gabriel Wilderness, San Jacinto Wilderness, San Rafael Wilderness, and Sequia National Park (Service GIS 2024).

Climate

The Intergovernmental Panel on Climate Change (IPCC) describes climate change as "a change in the state of the climate that can be identified (for example, by using statistical tests) by changes in the mean and/or the variability of its properties, and persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic (human-induced) changes in the composition of the atmosphere or in land use" (IPCC 2013).

Current ongoing global climate change is caused, in part, by the atmospheric buildup of greenhouse gases, which may persist for decades or even centuries. Although largely invisible to the short wavelength, incoming solar radiation that heats the earth's surface, greenhouse gases absorb a portion of the outgoing, long-wavelength infrared heat radiated back from the surface, preventing it from escaping out into space. As a result, the buildup of greenhouse gases since the start of the Industrial Revolution has increased the global mean temperature and has altered the earth's climate in complex ways.

Warming of the earth's climate since the Industrial Revolution has been observed to coincide with widespread effects throughout the earth-atmosphere system, including reductions in the extent and duration of polar sea ice and mountain winter snowpack, rising sea levels, increases in mean nighttime minimum temperatures, shifts in historical rainfall patterns, and changes in the frequency, severity, and duration of weather events. These effects, in turn, have affected natural and human systems regardless of cause, implicating the sensitivity of natural and human systems to changing climate (IPCC 2021).

The IPCC (2021) has concluded that human activities such as the burning of fossil fuels have caused greenhouse gas concentrations to increase since the mid-18th century and that "it is unequivocal that human influence has warmed the atmosphere, ocean and land." The IPCC's best estimate of the human-caused increase in global surface temperatures, largely through emission of greenhouse gases, is 2 degrees Fahrenheit for the period between 2011 and 2020, relative to the period between 1850 and 1900 (IPCC 2023).

Across the contiguous United States, annual average temperatures have increased by 2.5 degrees Fahrenheit since 1970 (US Global Change Research Program 2023). According to the National Climate Assessment, the largest increases in annual average temperatures since the beginning of the 20th century were observed in the western United States, while annual precipitation has decreased in most of the southern and western United States (US Global Change Research Program 2023).

Climate data show that California has already begun experiencing the effects of climate change, and studies indicate that climate change will continue influencing the natural resources, open spaces, built environment, economy, and recreational opportunities in the state. The average annual temperatures in California have increased by nearly 3 degrees Fahrenheit since the beginning of the 20th century. Multiple record warm years have been recorded in the last decade, and the most recent 10-year period (2011–20) was the warmest on record. Since 1995, California has experienced a below-average number of cold nights and its highest number of very warm nights over the historical record (NOAA 2022).

The planning area is in the desert regions of California, encompassing areas such as the Mojave Desert, Death Valley National Park, and Joshua Tree National Park. These regions exhibit a classic arid climate characterized by intense heat, minimal precipitation, and vast expanses of unique landscapes. Summers in

these regions are scorching, with daytime temperatures soaring well above 100 degrees Fahrenheit. Winters are relatively mild, providing some respite from the extreme heat, although nighttime temperatures can drop considerably. Annual precipitation is sparse, often measuring less than 5 inches, which contributes to the overall aridity and frequent drought conditions. While overall precipitation is low, occasional storms, including thunderstorms, can bring short bursts of heavy rainfall to these desert regions. Flash floods are a concern during intense rain events.

The topography varies, featuring flat plains, rugged mountain ranges, and distinctive geological formations. This variation influences the localized weather patterns and creates microclimates within the broader desert expanse. The vegetation in these areas has evolved to withstand the harsh conditions, showcasing a variety of drought-tolerant plants, succulents, and iconic cacti (see sections 3.3 and 3.5 for additional information on the vegetation and geology, respectively, in the planning area).

California's desert regions are experiencing profound impacts from climate change, manifesting in altered ecological dynamics and heightened environmental stressors. Escalating temperatures contribute to more frequent and severe heat waves, intensifying the arid conditions that define these landscapes. These elevated temperatures exacerbate water scarcity issues, putting additional strain on an already fragile ecosystem. Changes in precipitation patterns, characterized by increased variability and more intense but sporadic rainfall events, contribute to the challenge of sustaining plant and animal life adapted to arid conditions (see section 3.2 and 3.3 for additional discussions of the effects of climate change on wildlife and vegetation, respectively, in the planning area). Desertification becomes a concern as prolonged droughts and reduced water availability affect vegetation cover.

Additionally, the increased frequency and intensity of wildfires, linked to warmer and drier conditions, pose a threat to both natural habitats and human communities in these regions. As climate change continues, the delicate balance of the California desert ecosystems faces disruptions, impacting biodiversity, water resources, and the overall resilience of these unique landscapes. Adaptive strategies and conservation efforts are crucial to mitigate the adverse effects and ensure the long-term sustainability of the desert ecosystems in the face of a changing climate.

The California statewide greenhouse gas emissions totaled 393.4 million metric tons of carbon dioxide equivalent (CO_2e)[22] in 2021. This total was 19.6 million metric tons of CO_2e higher than 2020 levels and 36.6 million metric tons of CO_2e below the 2020 State greenhouse gas limit of 431 million metric tons of CO_2e (EPA 2023c). The 2020 to 2021 increase in emissions was likely due in large part to the economic recovery that took place after the COVID-19 pandemic.

Table 3-12 lists the county-wide greenhouse gas emissions for the planning area counties from the EPA 2020 National Emissions Inventory. Greenhous gas emissions from the planning area counties represented 37 percent of California's 2021 emissions and 39 percent of its 2020 emissions.

[22] CO_2e is a metric defined on the basis of relative strength of each gas to carbon dioxide.

Table 3-12. County-Level Greenhouse Gas Emissions (metric tons per year)

Geographic Area	Carbon Dioxide	Methane	Nitrous Oxide	100-Year CO_2e*	20-Year CO_2e**
Imperial County	2,166,304	742	24	2,194,927	2,234,014
Inyo County	511,363	202	7	519,157	529,783
Kern County	15,150,621	2,561	108	15,256,543	15,391,532
Los Angeles County	65,476,256	69,575	654	67,728,250	71,394,854
Riverside County	12,904,125	11,681	163	13,296,869	13,912,483
San Bernardino County	22,318,134	15,649	234	22,848,357	23,673,081
San Diego County	17,991,212	18,349	208	18,594,892	19,561,904
Total	**136,518,015**	**118,760**	**1,399**	**140,438,995**	**146,697,651**

Source: EPA 2022

*100-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 29.8; nitrogen dioxide = 273, from the IPCC Sixth Assessment Report (IPCC 2021).

**20-year time horizon global warming potentials applied are carbon dioxide = 1; methane = 82.5; nitrogen dioxide = 273, from the IPCC Sixth Assessment Report (IPCC 2021).

3.6.2 Environmental Consequences

Air Quality

Impacts Common to All Alternatives

Under all alternatives, construction activities would impact air quality through ground disturbance and operation of vehicles and machinery. The preconstruction and construction activities described in table 2-2 would involve use of vehicles and heavy equipment. Tailpipe exhaust emissions from heavy equipment (for example, drilling equipment, excavators, bulldozers, graders, and cranes) would include particulate matter, carbon monoxide, and ozone precursor gases, such as volatile organic compounds and nitrogen oxides. Emissions would be temporary and would directly contribute to air quality impacts locally, or indirectly through chemical reactions in the atmosphere (for example, nitrogen oxide and volatile organic compounds chemically react in the atmosphere to create ground-level ozone). In addition, vehicles traveling on unpaved roads would cause fugitive dust along those routes, and surface disturbance during construction would increase the potential for windblown fugitive dust creation near those areas.

Activities would be subject to the NAAQS and CAAQS regulations that require the implementation of emission-control measures. These measures can include dust suppression systems, exhaust filters, and other technologies that help minimize the release of pollutants into the air. Furthermore, regulatory frameworks would require activities to adhere to certain emission standards and environmental guidelines. Compliance with these regulations would minimize the impact of the activity on air quality.

Alternative 1: No Action

Under the no action alternative, impacts on air quality would be as described under *Impacts Common to All Alternatives* and would be specific to development activities implemented in the planning area. The Service would not approve and use the GCP to streamline the incidental take permit process for the desert tortoise in California and the proponent would continue to develop the conservation measures, including any compensatory mitigation, on a project-by-project and piecemeal basis. As a result, the current uses and trends for air quality would continue, as described according to the baseline conditions and trends described under the *Affected Environment*.

Alternative 2: Proposed Action

Under the proposed action, impacts on air quality from covered activities within the permit area would be as described under *Impacts Common to All Alternatives*. Some minimization activities listed in table 2-3 that involve the use of vehicles or heavy equipment or require ground disturbance, such as the installation of exclusion fencing and overland travel for desert tortoise monitoring, would be expected to contribute to localized air quality impacts. The degree of these impacts would depend on the specific activity; however, impacts would be expected to be lower, relative to impacts resulting from the activities listed in table 2-2.

In the mitigation area, impacts on air quality would be minimal. That is because the measures that are proposed to mitigate impacts on desert tortoise in the mitigation area would not generate air emissions over the long term.

Alternative 3: Reduced Mitigation Area

Under alternative 3, air quality impacts would be the same as those under alternative 2.

Climate

Impacts Common to All Alternatives

Under all alternatives, activities, including, but not limited to, commercial, agricultural, residential, industrial, and infrastructure development, as well as operation and maintenance of these activities (see section 2.3.1), would contribute to climate change impacts through emission of greenhouse gases and changes in carbon sequestration within the planning area. The preconstruction and construction activities described in table 2-2 would result in temporary emissions of greenhouse gases from vehicles and heavy equipment. Operation and maintenance activities would result in fuel usage from mostly light-duty vehicles from worker commutes, delivery trips, and construction equipment.

Operation and maintenance emissions would depend on the type of activity. Operation and maintenance of activities, such as operating solar plants and buildings, would require ongoing vehicle emissions. Other activities, such as solar facilities and transmission lines, could involve lower levels of vehicle emissions. Agricultural uses, mining, or quarrying would involve ongoing production of greenhouse gas emissions from vehicles, heavy equipment, and other types of emission sources, such as livestock and waste management.

Alternative 1: No Action

Under the no action alternative, impacts on climate change would be the same as described under *Impacts Common to All Alternatives*, and would be specific to development activities implemented in the planning area. The Service would not approve and use the GCP to streamline the incidental take permit process for the desert tortoise in California and the proponent would continue to develop conservation measures, including any compensatory mitigation, on a project-by-project and piecemeal basis. As a result, the current uses and trends for climate would continue, as described according to the baseline conditions and trends in the *Affected Environment*.

Alternative 2: Proposed Action

Under the proposed action, impacts on climate change from covered activities within the permit area would be as described under *Impacts Common to All Alternatives*. Some minimization activities listed in table

2-3 that involve utilization of vehicles or heavy equipment or require ground disturbance, such as the installation of exclusion fencing and overland travel for desert tortoise monitoring, would be expected to contribute to climate change impacts. The degree of these impacts would depend on the specific activity; however, impacts would be expected to be lower, relative to impacts resulting from the activities listed in table 2-2.

In the mitigation area, climate change impacts from emissions and changes to carbon storage would be minimal. That is because measures that are proposed to mitigate impacts on the desert tortoise in the mitigation area would generally lead to less development and fewer emissions. Habitat restoration would indirectly improve carbon cycling in the planning area. As soils undergo regeneration from restoration efforts, their ability to act as a carbon sink would be increased, meaning they would be able to sequester and store more carbon over time. Carbon sinks play a crucial role in mitigating climate change by absorbing and storing carbon dioxide from the atmosphere, thereby helping to offset the effects of human-induced emissions.

Alternative 3: Reduced Mitigation Area

Under alternative 3, climate change impacts from covered activities and mitigation activities would be the same as those described under alternative 2. While fewer areas would be able for mitigation activities under this alternative, the overall level of restoration and associated carbon cycling benefits is anticipated to be the same.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions that have affected, and would continue to affect, air quality and climate in the cumulative impacts analysis area are as follows: human development, conservation actions, resource management plans and land use plans, recreation, renewable energy projects, mining projects, and other development, such as roads and ROWs. The impacts that these activities have had on air quality in the planning area are reflected by the current conditions described under *Affected Environment*. Reasonably foreseeable large urban development, mining, and renewable energy projects would further contribute to these air quality and climate trends through the emission of criteria air pollutants and greenhouse gases as well as through generation of fugitive dust from during surface-disturbing activities. Some of these emissions would be short term, while other would continue through operational phases.

Development of individual projects (alternative 1) and covered activities (alternatives 2 and 3) would minimally contribute to cumulative impacts on air quality in the planning area. Implementation of emission-reduction measures required by the permitting conditions of state or local agencies of individual projects would reduce, but not completely avoid, the contribution to cumulative impacts at the project-specific level.

The measures to minimize and mitigate the impacts of incidental take on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through implementation of a GCP (alternatives 2 and 3) involving utilization of vehicles or ground disturbance as described above would contribute to cumulative impacts on air quality to, at most, a negligible degree when considered in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area. Based on experience, the Service anticipates such minimization and mitigation measures would not affect air quality.

3.7 CULTURAL RESOURCES

3.7.1 Affected Environment

The term "cultural resources," as used in this document, refers to the built environment (such as structures, bridges, railroads, and water conveyance systems), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms, including "historic properties," "historic sites," "historical resources," and "tribal cultural resources."

Cultural resources in California are protected by a number of federal, state, and local regulations. NEPA and the CEQA are the two environmental regulatory frameworks that require consideration of impacts on cultural resources. Section 106 of the NHPA, a parallel regulatory process tied to NEPA by the requirement to consider cultural resources, is relevant for the planning area as part of the delegation process where a federal agency is involved. Section 106 of the NHPA and its implementing regulations require federal agencies to consider the effects of their actions, or those they fund or permit, on historic properties that may be eligible for listing or that are listed on the National Register of Historic Places. To determine whether an undertaking could affect historic properties, cultural resources (including archaeological, historic, and architectural properties) must be identified, inventoried, and evaluated for eligibility for listing on the National Register of Historic Places.

The CEQA, in comparison with the NHPA, is a broader and more far-reaching environmental regulatory framework that includes cultural resources as an important component of its oversight and management policies. Prior to approving discretionary projects, state and local agencies must consider the potential significant impacts of those projects on archaeological and historic resources in accordance with the CEQA (Public Resources Code Sections 21083.2 and 21084.1) and Section 15064.5 of the CEQA Guidelines.

Listing or eligibility for listing on the National Register of Historic Places and significance under the CEQA are the primary considerations in determining whether a project may affect a cultural resource.

The planning area covers a vast geography of southern California that includes seven counties (Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties) and a diverse cultural resources landscape. The following is a generalization of the cultural resources environment.

While people are known to have inhabited southern California beginning at least 13,000 years before the present (BP), the first incontestable evidence of human occupation dates to at least 9000 BP and is associated with a period known as the Millingstone Cultural Horizon. Although many aspects of Millingstone culture persisted, by 3500 BP, a number of socioeconomic changes occurred. These changes are associated with the period known as the Intermediate Horizon, which started around 5000 BP.

The Late Prehistoric period, spanning from approximately 1500 BP to the Spanish mission era, is the period associated with the florescence of contemporary Native American groups. The planning area covers the territorial lands of at least 26 federally recognized and an additional 5 non-federally recognized tribal groups.

Following the establishment of the mission system and the coerced participation in new economic and social structures, Native people engaged in active and passive forms of resistance to maintain connections

to their families, language, and traditions. The descendant communities of the various tribal groups continue to live throughout the southern California region today.

The history of southern California includes the following four periods: Early Explorer period (1542 to 1769), Spanish mission period (1769 to 1822), Mexican Ranch period (1822 to 1846), and Anglo-American period (1846 to present). The first Europeans to arrive in southern California were with the Hernando de Alarcón expedition of 1540; however, the Spanish did not begin to colonize what was then known as Alta California until 1769. Spanish settlements and missions were established throughout southern California. The Mexican Ranch period expanded settlement in the area with the establishment of ranchos and various adobes throughout the area. The Anglo-American period is marked by development and further settlement of southern California. The signing of the Treaty of Guadalupe Hidalgo in 1848 and the US acquisition of California was immediately followed by the establishment of the Southern Emigrant Trail. This route was used by settlers, miners, and military on their way to California. Irrigation measures in southern California helped to establish agricultural operations in the region and promoted a large population boom. Furthermore, railroad lines, followed by the introduction of automobiles, prompted increased development and settlement of southern California.

Based on the precontact and historic history of the planning area, considerable prehistoric resources (activities in the past prior to sustained European contact) are throughout the planning area. Previous studies have identified resources including precontact villages, rock shelters, habitation sites, lithic scatters, trails, rock art localities, and milling stations. Isolated artifacts not associated with larger sites are also located throughout the planning area.

The site definitions provided in table 3-13, below, are based on information provided in the literature review of the region and are to be used as a general guideline to understanding the nature of prehistoric sites in the region.

Table 3-13. Types of Previously Identified Prehistoric Resources

Site Type	Site Definitions
Villages	Villages are sites that exhibit a level of sustained residency with resources suitable for sustaining long-term or seasonal habitation. They are typically located along watercourses. Associated artifact assemblages may include, but are not limited to, bedrock outcrops, lithic artifacts, ground stones, shells, animal bones, fire-affected rocks, ceramics, pictographs and petroglyphs, house rings, and evidence of funerary practices.
Rock Shelters	Rock shelters are typically located in higher elevations in areas that sustain habitable rock overhangs that can support brief habitation episodes or that can be utilized for ceremonial purposes. Associated artifacts can include, but are not limited to, pictographs and petroglyphs, fire-affected rocks, lithic artifacts, midden soil, animal bones, bedrock milling features, and ceramics.
Seasonal Habitation Sites	Temporary camps or transition areas were used to exploit an immediate or seasonal resource. These areas were usually located near watercourses. Associated artifact assemblages may include, but are not limited to, ground stone, lithic debitage, and bedrock milling features. Near the shoreline sites, this site type may also include stone fish traps.
Lithic Scatters	Flaking stations may indicate possible opportunistic quarrying activities or tool reduction stations. Clusters can be identified in isolation or in association with other site types; they are not restricted in geographic location.
Bedrock Milling Features	Grinding stations are typically located along watercourses near exposed bedrock outcrops (typically granite or granodiorite) with suitable resources in the area for processing.

Site Type	Site Definitions
Rock Art	Rock art localities are areas of exposed rock, usually bedrock outcrops but also boulders, that have had designs or figures either incised (petroglyphs) or painted on their surface (pictographs). These areas may be on vertical surfaces, the ceilings of caves and overhangs, or on the tops of outcrops. Rock art localities are usually sacred spaces to Native American groups.
Geoglyphs	Geoglyphs are large designs or motifs most often created by moving rocks or earth to create an image on the ground. This type of site is well known in some areas of southern California. Geoglyphs may be more easily identified through the use of aerial imagery, but they can also be identified on the ground.
Trails	Trails are cultural resources that link diverse features in systems, districts, and landscapes. Generally, there are many contributing attributes to trail systems. Trail-associated sites or features can include concentrations of ceramics and pot drops, cleared circles, rock rings, rock clusters, rock cairns, rock alignments, petroglyphs, and geoglyphs.
Isolates	These are isolated artifacts, such as lithics and ground stone.

Historic resources are the remains of activities in the past subsequent to sustained European contact. Identified historic-period built environment and archaeological resources represent a range of activities including, but not limited to, mining, transportation, and ranching and homesteading. These resources are represented throughout the planning area. The site definitions provided in table 3-14 are based on the information provided in the literature review of the region and are to be used as a general guideline to understanding the nature of historic sites in the region.

Table 3-14. Types of Previously Identified Historic Resources

Site Type	Site Definitions
Towns	Towns are sites that exhibit a built environment that may indicate a permanent population with established economic and social structures. Associated structures may include, but are not limited to, buildings used for residential, trade, government, or religious purposes.
Military Sites	Military sites include permanent settlements, temporary camps, or extensive training areas that exhibit a military presence in the region. Associated artifact assemblages may include, but are not limited to, military-issued debris and refuse or landscapes modified by use of military equipment, such as tanks.
Mining	Mining-related sites are representative of extractive operations focused on the acquisition of mineral materials. Such sites may include, but are not limited to, individual shafts and prospecting pits with associated tailings or mining complexes with extraction and processing elements. Mining complexes may also be considered as small towns.
Ranches and Homesteads	Ranch and homestead sites consist of a variety of materials that may indicate rural habitation and land use patterns. These materials may include, but are not limited to, building foundations, fence lines, rock walls, orchards and agricultural fields, landscaping elements, or outbuildings.
Religious Sites	Religious sites are closely linked with the Spanish and Mexican periods of California. Such sites may include, but are not limited to, intact or razed missions and chapel outposts. This site type may also be linked with military or ranching sites.
Refuse Scatters	Historic refuse deposits may indicate land use patterns such as settlement and travel. Scatters can be identified in isolation or in association with other site types. Associated artifact assemblages most commonly include, but are not limited to, cans, glass bottles, ceramics, or household items and debris.
Transportation Routes	Transportation routes (trails, roads, and rail lines) are often linked to significant historic events or are shown to have impacted trade and settlement patterns. Many of these routes can be identified through historic records; however, they may also be indicated by stone markers and lines, tracks left by wheels, railroad ties and debris, or refuse.
Isolates	These are isolated artifacts such as ceramics, glass, metal, and objects that are historic in nature.

It should also be noted that ethnographic resources, which are elements of the natural or built environment, or other cultural resource types assigned cultural significance by traditional users or groups exist in the planning area. The planning area also encompasses several cultural landscapes, which are a type of resource defined by the NPS Preservation Brief 36 as a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person exhibiting other cultural or aesthetic values.

3.7.2 Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, ground disturbance from construction and operation of proposed projects would have potential impacts on cultural resources in the planning area. These activities include the potential to disturb and impact cultural resources and could include impacts from physical disturbance during construction, including construction of linear features such as roads, utility lines, and fencing. The degree of impact would depend on the activity proposed.

Alternative 1: No Action

Under the no action alternative, impacts on cultural resources would continue to be specific to development activities implemented in the planning area. Strategies used to mitigate impacts on cultural resources would be developed through consultation with the State Historic Preservation Officer and area tribes during local permitting processes. Compliance with section 106 of the NHPA would occur through the mechanisms described in section 1.5.1 of this EIS to ensure that proposed projects, including desert tortoise minimization and mitigation activities, would avoid or mitigate all impacts on potentially affected cultural resources.

In addition, mitigation activities on BLM-administered lands would continue to adhere to cultural resources goals and mitigation measures outlined in the California Desert Conservation Area Plan and the DRECP, while mitigation on other federal lands would comply with applicable land use plans and policies of that surface management agency.

Alternative 2: Proposed Action

Under the proposed action, the covered activities with associated ground disturbance (see section 2.3.1) would contribute to the potential to encounter and disturb surface and subsurface cultural resources. The earthmoving operations that would comprise the preconstruction and construction activities described in table 2-2 would disturb and displace soils at varying depths depending on site conditions and the proposed covered activity. Actions such as excavation, grading, and boring would entail considerable soil removal and loosening, leading to increased potential to disturb and adversely affect existing and yet-to-be-identified cultural resources.

Impacts from operations and maintenance activities involving ground disturbance would also have the potential to adversely affect previously identified and yet-to-be-identified cultural resources. Minimization activities, such as installing exclusion fencing, also would have the potential to affect and encounter cultural resources. Soil impacts from ground disturbance associated with desert tortoise monitoring, translocation, and other activities also have the potential to disturb cultural resources.

The degree of these impacts would depend on the specific activities and would need to be assessed by a pre-activity/construction survey and cultural resources assessment. Cultural resources monitoring and

tribal monitoring, as appropriate depending on the nature of the resource, would likely be needed during all covered activities under alternative 2. Compliance with section 106 of the NHPA would occur through the mechanisms described in section 1.5.2 of this EIS to ensure that covered activities, including desert tortoise minimization and mitigation activities, would avoid or mitigate all impacts on potentially affected cultural resources.

Alternative 3: Reduced Mitigation Area

Under alternative 3, impacts on cultural resources would be generally as described for alternative 2, except that potential impacts from conservation and restoration activities would be less given the reduced mitigation area.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions that result in greater levels of surface disturbance would have higher potentials to disturb, encounter, and potentially adversely affect cultural resources. Impacts from recreation, conservation actions, other HCPs, and resource management and land use plans would likely generate fewer impacts. However, these cumulative impacts would depend on the nature of the action. For example, recreational off-highway vehicle use would likely impact cultural resources more than nonmotorized recreation.

Development of individual projects (alternative 1) and covered activities (alternatives 2 and 3) in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area would contribute to cumulative impacts on cultural resources. Because state or local agencies would require project proponents to fully avoid or mitigate impacts of their individual projects on cultural resources, the contribution to cumulative impacts on cultural resources is expected to be minimal.

The measures to minimize and mitigate the impacts of incidental take on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through use of a GCP (alternatives 2 and 3) involving ground disturbance as described above would contribute to cumulative impacts on cultural resources to, at most, a negligible degree when considered in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area. Based on past experience, the Service anticipates such minimization and mitigation measures would not affect cultural resources.

3.8 NATIVE AMERICAN CONCERNS

3.8.1 Affected Environment

The planning area is within a vast region of the ancestral and modern lands of many southern California tribal groups. While this section does not assess each specific tribal group, it does address the general environment and potential concerns. The Service contacted 26 federally recognized tribal groups and an additional 5 non-federally recognized tribal groups during the EIS process (see chapter 4).

From the earliest of times, Native peoples have attributed special significance to geographic features, which play important roles in religious and cultural practices. Many of these features are remembered in songs passed down through oral tradition, serving as "maps" of mythological traditions, as well as economic sites

such as quarry sites. Examples of these types of resources in the planning area that are important to tribal groups may include the following:

- Ceremonial Areas: Areas can be a precontact or historic area of sacred character to a tribal group or groups. Physical evidence of ceremonial activities is usually present in the form of dance patterns, vision quest circles, intaglios, rock cairns, rock art localities, and more.
- Sacred Areas: Areas can be precontact or historic with a sacred character to a tribal group or groups. Certain mountaintops, power places, rivers, creeks, lakes, and vision quest locations are examples of sacred areas. These places can sometime be marked by rock art.
- Traditional Use Areas: Many areas throughout the planning area were, and some continue to be, used for hunting, gathering (of food and medicinal plants), fishing, or traveling.

It is important to note that the desert tortoise itself is seen as a sacred and important animal and spiritual symbol to many tribal groups in the region. The desert tortoise is seen as a symbol of strength and perseverance. Additionally, animals such as bighorn sheep, rabbits, cattle, and goats, and plant resources like piñon are extremely important to tribal groups in southern California.

3.8.2 Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, ground disturbance from construction and operation of proposed projects would have potential impacts on cultural resources in the planning area.

Under all alternatives, activities with associated ground disturbance, including, but not limited to, commercial, agricultural, residential, industrial, and infrastructure development, as well as operation and maintenance of these activities (see section 2.3.1), would have potential impacts on tribal resources and Native American concerns in the planning area. The preconstruction and construction activities described in table 2-2 would involve the use of vehicles and heavy equipment. These activities include the potential to disturb and impact tribal resources and areas of Native American concern; they also could include impacts from physical disturbance during construction, including construction of linear features such as roads, utility lines, and fencing. The impact would depend on the activity proposed.

Alternative 1: No Action

Under the no action alternative, impacts on tribal resources and areas of concern would continue to be specific to development activities implemented in the planning area. Strategies used to mitigate impacts on tribal resources would be implemented on a project-by-project basis.

Alternative 2: Proposed Action

Under the proposed action, the covered activities with associated ground disturbance (see section 2.3.1) would contribute to the potential to encounter and disturb areas and tribal resources of concern to tribal groups. Activities such as earthmoving, displacement of soils, grading, boring, operations and maintenance activities, and exclusion fencing all have the potential to impact resources important to tribal groups. The degree of these impacts would depend on the specific activities and would need to be assessed by a pre-activity/construction assessment. Tribal monitoring would likely be needed during all proposed activities that have the potential for impacts under alternative 2. Benefits to desert tortoises from use of a GCP

(see section 3.1.2) and wildlife (see section 3.2.2) may serve to protect resources important to tribes more than under alternative 1.

Alternative 3: Reduced Mitigation Area

Under alternative 3, impacts on Native American concerns would be the same as those described under alternative 2, with the exception that mitigation activities would occur in fewer areas and thus would avoid the potential for impacts on resources of tribal importance in those areas.

Cumulative Impacts

Past and present actions have altered the landscape and elements of the landscape important to Native peoples. Reasonably foreseeable future actions that increase development or alter the landscape would further contribute to this effect, as would activities that have the potential to disturb, encounter, and potentially adversely affect tribal resources and areas of concern. Impacts from conservation actions, HCPs, and resource management and land use plans would likely generate fewer cumulative impacts. However, these cumulative impacts would depend on the nature of the action.

The development of activities in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area would contribute to cumulative impacts on cultural resources and other resources important to tribal groups. State or local agencies with permitting authority over projects as a whole may require full avoidance of impacts to cultural resources; where complete avoidance is not possible, mitigation measures would reduce but not remove the potential for cumulative impacts from specific projects.

The measures to minimize and mitigate the impacts of incidental take on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through use of a GCP (alternatives 2 and 3) involving ground disturbance as described above or direct impacts to desert tortoises would contribute to cumulative impacts on cultural resources and other resources important to tribal groups to, at most, a negligible degree when considered in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area.

3.9 HUMAN HEALTH AND SAFETY AND WASTES (HAZARDOUS AND SOLID)

3.9.1 Affected Environment

Hazardous Waste Materials

The planning area includes undeveloped land, active and fallow agricultural lands, and rural and urban development. It encompasses a wide variety of land uses, including commercial, agricultural, industrial, and infrastructure development.

Current or historical land use activities provide indicators of the use and storage of potential hazardous materials (40 CFR 261.3). Sites of potential environmental and human health concerns due to the possible presence of hazardous materials or waste include agricultural lands; utility infrastructure; aboveground and underground storage tanks; historical mining sites; ammunitions storage facilities; and industrial and commercial facilities known to store, generate, transport, or dispose of hazardous materials.

Agricultural Uses

The planning area includes agricultural lands, which indicates the agricultural use of pesticides in the planning area. As of 2019, 45 herbicide formulations are approved for use on BLM-administered land in the western states (BLM 2019). Some of these formulations can have deleterious impacts on human health, depending on the formulation, pathway of exposure, and concentration. The BLM is required to complete a human health and ecological risk assessment of individual active ingredients prior to analyzing and approving these ingredients for use. Formulations approved by the BLM are deemed effective in controlling vegetation and have minimal effects on the environment and human health, if they are used in accordance with label instructions. Pesticides must be registered with the EPA unless they meet the criteria for a minimum risk pesticide, or unless the pesticide poses little to no risk to human health or the environment. It is illegal to use pesticide products inconsistent with their label directions (EPA 2023d). Additionally, the State of California has approved over 1,000 pesticides for use, and use within the planning area tends to be higher than agricultural use in other parts of California (OEHHA 2024).

Additionally, crop production practices can generate air pollutants that can potentially impact human health and fail to meet the regional NAAQS. These emission sources can include particulate matter in smoke from crop burning; fossil fuel consumption associated with equipment used in tillage and harvest, which releases carbon dioxide, nitric oxide, and sulfur dioxide; particulate matter in soil particulates from tillage; and soil nitrous oxide emissions from the use of fertilizers, retention of crop residues, and drainage of organic soils. Carbon dioxide and carbon monoxide are also be released during use of farm equipment; during the transport of products; and from growers, scientists, and surveyors to and from field sites. Crop residue is also burned on some farms, which emits methane, nitrous oxide, carbon monoxide, and nitric oxide. For more information on air quality, see section 3.6, Air Quality, Greenhouse Gases, and Climate Change.

Hazardous Waste Facilities

Numerous facilities that treat, store, or dispose of hazardous waste are in the planning area. Superfund sites are locations that contain hazardous wastes and require a long-term response to address contamination (EPA 2023e). No Superfund sites are in the planning area (Service GIS 2024). Properties where the presence or potential presence of a hazardous substances, pollutants, or contaminants may exist and would need to be mediated before the land could be expanded, redeveloped, or reused are known as "brownfield" properties. The permit area contains two known brownfield properties (Service GIS 2024). There is also one abandoned mine in the permit area and five abandoned mines in the mitigation area (Service GIS 2024). Abandoned mine lands are lands, waters, and surrounding watersheds where extraction, beneficiation,[23] or processing of ores and minerals has occurred. Abandoned mine lands can pose serious threats to human health and the environment (EPA 2023f).

Several factors associated with the planning area affect the potential for an accidental release of a hazardous material that could cause public health impacts. These factors include the local meteorology, terrain characteristics, location of population centers relative to projects involving hazardous materials, existing public health concerns, and existing environmental site contamination.

[23] Mineral beneficiation is the science of separating valuable metallic and nonmetallic minerals from unusable, commercially worthless minerals.

Coccidioides

Coccidioides is a group of soil fungus species that causes valley fever in humans. When soil is disturbed, such as during construction, the fungi can become airborne and infect humans who inhale the spores (CDC 2023). *Coccidioides* tends to live and grow in the southwestern US, and the risk of exposure is limited to dry regions of the western US (CDC 2020). *Coccidioides* is a naturally occurring potential public health hazard in the planning area.

Covered Activities

The permit area includes a range of covered activities that would be eligible to use the GCP to support an application for an incidental take permit that could impact public health and safety. These activities include commercial, agricultural, residential, industrial, and infrastructure development. The impacts on public health and safety from these covered activities are assessed at the implementation or site-specific level and must comply with all relevant regulations, including local and state permits and authorizations and any federal regulations regarding materials handling and worker health and safety.

3.9.2 Environmental Consequences

Impacts Common to All Alternatives

As described in table 2-2, the general elements of construction and operation of proposed activities would include site clearing and preparation, facility construction, facility operations, integrated pest management, and solid and hazardous waste handling and disposal. All of these have the potential to impact human health and safety and wastes (hazardous and solid).

Development activities associated with site characterization, construction, operation, and decommissioning would potentially raise health and safety concerns for construction workers and nearby sensitive receptors. Projects would minimize these impacts by creating a health and safety program that would be developed to protect workers and the public during these phases. Projects would also develop a health and safety program that would ensure compliance with Occupational Safety and Health Administration standard practices for explosives and blasting agents, include measures for reducing occupational electromagnetic field exposures, and include required safety performance standards.

Solar facilities can create glint and glare effects, which are typically eliminated with proper siting and facility designs. Other types of development may have other health and safety effects such as increasing the potential for fire. Safety programs would establish fire safety procedures to reduce the risk of accidental fires or other identified hazards. These practices would reduce or minimize the health and safety concerns associated with development projects.

Depending on the activity, proposed development can have the potential to result in the use of hazardous materials and waste management during the projects' life. The projects would have the potential to affect air, water, soil, and biological resources from an accidental release of hazardous materials or solid and hazardous waste during transportation to and from the development sites, and during storage and use at development sites. Safety and containment measures would be implemented to minimize the potential for spills and any spill-related effects.

Waste management plans would also address solid and liquid wastes that could be generated at a site. Covered activities could use herbicides and pesticides, which would be subject to standard operating procedures and include the use of only EPA-registered pesticides and herbicides that comply with state

and local regulations. Depending on the project, project design features, emergency response plans, and best management practices would be implemented during project activities to ensure the avoidance of hazardous spills to soils, spills to waters of the US, and potential exposure to individuals.

Implementing the minimization and mitigation measures associated with an incidental take permit for the desert tortoise would not generate hazardous waste. Site clearing, site preparation, and other covered activities, as well as installing desert tortoise fencing and excavating burrows, would result in minimal ground disturbance that can generate fugitive dust, which could contain *Coccidioides* fungal spores that may be present in desert soils. Workers, residents, and visitors to an area with ground disturbance would have the potential to contract valley fever from exposure to disturbed soils that may contain fungal spores. On a project-by-project basis, environmental management measures or standard operating procedures would contain fugitive dust-control methods to minimize the risk of exposure to valley fever for workers and the public from construction, operations and maintenance, and decommissioning of projects.

Alternative 1: No Action

Under the no action alternative, the Service would not approve and use the GCP to streamline the incidental take permit process for desert tortoise in California; therefore, there would be no change to public health and safety. Impacts associated with proposed activities, as described in section 3.9.3 Impacts Common to All Alternatives, would continue to occur within the permit area.

Alternative 2: Proposed Action

Under the proposed action, the Service would approve and use the GCP for the desert tortoise in California, as presented in appendix A. The GCP would support incidental take permit applications for a range of activities within the permit area, including, but not limited to, commercial, agricultural, residential, industrial, and infrastructure development, as well as operation and maintenance of these activities.

Use of the GCP to facilitate the issuance of incidental take permits would not change the components of the covered activities that impact public health and safety, as described under *Impacts Common to All Alternatives*. As under the no action alternative, covered activities would still be assessed for human health and safety and wastes (hazardous and solid) impacts at the implementation or site-specific level. Also, activities would be subject to all local and state permits and authorizations and any federal regulations regarding health and safety, wastes (hazardous and solid), and worker health and safety.

Alternative 3: Reduced Mitigation Area

Alternative 3 would have the same impacts on public health and safety as the proposed action; this is because alternative 3 would adjust the location of mitigation and would not affect the public health and safety effects associated with the covered activities.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions that would affect human health and safety and wastes (hazardous and solid) involve human developments, such as roads and ROWs, mining, and renewable energy developments. These activities have impacted and would continue to impact human health and safety and wastes (hazardous and solid) by introducing hazards to workers and the public; generating fugitive dust, which could contain *Coccidioides*; introducing herbicides and pesticides; creating glare; introducing the risk of accidental fires; and more.

Development of individual projects (alternative 1) and covered activities (alternatives 2 and 3) in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area would contribute to cumulative impacts on public health and safety. The mitigation measures required by the state or local permitting agency with authority over the proposed project as a whole would minimize the contribution to cumulative impacts at the project-specific level, and the contribution to cumulative impacts is expected to be minimal.

The measures to minimize and mitigate the impacts of incidental take on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through use of a GCP (alternatives 2 and 3) would contribute to cumulative impacts on human health and safety to, at most, a negligible degree when considered in combination with the impacts from past, present, and reasonably foreseeable projects described above.

3.10 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.10.1 Affected Environment

Socioeconomics

This section discusses the existing social and economic conditions at the county level of all counties in the analysis area, which is defined as the geographic region within which social and economic conditions may affect or be affected by the Service's decisions regarding the GCP. This area extends to seven counties: Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. These counties were identified as the socioeconomic analysis area because the planning area lies within these counties, and most of the effects on the population and economy would occur within this region. Data are presented at the county level. This means the economic and social data include data for metropolitan areas that are outside the planning area and that might not reflect the conditions in the planning area. However, the data in the metropolitan areas provide context for the regional economic center and the regions that tend to influence jobs and economics in the analysis area. Data for California are presented for comparison and wider context.

Analysis Area Demographics

Population. Table 3-15 shows that the total population increased in all seven analysis area counties since 2010, with the largest percentage increase occurring in Riverside County (15.2 percent) and the smallest percentage increase occurring in Los Angeles County (1.8 percent).

Population growth in the analysis area is expected to continue over the next few decades in all counties except Inyo and Los Angeles Counties (table 3-16). The biggest percentage increase in population is expected to occur in Riverside County (with an increase of 8.1 percent), and the biggest percentage decrease in population is expected to occur in Los Angeles County (with a decrease of about 8.3 percent).

Table 3-15. Analysis Area Population Totals (2010–2022)

Location	2010	2022	Change 2010–2022	Percent Change 2010–2022
Imperial County	168,052	179,578	11,526	6.9%
Inyo County	18,434	18,829	395	2.1%
Kern County	815,693	906,883	91,190	11.2%
Los Angeles County	9,758,256	9,936,690	178,434	1.8%
Riverside County	2,109,464	2,429,487	320,023	15.2%
San Bernardino County	2,005,287	2,180,563	175,276	8.7%
San Diego County	3,022,468	3,289,701	267,233	8.8%
California	36,637,290	39,356,104	2,718,814	7.4%

Source: US Census Bureau 2022a

Table 3-16. Analysis Area Population Projections (2025–2050)

Location	2025	2030	2035	2040	2045	2050	Change 2025–2050	Percent Change 2025–2050
Imperial County	181,271	184,997	187,831	189,972	191,458	192,294	11,023	6.1
Inyo County	18,939	18,887	18,730	18,552	18,353	18,093	-846	-4.5
Kern County	919,153	940,257	956,191	966,310	970,794	969,968	50,815	5.5
Los Angeles County	9,676,333	9,566,663	9,462,085	9,306,759	9,111,732	8,877,939	-798,394	-8.3
Riverside County	2,471,003	2,540,559	2,596,890	2,637,463	2,661,201	2,670,068	199,065	8.1
San Bernardino County	2,206,224	2,257,518	2,289,104	2,302,286	2,300,687	2,287,280	81,056	3.7
San Diego County	3,320,866	3,373,792	3,403,354	3,416,779	3,412,606	3,394,592	73,726	2.2
California	39,024,054	39,430,871	39,872,787	40,106,449	40,152,224	40,049,519	1,025,465	2.6

Source: California Department of Finance, Demographic Research Unit 2023

Household Characteristics. Housing vacancy rates in the analysis area range from a low of 6.6 percent in Los Angeles and San Diego Counties to a high of 17.4 and 17.1 percent in Imperial and Inyo Counties, respectively (table 3-17). Housing vacancies can represent seasonal homes, those for rent or sale and not occupied, or other. The majority of the vacant housing units are second homes used for seasonal, recreation, or occasional use in Riverside (59.9 percent) and San Bernardino (53.0 percent) Counties. In contrast, second homes in Imperial, Inyo, Kern, Los Angeles, and San Diego Counties comprise 23.0 percent, 48.0 percent, 30.8 percent, 13.4 percent, and 29.9 percent of vacant units, respectively (US Census Bureau 2022a).

In 2022, the median monthly mortgage costs in San Diego and Los Angeles Counties were higher than they were in the state; however, median monthly mortgage costs for all other counties in the analysis area were lower than the state's median monthly mortgage costs. The median gross rent for all counties, except San Diego County, was lower than it was for the state. When housing price was examined as a percentage of household income, Los Angeles County had the highest estimated percentage of owner-occupied households where greater than 30 percent of household income was spent on mortgage costs (42.7 percent), whereas Riverside County had the highest estimated percentage of renter-occupied households where greater than 30 percent of household income was spent on rent (55.2 percent). In all of the analysis area counties, except Inyo County, over 50 percent of renter-occupied households spent more than 30 percent of their household income on rent (US Census Bureau 2022a).

Analysis Area Employment. Employment can be viewed as a key economic indicator, as patterns of growth and decline in a region's employment are largely driven by economic cycles and local economic activity. Employment patterns are shown for the seven analysis area counties in table 3-18 and table 3-19.

In 2022, health care and social assistance, government employment, and retail trade were major sectors of employment throughout the analysis area, although these varied slightly by county. Accommodation and food services was also an important sector, especially in Inyo County. Forestry, fishing, and related activities was an important sector, especially in Kern County and Imperial County. Professional scientific and technical services was an important sector, especially in Los Angeles and San Diego Counties. The transportation and warehousing sector had the highest percentage of employment in San Bernardino County. From 2001 to 2022, employment in the health care and transportation and warehousing sectors had the largest magnitude increase across the analysis area, while the mining sector (including quarrying and oil and gas extraction) had the largest magnitude decrease in employment across the analysis area (US Bureau of Economic Analysis 2023).

In 2022, the utilities, information, and management sectors had some of the highest average annual wages in the analysis area. The average wage per job numbers were typically lower in real estate, other nonpublic administration services sectors, and accommodation and food services (US Bureau of Economic Analysis 2023; see table 3-20 and table 3-21).

Table 3-17. Analysis Area Household Characteristics (2022)

Location	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Vacant Housing Rate (%)	Median Monthly Mortgage Cost	Median Gross Rent
Imperial County	56,907	47,024	9,883	17.4	$1,685	$961
Inyo County	9,471	7,849	1,622	17.1	$2,164	$1,131
Kern County	301,687	277,499	24,188	8.0	$1,808	$1,161
Los Angeles County	3,599,561	3,363,093	236,468	6.6	$2,945	$1,805
Riverside County	851,646	749,976	101,670	11.9	$2,384	$1,711
San Bernardino County	733,104	659,928	73,176	10.0	$2,173	$1,584
San Diego County	1,230,349	1,149,157	81,192	6.6	$2,993	$2,011
California	14,424,442	13,315,822	1,108,620	7.7	$2,759	$1,856

Source: US Census Bureau 2022a

Table 3-18. 2010 Analysis Area Employment by Sector (Number of Jobs/Percentage of Total Employment)

Industry	Imperial County	Inyo County	Kern County	Los Angeles County	Riverside County	San Bernardino County	San Diego County	California
Farm employment	3,705	114	16,694	5,410	7,491	2,755	12,151	232,546
	5.11%	1.10%	4.79%	0.10%	0.93%	0.33%	0.67%	1.18%
Forestry, fishing, and related activities	(D)	45	27,521	2,807	7,556	1,005	2,801	212,035
	(D)	0.43%	7.90%	0.05%	0.94%	0.12%	0.16%	1.08%
Mining, including oil and gas	(D)	90	11,804	13,967	1,967	1,350	4,016	60,312
	(D)	0.87%	3.39%	0.26%	0.24%	0.16%	0.22%	0.31%
Utilities	485	161	1,560	12,288	1,811	4,308	7,556	59,332
	0.67%	1.55%	0.45%	0.23%	0.22%	0.52%	0.42%	0.30%
Construction	1,853	452	17,867	179,611	55,658	41,158	81,056	865,756
	2.55%	4.36%	5.13%	3.35%	6.90%	4.95%	4.49%	4.41%
Manufacturing	2,899	323	14,110	399,993	41,833	50,826	100,816	1,322,647
	3.99%	3.11%	4.05%	7.46%	5.18%	6.11%	5.59%	6.73%
Wholesale trade	2,187	159	9,469	248,880	24,772	35,659	50,542	724,352
	3.01%	1.53%	2.72%	4.64%	3.07%	4.29%	2.80%	3.69%
Retail trade	8,504	1,221	33,397	486,294	99,926	96,247	163,881	1,880,137
	11.72%	11.77%	9.58%	9.07%	12.38%	11.57%	9.08%	9.57%
Transportation and warehousing	2,478	115	11,418	189,424	26,524	55,234	29,650	567,941
	3.41%	1.11%	3.28%	3.53%	3.29%	6.64%	1.64%	2.89%
Information	448	103	3,311	232,777	12,969	7,892	31,710	508,677
	0.62%	0.99%	0.95%	4.34%	1.61%	0.95%	1.76%	2.59%
Finance and insurance	1,504	219	10,161	258,386	31,148	30,991	83,127	953,934
	2.07%	2.11%	2.92%	4.82%	3.86%	3.73%	4.61%	4.86%
Real estate and rental and leasing	1,748	326	11,635	299,202	45,325	33,414	100,269	1,033,813
	2.41%	3.14%	3.34%	5.58%	5.62%	4.02%	5.56%	5.26%
Professional, scientific, and technical services	1,659	(D)	17,253	436,666	40,460	37,815	188,902	1,703,247
	2.29%	(D)	4.95%	8.14%	5.01%	4.55%	10.47%	8.67%
Management of companies and enterprises	257	(D)	3,226	58,381	3,384	6,176	18,993	207,094
	0.35%	(D)	0.93%	1.09%	0.42%	0.74%	1.05%	1.05%
Administrative and waste services	3,201	373	18,280	353,393	59,039	69,840	110,621	1,248,610
	4.41%	3.60%	5.25%	6.59%	7.32%	8.40%	6.13%	6.36%
Educational services	257	100	2,600	144,272	10,599	13,530	40,478	439,531
	0.35%	0.96%	0.75%	2.69%	1.31%	1.63%	2.24%	2.24%

Industry	Imperial County	Inyo County	Kern County	Los Angeles County	Riverside County	San Bernardino County	San Diego County	California
Health care and social assistance	8,420	610	32,370	531,002	71,692	86,653	150,232	1,868,599
	11.60%	5.88%	9.29%	9.90%	8.88%	10.42%	8.33%	9.51%
Arts, entertainment, and recreation	354	240	4,452	198,153	18,853	12,728	45,621	538,952
	0.49%	2.31%	1.28%	3.70%	2.34%	1.53%	2.53%	2.74%
Accommodation and food services	3,554	1,505	20,243	349,498	64,109	53,619	139,829	1,369,985
	4.90%	14.51%	5.81%	6.52%	7.94%	6.45%	7.75%	6.97%
Other services, except public administration	3,832	641	18,728	360,755	55,348	52,257	103,313	1,166,383
	5.28%	6.18%	5.37%	6.73%	6.86%	6.28%	5.73%	5.94%
Government	18,455	3,149	62,364	600,729	126,521	138,308	338,536	2,678,661
	25.43%	30.36%	17.90%	11.20%	15.68%	16.63%	18.76%	13.64%
Total Employment	72,569	10,373	348,463	5,361,888	806,985	831,765	1,804,100	19,642,544

Source: US Bureau of Economic Analysis 2023
(D) = Data not disclosed

Table 3-19. 2022 Analysis Area Employment by Sector (Number of Jobs/Percentage of Total Employment)

Industry	Imperial County	Inyo County	Kern County	Los Angeles County	Riverside County	San Bernardino County	San Diego County	California
Farm employment	3,967	90	16,430	4,197	7,156	2,466	11,749	228,186
	4.67%	0.90%	3.61%	0.06%	0.60%	0.21%	0.52%	0.90%
Forestry, fishing, and related activities	6,356	36	45,189	2,862	6,845	1,201	2,763	259,767
	7.49%	0.36%	9.93%	0.04%	0.57%	0.10%	0.12%	1.03%
Mining, including oil and gas	421	36	9,079	6,494	1,674	1,603	2,088	36,926
	0.50%	0.36%	2.00%	0.10%	0.14%	0.13%	0.09%	0.15%
Utilities	522	157	1,685	13,497	1,910	4,112	5,984	67,516
	0.61%	1.57%	0.37%	0.20%	0.16%	0.34%	0.26%	0.27%
Construction	2,583	413	22,430	247,498	100,111	61,113	115,692	1,259,662
	3.04%	4.12%	4.93%	3.64%	8.34%	5.12%	5.10%	4.98%
Manufacturing	2,572	378	14,150	347,301	50,990	60,001	125,914	1,419,413
	3.03%	3.77%	3.11%	5.10%	4.25%	5.03%	5.55%	5.61%
Wholesale trade	2,385	111	10,151	253,705	34,573	49,500	59,274	773,657
	2.81%	1.11%	2.23%	3.73%	2.88%	4.15%	2.61%	3.06%
Retail trade	9,800	1,093	42,296	538,484	124,022	116,117	180,091	2,090,805
	11.54%	10.90%	9.29%	7.91%	10.34%	9.73%	7.93%	8.26%
Transportation and warehousing	3,939	101	35,695	412,112	118,550	177,757	92,798	1,474,413
	4.64%	1.01%	7.84%	6.06%	9.88%	14.89%	4.09%	5.83%
Information	322	69	2,498	297,427	9,851	8,061	31,637	727,797
	0.38%	0.69%	0.55%	4.37%	0.82%	0.68%	1.39%	2.88%
Finance and insurance	2,053	201	13,283	354,030	49,195	43,147	116,913	1,318,004
	2.42%	2.01%	2.92%	5.20%	4.10%	3.61%	5.15%	5.21%
Real estate and rental and leasing	2,264	375	16,025	458,500	61,940	48,684	133,935	1,454,721
	2.67%	3.74%	3.52%	6.74%	5.16%	4.08%	5.90%	5.75%
Professional, scientific, and technical services	2,184	485	18,867	560,569	56,146	50,533	247,892	2,231,632
	2.57%	4.84%	4.15%	8.24%	4.68%	4.23%	10.92%	8.82%
Management of companies and enterprises	187	(D)	3,553	79,182	4,747	5,669	28,457	284,267
	0.22%	(D)	0.78%	1.16%	0.40%	0.47%	1.25%	1.12%
Administrative and waste services	3,625	(D)	20,818	425,270	86,326	94,572	143,628	1,581,853
	4.27%	(D)	4.57%	6.25%	7.19%	7.92%	6.33%	6.25%

Industry	Imperial County	Inyo County	Kern County	Los Angeles County	Riverside County	San Bernardino County	San Diego County	California
Educational services	477	(D)	3,665	174,096	15,397	16,960	48,273	554,586
	0.56%	(D)	0.81%	2.56%	1.28%	1.42%	2.13%	2.19%
Health care and social assistance	11,607	(D)	48,617	890,342	136,687	140,876	231,189	2,942,827
	13.67%	(D)	10.68%	13.08%	11.39%	11.80%	10.18%	11.63%
Arts, entertainment, and recreation	381	303	4,836	231,016	23,911	15,433	51,915	617,031
	0.45%	3.02%	1.06%	3.39%	1.99%	1.29%	2.29%	2.44%
Accommodation and food services	4,667	1,462	29,641	462,052	96,865	79,767	177,272	1,775,446
	5.50%	14.59%	6.51%	6.79%	8.07%	6.68%	7.81%	7.02%
Other services, except public administration	4,465	555	24,100	438,487	77,159	70,526	124,990	1,423,034
	5.26%	5.54%	5.30%	6.44%	6.43%	5.91%	5.50%	5.62%
Government	20,109	3,138	72,052	608,070	135,916	145,583	338,141	2,779,431
	23.69%	31.31%	15.83%	8.94%	11.33%	12.20%	14.89%	10.99%
Total Employment	84,886	10,023	455,060	6,805,191	1,199,971	1,193,681	2,270,595	25,300,974

Source: US Bureau of Economic Analysis 2023
(D) = Data not disclosed

Table 3-20. 2010 Analysis Area Labor Income by Sector (Earnings in Thousand 2022 Dollars/Percentage of Total Earnings)[1]

Industry	Imperial County	Inyo County	Kern County	Los Angeles County	Riverside County	San Bernardino County	San Diego County	California
Farm earnings	637,013	11,534	1,691,335	254,816	456,367	196,452	798,029	17,899,555
	12.83%	1.53%	6.42%	0.06%	0.94%	0.38%	0.58%	1.11%
Forestry, fishing, and related activities	(D)	439	972,043	78,202	270,484	34,967	86,088	8,704,855
	(D)	0.06%	3.69%	0.02%	0.56%	0.07%	0.06%	0.54%
Mining, including oil and gas	(D)	23,263	2,054,236	2,189,263	256,138	65,418	42,013	6,275,909
	(D)	3.09%	7.80%	0.50%	0.53%	0.13%	0.03%	0.39%
Utilities	79,095	22,516	267,918	2,092,018	244,650	658,039	1,390,365	10,944,818
	1.59%	2.99%	1.02%	0.48%	0.51%	1.26%	1.00%	0.68%
Construction	145,066	49,830	1,469,452	10,613,748	3,788,970	2,412,648	6,628,674	76,369,057
	2.92%	6.63%	5.58%	2.42%	7.82%	4.63%	4.78%	4.74%
Manufacturing	189,096	103,008	1,294,833	39,132,489	3,433,918	3,915,867	11,792,284	157,051,396
	3.81%	13.70%	4.92%	8.91%	7.09%	7.51%	8.51%	9.74%
Wholesale trade	156,880	9,290	804,491	22,079,852	1,752,880	2,777,439	5,261,469	71,569,728
	3.16%	1.24%	3.05%	5.03%	3.62%	5.33%	3.80%	4.44%
Retail trade	365,356	49,518	1,499,262	24,753,126	5,591,721	4,219,365	6,846,491	94,611,765
	7.36%	6.58%	5.69%	5.63%	11.54%	8.09%	4.94%	5.87%
Transportation and warehousing	201,629	8,197	2,139,096	15,696,314	2,041,038	4,367,701	1,478,284	45,642,396
	4.06%	1.09%	8.12%	3.57%	4.21%	8.38%	1.07%	2.83%
Information	29,179	10,814	235,882	31,556,249	968,298	741,211	3,658,483	72,750,382
	0.59%	1.44%	0.90%	7.18%	2.00%	1.42%	2.64%	4.51%
Finance and insurance	79,235	7,765	540,454	28,286,531	1,266,785	1,519,334	7,049,821	104,666,907
	1.60%	1.03%	2.05%	6.44%	2.62%	2.91%	5.09%	6.49%
Real estate and rental and leasing	88,751	7,840	483,319	20,403,775	1,171,721	643,777	2,091,016	50,055,709
	1.79%	1.04%	1.83%	4.64%	2.42%	1.24%	1.51%	3.11%
Professional, scientific, and technical services	80,893	(D)	1,256,973	50,514,848	2,021,429	2,259,018	20,482,240	188,670,764
	1.63%	(D)	4.77%	11.50%	4.17%	4.33%	14.78%	11.71%
Management of companies and enterprises	16,451	(D)	393,195	7,987,053	249,561	644,982	2,437,660	30,279,294
	0.33%	(D)	1.49%	1.82%	0.52%	1.24%	1.76%	1.88%
Administrative and waste services	123,405	12,693	789,884	17,602,424	2,323,940	2,640,414	5,637,481	65,252,656
	2.49%	1.69%	3.00%	4.01%	4.80%	5.07%	4.07%	4.05%

Industry	Imperial County	Inyo County	Kern County	Los Angeles County	Riverside County	San Bernardino County	San Diego County	California
Educational services	3,915	2,960	87,262	8,957,196	381,484	690,828	2,062,136	24,805,757
	0.08%	0.39%	0.33%	2.04%	0.79%	1.33%	1.49%	1.54%
Health care and social assistance	284,980	32,953	2,097,305	40,812,166	4,758,315	5,943,577	11,540,717	151,574,732
	5.74%	4.38%	7.96%	9.29%	9.82%	11.40%	8.33%	9.40%
Arts, entertainment, and recreation	5,166	5,976	91,224	17,141,147	538,664	263,368	1,684,279	30,875,620
	0.10%	0.79%	0.35%	3.90%	1.11%	0.51%	1.22%	1.92%
Accommodation and food services	100,283	52,887	510,375	12,034,794	1,938,129	1,396,539	5,003,420	45,461,666
	2.02%	7.03%	1.94%	2.74%	4.00%	2.68%	3.61%	2.82%
Other services, except public administration	165,943	31,200	1,052,592	17,396,642	2,530,419	2,415,094	5,154,365	59,927,366
	3.34%	4.15%	4.00%	3.96%	5.22%	4.63%	3.72%	3.72%
Government	1,913,058	293,595	6,609,163	69,727,376	12,449,326	14,318,946	37,460,385	298,374,392
	38.53%	39.03%	25.09%	15.87%	25.70%	27.47%	27.03%	18.51%
Total Earnings	4,965,502	752,143	26,340,296	439,310,026	48,434,234	52,124,985	138,585,701	1,611,764,723

Source: US Bureau of Economic Analysis 2023
(D) = Data not disclosed
[1] The 2010 data were multiplied by an inflation rate of 1.36 to calculate real earnings.

Table 3-21. 2022 Analysis Area Labor Income by Sector (Earnings in Thousand 2022 Dollars/Percentage of Total Earnings)

Industry	Imperial County	Inyo County	Kern County	Los Angeles County	Riverside County	San Bernardino County	San Diego County	California
Farm earnings	582,341	10,430	1,410,481	212,840	416,727	181,780	490,452	16,004,335
	10.50%	1.38%	4.73%	0.04%	0.60%	0.24%	0.28%	0.74%
Forestry, fishing, and related activities	339,184	412	1,837,767	93,630	270,319	36,136	194,734	12,925,476
	6.12%	0.05%	6.16%	0.02%	0.39%	0.05%	0.11%	0.60%
Mining, including oil and gas	46,247	20,869	1,249,762	367,559	268,819	129,120	54,979	3,050,869
	0.83%	2.76%	4.19%	0.07%	0.39%	0.17%	0.03%	0.14%
Utilities	83,130	23,824	343,219	2,622,901	300,392	683,697	1,288,584	15,747,062
	1.50%	3.16%	1.15%	0.50%	0.43%	0.92%	0.72%	0.73%
Construction	155,752	28,041	1,872,875	19,323,614	7,415,586	5,220,885	9,489,840	112,639,869
	2.81%	3.71%	6.28%	3.65%	10.70%	7.00%	5.32%	5.19%
Manufacturing	206,788	100,083	1,211,256	36,734,132	3,922,562	4,964,530	15,338,477	194,388,210
	3.73%	13.26%	4.06%	6.94%	5.66%	6.65%	8.61%	8.96%
Wholesale trade	195,487	12,827	853,515	24,964,242	2,955,597	4,307,819	6,665,193	82,264,226
	3.52%	1.70%	2.86%	4.72%	4.26%	5.77%	3.74%	3.79%
Retail trade	397,412	48,696	1,988,795	27,913,006	5,459,178	5,074,062	8,514,582	107,785,050
	7.17%	6.45%	6.67%	5.28%	7.88%	6.80%	4.78%	4.97%
Transportation and warehousing	255,708	6,006	2,288,355	25,466,037	5,995,561	10,687,573	3,240,852	87,291,248
	4.61%	0.80%	7.67%	4.81%	8.65%	14.32%	1.82%	4.03%
Information	18,447	7,493	167,938	46,058,987	645,612	483,475	5,238,587	165,167,252
	0.33%	0.99%	0.56%	8.71%	0.93%	0.65%	2.94%	7.62%
Finance and insurance	60,065	5,448	546,466	30,879,538	1,525,882	1,632,252	8,110,406	118,876,354
	1.08%	0.72%	1.83%	5.84%	2.20%	2.19%	4.55%	5.48%
Real estate and rental and leasing	82,439	14,117	626,422	15,154,435	2,350,656	1,952,221	4,160,763	71,136,357
	1.49%	1.87%	2.10%	2.86%	3.39%	2.62%	2.33%	3.28%
Professional, scientific, and technical services	114,050	21,753	1,227,311	64,543,809	2,926,685	3,078,992	29,761,264	290,517,440
	2.06%	2.88%	4.11%	12.20%	4.22%	4.13%	16.70%	13.40%
Management of companies and enterprises	11,327	(D)	502,844	10,746,520	488,165	616,432	4,117,358	46,274,385
	0.20%	(D)	1.69%	2.03%	0.70%	0.83%	2.31%	2.13%
Administrative and waste services	154,856	(D)	1,054,407	24,363,510	3,691,876	4,301,012	9,770,095	98,877,804
	2.79%	(D)	3.53%	4.61%	5.33%	5.76%	5.48%	4.56%

Industry	Imperial County	Inyo County	Kern County	Los Angeles County	Riverside County	San Bernardino County	San Diego County	California
Educational services	12,420	(D)	112,020	11,446,433	611,248	746,278	2,300,469	33,200,844
	0.22%	(D)	0.38%	2.16%	0.88%	1.00%	1.29%	1.53%
Health care and social assistance	439,894	(D)	2,961,234	55,787,599	8,074,416	9,114,523	16,610,705	209,797,423
	7.93%	(D)	9.92%	10.55%	11.65%	12.21%	9.32%	9.67%
Arts, entertainment, and recreation	5,506	11,931	158,378	20,029,773	928,160	535,107	2,213,019	41,988,708
	0.10%	1.58%	0.53%	3.79%	1.34%	0.72%	1.24%	1.94%
Accommodation and food services	161,971	65,696	965,839	20,050,860	3,645,736	2,752,074	7,309,481	74,701,123
	2.92%	8.70%	3.24%	3.79%	5.26%	3.69%	4.10%	3.44%
Other services, except public administration	166,232	23,175	976,556	18,144,514	3,099,486	2,767,418	5,240,434	63,637,126
	3.00%	3.07%	3.27%	3.43%	4.47%	3.71%	2.94%	2.93%
Government	2,056,581	300,915	7,483,937	74,067,738	14,328,345	15,359,294	38,104,270	322,271,125
	37.08%	39.86%	25.08%	14.00%	20.67%	20.58%	21.38%	14.86%
Total Earnings	5,545,837	754,843	29,839,377	528,971,677	69,321,008	74,624,680	178,214,544	2,168,542,286

Source: US Bureau of Economic Analysis 2023
(D) = Data not disclosed

Income Source. Income is derived from two major sources: (1) labor earnings or income from the workplace; and (2) nonlabor income, including dividends, interest, and rent (collectively often referred to as money earned from investments), and transfer payments (payments from governments to individuals and age-related payments, including Medicare, disability insurance payments, and retirements). In 2022, labor income was the main source of income for all analysis area counties. However, nonlabor income from rent, dividends, and other sources also provided a significant percentage of income for the seven-county analysis area, with all counties at 34 percent of total income or higher (table 3-22).

Table 3-22. Analysis Area Labor and Nonlabor Income (2022)

Location	Personal Income Total (millions of $)	Labor Income (net earnings)		Nonlabor Income (including dividends, interest, rent, and personal transfer receipts)	
		Millions of $	Percentage of Personal Income Total	Millions of $	Percentage of Personal Income Total
Imperial County	8,076	4,756	58.9	3,320	41.1
Inyo County	1,151	658	57.2	493	42.8
Kern County	41,099	26,144	63.6	14,955	36.4
Los Angeles County	720,741	438,324	60.8	282,416	39.2
Riverside County	127,196	82,839	65.1	44,357	34.9
San Bernardino County	108,082	70,576	65.3	37,506	34.7
San Diego County	243,507	155,034	63.7	88,472	36.3
Analysis Area Total	*1,249,850*	*778,332*	62.3	*471,518*	37.7
California	*3,006,647*	*1,935,012*	64.4	*1,071,636*	35.6

Source: US Bureau of Economic Analysis 2023

Unemployment levels in the analysis area for 2022 ranged from a low of 3.4 percent in San Diego County to a high of 14.7 percent in Imperial County. In comparison, the California annual unemployment rate in 2022 was 4.2 percent (US Bureau of Labor Statistics 2023). Refer to table 3-23, below, for additional information, including historical data from 1990 to 2022.

Table 3-23. Analysis Area Unemployment Levels

Year	Imperial County (%)	Inyo County (%)	Kern County (%)	Los Angeles County (%)	Riverside County (%)	San Bernardino County (%)	San Diego County (%)	California (%)
1990	25.4	7.1	10.9	5.9	7.1	5.6	4.6	5.8
1995	29.2	9.4	13.8	8.1	9.4	7.9	6.3	7.9
2000	17.3	4.6	8.2	5.4	5.3	4.7	3.9	4.9
2005	15.9	4.9	8.4	5.3	5.3	5.2	4.3	5.4
2010	29.4	10.0	16.0	12.6	14.2	13.9	11.0	12.5
2015	24.6	5.8	10.3	6.7	6.7	6.5	5.2	6.3
2020	22.6	8.0	12.8	12.3	10.1	9.6	9.4	10.1
2021	17.5	6.0	9.9	8.9	7.3	7.4	6.5	7.3
2022	14.7	3.7	6.9	4.9	4.2	4.1	3.4	4.2

Source: US Bureau of Labor Statistics 2023
Note: Levels are not seasonally adjusted.

Income Distribution. The analysis area population represents a wide range of income levels. Among the analysis area counties, the median household income in 2022 was highest in San Diego County ($96,974) and lowest in Imperial County ($53,847) (US Census Bureau 2022b; see table 3-24). Per capita income followed similar trends; the highest per capita personal income in 2022 was reported in San Diego and Los Angeles Counties ($74,326 and $74,142, respectively) and the lowest was in Kern and Imperial Counties ($44,862 and $45,188, respectively; US Bureau of Economic Analysis 2023).

Nonmarket Values

Nonmarket values are the benefits derived by society from the uses or experiences that are not dispensed through markets and do not require payment. These values include use values associated with unique and sensitive natural and cultural resources on public lands as well as nonuse values associated with knowing a certain species, such as the desert tortoise, exists for future generations. These values enhance the quality of life and enjoyment of place, thereby improving regional and local economic conditions. Proximity to undeveloped natural lands and the resources they harbor, including scenic vistas and recreational and wildlife viewing opportunities, add nonmarket value to the area.

Some general consensus has been established that certain areas set aside for protection or for protecting certain species, such as the desert tortoise, would further maintain and perhaps enhance the nonmarket values associated with natural amenities protected on these lands. In particular, non-developed and open spaces have been correlated with rapid population, income, and employment growth in those counties compared with counties with fewer non-developed and open lands. Many jobs are increasingly mobile, and many entrepreneurs locate their businesses in areas with a high quality of life (Lorah and Southwick 2003). In addition, open public lands have been linked with increased local property values (Phillips 2004). It appears that other special protections on areas and species could also attract new residents and tourists to the area, which then contribute to the area's economic activity.

In some cases, land protection and conservation directly reduce employment growth; however, it has been shown that natural amenities can offset job losses due to increases in net migration (Eichman et al. 2010). Natural amenities and quality of life have been increasingly recognized as important factors in the economic prospects of many rural communities in the West (Rudzitis and Johnson 2000). In addition, nonlabor income is intimately tied to natural amenities. Rural county population change, the development of rural recreation, and retirement-destination areas are all related to natural amenities (McGranahan 1999). Some studies indicate that the importance of nonmarket values of federal lands are increasing in the West as the role of resource extraction decreases (Southwick Associates 2012).

Nonmarket values of open space and well-managed natural resources also include a broad range of human benefits resulting from healthy ecosystem conditions and functions. Ecosystem services are the benefits that people receive from the appropriate structure and function of ecosystems; these services are often categorized as provisioning (such as food and water), regulating (such as climate, disease regulation, and fire regime), cultural (such as viewsheds and spiritual), and supporting (such as soil formation) (Millennium Ecosystem Assessment 2003). Some ecosystem services may involve market goods, such as timber and forage, while others, such as water quality, carbon sequestration, and aesthetics and amenity values, reflect nonmarket values (BLM 2013).

Table 3-24. Analysis Area Income Distribution

Income		Imperial County ($)	Inyo County ($)	Kern County ($)	Los Angeles County ($)	Riverside County ($)	San Bernardino County ($)	San Diego County ($)	California ($)
Median household income (2022$)[1,3]	2022	53,847	63,417	63,883	83,411	84,505	77,423	96,974	91,905
	2010	52,573	60,894	63,994	75,392	78,506	75,893	85,710	82,740
Per capita personal income (2022$)[2,3,4]	2022	45,188	61,501	44,862	74,142	51,415	49,270	74,326	77,036
	2010	39,579	57,680	41,679	58,157	42,088	40,003	59644.96	58,624

Sources: [1]US Census Bureau 2010, 2022b; [2]US Bureau of Economic Analysis 2023

[3] The 2010 data were multiplied by an inflation rate of 1.36 to calculate real income.

[4] Note that per capita personal income was computed using US Census Bureau midyear population estimates. Personal income includes all income that persons receive in return for their provision of labor, land, and capital used in current production, as well as other income, such as personal current transfer receipts.

Environmental Justice

Environmental justice refers to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (CEQ 1997).

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to determine whether their programs, policies, and activities (proposed actions) would have disproportionately high and adverse human health or environmental effects on minority, low-income, and Native American populations. Executive Order 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All, was enacted on April 21, 2023, to complement Executive Order 12989. Executive Order 12898 requires federal agencies to ensure opportunities for effective public participation by potentially affected low-income populations, minority populations, or tribes. These populations are considered to be potential environmental justice populations of concern that should be addressed throughout the planning effort. Additionally, new CEQ guidance has been developed to advance environmental justice objectives (CEQ 2022).

To identify communities of potential environmental justice concern within the analysis area, the Service conducted an environmental justice screen of the seven counties in the analysis area. The screen consisted of using US Census Bureau data[24] to determine whether the populations in each county met at least one of the following criteria:

- A minority[25] community of concern is present if the percentage of the population identified as belonging to a minority group in an analysis area is (1) equal to or greater than 50 percent of the population, or (2) meets the "meaningfully greater" threshold (CEQ 1997). For the purpose of this analysis, meaningfully greater is calculated by comparing the minority group population percentage with 110 percent of the reference area minority population.
- For the purpose of this analysis, a low-income community of concern is present if the population in the analysis area experiencing income levels at or below 200 percent of the federal poverty threshold is (1) equal to or greater than 50 percent of the population or (2) greater than or equal to the population in the reference area experiencing income levels at or below 200 percent of the federal poverty threshold.

Native American populations are included in the minority population of environmental justice concern, as described above; however, because there could be impacts on resources that tend to have additional value to Native American populations in the analysis area, a more sensitive threshold is used in this screening of Native American populations of concern. Executive Order 12898 applies to federally recognized tribes; therefore, it is important to determine whether any tribes are present in the area, have treaty or reserved rights for lands and resources in the analysis area, or have traditional cultural and historical use ties to lands and resources in the analysis area. Federally recognized tribes are considered environmental justice

[24] Data were collected directly from the US Census Bureau to gather the most recent data. The EPA also calculates and reports data on minority and low-income populations based on data from the US Census Bureau; however, due to the timing of the reports published by the EPA, the data that are used often lag behind the data from the US Census Bureau by 1 year.

[25] Total minority population is defined as the total population minus that portion that is listed in US Census Bureau data as white, of non-Hispanic origin. This method includes all individuals who identify as a racial or ethnic minority, or both, without double counting these populations.

populations in and of themselves. The population identified as belonging to a Native American population was defined as the population who identified as Native American alone or in combination with one or more other races as reported by the US Census Bureau. As discussed in section 1.8.2, Tribal Collaboration; section 3.9, Cultural Resources; section 3.10, Native American Concerns; and section 4.2, Agency Consultation and Coordination, the Service contacted tribes that are identified as having interests or traditional cultural properties in the analysis area.

Table 3-25 identifies the percentage of the population considered part of a low-income, Native American, or minority population. All counties in the analysis area qualify for further consideration as environmental justice populations. The minority population in California that is not in a metropolitan statistical area is 29.9 percent, and the meaningfully greater threshold for minority populations is 32.9 percent. All counties in the analysis area exceeded the threshold for having potential minority environmental justice populations. The nonmetropolitan Native American population in California is 5.9 percent. Across the analysis area, only Inyo County exceeded the threshold for having a potential Native American environmental justice population. The nonmetropolitan low-income population in California is 33.3 percent. Across the analysis area, three counties exceeded the threshold for having potential low-income environmental justice populations: Imperial, Kern, and San Bernardino Counties.

Table 3-25. Population for Environmental Justice Consideration

Area	Environmental Justice Indicators (Race/Ethnicity and Income Status) as a Percentage of Total Population[1,2]			
	Total Minority Population (Total %/ "Meaningfully Greater" Threshold %)[3]	Native American Population[4]	Low-Income Population	Meets One or More Environmental Justice Threshold[5]
California not in metropolitan statistical area	29.9/32.9	5.9	33.3	—
Imperial County	**90.4**	2.4	**46.4**	Yes
Inyo County	**40.4**	**13.6**	29.5	Yes
Kern County	**68.5**	2.5	**43.0**	Yes
Low Angeles County	**74.8**	2.4	31.8	Yes
Riverside County	**67.6**	2.6	29.2	Yes
San Bernardino County	**74.1**	2.8	**33.6**	Yes
San Diego County	**56.4**	2.1	24.6	Yes

Sources: US Census Bureau 2022c, 2022d

[1] The EPA calculates and reports data on minority and low-income populations based on data from the US Census Bureau American Community Survey 5-Year Estimates Data Profiles; however, due to the timing of the reports published by the EPA, the data that are used often lag behind the data from the US Census Bureau by 1 year; therefore, data taken directly from the US Census Bureau's website were used to calculate the percentages above.

[2] Bold values indicate the counties that were identified as environmental justice communities of concern based on each indicator.

[3] Total minority population is calculated based on the total population minus those identifying as white, of non-Hispanic descent.

[4] Native American populations are calculated based on those who identified as the race alone or in combination with one or more other races.

[5] Environmental justice consideration is based on a comparison with the state nonmetropolitan reference values.

As discussed above, there were environmental justice populations identified in all counties in the analysis area; therefore, further consideration is needed to examine whether the decisions under the alternatives

would lead to disproportionate and adverse impacts on these environmental justice populations. This discussion of these impacts is provided in the following section.

3.10.2 Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, analyses of the impacts on economic, nonmarket, and social conditions from development activities would occur at the implementation and site-specific level during environmental reviews by state or local agencies. Impacts on socioeconomics and environmental justice from development activities and associated measures to minimize or mitigate impacts on the desert tortoise are described by alternative, below.

Alternative 1: No Action

Socioeconomics

Under alternative 1, impacts on social and economic conditions would continue to be specific to development activities implemented in the planning area, and there would be no change from current conditions, as discussed in *Affected Environment*.

Environmental Justice

Under alternative 1, impacts on environmental justice populations due to management decisions would continue to be specific to development activities implemented in the planning area, and conditions would be consistent with current conditions, as discussed in *Affected Environment*.

Alternative 2: Proposed Action

Socioeconomics

Under alternative 2, the Service would approve and use the GCP for the desert tortoise in California. The Service would develop a standardized, comprehensive strategy that provides specific direction to proponents. This streamlined process would reduce the amount of time and cost for issuing and receiving incidental take permits for both the Service and the proponents. The reduction in time and cost could impact the surrounding economies due to the expedited timeline for development.

Under alternative 2, the standardized minimization and mitigation measures could lead to greater levels of desert tortoise conservation than issuing incidental take permits on an individual project-by-project basis (see section 3.1, Desert Tortoise [*Gopherus agassizii*], for more information on current conditions and impacts on the desert tortoise from the alternatives). The greater levels of desert tortoise conservation would likely lead to an increase in access and quality of nonmarket values for those individuals in communities of interest that value habitat conservation.

Environmental Justice

Under alternative 2, the Service would approve and use the GCP for the desert tortoise in California. Use of the GCP would not likely have impacts on environmental justice populations. Covered activities would be subject to regulations or guidelines for mitigation and control measures, such as emission-control measures for reducing impacts on air quality and mitigation measures for cultural and tribal resources (see section 3.6, Air Quality, Greenhouse Gases, and Climate Change; section 3.7, Cultural Resources; and section 3.8, Native American Concerns, for more information on current conditions and impacts on air quality and cultural resources due to the alternatives). Additional analysis of the impacts on environmental

justice populations from covered activities would occur at the implementation and site-specific level during environmental reviews by state or local agencies.

Alternative 3: Reduced Mitigation Area

Socioeconomics

Under alternative 3, the Service would approve and use the GCP for the desert tortoise in California, similar to under alternative 2; however, the mitigation area would be smaller. Under alternative 3, the impacts on economic and social conditions would be similar to those under alternative 2.

Environmental Justice

Under alternative 3, the Service would approve and use the GCP for the desert tortoise in California, similar to under alternative 2; however, the mitigation area would be smaller. Under alternative 3, the impacts on environmental justice populations would be similar to those under alternative 2.

Cumulative Impacts

Socioeconomics

The discussion below highlights the actions that could contribute to cumulative impacts on economic, nonmarket, and social conditions (see table 3-2 for more details on the past, present, and reasonably foreseeable actions).

Past, present, and reasonably foreseeable actions that lead to increased development, such as mineral and renewable energy development, could contribute to cumulative impacts on economic and social conditions, in combination with the incremental impacts under all alternatives, as described above. These actions could reduce native habitats and increase habitat fragmentation, which could contribute to impacts on the quality and access to nonmarket values, such as wildlife viewing, particularly for those who value habitat conservation. Mineral and renewable energy development could also contribute to cumulative impacts on economic conditions by supporting jobs, labor income, economic output, and tax revenue that could bolster the local economies and communities. Also, development could contribute to an increase in the quality and access to nonmarket values, such as way of life and sense of place for individuals who value resource extraction and use. As mentioned above, additional analysis of the impacts on nonmarket values from covered activities would occur at the implementation and site-specific level during environmental reviews by state or local agencies.

Past, present, and reasonably foreseeable conservation efforts, such as acquiring lands for conservation purposes, could contribute to cumulative impacts on access and the quality of nonmarket values, such as wildlife viewing, especially for those individuals in communities of interest that value habitat conservation. These cumulative impacts would be greater under the action alternatives, where the standardized minimization and mitigation measures could lead to greater levels of desert tortoise conservation.

Increased demand for recreation, including dispersed, organized, and concentrated recreation or wildlife viewing, could lead to cumulative impacts through an increase in the number of individuals in communities of interest who value habitat conservation and an increase in potential surface disturbance through foot and vehicle traffic. However, additional analyses of the impacts on economic, nonmarket, and social conditions from covered activities would occur at the implementation and site-specific level during environmental reviews by state or local agencies.

Environmental Justice

Development of individual projects (alternative 1) and covered activities (alternatives 2 and 3) in combination with the impacts from past, present, and reasonably foreseeable projects in the planning area are not expected to contribute to cumulative impacts, since there are no anticipated impacts on environmental justice populations under the alternatives.

3.11 NOISE

Noise is defined as unwanted sound and can be intermittent or continuous, steady or impulsive. Human response to noise is extremely diverse and varies according to the type of noise source, the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source and the receptor.

The decibel is the accepted unit of measurement for noise. Because human hearing is not equally sensitive to all sound frequencies, various frequency-weighting schemes have been developed to approximate the way people hear sound. The A-weighted decibel scale is normally used to approximate human hearing response to sound.

3.11.1 Affected Environment

Federal Regulations

Noise is regulated by local noise guidelines and the Noise Control Act of 1972 (42 USC 4901 et seq.), which establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. The counties within the planning area all have general plans with noise elements that set goals and objectives relative to planning for the noise environment within unincorporated areas of the county. Many other cities, towns, and municipalities in the planning area have noise ordinances that regulate noise, though many of these exempt categories of activities such as construction.

3.11.2 Environmental Consequences

Impacts Common to All Alternatives

Under all alternatives, construction of proposed projects would expose sensitive receptors to temporary noise increases from construction equipment and traffic on area roadways. Construction generally would occur during daytime hours set by the applicable municipal code. Most construction activities would be intermittent and would occur in defined construction areas with noise emanating from various points. Noise levels would be attenuated by distance as construction activities move farther away from sensitive receptors. Table 3-26 shows the typical average noise levels generated by individual pieces of construction equipment.

The noise levels generated by construction equipment vary greatly based on factors such as the type of equipment, the equipment model, the operation being performed, and the condition of the equipment. The dominant source of noise is usually from heavy-duty diesel construction equipment; in other cases, activities such as impact pile driving or jack hammering may dominate (FTA 2013).

Table 3-26. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level 50 feet from Source (A-weighted decibels)
Air compressor	80
Backhoe	80
Ballast equalizer	82
Ballast tamper	83
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane	88
Dozer	85
Generator	82
Grader	85
Impact wrench	85
Jackhammer	88
Loader	80
Paver	85
Pile driver (impact)	101
Pile driver (sonic)	95
Pneumatic tool	85
Pump	77
Rail saw	90
Rock drill	95
Roller	85
Saw	76
Scarifier	83
Scraper	85
Shovel	82
Spike driver	77
Tie cutter	84
Tie handler	80
Tie inserter	85
Truck	84

Source: FTA 2013

Operational noise impacts would depend on the type of project developed and the equipment used on a daily basis. Mobile sources related to the operation of the activities would include vehicular traffic caused by commuting workers, trucks entering and exiting the project facilities, agricultural equipment, and various other types of mobile sources. The California Department of Transportation published the Traffic Noise Analysis Protocol in April 2020 to create guidelines and protocols for measuring the impact of mobile sources. If traffic noise impacts are predicted, noise abatement measures must be considered. Noise abatement is considered only where frequent human use occurs and where a lowered noise level would be of benefit. For noise abatement to be considered acoustically feasible, it must be predicted to provide at least a 5 dB minimum reduction at an impacted receptor.

Proposed projects may be subject to regulations or guidelines that require the implementation of noise emission–control measures. These measures can include sound walls, setbacks, vegetation barriers,

mufflers for internal combustion equipment, and other technologies that help minimize excessive noise. Furthermore, regulatory frameworks may require activities to adhere to certain noise standards and environmental guidelines. Compliance with these regulations would reduce or minimize the impact of construction noise on the surrounding environment.

Alternative 1: No Action

Under the no action alternative, noise impacts from activities would be as described under *Impacts Common to All Alternatives*, and they would be specific to development activities implemented in the planning area.

Minimization activities at the project site or off-site mitigation activities would be a short-term or negligible source of noise.

Alternative 2: Proposed Action

Under the proposed action, noise impacts from covered activities within the permit area would be as described under *Impacts Common to All Alternatives*.

Minimization activities for covered activities in the permit area would have short-term or negligible noise impacts. Similarly, mitigation activities in the mitigation area would require no long-term sources of noise. Short-term sources of noise could include the use of equipment in support of restoration activities; however, these sources would be unlikely to affect sensitive receptors due to the undeveloped nature of these lands.

Alternative 3: Reduced Mitigation Area

Noise impacts under alternative 3 would be as described for alternative 2 for activities in the permit area. Noise impacts from mitigation activities in the mitigation area would be as described for alternative 2, but they would occur in fewer areas, primarily avoiding ACECs on BLM-administered lands.

Cumulative Impacts

The cumulative impacts analysis area for noise is the seven counties in the planning area. The timescale for the analysis is the period over which the GCP would be available for use, which is likely several decades.

Noise levels in the planning area counties are the result of past and present activities related to human development. The extent of noise pollution varies, with rural areas experiencing lower noise levels and urban areas experiencing higher levels of background noise. Reasonably foreseeable future development, mining, agricultural, and renewable energy projects in the permit area would contribute new short-term or long-term sources of noise, depending on the type of project proposed.

The development of activities in the permit area during construction and potentially during operation of activities would minimally contribute to cumulative noise impacts. State and local agencies with authority over the proposed project as a whole would likely require measures to mitigate noise impacts at the project-specific level.

The measures to minimize and mitigate the impacts of incidental take on the desert tortoise required by incidental take permits on a case-by-case basis (alternative 1) or through use of the GCP (alternatives 2 and 3) that may have noise effects as described above would minimally contribute to cumulative noise

impacts when considered in combination with the impacts from past, present, and reasonably foreseeable project in the planning area. There would be no incremental noise impacts in the mitigation area; therefore, activities in that area would not contribute to cumulative impacts in that area.

3.12 AESTHETICS

3.12.1 Affected Environment

Major Land Resource Areas

Visual resources are the visible physical features on a landscape (for example, land, water, vegetation, animals, structures, and other features). High-quality scenery, especially scenery with natural-appearing landscapes, enhances people's lives and benefits society.

The planning area landscape consists of five different major land resource areas (MLRAs). MLRAs are a hierarchal segmentation of land areas of the United States. MLRAs are delineated at scales of 1:7,500,000 to 1:1,000,000 and are useful for statewide, interstate, and regional planning. MLRA boundaries are based on a combination of factors (land use, elevation and topography, climate, water, soil, potential natural vegetation, and geology.) The purpose of the MLRA concept is to provide the knowledge needed to make decisions about national and regional agricultural concerns, provide a basis for resource inventories and extrapolating research results, and serve as a framework for organizing and operating soil surveys and resource conservation programs.

Table 3-27 lists the planning area's MLRAs. General descriptions of the MLRAs are provided below. Vegetation in the planning area is described in greater detail in section 3.3.

Table 3-27. MLRAs in the Mitigation and Permit Areas

Mitigation Area	Acres
Mojave Basin and Range	6,209,900
Sonoran Basin and Range	2,393,900
Southern Nevada Basin and Range	6,400
Permit Area	**-**
Mojave Basin and Range	1,966,100
Sierra Nevada Foothills	1,200
Sonoran Basin and Range	550,600
Southern California Coastal Plains and Mountains	38,500
Southern Nevada Basin and Range	34,500
Total	**11,200,900**

The Mojave Basin and Range MLRA occurs in California (57 percent), Nevada (32 percent), Arizona (10 percent), and Utah (1 percent). It is the transition from the hot Sonoran Desert in the south to the cool Great Basin Desert in the north. Climate and vegetation diversity, due to the random orientation of mountains and basins coupled with extreme gradients, make up the central concept of this MLRA. This MLRA has both low and high deserts that mostly occur within short distances. The low, hot deserts are in hot, sediment-filled, flat-bottom basins; the high, cool deserts are in adjacent mountain ranges with steep bedrock slopes extending to high elevations. The intermingling of hot and cold deserts adds to the diverse bio-geographics of the Mojave Basin and Range MLRA. Precipitation occurs primarily in winter and early spring. Drought years are common, and high amounts of annual precipitation often occur in single storm events. The Mojave Desert supports a wide variety of plant communities and ecological systems. Most of the land has a cover of desert vegetation (US Department of Agriculture 2022).

The Sierra Nevada Foothills MLRA is entirely in California, on the toeslope of the Sierra Nevada. The area is characterized by rolling to steep, dissected hills and low mountains. It is at the toe of the gentle east-to-west slope. The stream valleys are narrow and fairly steep. The moderate rainfall and intermittent streamflow are the major water sources. This area supports a species-rich, ecologically diverse and complex patchwork of habitats (US Department of Agriculture 2022).

The Sonoran Basin and Range MLRA occurs in Arizona (72 percent) and California (28 percent). It is a subdivision of the Basin and Range province, which spans from the sky island mountain ranges of southeastern Arizona to the Peninsular Ranges of southern California. It is characterized by isolated, short mountain ranges surrounded by broad, alluvium-filled desert basins. This MLRA is characterized by bimodal precipitation patterns due to the intercept of desert mountain features and coastal weather patterns. This precipitation pattern, coupled with hot summers and mild winters, promotes rich biological diversity.

The Sonoran Basin and Range MLRA encompasses the southern two-thirds of the Sonoran Desert and Salton Trough sections of the Basin and Range province of the Intermontane Plateaus. It is characterized by small, isolated mountain ranges with numerous long, uninterrupted alluvial fans. Mountain ranges tend to be short, fault-block ranges trending southeast to northwest that rise abruptly from the smooth or gently sloping desert valley floors. Most of this MLRA is open desert. The Sonoran Desert is biologically rich across both space and time. Across landscapes, the diversity is visually evident as precipitation patterns, slope aspects, and soils change. A single point can change dramatically with seasons, as both summer and winter communities flourish. Biological diversity is greatest at the higher elevations and precipitation zones. Diversity diminishes and plant communities become open and simple at the lowest elevations and precipitation zones. Several species of plants and animals are unique to this MLRA (US Department of Agriculture 2022).

The Southern California Coastal Plains and Mountains MLRA, which is entirely in California, is characterized by both the gently sloping to strongly sloping, dissected coastal and alluvial plains, as well as the steep, erosive hills and mountains. Stream incision has created abandoned floodplains, or terraces, adjacent to most rivers. Intermountain valleys are typically narrow and filled with alluvium. Almost all the valleys have streams with actively eroding banks. The mountainous portion is an area of narrow mountain ranges and broad fault blocks. The low rainfall and intermittent streamflow provide small quantities of surface water (US Department of Agriculture 2022).

The Southern Nevada Basin and Range MLRA is in Nevada (73 percent), California (26 percent), and Utah (1 percent). The area is in the Great Basin, which is characterized by broad, nearly level, aggraded desert basins and valleys between a series of mountain ranges trending north to south. The area's basins are bordered by sloping fans and terraces. Its mountains are uplifted fault blocks with steep side slopes. They are not well dissected because of the low amount of rainfall. Most valleys in this MLRA are closed basins containing sinks or playa lakes. Precipitation is sparse. Most streams are small and intermittent, and they depend on sources in the higher mountains. This area supports desert shrub vegetation (US Department of Agriculture 2022).

The affected environment also includes the major roadways that connect communities and provide expansive views of the landscape. The size of the communities varies greatly. Vehicles and communities are the primary sources of nighttime light. Route 78 contains the Anza-Borrego Desert State Park Road. This officially designated state scenic highway crosses 18 miles in the planning area and runs through Anza-

Borrego Desert State Park, which contains interesting rock formations and, in late winter, blooming wildflowers and cacti. The route offers scenery of the southern California low desert (Caltrans 2024; scenicbyways.info 2024).

3.12.2 Environmental Consequences

Impacts Common to All Alternatives

During construction of proposed activities, views of development areas would be altered by construction equipment and construction materials. The bold colors and geometric, boxy forms of construction vehicles, materials, and equipment may not resemble the colors and forms of the surrounding terrain and vegetation depending on the location of the activity and its proximity to other built features. Rigid vertical and horizontal project elements and infrastructure developed would create various focal points, especially on an open, flat landscape that might not resemble other landscape elements. Construction vehicles, materials, and equipment would cause short-term impacts, and any new structures and infrastructure resulting from the construction would cause long-term impacts. Construction and maintenance also could generate dust from vehicle movements, excavation, and blowing wind across disturbed soils. Fugitive dust would diminish the atmospheric clarity. This impact on visual resources would persist until the dust settles or the dust is blown elsewhere.

Construction can disturb the soil surface and remove vegetation. Surface disturbances can change the forms and lines of the terrain and expose buried soils with different colors than surface soils. Removing vegetation can create new vegetation patterns and forms. It can also create abrupt edges in vegetation and fragment habitats. These changes would be long term, unless soil and vegetation reclamation occurs.

Construction, operations, and maintenance may use temporary lights to illuminate work sites and permanent lights to illuminate developed areas. Reflective surfaces can create glare, and artificial light can increase skyglow (light that is scattered back to the earth by aerosols and clouds). Artificial light and skyglow can, in turn, affect the presence and behavior of animals viewed in the planning area. The intensity and amount of light and glare would vary, depending on the light source and its orientation, the intensity and angle of sunlight, and the time of day and year.

Alternative 1: No Action

Under the no action alternative, impacts on visual resources would be as described under *Impacts Common under All Alternatives*. Impacts would continue to be specific to development activities implemented in the planning area. Strategies used to minimize or mitigate impacts would be developed through required permitting and authorization processes. Projects would continue to adhere to local, state, and federal regulations and measures developed through the CEQA process. Minimization activities for the desert tortoise and mitigation activities on off-site lands would cause a minimal change where they are implemented; they would not have impacts on the visual environment. Any restoration activities undertaken could indirectly affect visual resources in the area to the extent that areas are restored to a more natural condition.

Alternative 2: Proposed Action

The GCP would cover a range of activities, including, but not limited to, commercial, agricultural, industrial, and infrastructure development, as well as operation and maintenance of these activities. The impacts on visual resources from these activities would be as described under *Impacts Common to All Alternatives*.

As described under alternative 1, minimization activities for the desert tortoise and mitigation activities on off-site lands would cause a minimal change where they are implemented; they would not have impacts on the visual environment. Any restoration activities undertaken in mitigation areas could indirectly affect visual resources in the area to the extent that areas are restored to a more natural condition. This would contribute to natural-appearing landscapes.

Alternative 3: Reduced Mitigation Area

Under alternative 3, impacts on the landscape aesthetics would be the same as those under alternative 2, except mitigation activities would occur over fewer areas. Beneficial effects from desert tortoise-related restoration activities would not occur in areas excluded under alternative 3; this would be a negligible effect compared with alternative 2, since these areas are primarily within ACECs that are protected from visual changes by management direction in BLM land use plans.

Cumulative Impacts

Past and present actions have altered the visual environment in the planning area through the development of structures and alteration of natural features. These changes are centered more in the permit area, which includes nonfederal lands that have undergone more development. Reasonably foreseeable future actions along with individual projects (alternative 1) and covered activities (alternatives 2 and 3) would continue this trend. Implementing measures determined through local permitting processes may lessen but not prevent the contribution to cumulative impacts at the project-specific level. Minimization activities in the permit area and mitigation activities in mitigation areas would cause minimal change to the visual environment where implemented.

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Chapter 4. Consultation and Coordination

4.1 Public Involvement

4.1.1 Pre-scoping

The Service conducted a 30-day pre-scoping process to introduce the concept of a GCP, answer questions, and collect feedback. During this time, the Service held two virtual public information forums; one was on June 14, 2022, and one was on June 15, 2022. At the forums, the Service gave an informational presentation and held a question-and-answer session for those who attended. A representative from the BLM was present at all scoping meetings to answer questions brought forward by the public that pertained to the BLM and the BLM's role in this process. Pre-scoping materials and recordings and transcripts from the meetings were posted on a project website.[26] The Service considered the feedback received in developing the draft GCP, which was presented to the public during the formal NEPA scoping process, described below.

4.1.2 Public Scoping

As described in section 1.7.1, the Service held two virtual and one in-person public scoping meetings during the scoping process. The Service received 15 unique written submissions during the public scoping period, comprising 118 substantive comments. A summary of each comment and the Service's consideration of those comments can be found in the scoping report in appendix B. A majority of the comments received related to the following:

- The need for the Service to ensure the management practices outlined in the GCP fully encompass the GCP's stated purpose and need
- The importance of engaging with state and federal agencies and tribes to take a collaborative approach to the GCP
- The importance of looking at a range of alternatives
- The need for clarification on what constitutes a covered activity
- The importance of effective and feasible mitigation measures, a robust reporting and monitoring program, and adaptive management
- Evaluation of potential adverse impacts on natural, cultural, and socioeconomic resources

4.2 Agency Consultation and Coordination

4.2.1 Government-to-Government Consultation with Native American Tribes

In July 2023, the Service sent letters to tribes inviting them to enter into government-to-government consultation. Below is a list of tribes who received letters inviting them to participate in formal consultation. The Service did not receive any responses to the initial mailing and has continued to reach out throughout this NEPA process. The Colorado River Indian Tribes provided a letter during scoping but did not request government-to-government consultation.

[26] https://www.virtualpublicmeeting.com/usfws-desert-tortoise-gcp-eis

Federally recognized tribes:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians
- Big Pine Paiute Tribe of the Owens Valley
- Bishop Paiute Tribe
- Cabazon Band of Mission Indians
- Cahuilla Band of Indians
- Campo Band of Diegueno Mission Indians
- Chemehuevi Indian Tribe
- Colorado River Indian Tribes
- Death Valley Timbi-sha Shoshone Tribe
- Fort Independence Indian Community of Paiutes
- Fort Mojave Indian Tribe
- La Posta Band of Diegueno Mission Indians
- Las Vegas Tribe of Paiute Indians
- Lone Pine Paiute-Shoshone Tribe
- Los Coyotes Band of Cahuilla and Cupeño Indians
- Manzanita Band of Kumeyaay Nation
- Morongo Band of Mission Indians
- Ramona Band of Cahuilla
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseño Indians
- Sycuan Band of the Kumeyaay Nation
- Tejon Indian Tribe
- Torres-Martinez Desert Cahuilla Indians
- Twenty-Nine Palms Band of Mission Indians
- Yuhaaviatam of San Manuel Nation

Non-federally recognized tribes:

- Agua Caliente Tribe of Cupeño Indians
- Chumash Council of Bakersfield
- Kern Valley Indian Community
- Kitanemuk and Yowlumne Tejon Indians
- Tubatulabals of Kern Valley

4.2.2 Agency Coordination with California Department of Fish and Wildlife

The Service has coordinated with the CDFW throughout the preparation of the GCP and this EIS. The CDFW is an active partner with the Service concerning management of the desert tortoise in California. A memorandum of understanding exists between the Service and CDFW.

4.2.3 Cooperating Agencies

The BLM accepted and signed a memorandum of understanding on January 4, 2023, to become a cooperating agency.

4.3 LIST OF PREPARERS

This EIS was prepared by an interdisciplinary team of staff from the Service and AECOM, a contactor to the Service. table 4-1, below, provides a list of people that prepared or contributed to the development of this EIS.

Table 4-1. List of Preparers

Affiliation	Name	Position
Service	Ray Bransfield	Contractor
Service	Peter Sanzenbacher	Fish and Wildlife Biologist
Service	John Robles	Fish and Wildlife Biologist
Service	Jessica D'Ambrosio	Public Affairs Specialist
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AECOM	Amy Cordle	Program Manager
AECOM	Liza Schill	Deputy Project Manager
AECOM	Lily Benson	Air Quality Specialist
AECOM	Kirsti Davis	Geology and Soils Specialist
AECOM	Claire Elias	Geology and Soils Specialist
AECOM	Kayla Ferron	Desert Tortoise Specialist
AECOM	Zoe Ghali	Socioeconomics and Environmental Justice Specialist
AECOM	Derek Holmgren	Visual Resources Specialist
AECOM	Meredith Linhoff	Lead Biologist
AECOM	Nicole Morris	Botanist
AECOM	Theresa O'Halloran	Water Resource Specialist
AECOM	Rachel Redding	Biologist
AECOM	Camila Reiswig	Socioeconomics and Environmental Justice Specialist
AECOM	Shine Roshan	Air Quality Specialist
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AECOM	Val Stanson	Human Health and Safety Specialist
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Chapter 6. Index

Appendix A

Draft Desert Tortoise General Conservation Plan

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DRAFT

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

DRAFT GENERAL CONSERVATION PLAN FOR THE DESERT TORTOISE IN CALIFORNIA

The U.S. Fish and Wildlife Service (Service) has prepared this draft general conservation plan (Plan) intended for use as a means of issuing incidental take permits, pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended, for desert tortoises in California. This document is a product of numerous internal discussions and coordination with other agencies, including the Bureau of Land Management (Bureau) and California Department of Fish and Wildlife (Department).

The Service would approve this Plan as a basis to issue incidental take permits under its regulations and guidance once it:

1. Receives and addresses public comments on the draft Plan and the draft environmental impact statement;

2. Completes an internal consultation under section 7(a)(2) of the Endangered Species Act to assess the effects of use of the Plan on the desert tortoise and its critical habitat and on any other listed species or critical habitat that it may affect.

3. Completes a record of decision for the National Environmental Policy Act process; and

4. Signs the Plan.

GLOSSARY OF TERMS

Many of the terms used in the California Desert Conservation Area Plan, as amended by the Desert Renewable Energy Conservation Plan (Bureau of Land Management 2016) are relevant to this general conservation plan. Consequently, we have used numerous definitions from that land use plan amendment (Bureau 2016) and added others that are specifically pertinent to this document.

A

Acquired lands. Lands in federal ownership that are not public domain and that have been obtained by the government by purchase, exchange, donation, or condemnation. Acquired lands are normally dedicated to a specific use or uses.

Acquisition. The activity of obtaining land and/or interest in land through purchase, exchange, donation, or condemnation.

Activity. Development, operation, and maintenance conducted by project proponents with a section 10(a)(1)(B) incidental take permit issued under the auspices of this general conservation plan.

Adaptive management. A process for assimilating new information, including, but not limited to, from monitoring and research, and assessing if adjustments to the general conservation plan or individual incidental take permits are needed.

Applicant. A public or private entity, or an individual, that applies to the U.S. Fish and Wildlife Service for an incidental take permit, pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended.

Area of critical environmental concern. An area designated by the Bureau of Land Management (Bureau) within public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

C

California Desert Conservation Area. As designated by Congress in 1976 through the Federal Land and Policy Management Act and defined in section 601 of that act, the California Desert Conservation Area is a 25-million-acre expanse of land in southern California. The Bureau administers approximately 10 million acres of the California Desert Conservation Area under its California Desert Conservation Area Plan.

California Desert National Conservation Lands. The land use plan amendment for the Desert Renewable Energy Conservation Plan identified California Desert National Conservation Lands, in accordance with the Omnibus Public Land Management Act of 2009 (Omnibus Act), which are nationally significant landscapes within the California Desert Conservation Area with

outstanding cultural, ecological, and scientific values. The California Desert National Conservation Lands are a permanent addition to the National Landscape Conservation System, as per the direction to Bureau in the Omnibus Act.

Clearance survey. Clearance surveys are surveys conducted immediately prior to activities that can kill or injure desert tortoises. Qualified biologists conduct these surveys and translocate or move desert tortoises from harm's way prior to disturbance, as per the minimization measures in the general conservation plan and individual incidental take permits issued under the auspices of the general conservation plan. Clearance surveys must be conducted in accordance with the Service's most up-to-date survey protocol or as specified individual incidental take permits issued under the auspices of the general conservation plan.

Conservation easement. A partial interest in land that can be transferred to a qualified land conservancy or government entity. The purpose is to conserve or protect the land. Conservation easements typically restrict allowable uses of the land by prohibiting development and sometimes restricting or requiring particular management activities. A conservation easement is legally binding for a specified term, which may be in perpetuity.

Conservation lands. Administrative designations by the Bureau that include California Desert National Conservation Land, areas of critical environmental concern, and wildlife allocation designations on Bureau-administered land.

Critical habitat. Critical habitat is defined in section 3(5)(A) of the Endangered Species Act of 1973 as (1) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Endangered Species Act, on which are found those physical or biological features essential to the conservation of the species, and which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Through section 7(a)(2) of the Endangered Species Act, federal agencies must ensure that any action they fund, authorize, or carry out is not likely to result in the destruction or adverse modification of critical habitat.

D

Desert Renewable Energy Conservation Plan. The Desert Renewable Energy Conservation Plan resulted from an interagency planning effort of the Bureau, Service, California Department of Fish and Wildlife, and California Energy Commission to address a biological conservation framework and renewable energy strategy for the California desert. The Bureau completed a land use plan amendment for the public lands portion of the Desert Renewable Energy Conservation Plan; the Service and Bureau completed formal consultation, pursuant to section 7(a)(2) of the Endangered Species Act, on the land use plan amendment in 2016.

Desert tortoise conservation areas. Desert tortoise conservation areas are areas where the management goals of the landowner or manager are compatible with the recovery of the desert tortoise. The recovery plan for the desert tortoise (2011, Box 2) generally describes conservation lands as desert tortoise habitat within critical habitat, areas of critical environmental concern,

national monuments, national wildlife refuges, National Park Service lands, and other conservation areas or easements managed for desert tortoises.

F

Federal lands. Land or interest in land owned and/or administered by the United States. Activities on federal lands in the general conservation plan area are administered by the Secretary of the Interior through the Bureau, National Park Service, and Bureau of Reclamation. The Department of Defense administers other federal lands in the planning area.

H

Harass. Harass is a form of "take," as defined in section 3(19) of the Endangered Species Act. Regulations at 50 Code of Federal Regulations 17.3 further define "harass" as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering."

Harm. Harm is a form of "take," as defined in section 3(19) of the Endangered Species Act. Regulations at 50 Code of Federal Regulations 17.3 further define "harm" as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns such as breeding, feeding or sheltering."

I

Incidental take. "Incidental take" or "incidental taking" means any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (*see* 50 Code of Federal Regulations 17.3).

L

Land use plan amendment. The land use plan amendment is a set of decisions that establishes management direction for Bureau-administered land within an administrative area through amendment to existing land use plans.

M

Maximum extent practicable. Section 10(a)(2)(B)(ii) of the Endangered Species Act requires that a project proponent minimize and mitigate the impacts of the taking "to the maximum extent practicable." To meet this statutory standard, the project proponent must propose minimization and mitigation measures that are commensurate with the impacts of the taking or, if the measures will not completely offset the impacts of the taking, demonstrate that minimization and mitigation measures proposed in the conservation plan represent the most the project proponent can practicably accomplish (Service and National Oceanic and Atmospheric Administration 2016, page 9-28).

Mitigation area. Mitigation area refers to areas within the planning area where mitigation resulting from issuance of incidental take permits under the auspices of the general conservation plan to project proponents would occur; these areas would also serve as recipient sites for desert tortoises that are translocated from development sites.

Moved from harm's way. For the purposes of this general conservation plan, "moved from harm's way" means the movement of desert tortoises by biologists authorized by the Fish and Wildlife Service from an activity footprint to adjacent habitat to protect them during the conduct of the activity. In general, moving a desert tortoise from harm's way is an appropriate tool when the disturbance in the activity footprint is temporary or insignificant enough to allow for desert tortoises to re-occupy the site at the conclusion of the activity. Moving a desert tortoise from harm's way involves short distances, which means the desert tortoise would likely remain within its home range.

N

National Landscape Conservation System. In accordance with and as defined by Public Law 111-11 in the Omnibus Public Land Management Act of 2009, sections 2002(a),(b)(1)(A–F), and (b)(2)(D), the National Landscape Conservation System is a Bureau land use designation to conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations. Areas specially designated as part of the National Landscape Conservation System in Public Law 111-11 are wilderness, wilderness study areas, national monuments, national scenic trails, national historic trails, and national and wild and scenic rivers. Public Law 111-11 also directed the Bureau to designate public land within the California Desert Conservation Area administered for conservation purposes as part of the National Landscape Conservation System. These lands are the California Desert National Conservation Lands and are an addition to the other components of the National Landscape Conservation System.

Non-federal lands. Land owned by state agencies, local jurisdictions (e.g., cities or counties), non-governmental organizations, or private citizens, or otherwise not under federal ownership or management.

P

Permit area. The permit area refers to areas within the planning area where project proponents could use the general conservation plan to apply for incidental take permits for the desert tortoise under the auspices of the general conservation plan.

Permittee. A public or private entity, or an individual, to whom the U.S. Fish and Wildlife Service has issued an incidental take permit, pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended.

Planning area. The planning area includes the entire area covered by this general conservation plan. The permit area and the mitigation area comprise the planning area.

Pre-project surveys. Pre-project surveys are surveys conducted prior to a project or an activity to determine whether desert tortoises are likely to be present. Such surveys will assist a project proponent in determining whether an application for an incidental take permit is advisable. They may consist of the standard protocol surveys developed by the Service or other methods of detecting desert tortoises developed in cooperation with the Service for specific circumstances.

Proponent or project proponent. For the purposes of this general conservation plan, "proponent" or "project proponent" refers to either an applicant for an incidental take permit or a permittee who has received an incidental take permit from the U.S. Fish and Wildlife Service. The precise meaning is dependent on the context of proponent or project proponent in the document.

Protocol survey. The Service has developed a standard protocol survey for desert tortoises that recommends the timing and methodology for such surveys and contains a model that estimates the likely number of desert tortoises present, based on the results of the field work and monitoring of transmittered desert tortoises.

Public domain. Vacant, unappropriated, and unreserved public lands, or public lands withdrawn by Executive Order 6910 of November 26, 1934, as amended, or Executive Order 6964 of February 5, 1935, as amended, and not otherwise withdrawn or reserved, or public lands within grazing districts established under section 1 of the Taylor Grazing Act of June 28, 1934, as amended, and not otherwise withdrawn or reserved.

Public land. Land or interest in land owned by the United States and administered by the U.S. Secretary of the Interior through the Bureau, without regard to how the United States acquired ownership, but not including (1) lands on the outer continental shelf and (2) lands held for the benefit of Indians, Aluets, and Eskimos.

T

Take. Section 3(19) of the Endangered Species Act defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC 1532(3)(19)). Take of endangered animals is prohibited by section 9 of the Endangered Species Act; the Service extended the take prohibitions of section 9 to the desert tortoise, a threatened species, through federal regulation pursuant to section 4(d) of the Endangered Species Act.

Translocation. For the purposes of this general conservation plan, "translocation" means the movement of desert tortoises by biologists authorized by the Fish and Wildlife Service from an activity footprint to a recipient site. In general, translocation is an appropriate tool when the activity footprint would no longer be suitable for occupation by desert tortoises because of the activity; the recipient site would generally be at some distance from the activity and likely outside the home range of the translocated desert tortoise.

W

Wildlife allocation. A Bureau conservation designation on Bureau-administered lands where management emphasizes wildlife values, but the area does not contain the same sensitive values or management limitations as an area of critical environmental concern.

COVER SHEET

TITLE: General Conservation Plan for Issuance of Endangered Species Act Section 10(a)(1)(B) Permits for the Desert Tortoise in California

SPECIES: Mojave distinct population segment of the desert tortoise (*Gopherus agassizii*)

PLANNING AREA: Figure 1 depicts the planning area. The planning area generally encompasses most of the range of the desert tortoise in California. Incidental take permits deriving from the general conservation plan (Plan) would be available on non-federal lands outside of desert tortoise conservation areas as described in the recovery plan for the desert tortoise (Service 2011). Additionally, the Plan also covers activities along existing rights-of-way through federal lands in the California desert where the federal agency no longer has discretionary authority. Mitigation associated with implementation of the Plan would occur within desert tortoise conservation areas, where they overlap with Bureau of Land Management conservation lands (California Desert National Conservation Lands and areas of critical environmental concern) as identified in the California Desert Conservation Area Plan, as amended by the Desert Renewable Energy Conservation Plan (see Figure 2 in Bureau 2016), National Park Service lands, or on non-federal lands that are being managed for conservation (Figure 3). The Plan does not include lands within military bases or the area covered by the Coachella Valley Multiple Species Habitat Conservation Plan. Any regional or local habitat conservation plan can supersede this Plan upon issuance by the U.S. Fish and Wildlife Service (Service) of a section 10(a)(1)(B) incidental take permit for that specific area.

COORDINATION WITH THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE: We will discuss compliance with the California Endangered Species Act later in this Plan. However, regardless of how project proponents comply with the California Endangered Species Act, close coordination between the Service and Department will be a key component of maximizing the efficiency of this Plan and conservation of the desert tortoise. In almost every situation where a project proponent is seeking a section 10(a)(1)(B) permit from the Service, they would need to comply with the California Endangered Species Act. We envision that, at every step in the process of applying for a federal incidental take permit, the project proponent would engage the Department at the same time. We did not insert this important concept throughout this document, but the Service fully intends to work with the Department closely on every project where the project proponent is seeking incidental take permits from both agencies.

COVERED ACTIVITIES: The Plan covers otherwise lawful commercial, agricultural, residential, industrial, and infrastructure development. It will also cover operations and maintenance of these activities.

AMOUNT OF INCIDENTAL TAKING: Resource agencies do not conduct systematic surveys to estimate the number of desert tortoises that reside outside of conservation areas. Given the results of numerous surveys for specific projects, we conclude that desert tortoises are not abundant on non-federal lands where the Plan would permit covered activities. To ensure that

we have not underestimated the abundance of desert tortoises on these lands, the Service will establish a threshold system as part of its review process (Section 4). Incidental take is likely to occur in the form of killing, wounding, harming, and capturing desert tortoises during the conduct of covered activities.

FUNDING PLAN: Project proponents must commit to funding full implementation of the measures listed in their project-specific application, which would be based on the minimization, mitigation, and monitoring programs described more generally in this Plan. Project proponents will minimize and mitigate, to the maximum extent practicable, for all incidental take of desert tortoises that occurs under the authority of this Plan (Section 6). Project proponents will provide funding assurances with their individual project package application.

MONITORING PLAN: Each project proponent will provide an annual report on March 31 each year that its incidental take permit is in effect or until the Service agrees that an annual report is no longer needed.

DURATION OF PERMITS ISSUED UNDER THE PLAN: The duration of permits issued under the Plan will vary according to the nature of the specific proposed action for which a project proponent requests an incidental take permit.

Section 1. Introduction

Section 9 of the Endangered Species Act of 1973, as amended (Act), and federal regulation pursuant to section 4(d) of the Act prohibit the taking of any federally listed endangered or threatened fish or wildlife species. Section 10(a)(1)(B) of the Act allows non-federal entities to apply for incidental take permits to take listed fish or wildlife species in the course of otherwise legal activities.

The Service (2007) developed the concept of general conservation plans to streamline the habitat conservation planning process. This process streamlines the application for a section 10(a)(1)(B) incidental take permit by allowing the Service to develop a single general conservation plan for a local area. The Service then completes all documents required by the Act and National Environmental Policy Act (NEPA). Non-federal entities may apply for an incidental take permit, provided they commit to complying with the monitoring, minimization, and mitigation measures in the general conservation plan.

The Service developed this Plan to provide a streamlined mechanism for project proponents engaged in covered activities to meet the statutory and regulatory requirements of the Act, while promoting conservation of the federally threatened desert tortoise. Covered activities include commercial, agricultural, residential, industrial, and infrastructure development.

This Plan is a conservation plan as required in section 10(a)(2)(A) of the Act for issuance of an incidental take permit pursuant to section 10(a)(1)(B). Participation in the Plan and applying for authorization to take desert tortoises are voluntary. To obtain an incidental take permit for the desert tortoise through this streamlined process, project proponents must:

- Meet the issuance criteria found at 50 Code of Federal Regulations (CFR) Parts 13 and 17;
- Document that their projects meet various qualifying criteria (described below);
- Agree to implement the minimization, mitigation, and monitoring generally described in this document and described in detail in the project-specific application and comply with the terms and conditions of any incidental take permit issued under this Plan; and
- Provide documentation that they have met all incidental take permitting requirements for their project as described in this document.

Once approved, the Plan will provide a basis for project proponents to obtain individual incidental take permits for covered activities in a streamlined manner. To use the Plan, project proponents must submit an individual project application package for the Service's approval. Section 6 of this Plan describes the process for submission and approval of an individual project package.

The Service recognizes that covered activities may result in take of the desert tortoise. Equipment and vehicles may crush or strike them; habitat degradation or loss could impair their breeding, feeding, or sheltering to the extent that they are reasonably certain to die; and the entities implementing a project may capture them (with authorization from the Service) for translocation or move them from harm's way. Section 4 discusses the potential impacts on the desert tortoise of the issuance of incidental take permits under this Plan. This Plan also describes actions that can serve to minimize and mitigate the impacts of such taking to the maximum extent practicable.

We developed this document to meet the Service's statutory and regulatory requirements.

Despite the best efforts of responsible agencies and project proponents, some projects may have the potential to take desert tortoises in a manner that we did not foresee during the development of this Plan or affect federal candidate, proposed, or listed species not covered by the Plan. If covered activities may result in take of non-covered federally listed species, the Service would recommend that project proponents apply for an incidental take permit for the non-covered species.

The Service may suspend or revoke an incidental take permit for noncompliance with its conditions or with any applicable laws or regulations governing the conduct of the permitted activity (50 CFR 13.27, 13.28). Revocation can further disqualify a project proponent from receiving or exercising the privileges of a similar permit for a period of 5 years from the date of the agency decision on the revocation (50 CFR 13.21(c)(2)).

Planning Area

The defined planning area includes a large portion of the range of the desert tortoise in California (Figure 1) and is the entire area covered by this Plan.

Because of the large sizes of the proposed planning, permit, and mitigation areas, the maps in this document are unlikely to precisely match on-the-ground boundaries. During application of the Plan, if the Service adopts it, the Service will abide by and rely on the spirit and intent of the Plan. Specifically, we intend the Plan to be available to facilitate the issuance of incidental take permits for the desert tortoise for activities on non-federal land that are outside of desert tortoise conservation areas; the Plan would also be available for activities along existing non-federal rights-of-way that traverse federal lands, provided that the activities are within the original purpose of the right-of-way. Mitigation required for the issuance of an incidental take permit would occur within a mitigation area, as defined in the Plan.

The two components of the planning area consist of the permit area and the mitigation area.

Project proponents could use the Plan to apply for incidental take permits within the permit area. The permit area generally encompasses non-federal lands outside of desert tortoise conservation areas (Figure 2). It also includes existing rights-of-way in the planning area where the federal agency no longer has discretionary authority; consequently, interagency consultation, pursuant to section 7(a)(2) of the Endangered Species Act, does not apply in these areas. The Plan would

Figure 1. Planning area.

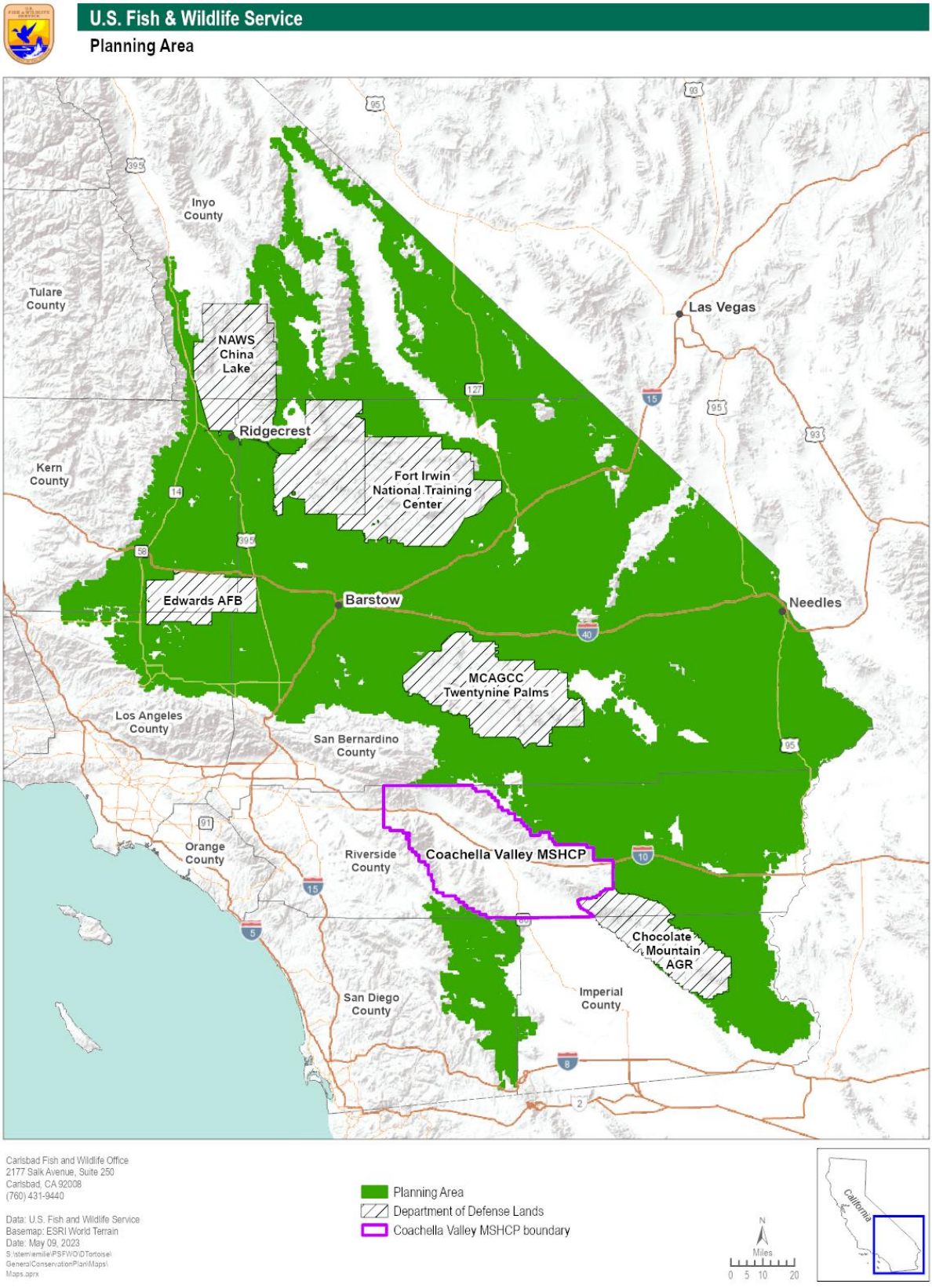
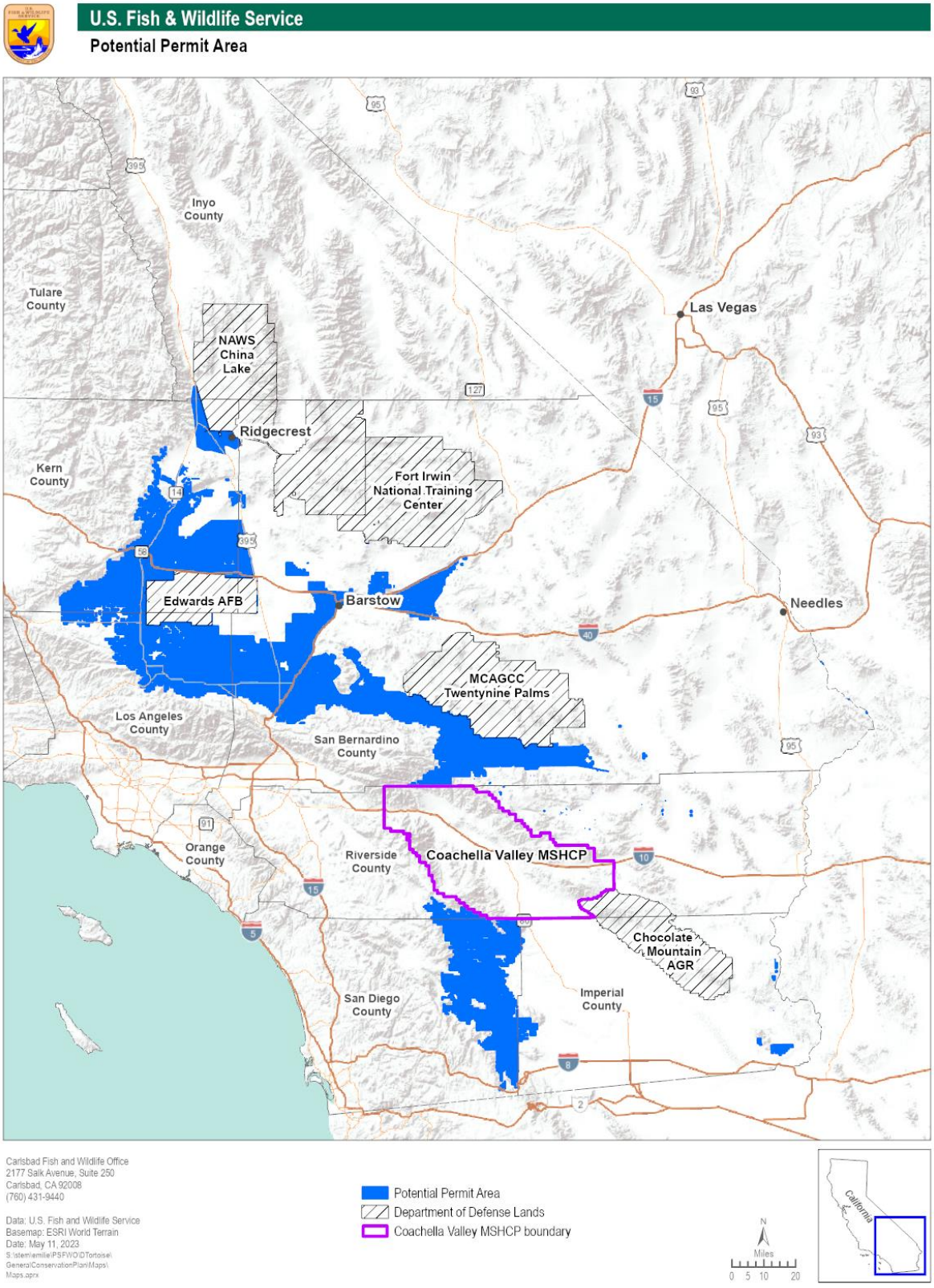


Figure 2. Potential permit area. The permit area depicted on this map may change because of public input and further analysis.



apply to such rights-of-way that cross federal lands, whether they are within or outside of mitigation areas. Within conservation areas, the Plan would be available only for projects that are intended to improve the safety and functionality of the existing right-of-way; the Service will not consider its use appropriate if the proposed action changes the basic function of the existing right-of-way. For example, the holder of such a right-of-way could apply for an incidental take permit under the Plan for the excavation of sand and gravel from the right-of-way to repair its utility in the right-of-way. However, we would not consider use of the Plan if the purpose was to sell the sand and gravel off site.

Mitigation resulting from issuance of incidental take permits under the auspices of the Plan to project proponents would occur within the defined mitigation area; we also propose to translocate desert tortoises into this area from development sites, as appropriate. The mitigation area generally includes "desert tortoise conservation areas" as described in the recovery plan for the desert tortoise (2011, Box 2). Conservation areas include conservation lands managed by the Bureau (California Desert National Conservation Lands and areas of critical environmental concern) as identified in the California Desert Conservation Area Plan, as amended by the Desert Renewable Energy Conservation Plan (Bureau 2016), National Park Service lands, and other conservation areas or easements managed for desert tortoises. The Plan would not be available to proponents of projects within the mitigation area, even if the proposed project is on non-federal land.

Figure 3 depicts desert tortoise conservation areas as described in the previous paragraph that overlay areas with a habitat potential of 0.5 or above for desert tortoises, as described by Nussear et al. (2009).

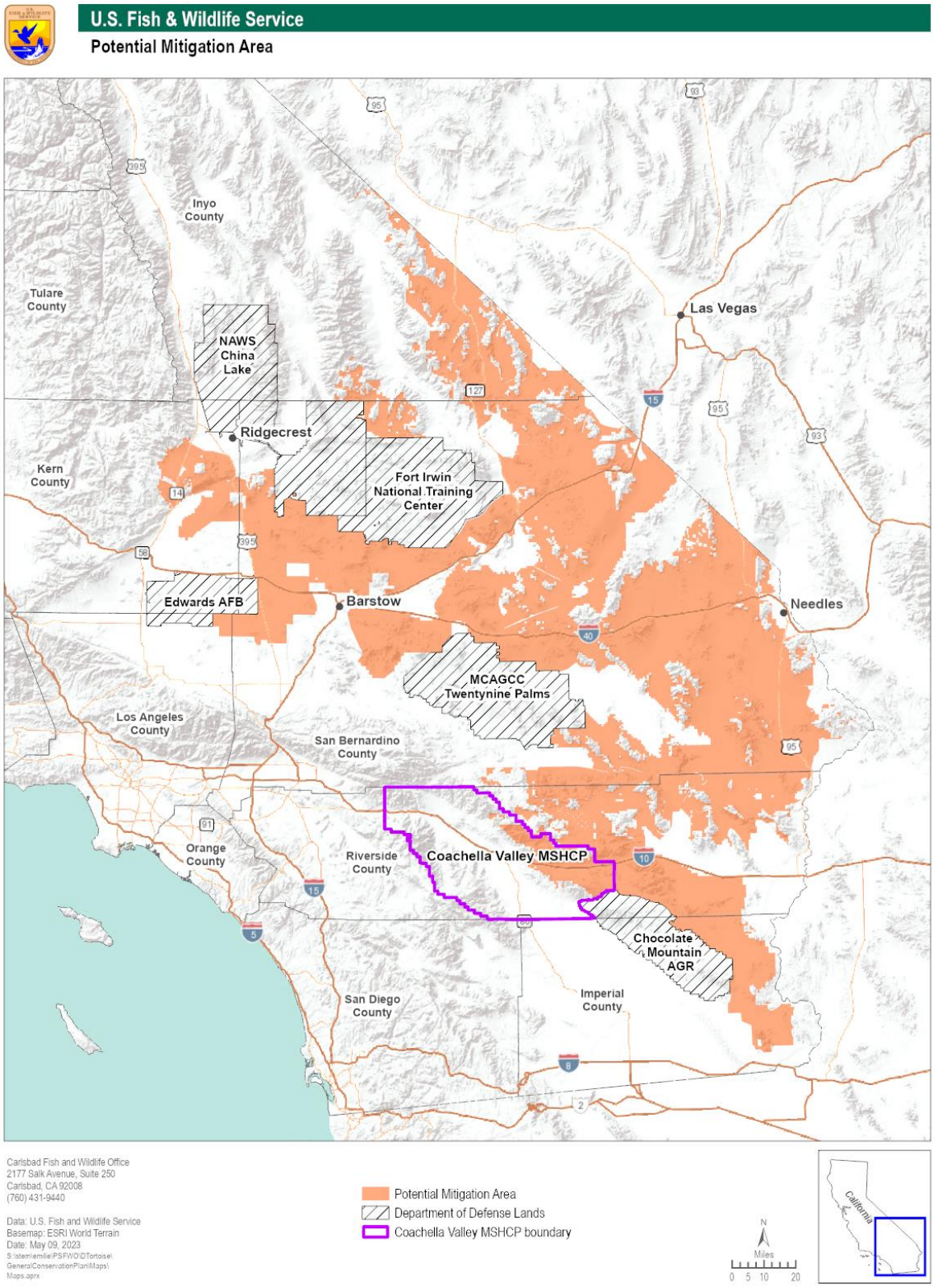
The Plan does not include the area covered by the Coachella Valley Multiple Species Habitat Conservation Plan. Also, the potential exists that the Service may issue incidental take permits for regional or local areas in the future. The Service and stakeholders can decide during those planning processes whether project proponents for incidental take permits in those areas can rely on this Plan or if the new habitat conservation plan would supersede this Plan.

The planning area includes undeveloped land, active and fallow agricultural lands, and rural and urban development. The undeveloped land encompasses various types of desert scrub habitat; human activities have disturbed some areas of scrub habitat. Desert tortoises occur primarily within undeveloped land but occasionally use fallow agricultural lands.

Duration of Incidental Take Permits Issued under the Plan

The duration of permits issued under the Plan will vary according to the nature of the specific proposed action for which a project proponent requests an incidental take permit. For example, if the proposed action would involve the incidental take of desert tortoises and the project proponent can fully implement the mitigation and monitoring over a brief time, the duration of that incidental take permit would be relatively short. For projects where incidental take and the implementation of mitigation are likely to require a long time, the incidental take permit for that project could extend for decades.

Figure 3. Potential mitigation area. The mitigation area depicted on this map is likely to change as a result of public input and further analysis.



Regulatory Context

Permits issued under this Plan cover only take incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (50 CFR 17.3). Project proponents seeking an incidental take permit under this Plan must comply with all applicable Federal, State, and local statutes and regulations to ensure that the action is otherwise lawful.

Regulatory Framework

Federal Endangered Species Act

The Service's responsibilities include administering the Act. Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the taking of any federally listed endangered or threatened fish or wildlife species. Take is defined in Section 3(19) of the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC 1532(3)(19)). Regulations at 50 CFR 17.3 further define harm as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns such as breeding, feeding or sheltering." The Act provides for civil and criminal penalties for the unlawful taking of listed species.

Exemptions to the prohibitions against take are available through coordination with the Service in two ways. If a Federal agency has discretion with regard to funding, authorizing, or carrying out an action that may affect a listed species, the Federal agency must consult with the Service pursuant to section 7(a)(2) of the Act, and, if an incidental take statement is provided, receive a take exemption through section 7(o)(2) of the Act. Any applicant would also receive the take exemption. Private individuals, State and local agencies, or other entities who propose an action that is reasonably certain to result in the take of federally listed fish or wildlife species, and for which no Federal nexus exists, may comply with the Act by applying for, and receiving, an incidental take permit pursuant to section 10(a)(1)(B) of the Act. A conservation plan must accompany the application for an incidental take permit.

Section 7(a)(2) of the Act requires that Federal agencies ensure that their actions are not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat. Pursuant to 50 CFR 402.2, "Jeopardize the continued existence of…" means "to engage in an action that would reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." Destruction or adverse modification means "a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species." Issuance of an incidental take permit by the Service, pursuant to section 10(a)(1)(B), constitutes a Federal action that is subject to the requirements of section 7(a)(2) and the Service must prepare an internal consultation to address the effects of the permit issuance.

Incidental Take Permit Process

The conservation planning process has four primary phases: (1) pre-application; (2) development of a conservation plan; (3) processing of the permit; and (4) post-issuance compliance. First, the Service provides the potential project proponent guidance in deciding if an incidental take permit is appropriate and, if so, what type and scale of conservation plan would fit the proponent's needs. During the second phase, the project proponent prepares a plan that integrates the proposed project or action with conservation of listed species. Pursuant to section 10(a)(2)(A) of the Act, every conservation plan submitted in support of an application for an incidental take permit must specify:

1. The impact that will likely result from such taking;
2. What steps the project proponent will take to monitor, minimize, and mitigate such impacts, the funding that will be available to implement such steps, and the procedures to be used to deal with unforeseen circumstances;
3. What alternative actions to such taking the project proponent considered and the reasons why such alternatives are not proposed to be utilized; and
4. Such other measures that the Service may require as being necessary or appropriate for purposes of the plan.

Development of a conservation plan concludes and the permit processing phase begins when the project proponent submits a complete application package to the appropriate permit-issuing office. A complete application package consists of a conservation plan, a permit application, and payment of a $100 fee by the project proponent. The Service will publish a notice of availability of the package in the Federal Register to allow for public comment and issue its incidental take permit when it determines that all the statutory requirements have been met. Pursuant to section 10(a)(2)(B) of the Act, the criteria for issuance of the permit are:

1. the taking will be incidental;
2. the project proponent will, to the maximum extent practicable, minimize and mitigate the impacts of such taking;
3. the project proponent will ensure that adequate funding for the plan will be provided;
4. the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and
5. the project proponent will meet measures, if any, required by the Service as necessary or appropriate for purposes of the plan.

The Service must also determine that it has received any other assurances that it may require that the project proponent will implement the plan. The permit will contain such terms and conditions as the Service deems necessary or appropriate to carry out the purposes of the issuance criteria, including, but not limited to, reporting requirements necessary to determine whether the project proponent is complying with the terms and conditions of the incidental take permit. The Service will prepare a set of findings that evaluates the application for the section 10(a)(1)(B) in the context of these issuance criteria.

During the post-issuance phase, the project proponent and any other responsible entities are required to implement the conservation plan in accordance with the terms and conditions of the incidental take permit. The Service monitors compliance with the conservation plan and its long-term progress and success.

National Environmental Policy Act

Federal agencies must comply with NEPA when they undertake discretionary actions. A purpose of NEPA is to ensure that Federal agencies "identify, consider, and disclose to the public relevant environmental information early in the process before decisions are made and before actions are taken" (40 CFR 1500.1(b)). In this case, the Federal action is deciding whether to issue an incidental take permit; the Service's NEPA compliance consists of an environmental impact statement.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires Federal agencies consider the effects of projects they carry out, approve, or fund on historic properties. This process requires consultation with the State Historic Preservation Office and appropriate American Indian tribes.

The implementing regulations for section 106 of the National Historic Preservation Act allow for the federal agency to authorize a project proponent or group of project proponents to initiate consultation regarding compliance with section 106 of the National Historic Preservation Act with the State Historic Preservation Office and Tribal historic preservation offices and others (36 CFR 800.2(c)(4)). Pursuant to the statute and regulations, the Service would remain legally responsible for all findings and determinations regarding historic properties. The Service will notify the State Historic Preservation Office and Tribal historic preservation offices of our intent to apply this authorization under the Plan. The Service will continue to follow its policies regarding government-to-government relationships with federally recognized tribes. We will describe the specific mechanism that the Service will use to comply with section 106 in Section 6 of this Plan.

Other Relevant Laws and Regulations

California Endangered Species Act: The California Endangered Species Act generally parallels the main provisions of the Act and provides for the designation of native species or subspecies of plants, fish, and wildlife as endangered or threatened. Section 2080 of the California Endangered Species Act prohibits the take of state-listed endangered or threatened species but allows for the incidental take of such species resulting from otherwise lawful development projects under section 2081(a) and (b). The desert tortoise is also listed as threatened, candidate endangered, under the California Endangered Species Act by the State of California. Individual project proponents who obtain a Federal incidental take permit for the desert tortoise, pursuant to section 10(a)(1)(B), may request that the Director of the Department find the Federal documents consistent with the California Endangered Species Act. Project proponents under this Plan are encouraged to coordinate with the Department

early in the federal permitting process prior to submitting requests for individual section 2080.1 consistency determinations for the desert tortoise to the Department.

California Environmental Quality Act: The California Environmental Quality Act is generally analogous to NEPA in that it requires the completion of an environmental review for projects that may significantly impact environmental resources. It requires public agencies in California to evaluate the environmental impacts of proposed projects, prepare negative declarations, mitigated negative declarations, or environmental impact reports and to consider feasible alternatives and mitigation measures that would substantially reduce significant adverse environmental effects; it also requires state and local agencies to notify the public and review its comments on proposed actions. It applies to a broad range of environmental resources, such as air quality, water, traffic, state and federally listed wildlife and plant species, and sensitive natural communities. We expect that local state land use agencies will review most projects for which project proponents propose to use the Plan under the California Environmental Quality Act.

Local land use agencies within the planning area include, but are not limited to, the counties of San Bernardino, Kern, Los Angeles, Riverside, and Imperial; the cities of Lancaster, Palmdale, California City, Ridgecrest, Hesperia, Adelanto, Barstow, Victorville, and Twentynine Palms; and the towns of Yucca Valley, Joshua Tree and Apple Valley. Several school and water districts also occur within this area. Other agencies of the State of California (e.g., the Department of Water Resources and State Lands Commission) may undertake activities in the planning area.

Covered Species

The desert tortoise is the only species covered under this Plan; therefore, we will only address impacts to and conservation of this species. We describe the desert tortoise further in section 3 of this Plan.

The Service considered whether covered activities could affect other federally listed species, candidate or proposed species, eagles, and migratory birds within the planning area (section 2). In the past, we have had few instances where a single project in the permit area had the potential to affect federally listed species or critical habitat in addition to the desert tortoise. Project proponents must avoid or receive separate authorization to take other federally protected species that occur within their project areas to meet issuance criteria for participation in the Plan. Failure to comply with the Act for other federally listed species may constitute a violation of section 9; it also could result in suspension or revocation of incidental take permits issued under the Plan. Failure to comply with other Federal laws and regulations with regard to other federally protected species may also result in prosecution.

Alternatives to the Taking

Section 10(a)(2)(A)(iii) of the Act requires that the project proponent describe "what alternative actions to the taking the applicant considered, and the reasons why such alternatives are not being utilized." The only alternative to the proposed incidental taking is for project proponents to

avoid any actions that could result in take of the desert tortoise. Under this alternative, proponents could modify projects to avoid the take of desert tortoises. Such modifications would likely range from insignificant to substantial changes in project design, timing, or location. For at least some cases, such modifications would not meet the needs of project proponents. Also, desert tortoises move over time; an animal that is outside the project boundary during resource surveys may move to within the project's boundary at the time of implementation. Complete avoidance of desert tortoises in the planning area is neither practical nor feasible for many activities.

Section 2.
Covered Activities

The Plan covers commercial, agricultural, residential, industrial, and infrastructure development on non-federal lands within the planning area and certain existing rights-of-way on federal lands where the federal agency no longer has discretionary authority. We also intend for the Plan to cover operations and maintenance associated with such activities. The Service intends the covered activities to be inclusive; that is, it will consider for coverage any future activity that has the same general effects on the desert tortoise as those described in this Plan. The Service retains the right to recommend that the non-federal entity pursue an individual incidental take permit if the scope of the proposed activity is likely to affect desert tortoises in a manner that we have not considered in this Plan.

We expect that portions of projects that are reasonably certain to take desert tortoises may occur outside the planning area as described in this Plan. For example, a proponent could propose a project that includes suitable desert tortoise habitat within the planning area but extends outside the planning area into areas where desert tortoises are highly unlikely to occur because the habitat is unsuitable. A second example would occur when a project proponent detects desert tortoises beyond areas we consider to be within their current range. In such cases, we would recommend that the project proponent contact us early in their planning process to determine whether use of the Plan is appropriate. To determine whether use of the Plan is appropriate, we would consider whether the proposed action would constitute more than a negligible effect on the desert tortoise. We would also evaluate the extent of the covered activities regarding their potential effects on the human environment. If the overall effect on the desert tortoise is negligible and the Service has adequately evaluated the potential effects on the human environment through NEPA, the Service may allow for use of the Plan. If we determine otherwise, we will recommend that project proponent seek incidental take authorization independent of the Plan, if needed.

All covered activities associated with each project must comply with all the requirements of local and state jurisdictions.

Section 3.
Environmental Setting and Covered Species

We derived the following information regarding climate; topography; hydrology and drainages; and existing and surrounding land uses from the California Energy Commission et al. (2014).

Climate

The planning area generally experiences hot, dry summers and mild to cold winters. Annual precipitation ranges from approximately 3 inches in the low deserts (Colorado/Sonoran) to approximately 8 inches in the high deserts and desert ranges (Mojave). The Mojave Desert is a "cold" or winter desert, with about 50 to 70 percent of rainfall occurring during the winter. The Colorado/Sonoran Desert is lower in elevation overall and hotter and drier than the Mojave Desert. In contrast with the Mojave Desert, the lower elevations of the Colorado/Sonoran Desert seldom experience subfreezing temperatures and frost. A substantial portion of the annual rainfall in the Colorado/Sonoran Desert occurs during monsoons from July to late September.

Topography

The topography within the planning area generally ranges from near sea level to approximately 8,700 feet. Most of the planning area ranges from approximately 1,500 to 3,500 feet above mean sea level. The westernmost portion of the planning area is relatively flat (Antelope Valley); most of the planning area contains mountain ranges, alluvial fans, and valleys.

Hydrology and Drainages

Major hydrologic features in the planning area include the Mojave River and numerous closed watersheds that drain to dry lake beds. The planning area also contains numerous washes, some of which are wide and deep.

Existing Land Uses

The planning area includes undeveloped land, active and fallow agricultural lands, and rural and urban development. The undeveloped land encompasses various types of desert scrub habitat; human activities have disturbed some areas of scrub habitat.

Various types of uses and facilities occur in areas where desert tortoises occur. These uses and facilities include but are not limited to mines, compost facilities, renewable energy facilities, communication sites, solid waste disposal facilities, wastewater treatment plants, transmission lines, residences, and prisons.

Numerous roads traverse the planning area. These roads include interstate and state highways, local roads, unpaved but maintained roads, and unpaved and unmaintained roads. Hiking, equestrian, and mountain bike trails also occur in the planning area.

The planning area also includes state and local parks. Non-federal lands also support motorized recreation, at least some of which is unauthorized, and other staged recreation events.

Covered Species

The Mojave population of the desert tortoise is the only species addressed in this Plan. This section provides a concise review of pertinent information on the desert tortoise, including a history of its listing, goals for recovery, status and distribution, reasons for its decline, and its recovery needs.

Listing History

The Service listed the Mojave population of desert tortoise (all desert tortoises north and west of the Colorado River in Arizona, Utah, Nevada, and California) as threatened on April 2, 1990 [55 Federal Register 12178].

Recovery Plan

In the revised recovery plan for the desert tortoise, the Service (2011) identified the need for "conservation areas" to protect existing desert tortoise populations and habitat. Box 2 and Figure 2 in the recovery plan (Service 2011) describe and depict these areas in a generalized manner, respectively.

The revised recovery plan lists three objectives and associated criteria to achieve delisting. The first objective is to maintain self-sustaining populations of desert tortoises within each recovery unit into the future. The criterion is that the rates of population change for desert tortoises are increasing over at least 25 years (i.e., a single generation), as measured by extensive, range-wide monitoring across conservation areas within each recovery unit and by direct monitoring and estimation of vital rates (recruitment, survival) from demographic study areas within each recovery unit.

The second objective addresses the distribution of desert tortoises. The goal is to maintain well-distributed populations of desert tortoises throughout each recovery unit; the criterion is that the distribution of desert tortoises throughout each conservation area increase over at least 25 years.

The final objective is to ensure that habitat within each recovery unit is protected and managed to support long-term viability of desert tortoise populations. The criterion is that the quantity of desert tortoise habitat within each conservation area be maintained with no net loss until population viability is ensured.

The revised recovery plan (Service 2011) also recommends connecting blocks of desert tortoise habitat, such as critical habitat units and other important areas, to maintain gene flow between populations. Linkages defined using least-cost path analysis (Averill-Murray *et al*. 2013) illustrate a minimum connection of habitat for desert tortoises between blocks of habitat and represent priority areas for conservation of population connectivity.

Threats

The threats described in the listing rule and both recovery plans (Service 1994, 2011) continue to affect the species. The most apparent threats to the desert tortoise are those that result in mortality and permanent habitat loss across large areas, such as urbanization and large-scale renewable energy projects, and those that fragment and degrade habitats, such as proliferation of roads and highways, off-highway vehicle activity, wildfire, and habitat invasion by non-native invasive plant species.

We remain unable to precisely quantify how particular threats affect desert tortoise populations relative to other threats. The assessment of the original recovery plan emphasized the need for a better understanding of the implications of multiple, simultaneous threats facing desert tortoise populations and of the relative contribution of multiple threats on demographic factors (i.e., birth rate, survivorship, fecundity, and death rate; Tracy *et al*. 2004).

For example, we have long known that the construction of a transmission line can result in the death of desert tortoises and loss of habitat. We have also known that common ravens (*Corvus corax*), known predators of desert tortoises, use transmission line pylons for nesting, roosting, and perching and that the access routes associated with transmission lines provide a vector for the introduction and spread of invasive weeds and facilitate increased human access into an area. Increased human access can accelerate illegal collection and release of desert tortoises and their deliberate maiming and killing, as well as facilitate the spread of other threats associated with human presence, such as vehicle use, garbage and dumping, and invasive plants (Service 2011). Changes in the abundance of native plants, because of invasive weeds, can compromise the physiological health of desert tortoises, making them more vulnerable to drought, disease, and predation.

Five-Year Reviews

Section 4(c)(2) of the Act requires the Service to conduct a status review of each listed species once every 5 years. The purpose of a 5-year review is to evaluate whether the species' status has changed since listing (or since the most recent 5-year review); these reviews, at the time of their completion, provide the most up-to-date information on the range-wide status of the species.

The Service's (2022) second 5-year review of the status of the desert tortoise summarizes the information from its initial 5-year review (Service 2010) and "describes substantive new information since 2011 [from the release of the updated recovery plan] relative to changes in threats, conservation measures, and regulatory mechanisms that pertain to the five listing factors outlined in section 4(a)(1) of the Act." For this reason, we are incorporating the 5-year review of the status of the desert tortoise (Service 2022) by reference to document information related to the status of the desert tortoise. Because it contains background information that is not in the most recent 5-year review, we have also incorporated the 2010 5-year review by reference. The following paragraphs provide a summary of the relevant information for the Plan. All references to "the 5-year review" in this section are to the most recent document (Service 2022), unless otherwise noted.

The 5-year review is replete with references to numerous studies and reports. We have not included references to those studies and reports in the following summary; the full citations are available in the 5-year review.

In the 5-year review, the Service discusses the status of the desert tortoise as a single distinct population segment and summarizes that "… habitat occupied by the Mojave [distinct population segment] is relatively continuously distributed, and genetic differentiation within the [distinct population segment] is consistent with isolation-by-distance in a continuous-distribution model of gene flow." The 5-year review also notes that the Mojave distinct population segment of the desert tortoise was elevated to species status as *Gopherus agassizii*, with most desert tortoises east of the Colorado River recognized as *G. morafkai*. The 5-year review notes that "nine local populations that include *G. agassizii* or hybrids with *G. morafkai* have been genetically identified east of the Colorado River in Arizona." The 5-year review recommends evaluating the federal listing status of the Mojave desert tortoise relative to its current taxonomy and distribution.

In the 5-year review, the Service concluded that the "condition of most threats is similar to that described in the previous [2010] status review" and summarized the new information within the context of the five listing factors outlined in section 4(a)(1) of the Act. We summarize that information below.

Factor A: Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range

Various types of anthropogenic impacts continue to cause the loss of desert tortoise habitat. The Service has issued biological opinions or incidental take permits for approximately 74,000 acres of utility-scale solar energy development in occupied desert tortoise habitat. Solar development has largely occurred outside of desert tortoise conservation areas, as described in the recovery plan (Service 2011).

The 5-year review also describes the Marine Corps' expansion of training onto approximately 167,982 acres of public and private land and the Department of Army's plans to expand activities onto approximately 62,045 acres of its western training area in the near future. These activities are in the Western Mojave Recovery Unit.

Legal and illegal cannabis cultivation is causing smaller scale, more widely distributed losses of habitat, particularly in the Western Mojave Recovery Unit; illegal operations are likely to indirectly affect additional habitat because of various types of waste they generate.

Wildfires fueled by invasive grasses have burned extensive areas of desert tortoise habitat. For example, fires in 2020 occurred in desert tortoise habitat in the Mojave National Preserve (Dome Fire, 43,273 acres), Nevada (Meadow Valley Fire, 23,500 acres), and the Red Cliffs Desert Reserve in the Upper Virgin River Recovery Unit (11,000 acres in several fires). The latter fire killed at least 25 desert tortoises.

The 5-year review notes that desert tortoises are "essentially absent" from habitat within 1 kilometer of areas with greater than 10 percent development; "development" includes urban

areas, cultivated agriculture, energy facilities, mines and quarries, pipelines, transmission lines, roads and railroads. Approximately 5 percent of modelled desert tortoise habitat within conservation areas had development levels that exceeded this threshold. See Table 3 and Figure 7 in the 5-year review. Desert tortoise populations declined in conservation areas where the density of paved and unpaved roads exceeded 0.75 kilometer per square kilometer; population trends varied at lower densities of roads. See Figure 8 in the 5-year review.

Of the threats discussed for Factor A, solar development likely directly affects the largest number of desert tortoises. Since approximately 2010, the Service (unpublished data) has estimated that solar development would affect approximately 19,900 desert tortoises in its biological opinions and incidental take permits. We used various methodologies to arrive at that estimate. In some cases, we included the estimated number of small desert tortoises, which likely far exceeded the numbers of individuals present. To date, 661 desert tortoises have been observed at these project sites; the potential exists that some desert tortoises, particularly small individuals died during construction of the projects, but were not detected.

Factor B: Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

The 5-year review notes that the Service has little new information on threats related to this factor. Mortalities on paved and unpaved roads and the collection and deliberate maiming of desert tortoises remain threats.

Factor C: Disease or Predation

The 5-year review notes that "current research suggests that direct disease management of wild [desert] tortoise populations is less important … than managing factors that affect their habitat and its capacity to support healthy [desert] tortoises." However, management of disease when translocating desert tortoises between populations remains important. As an example of managing habitat, red brome (*Bromus rubens*), which is a non-native invasive plant, negatively affects the health and survival of juvenile desert tortoises.

Badgers (*Taxidea taxus*), coyotes (*Canis latrans*), kit foxes (V*ulpes macrotis*), dogs (*Canis familiaris*), common ravens, and red-tailed hawks (*Buteo jamaicensis*) prey on desert tortoises. Badgers can have severe effects on desert tortoise populations at the local level; DNA analysis of scats suggest that badgers, coyotes, kit foxes, dogs, and red-tailed hawks may prey on desert tortoises more frequently than previously thought.

Common ravens, because their populations have greatly increased through human subsidies, severely affect the recruitment of desert tortoises into the breeding population through predation on small individuals. In California, management includes the broad-scale removal of common ravens from critical habitat of the desert tortoise.

Factor D: Inadequacy of Existing Regulatory Mechanisms

The Bureau continues to face challenges in managing compliance with use of its off-highway vehicle network in the Western Mojave Recovery Unit. As of 2019, the Bureau documented

24,518 kilometers of ground transportation linear features in this area, which is more than 2.5 times the 9,651 kilometers designated as open or limited. The Bureau has an active program of restoring unauthorized routes and signing open routes.

Unauthorized cattle grazing continues within the Gold Butte National Monument in Nevada. We discussed cannabis cultivation in California previously in this section.

Factor E: Other Natural or Manmade Factors Affecting its Continued Existence

The 5-year review notes that, in the southwestern United States, 2000 through 2021 was the driest 22-year period in over 1,200 years; drought is likely to continue beyond 2022. Drought reduces the amount of annual plant forage for desert tortoises and, over longer times, will kill shrubs that desert tortoises rely on for cover.

Increased temperatures may affect hatchling sex ratios. Changes in climate may shift the timing of egg production and extend the egg-laying period. This change in egg production may not compensate for changes in the environment, such as the length of time eggs spend above their critical thermal maximum temperature and whether forage is available to support the production of eggs and forage for hatchlings. If climate change results in an overall decrease in reproduction, human-subsidized predation on young desert tortoises, particularly by common ravens, would exacerbate issues with the recruitment of desert tortoises into the breeding population.

Synthesis

The Management Oversight Group for the desert tortoise "has taken steps to prioritize and implement actions that would be most effective at facilitating recovery across the range." The Departments of Defense and the Interior have initiated a Recovery and Sustainment Partnership with the goal of implementing actions that would accelerate recovery of the desert tortoise while reducing the regulatory burden on military installations. The action plan focuses on identifying ways to accelerate habitat restoration, fencing conservation areas and roadways, and addressing unauthorized routes in the Western Mojave Desert Recovery Unit.

In California, the Bureau's (2016) Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Act Plan included numerous conservation and management actions that addressed issues relevant to the desert tortoise. As part of the land use plan amendment, the Bureau established new limits on ground-disturbing activities of 0.1–1.0 percent relative to its lands within desert tortoise conservation areas and mapped linkages between these areas. The land-use plan amendment also increased the amount of land that the Bureau manages for conservation in California (e.g., areas of critical environmental concern, California Desert National Conservation Lands, etc.) from 6,118,135 to 8,689,669 acres. Not all of these areas are within desert tortoise habitat; however, management as conservation areas will likely benefit desert tortoises indirectly because conservation management would limit subsidies to common ravens and other indirect effects.

The threats that led to the listing of the desert tortoise (i.e., the five-factor analysis required by section 4(a)(1) of the Act) continue. The status of the desert tortoise has continued to decline

and most of the previously identified threats continue to affect populations. Given the reproductive ecology of the desert tortoise, measurable increases in the size of populations will require years.

In the 5-year review, the Service concluded by recommending that the status of the desert tortoise as a threatened species be maintained because of the large extent of its range and a total number in the "hundreds of thousands of individuals (all size classes) at last estimation."

Recommendations for Future Actions

The 5-year review provided eight recommendations for the highest priority actions over the next 5 years. These recommendations are from the revised recovery plan (Service 2011); their full text is in the 5-year review.

1. More aggressive implementation of habitat restoration, targeted predator control and limitation of subsidies, fencing priority stretches of highways, fire management planning and implementation, and environmental education;

2. Maintaining landscape connectivity and the resilience of desert tortoise conservation areas by managing all desert tortoise habitat for persistence and connectivity, limiting landscape-level disturbance across habitat managed for the desert tortoise by extending surface-disturbance caps similar to those enacted by the Bureau in California to the rest of the Mojave desert tortoise's range, maximizing passage under roads, and adapting management based on information from research on: the effects of climate change on desert tortoise habitat, distribution, and population connectivity; the effects of large-scale fires, especially within repeatedly burned habitat, on desert tortoise distribution and population connectivity; the ability of solar energy facilities or similar developments to support desert tortoise movement and presence by leaving washes and native vegetation intact; and the design and frequency of underpasses necessary to maintain functional demographic and genetic connectivity across roads and highways;

3. Increasing law enforcement efforts across the range of the desert tortoise, especially within conservation areas to minimize impacts of habitat destruction and degradation as a result of unauthorized off-highway vehicle use, unpermitted cannabis farms, and trespass grazing;

4. Using population augmentation to help achieve recovery criteria in each of the five recovery units according to the Service's population augmentation strategy;

5. Updating the taxonomy, distribution, and listed status of the species, which we discussed previously in this section;

6. Incorporating updated population trend analysis and climate change and land-use modeling into the next 5-year review to inform management strategies under a framework for ecological adaptation;

7. Sustaining and more fully implementing range-wide monitoring efforts; and

8. Developing a revised spatial decision support system to improve models of threats, recovery actions, and demographics, using up-to-date underlying geospatial data, evaluation of prior conceptual models, and improved operationalization of recovery action terminology.

Reproduction, Numbers, and Distribution

Section 10(a)(2)(B) of the Act requires, among other issuance criteria for an incidental take permit, that the Service determine whether the taking associated with the proposed action will appreciably reduce the likelihood of the survival and recovery of the species in the wild. The Service conducts this analysis through an internal consultation, pursuant to section 7(a)(2) of the Act. Through the consultation process, when determining whether a proposed action is likely to jeopardize the continued existence of a species, we are required to consider whether the action would "reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). We consider the requirement at section 10(a)(2)(B) to function the same as the jeopardy analysis conducted under section 7(a)(2). Below we summarize the status of the desert tortoise with respect to its reproduction, numbers, and distribution.

Reproduction

In the previous 5-year review, the Service (2010) notes that desert tortoises increase their reproduction in high rainfall years; more rain provides desert tortoises with more high-quality food (i.e., plants that are higher in water and protein), which, in turn, allows them to lay more eggs. Conversely, the physiological stress associated with foraging on food plants with insufficient water and nitrogen may leave desert tortoises vulnerable to disease and the reproductive rate of diseased desert tortoises is likely lower than that of healthy animals. Young desert tortoises also rely upon high-quality, low-fiber plants (e.g., native annual plants) with nutrient levels not found in the invasive weeds that have increased in abundance across its range. Compromised nutrition of young desert tortoises likely represents an effective reduction in reproduction by reducing the number of animals that reach adulthood. Consequently, although we do not have quantitative data that show a direct relationship, the abundance of weedy species within the range of the desert tortoise has the potential to affect the reproduction of desert tortoises and recruitment into the adult population in a negative manner.

Various human activities have introduced numerous species of non-native invasive plants into habitat of the desert tortoise. Routes that humans use to travel through the desert (paved and unpaved roads, railroads, motorcycle trails, etc.) serve as pathways for new species to enter habitat of the desert tortoise and for species that currently occur there to spread. Other disturbances of the desert substrate also provide invasive species with entry points into the desert. The abundance and distribution of invasive weeds may compromise, at least to some degree in localized areas across its range, the reproductive capacity of the desert tortoise; the

continued increase in human access across the desert likely continues to facilitate the spread of weeds and further affect the reproductive capacity of the species.

Numbers

In the previous 5-year review, the Service (2010) discussed various means by which researchers have attempted to determine the abundance of desert tortoises and the strengths and weaknesses of those methods. Due to differences in area covered and especially to the non-representative nature of earlier study sites, data gathered by the Service's current range-wide monitoring program cannot be reliably compared to information gathered through other means at this time.

Range-wide monitoring from any single year samples a portion of the desert tortoise conservation areas; the conservation areas comprise only a portion of the recovery units. Additionally, any single-year estimate of the number of desert tortoises should be viewed as a snapshot that several variables likely influence. Consequently, considering trends derived from years of range-wide monitoring provides a more accurate view of the status of desert tortoise populations.

Allison and McLuckie (2018) used annual density estimates obtained from range-wide monitoring from 2004 through 2014 to evaluate range-wide trends in the density of desert tortoises over time. Allison and McLuckie (2018) extrapolated the densities of large desert tortoises derived by range-wide monitoring in the conservation areas to all modeled habitat in the recovery unit; the abundance columns in Table 1 contain these extrapolated numbers, which overestimate the number of desert tortoises.

Table 1. Change in desert tortoise abundance in recovery units (Allison and McLuckie 2018)*.

Recovery Units	Modeled Habitat (km^2)	Conservation Area (km^2)	2004 Abundance	2014 Abundance	Annual Trend (percent)
Western Mojave	23,139	6,873	131,540	64,871	-7.1
Colorado Desert	18,024	13,530	103,675	66,097	-4.5
Northeastern Mojave	10,664	4,889	12,610	46,701	13.1
Eastern Mojave	16,061	3,720	75,342	24,664	-11.2
Upper Virgin River	613	115	13,226	10,010	-3.2
Total	68,501	29,127	336,393	212,343	

* Allison and McLuckie (2018) used modeled habitat within the entire range of the desert tortoise for this estimate.

Distribution

We discussed specific activities that have resulted or will result in the loss of desert tortoise habitat in the Factor A section above. Here, we summarize their overall effect on the distribution of the desert tortoise.

The 5-year review notes that the absolute amount of desert tortoise habitat range-wide decreased by approximately 163,700 acres between 2005 and 2017, based on changes in LandSat imagery. However, several utility-scale solar energy developments have been approved or constructed since 2017; additionally, LandSat imagery would not detect areas from which desert tortoises have been or will be translocated that have not undergone changes in vegetation to date.

Attempting to quantify the amount of habitat lost is difficult because of the varying methods used in studies. Also, models depicting desert tortoise habitat cannot differentiate between areas where desert tortoise populations maintain the ability to recruit young animals to breeding age and areas where recruitment has likely not occurred for years.

In summary, human activities have continued to reduce the distribution of the desert tortoise. Most of the losses of habitat have occurred outside of desert tortoise conservation areas, with the exception of those associated with Fort Irwin. The large size of the potential range of the desert tortoise and difficulties associated with determining areas that it actually occupies within that area (i.e., not including areas from which it has been extirpated or that are unsuitable habitat) precludes quantifying its distribution with precision.

Critical Habitat of the Desert Tortoise

The permit area for the Plan does not include any areas that the Service designated as critical habitat for the desert tortoise. Consequently, the Service would not issue any incidental take permits based on this Plan for proposed actions that occur within the boundaries of critical habitat of the desert tortoise.

The potential exists that a proposed action outside the boundaries of critical habitat could affect off-site critical habitat in some manner. We will evaluate every application for an incidental take permit with regard to this potential. If we identify the potential for such an effect, we will discuss it with the project proponent. If we cannot remove or mitigate the adverse effect through these discussions, the Service would decline to evaluate that proposed action under the Plan and would recommend that the project proponent pursue a separate incidental take permit. The nature of the effects to adjacent critical habitat would influence whether mitigation of the adverse effects at a higher ratio (such as that in effect for the land management plan for that area) or applying for a separate incidental take permit would be appropriate.

Some proposed actions are likely to occur along non-federal rights-of-way within the boundaries of critical habitat of the desert tortoise. In our experience, past activities in these rights-of-way have disturbed the physical and biological features of critical habitat. During our review of specific proposed actions along non-federal rights-of-way within critical habitat, we would

consider the condition of the physical and biological features. In areas where habitat conditions are not now suitable for the conservation of desert tortoises, use of the Plan by project proponents would be appropriate. As noted previously in this document, the Service would decline the use of the Plan in any situation that falls outside its standards and sideboards.

Mitigation for the incidental take of desert tortoises will occur within desert tortoise conservation areas (Service 2011), including critical habitat. These actions would include the acquisition and management of lands and various other activities designed to conserve desert tortoises. The acquisition of lands would not cause the take of desert tortoises; the management of acquired lands and the implementation of other mitigation activities (e.g., restoration of habitat, fencing of roads, etc.) have some potential to take limited numbers of desert tortoises and may be addressed through a recovery permitting process (i.e., section 10(a)(1)(A) of the Act) or consultation under section 7 of the Act associated with this Plan, through existing permits and consultations, or through separate project-specific processes.

For these reasons, the Plan does not address effects to critical habitat of the desert tortoise. Consequently, we have not included a review of the status of critical habitat in this document.

Section 4.
Biological Impacts and Take Assessment

The development of land is likely to kill or injure any desert tortoises that reside in the area where work would occur. The Service and other agencies that have worked with the desert tortoise since its listing have developed measures to minimize the number of animals that development activities are likely to kill or injure.

In the following paragraphs, we will evaluate the potential effects on the desert tortoise of the issuance of incidental take permits under this Plan and assess the amount of incidental take that we anticipate may occur.

Loss of Individuals during the Disturbance or Conversion of Habitat

The disturbance or conversion of habitat for various uses in the desert usually involves heavy equipment. This equipment can crush desert tortoises that are either above ground or in their underground burrows. It can also collapse occupied burrows and trap desert tortoises inside. The collapse of unoccupied burrows removes shelter sites upon which desert tortoises depend; the loss of shelter sites leaves desert tortoises vulnerable to temperature extremes and predators.

Based on our experience with past development projects, biologists are able to translocate or move most desert tortoises to outside work areas. If surveys fail to detect desert tortoises prior to the onset of ground-disturbing activities, they are likely to die during construction, although project workers occasionally detect individuals during construction. Smaller desert tortoises (i.e., those smaller than 180 millimeters) are more difficult to detect; therefore, project activities are more likely to kill or injure smaller individuals. We will discuss these potential outcomes in the following sections.

Moving Desert Tortoises from Harm's Way and Translocation

Moving desert tortoises from harm's way involves transporting individuals from the immediate area of an activity that is likely to injure or kill the animals to nearby habitat that is likely within or very near the individual's territory; that is, the moved desert tortoise very likely is familiar with the area to which it was moved. Depending on the nature of the activity, biologists monitoring the project approved by the Service may move desert tortoises up to several hundred feet from the activity.

No one has studied the effects of moving desert tortoises from harm's way. We expect that the placement of the desert tortoise up to several hundred feet from its original location is not likely to adversely affect individuals because they are likely still within their home range. (That is, they remain where they are familiar with local resources, such as areas to forage and seek shelter.)

Handling desert tortoises can cause them to void their bladders, which they use to store water. Averill-Murray (2002) found that desert tortoises that voided their bladders had lower survival rates than those that did not. Careful handling while moving desert tortoises from harm's way can reduce the likelihood of their voiding their bladders. Because moving desert tortoises from

harm's way does not involve excessive handling and anyone who does so will receive instruction beforehand, we expect that desert tortoises voiding their bladders is likely to occur infrequently. Also, approved biologists can provide desert tortoises with water if they void their bladders; many desert tortoises readily accept provided water.

This method of protecting desert tortoises from project activities is more likely to occur along existing rights-of-way where Federal discretionary authority is not present. We expect that project proponents would rarely use this method within the western Mojave Desert because Federal agencies do not manage most lands in that area; in such areas, project proponents would be unable to move desert tortoises from harm's way without placing them on another landowner's property.

Translocation involves the movement of desert tortoises from their territories within the work area to suitable habitat outside of their home ranges; the recipient sites for translocated desert tortoises may be miles from the project site. Project proponents in the western Mojave Desert are likely to translocate numbers of desert tortoises to augmentation sites on lands managed for conservation.

One of the strategic elements in the recovery plan for the desert tortoise (Service 2011) is the augmentation of depleted populations with conservation areas. The Service is currently working with the U.S. Geological Survey to identify specific augmentation sites that meet specific criteria; we discuss augmentation later in this section. In the interim, prior to the establishment of specific augmentation sites, the Service would direct project proponents to translocate desert tortoises to general areas that meet these criteria on a case-by-case basis, in coordination with the land manager.

In recent years, agencies and project proponents have translocated numerous desert tortoises from military training areas, solar projects, and construction sites. Many of these translocations involved various studies to evaluate how the movement affected resident and translocated desert tortoises in relation to control animals. Resident desert tortoises are those animals within their home ranges with translocated individuals nearby; control desert tortoises are animals within their home ranges with no translocated individuals nearby. The Service (2017a, b) has summarized various studies regarding the effects of translocation on desert tortoises and Dickson et al. (2019) evaluated the results of a multi-year study of translocation on desert tortoises from the site of a solar project. We have incorporated those analyses into this Plan and will not repeat that information here.

In general, studies demonstrate that translocated, resident, and control desert tortoises do not differ significantly in survival rates, levels of stress hormones, movements, susceptibility to predation, and other aspects of behavior. In some cases (*e.g.*, movement patterns), the behavior pattern of translocated desert tortoises resembled those of controls and residents after 2 to 3 years. Consequently, we conclude that translocation is an effective tool for protecting desert tortoises, if those conducting the translocation follow specific protocols designed to increase the chance of success. These protocols include translocating desert tortoises only during appropriate times of the year (*i.e.*, when they are active), only into suitable habitat, and with appropriate consideration of disease issues.

The Service will consider disease when directing project proponents to translocate desert tortoises. To the best of our knowledge, no wild desert tortoise population is free of disease; Rideout (2015) notes that no wildlife populations are completely free of disease. Consequently, the Service's goal is to ensure that translocated desert tortoises do not affect the prevalence of disease in a negative manner among recipient populations. To achieve this goal, we will use our most recent protocol with regard to management of disease, including the use of an algorithm to determine whether translocation of any individual is appropriate and an evaluation of the recipient sites to ensure that the sites do not show evidence of an active outbreak of disease (Service 2019).

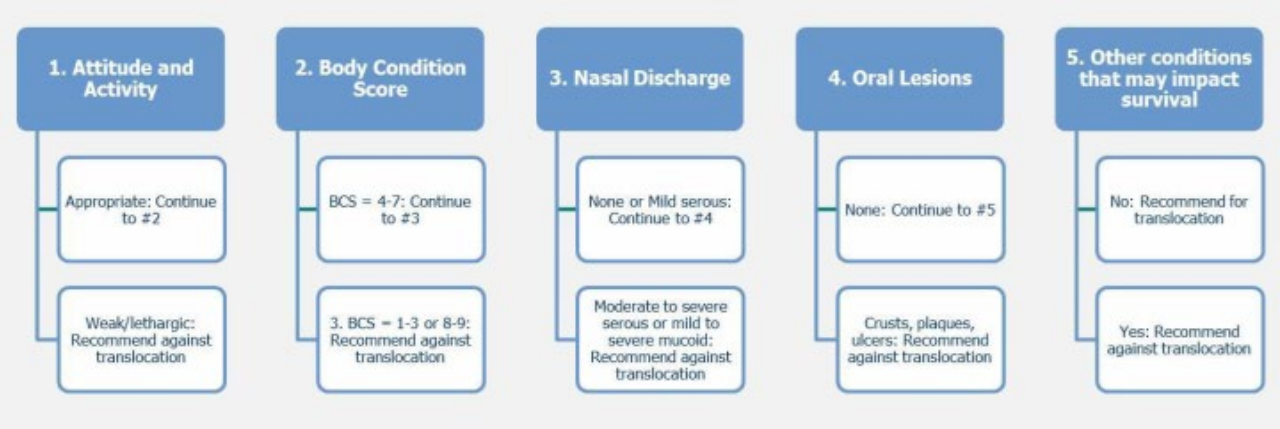


Figure 4 Translocation algorithm from Service (2019).

We expect that new information regarding the management of diseases will emerge over time. We will modify the management of disease when new information is available, through coordination with the Service's Desert Tortoise Recovery Office.

Augmentation of Depleted Populations

The revised recovery plan for the desert tortoise (Service 2011) notes that the Service considers population augmentation as a necessary recovery tool because of "appreciable declines of … populations across the range." We have proposed to approach this strategy experimentally, "in terms of both the continued development and evaluation of techniques and through the use of augmentation to help assess specific threats and recovery actions" (Service 2011). In situations where we can achieve greater conservation benefit for the desert tortoise, the terms and conditions of our incidental take permits will require project proponents to move desert tortoises to designated augmentation sites within conservation areas.

Relatively few desert tortoises are likely to undergo translocation because of this Plan. We have reached this conclusion because, since the listing of the desert tortoise in 1990, we have issued approximately 14 incidental take permits for the desert tortoise in the planning area. With the exception of the incidental take permit for the Hyundai Test Facility in Kern County (Sundance Biology 2006; 27 desert tortoises), our issuance of incidental take permits has resulted in the translocation of few desert tortoises. In several cases, the project proponents either did not proceed with the permitted project or did not take any desert tortoises during implementation.

Table 1 depicts the incidental take permits that the Service issued that resulted in the take of desert tortoises.

Table 1. Section 10(a)(1)(B) Projects That Resulted in the Incidental Take of Desert Tortoises in California.

Project	Year Issued	Location and County	Acres	Number of Desert Tortoises Found Onsite[1]
Borax	1999	Boron, Kern	3,465	1
Hyundai Test Track	2004	California City, Kern	4,498	27
Copper Mountain College	2007	Near Joshua Tree, San Bernardino	267	~5
Cinco Solar	2013	Near Cantil, Kern	500	3
High Desert Solar	2019	Victorville, San Bernardino	580	8
Pacific Gas and Electric	2019	Near Hinkley, San Bernardino	1,379[2]	0
California City Prison	1998	California City, Kern	425	1
AGCON	2010	Oro Grande, San Bernardino	120	2
Bellefield Solar Energy Project	2022	Mojave, Kern	8,571	5[3]
Total	-	-	19,805	~52

[1] This column represents the number of desert tortoises that were found onsite and translocated or moved from harm's way. We are unaware of any desert tortoises that have died because of project activities conducted under section 10(a)(1)(B) permits in the planning area.
[2] This acreage reflects the acreage of anticipated habitat disturbance over the life of the incidental take permit (CH2MHill Engineers 2019). No desert tortoises have been killed, injured, or captured to date (Arcadis U.S. 2022).
[3] The project proponent has not cleared the entire site to date and has found five to date. Biologists found five large desert tortoises during surveys (Stantec 2022).

We expect that incidental take permits issued through this Plan may cause an increase in the number of translocations and movements from harm's way to a small degree as developers use the expedited process to take desert tortoises, primarily in the form of capture, rather than altering project boundaries to avoid a few individuals. For this reason, we expect that the issuance of this Plan is likely to have a minor and possibly undetectable positive effect on the augmentation of depleted populations.

Because this Plan will also apply to the maintenance of infrastructure by public works agencies, we also expect that project proponents may move desert tortoises from project sites onto adjacent federal lands. Whether such short-distance movements constitute augmentation of depleted populations would be determined on a case-by-case basis.

Impact Analysis regarding Incidental Take of Desert Tortoises

No one conducts comprehensive monitoring of desert tortoises on non-federal lands in the permit area. Consequently, the Service does not have information on the abundance of desert tortoises in this area. However, the permit area likely supports relatively few desert tortoises. We have reached that conclusion based on the results of surveys conducted for incidental take permits that we have issued in the past and the results of other surveys. In general, the permit area is closer to existing development. Desert tortoises in those areas have been subject to the direct and indirect effects of numerous human activities for decades.

Overall, implementation of the Plan would likely not result in the incidental take of numerous desert tortoises because relatively few desert tortoises remain in the permit area. We also anticipate that most incidental take under the Plan would occur in the form of capture (i.e., capture is a form of take defined in the Act) when project proponents translocate desert tortoises from project sites to conservation areas or move them from harm's way along non-federal rights-of-way within conservation areas.

Experience from range-wide monitoring for desert tortoises demonstrates that surveyors generally detect most individuals that are 180 millimeters or more in length when they are above ground. For the purposes of this discussion, we will refer to individuals that have a midline carapace length of 180 millimeters or longer as "large" desert tortoises; we will refer to desert tortoises with shorter midline carapace lengths as "small" desert tortoises.

Based on our experience, we expect that the implementation of projects under the Plan is likely to result in death or injury of few large desert tortoises because biologists find and translocate or move from harm's way most of those individuals. If biologists do not find a desert tortoise during a project's clearance surveys, it is likely to be killed or injured by construction equipment.

Small desert tortoises are more likely to escape detection; hatchlings, which are approximately 50 millimeters long, are especially difficult to detect. However, we expect that the permit area supports relatively few small desert tortoises. For example, 8minute Solar Energy found 5 desert tortoises on approximately 8,000 acres of the site of the Bellefield Solar Energy Project from 2019 to 2021. This site is located northwest of the town of Mojave. The smallest desert tortoise found in this effort was a female that was 240 millimeters long. A female desert tortoise of this size is likely to be from 30 to 45 years old, although some females never reach this size (Medica et al. 2012). Given that age range, we can calculate that she hatched between 1976 and 1991. No desert tortoises between 180 and 240 millimeters were found in this same survey of Bellefield, even though detection probability among these size-age classes is uniform (Alison and McLuckie 2018). This gap in demography indicates that consistent recruitment into adult age classes at the Bellefield site has been intermittent or nonexistent since at least 1990, evidenced by the lack of individuals observed in the size-age classes of 17 to 20, 20 to 35, and possibly 35 to 45 years.

At the Hyundai site, which is located immediately to the east of the Bellefield site, Vaughn (2006) translocated 28 desert tortoises from approximately 4,290 acres in 2003 and 2004. The smallest desert tortoise found in this effort was a 227-millimeter female. In 2017 and 2018, the site of the High Desert Solar Project, which is located north of Victorville, supported 7 large desert tortoises and a hatchling; the smallest large individual was 236 millimeters long (Guigliano 2021). Considered collectively, survey results from 2004 and 2021 most likely indicate that relatively few small desert tortoises occur in the permit area.

The Service cannot predict how many desert tortoises are reasonably certain to be taken by projects under the Plan because we do not know how many project proponents will apply for incidental take permits, the specific locations of those projects, or the number of desert tortoises on each project site. Of the desert tortoises taken, we do not know how many are likely to be killed or injured. To ensure that the Plan succeeds in terms of minimizing the number of desert tortoises that are killed during project activities, the Service will evaluate the circumstances of each reported mortality to determine whether the project proponent was fully implementing the minimization measures. If our evaluation demonstrates that the minimization measures were not fully implemented, the Service will work with the project proponent to resolve the pertinent issue; if the project proponent is not responsive, the Service will initiate procedures to suspend or revoke that specific incidental take permit. If we determine, through the evaluation, that the project proponent was fully implementing the minimization measures, but additional or somewhat different measures are needed, the Service will work with the project proponent to develop supplementary minimization measures to correct the identified issue.

To date, we are unaware of any large desert tortoises that have died during the implementation of a project covered by an incidental take permit in California. The lack of mortalities likely reflects the few desert tortoises that biologists have encountered while implementing the projects and the effectiveness of the minimization measures project proponents use to protect desert tortoises. We acknowledge that a few desert tortoises, likely smaller ones, were likely killed but were not detected.

Given the uncertainties we have outlined in this section of the Plan, we cannot predict the number of desert tortoises that projects may kill under the Plan. We fully expect the cumulative number to be low because of the relatively few desert tortoises that occur in the permit area and the fact that qualified biologists will find most large desert tortoises and remove them from the project sites. To ensure that implementation of the Plan meets our expectations in terms of protecting desert tortoises, the Service will track the amount of incidental take permitted for each activity under the Plan through the approval of incidental take permits. If five large desert tortoises die because of activities for which incidental take was permitted under this Plan in any calendar year, the Service will first assess the adequacy of the minimization measures in the Plan. If administrative changes to the minimization measures in the Plan, or the specific measures associated with the individual incidental take permits, are not practical, we will not approve additional incidental take permits in that calendar year unless we amend the Plan. We will notify the public of any revisions to the Plan that may involve additional impacts to the desert tortoise through a notice in the Federal Register.

Consequently, the Service will evaluate each individual incidental take permit with regard to the results of surveys for desert tortoises and the nature of the proposed action and include a limit on the number of desert tortoises that it authorizes as take in the form of mortality. We will then track the amount of take that occurs through each project's reporting and cumulatively by evaluating annual reports.

Project proponents may injure desert tortoises during the implementation of their projects. Each incidental take permit will include directions to provide veterinary care to injured desert tortoises at the expense of the project proponent. Injured desert tortoises that recover fully will be returned to the wild. The Service will consider injured desert tortoises that cannot be returned to the wild after treatment as mortalities that accrue under the project's incidental take permit. Project proponents must contact the Service to determine the final disposition of all injured desert tortoises.

In summary, the implementation of the Plan would likely result in the translocation or movement from harm's way of a relatively small number of desert tortoises from project areas; an even smaller number of desert tortoises are likely to die as result of projects that receive an incidental take permit from the Service under the Plan. The few desert tortoises that are likely to die would comprise a small fraction of the number of desert tortoises within the range of the species.

Prior to the issuance of incidental take permits through this Plan, the Service must consult internally, pursuant to section 7(a)(2) of the Act, regarding the effects of the proposed action (i.e., the use of the Plan) on the desert tortoise. The purpose of that formal consultation is to determine whether use of the Plan is likely to jeopardize the continued existence of the desert tortoise. We will base the analysis in the internal consultation on the definitions and metrics described in the implementing regulations for section 7(a)(2) of the Act (50 CFR Part 402).

Section 5.
|Conservation Program/Measures to Minimize and Mitigate for Impacts

Biological Goals and Objectives

Section 10(a)(2)(A) of the Act requires that a general conservation plan specify the measures that the project proponent will take to minimize and mitigate the impacts of the taking of any federally listed wildlife species as a result of covered activities addressed by the plan.

Conservation plans must establish biological goals and objectives. The purpose of the biological goals is to ensure that the operating conservation program in the conservation plan is consistent with the conservation and recovery goals established for the species. The goals are also intended to provide to the project proponent an understanding of why these actions are necessary. We developed these goals based upon the biology of the desert tortoise, threats to the species, the potential effects of the covered activities, and the scope of the Plan.

Goal 1: Minimize take of desert tortoises within the project areas.

Objective 1.1 Minimize the potential for the take of desert tortoises because of covered activities.

Objective 1.2 Remove any desert tortoises from impact areas by performing surveys prior to and, if necessary, during implementation of the activity, and translocate any individuals to approved suitable habitat within conservation areas.

Goal 2: Mitigate the effects of take to help meet recovery criteria and/or support long-term viability of the desert tortoise.

Objective 2.1 To mitigate impacts on the desert tortoise, project proponents will acquire, restore, and/or manage habitat to ensure conservation benefits for the desert tortoise within conservation areas. Conservation benefits include measures to reduce the mortality of desert tortoises (e.g., installation of highway fencing, etc.) and to improve habitat conditions (e.g., restoration of disturbed habitat within conservation areas, etc.).

Minimization and Mitigation Measures

Section 10(a)(2)(B) of the Act requires that conservation plans demonstrate how a project proponent will minimize and mitigate to the maximum extent practicable the impacts of take authorized by an incidental take permit and that such taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild. In general, the minimization and mitigation measures in conservation plans should be based on sound biological rationale and be practicable and commensurate with the impacts of the project on species for which take is requested.

In accordance with these guidelines and the requirements of the Act, the conservation program of this Plan is intended to achieve its biological goals and objectives and to ensure that the impacts of covered activities are minimized and mitigated to the maximum extent practicable.

The following minimization, mitigation, and monitoring measures will apply to all permits issued under the Plan and will be specifically tailored to the circumstances of each individual permit as appropriate.

Measures to Minimize Impacts

Measures 1, 2, and 4 through 11 implement Objective 1.1. Measure 3 implements Objective 1.2.

1. Depending on the nature and location of the proposed action, the project proponent may conduct pre-project surveys of the project area according to the Service's current protocol or a modified protocol agreed upon by the Service for the specific action; it may also use the regional density as determined by the Service's range-wide monitoring. The project proponent and Service will determine the appropriate course of action through discussions prior to submitting an application package. The purpose of these surveys is to assess the number of desert tortoises that may be present.

2. The project proponent will employ authorized biologists, monitors, and/or fencing, as necessary and appropriate, to protect desert tortoises during implementation of the proposed project. Biologists requesting designation as authorized biologists for each activity must have sufficient training and experience to resolve any issue that may arise regarding the specific activity on which they are working. For example, if the activity involves the translocation of desert tortoises, at least one authorized biologist must have sufficient training and experience to conduct full health assessments and implement the translocation according to the Service's guidance. For an activity where translocation is not needed, the authorized biologist need not have that specific training and experience. Monitors may work under the supervision of authorized biologists. Monitors may handle desert tortoises as determined to be appropriate by the authorized biologist; the authorized biologist will determine the protective measures the monitors may conduct and the level of supervision the monitors need to complete each task. The project proponent will submit the credentials of biologists they propose as authorized biologists to the Service for review and approval at least 30 days prior to the onset of activities that could take a desert tortoise.

3. The project proponent will employ authorized biologists and monitors to conduct clearance surveys to remove desert tortoises from work areas prior to the onset of ground-disturbing activities. Depending on the nature of the activity and circumstances, desert tortoises in work areas will either be moved from harm's way into adjacent suitable habitat or translocated longer distances to suitable protected habitat on public or designated conservation lands; the translocation sites may include regional augmentation sites, as discussed in the recovery plan (Service 2011). The project proponent will follow the Service's most recent guidance for handling, moving, and translocating desert tortoises; because of specific circumstances, we may recommend changes in the guidance

that is in place at the time of a specific activity. In all cases, the project proponent must obtain the Service's review and approval of the project-specific translocation plan. If the proposed recipient site is on land managed by a federal, state, or local agency, the Service will contact the land manager for approval prior to the project proponent translocating desert tortoises. If the proposed recipient site is on land managed by a land conservancy or mitigation bank, the project proponent will provide the Service with a letter from the landowner accepting the translocated desert tortoises prior to moving them. If the proposed project is located on a non-federal right-of-way within a conservation area, desert tortoises in work areas will be moved from harm's way into suitable habitat within adjacent conservation lands. The project proponent will mark all desert tortoises that it moves in a manner to be determined by the Service unless we determine that marking is not needed in a specific situation.

4. The project proponent will implement measures to reduce the attractiveness of work sites to common ravens (*Corvus corax*) and other subsidized predators by controlling trash and educating workers. The project proponent and Service will discuss whether the proposed project is likely to attract common ravens over its active life. If the proposed project is likely to attract common ravens over its active life, the project proponent will convey the appropriate fee to the National Fish and Wildlife Foundation for the management program for common ravens, as described in the Service's incidental take permit issued for the project.

5. The project proponent will implement an education program for workers and all other participants in the activity to ensure they are aware of the protective measures in place for the desert tortoise.

6. The project proponent will require that all workers, contractors, and all other participants in the activity check under their vehicles or equipment prior to moving them when they are in areas where desert tortoises are likely to be active.

7. The project proponent will follow the Service's most recent protocol for construction of fencing and gates to exclude desert tortoises. The project proponent will also ensure that the fencing and gates remain capable of excluding desert tortoises for the life of the activity unless otherwise notified by the Service.

8. The project proponent will employ best management practices to reduce the likelihood that its actions will introduce non-native invasive plant species.

9. In any situation where a desert tortoise places itself in danger (e.g., it enters a work area or access road or becomes trapped in an excavation), the project proponent will undertake immediate action to protect the desert tortoise. If an authorized biologist or biological monitor is not <u>immediately</u> available onsite, the project proponent will place the desert tortoise in a suitable container in a shaded location and contact an authorized biologist for additional guidance. The project proponent may also contact the Service for further guidance, if needed. The authorized biologist and project proponent will develop a procedure for such an occurrence, which we expect would not occur frequently, prior to

the start of the activity. Under normal circumstances, authorized biologists (and the biological monitors that they designate) will be the only individuals allowed to handle desert tortoises.

10. The interstitial spaces of all rock-slope protection extending to and from culverts and undercrossings will be filled with substrate to prevent trapping desert tortoises. All culverts and undercrossings will be constructed to allow for the passage of desert tortoises. For example, the entrances and exits of culverts and undercrossings will not contain steep or vertical inclines that desert tortoises would be unable to use.

11. The project proponent will monitor translocated desert tortoises in a manner that is commensurate with the number of desert tortoises that require translocation. For example, the translocation of few desert tortoises into an augmentation area may require only monthly "wellness checks" on translocated individuals for the first year. The translocation of many desert tortoises from a single project may require more extensive pre-translocation work and intensive monitoring for years after translocation.

12. The Service intends to develop a program to conduct long-term monitoring of translocated desert tortoises. We may discuss with project proponents methods for their monitoring to contribute to this effort.

If these generalized protective measures do not address a specific concern during the review of a proposed action, the Service and the project proponent may develop additional protective measures for that project.

Measures to Mitigate Impacts

The following measures to mitigate impacts to desert tortoises implement Object 2.1. The project proponent will fulfill its mitigation obligation through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., habitat preservation), mitigation bank credits, other actions needed to protect and conserve desert tortoises, or a combination of these options. At a minimum, the amount of land acquisition will generally follow the guidelines in the Bureau's (2016; see Table 18) Desert Renewable Energy Conservation Plan.

For land-acquisition options, the project proponent may directly purchase lands or purchase them through a third party (e.g., land trust); in either case, the Service will review lands proposed for acquisition. The project proponent must place acquired lands under a conservation easement and provide for long-term management and funding to ensure in-perpetuity conservation.

The project proponent may choose to donate acquired lands to the Bureau or National Park Service. These agencies will follow relevant statutes, regulations, and land use plans, when accepting land donations.

For mitigation banking options, the project proponent may directly purchase credits from a mitigation bank that the Service has approved. If the bank lacks approval from the Service, the project proponent may provide the bank's enabling instrument to the agency to request approval.

For non-acquisition options, the project proponent must work with the Service to identify any appropriate recovery action(s) to fulfill its mitigation obligations. The project proponent will either directly fund implementation of the project or place funds into a regional recovery account to provide for its implementation by an entity approved by the Service. The Service would work with the project proponent to identify the appropriate funding assurances and durability mechanisms, when appropriate, to meet permit issuance criteria.

If the Service and project proponent are interested in pursuing a non-acquisition option on lands managed by the Bureau, they would work with the Bureau to find an area within California Desert National Conservation Lands or an area of critical environmental concern within a mitigation area as defined by the Plan. If the non-acquisition mitigation on lands managed by the Bureau requires compliance with NEPA, the project proponent will be responsible for any costs associated with the preparation of the appropriate NEPA document.

The project proponent could also provide funding to the recovery account for desert tortoises held by the National Fish and Wildlife Foundation, after determining the appropriate amount of funding with the Service. The National Fish and Wildlife Foundation would combine this funding from other sources and issue annual requests for proposals to implement recovery actions for the desert tortoise.

Monitoring

Monitoring tracks compliance with the provisions of the Plan and the specific incidental take permit and provides information for making adaptive management decisions. Monitoring consists of three types:

1. Compliance monitoring tracks the permit holder's compliance with the requirements specified in the Plan and permit;

2. Effects monitoring tracks the impacts of the covered activities on the covered species; and

3. Effectiveness monitoring tracks the progress of the conservation strategy in meeting the Plan's biological goals and objectives.

<u>Compliance Monitoring</u>

Each incidental take permit issued under the Plan will include onsite monitoring during implementation of the activity, daily monitoring logs, and preparation of a post-construction compliance report to be provided to the Service.

Effects Monitoring

To quantify the amount of incidental take at the end of the activity, the post-construction compliance report will provide information on the numbers of desert tortoises that were found and translocated or moved from harm's way, injured, or killed during implementation of the activity.

Effectiveness Monitoring

The Service will assess the effectiveness of the minimization and mitigation measures by reviewing monitoring reports and, for activities of longer duration, possibly site visits. The post-construction compliance report will include an evaluation of the effectiveness of the minimization and mitigation measures. Project proponents are responsible for management, monitoring, and reporting the biological monitoring on mitigation land for which the proponent is responsible.

Management, monitoring, and reporting the biological monitoring on conservation banks or other mitigation land is the responsibility of the banker or third party that holds the easement on the mitigation land, respectively. Other than the biological monitoring that is being conducted on the mitigation land, the Service will monitor and evaluate biological effectiveness of the Plan through review of annual reports and range-wide monitoring of the desert tortoise. Project proponents will allow Service staff or other persons designated by the Service to access the property at any reasonable hour for the purpose of assessing whether the project proponent is fully implementing the specific incidental take permit for desert tortoises (50 CFR 13.47).

Adaptive Management Strategy

The Service defines adaptive management as a formal, structured approach for addressing the uncertainty inherent in all natural systems (65 FR 35242). It involves examining alternative strategies for meeting measurable biological goals and objectives, and then, if necessary, adjusting future conservation, management, monitoring, or mitigation actions based upon what is learned. Adaptive management plans are required for conservation plans where there is substantial uncertainty regarding the effects of the action on the covered species or the efficacy of minimization and mitigation measures. The adaptive management program identifies the potential need for modification of a project and uses research and monitoring as an on-going feedback loop for continuous improvement. It should also identify triggers for certain responses and incorporate those triggers and responses into conservation plan implementation. Monitoring and reporting described in Section 5 of this Plan and other project and survey information will provide the basis for determining when the project proponent and Service should discuss and/or implement adaptive management. The Service will monitor and analyze the effects of minimization and mitigation actions prescribed in this Plan to determine whether they are producing the anticipated results. If the desired results are not being achieved, we can use adaptive management to adjust minimization and mitigation measures to increase the Plan's effectiveness for specific activities.

Changed Circumstances

The regulations that implement section 10(a)(1)(B) of the Act [50 CFR 17.22(b)(2) and 17.32(b)(2)] require that a conservation plan specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the habitat conservation plan. In addition, 50 CFR 17.22(b)(5) and 17.32(b)(5)] provide assurances to non-federal landowners participating in conservation planning under the Act that where the conservation plan is being properly implemented and the permittee is properly complying with the permit, no additional land restrictions or financial compensation will be required for covered species in the event of unforeseen circumstances without the consent of the project proponent.

If the Service deems additional conservation and mitigation measures necessary to respond to changed circumstances and these additional measures were already provided for in the Plan's conservation program, the project proponent must implement those measures as specified in the Plan. In some cases, the Service may find that specific projects warrant additional requirements regarding changed circumstances.

If additional conservation management and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the Plan's conservation program or the specific incidental take permit, the Service will not require these additional measures absent the consent of the project proponent, provided that the Plan is being "properly implemented." ("Properly implemented" means the project proponent has been or is fully implementing the commitments and provisions of the Plan (Service and National Oceanic and Atmospheric Administration 2016, page G-20).)

Project proponents should identify up-front the range of possible conservation program adjustments that could be implemented as new information or data is obtained. This range defines the limits of what resource commitments may be required of the project proponent. The project proponent should identify specific actions that must be taken, not merely provide a general review of strategies. Prior to permit issuance, the Service and the project proponent must have a clear understanding and agreement as to the range of adjustments to the management actions that might be required as a result of any changed circumstances. This process will enable the project proponent to assess the potential economic impacts of adjustments before agreeing to the Plan.

To fund the remedial management to address changed circumstances, a project proponent must add a line item to the estimated management costs. The amount should be commensurate with the costs to address the changed circumstances, based on the anticipated restoration, management and/or monitoring costs. The following sections outline reasonably foreseeable circumstances and their anticipated effects on the covered species.

<u>Newly Listed Species</u>

If a new species is listed or critical habitat is designated under the Act that occurs within the permit area, the Service will re-evaluate any incidental take permits it issued under this Plan. If, after reevaluation, the Service determines that modification of covered activities for any specific

project would be necessary to avoid or minimize the likelihood of take of this newly listed species or the destruction or adverse modification of designated critical habitat, the project proponent and the Service will work together to develop and implement mutually agreeable modification measures to the covered activities in the incidental take permit ("modification measure(s)"). The Service and the project proponent must approve each modification measure before implementation. The project proponent will be allowed to continue undertaking covered activities that would not result in take of the newly listed species while such modification measures are being developed. The project proponent will continue to implement such modification measures until such time as they have applied for and the Service has approved an amendment of the section 10(a)(1)(B) permit, in accordance with applicable statutory and regulatory requirements, to cover the newly listed species or until the Service notifies the proponent in writing that the modification measures to the covered activities are no longer required to avoid the take of the newly listed species or the destruction or adverse modification of designated critical habitat.

Newly Discovered Listed Species

In the event that an already-listed species is discovered in a project area, if the Service determines that modification of the covered activities would be necessary to avoid the likelihood of take of this species, the project proponent and the Service will work together to develop and implement mutually agreeable modification measures to the covered activities in the incidental take permit. The Service and the project proponent must approve each modification measure before implementation. The project proponent will be allowed to continue undertaking covered activities that would not result in take of the newly listed species while such modification measures are being developed. The project proponent will continue to implement such modification measures until such time as the proponent has applied for and the Service has approved an amendment of the section 10(a)(1)(B) permit, in accordance with applicable statutory and regulatory requirements, to cover the listed species or until the Service notifies the project proponent in writing that the modification measures to the covered activities are no longer required to avoid the likelihood of take of the listed species.

Unforeseen Circumstances

Unforeseen circumstances are defined at 50 CFR 17.3 as changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the Service at the time of the conservation plan's negotiation and development, and that result in a substantial and adverse change in the status of the covered species (50 CRF 17.3). The term "unforeseen circumstances" is used to define the limit of the project proponent's obligation under the "No Surprises" regulations set forth in 50 CFR 17.22(b)(5) and 17.32(b)(5).

In case of an unforeseen circumstance, the project proponent will immediately notify the Service. In deciding whether unforeseen circumstances exist, which might warrant requiring additional conservation measures, the Service will consider, but not be limited to, the factors identified in 50 CFR, 17.22(b)(5)(C) and 17.32(b)(5)(C) (the No Surprises Rule). These factors are: size of

the current range of the affected species, percentage of the range affected by the Plan, percentage of range conserved by the Plan, ecological significance of that portion of the range affected by the Plan, level of knowledge about the affected species and the degree of specificity of the species' conservation program under the Plan, and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

As described in 50 CFR 17.22(b)(5)(C) and 17.32(b)(5)(C), the Service will have the burden of demonstrating that unforeseen circumstances exist, using the best data available. Any findings of unforeseen circumstances must be clearly documented and based upon reliable technical information regarding the biological status and habitat requirements of the affected species.

Except where substantial threat of imminent, significant adverse impacts to a covered species exists, the Service will provide the project proponent at least 60 calendar-days written notice of a proposed finding of unforeseen circumstances, during which time the Service will meet with the project proponent to discuss the proposed finding, to provide the proponent with an opportunity to submit information to rebut the proposed finding, and to consider any proposed changes to the conservation program or the incidental take permit.

Pursuant to the No Surprises rule, if the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstances, the additional measures must be as close as possible to the terms of the original plan. If the Service determines that additional conservation and mitigation measures are necessary to respond to unforeseen circumstances, then the project proponent will work with the Service to develop mutually agreeable conservation and mitigation measures; both the Service and the proponent must approve the measures before implementation. Additional conservation and mitigation measures will not involve the commitment of additional land, additional financial commitment or funding by the project proponent, or additional restrictions on the use of land or other natural resources otherwise available for development or use under original terms of the Plan without the consent of the proponent.

Section 6.
Permit Processing and Implementation

The Service strongly recommends that project proponents who may want to apply for an incidental take permit for desert tortoises meet with us as early in their planning process as possible. In some cases, such as when desert tortoises are clearly present on a project site, project proponents can be reasonably certain that their activities would result in take. In other situations, such as when the results of surveys are not clear or desert tortoises occur near but not on the project site, determining the appropriate course of action (i.e., whether to apply for an incidental take permit) can be more difficult.

Application Package

Once a project proponent has decided to apply for an incidental take permit for desert tortoises under the Plan, they should meet with the Service to refine the general minimization and mitigation measures described in this document into project-specific measures. Once a project proponent has refined the minimization and mitigation measures to address their specific activity, they must submit a complete permit application package to the Service. This section describes the permit application package and provides information on the development and submission of the package. The permit application package includes the following items:

- A 3-200-56 Federal Fish and Wildlife Permit Application Form (including supplementary information requested in the permit application form such as the total number of acres, covered activities requested under the permit, etc.);
- Application processing fee (currently $100);
- A signed copy of the Plan's project planning document:
    - Project proponents interested in applying for a permit must complete the project planning document. See Appendix A. This document can assist potential project proponents with determining whether their activity may be eligible for a permit under this Plan.
- Individual project package, which includes:
    - Map or maps and a description of the location of impacts, including photographs (as described below). Maps must include sufficient detail to enable readers to determine how various aspects of the project are likely to affect desert tortoises. If the previous map does not include the mitigation area for the proposed project, please include an additional map. Please provide shape files for all maps.
    - Duration of proposed covered activities;
    - Description of proposed covered activities with emphasis on how they would affect desert tortoises and their habitat;
    - Survey results for the desert tortoise;
    - Estimation of the amount of take (more information below);
    - Project-specific descriptions of the minimization and mitigation measures and the monitoring plan developed in coordination with the Service;

- Project-specific descriptions of the funding assurances and commitments necessary to implement the proposed minimization, mitigation, and monitoring (more information below); and
- Documentation that project proponent has completed their compliance with the state or local agency's cultural resources requirements. If the project proponent does not require authorization from a state or local agency, the proponent should inform the Service of the circumstance early in the planning process so the Service can initiate its work to comply with section 106.

Mitigation and Funding Assurances

Project proponents must demonstrate adequate funding for mitigation. If conservation banks are the selected mitigation method, documentation of credit purchase must be provided to the Service prior to initiation of impacts. If project proponent-responsible mitigation lands are the selected mitigation method, these lands must first be approved by the Service, and then be acquired and have completed management plans and perpetual protection (for example, a conservation easement) prior to the initiation of impacts. If the mitigation includes non-acquisition measures, the project proponent must assure the Service that they have the funding and commitments from other parties, if necessary, to implement the mitigation prior to the initiation of impacts. Project proponents must submit their plans for mitigation (type, location, and status) in their individual project packages.

In addition to funding mitigation, the project proponent must also demonstrate adequate funding sources to fully implement and maintain the required minimization measures for their specific activity, conduct compliance and effectiveness monitoring, and implement measures that may be required due to changed circumstances. Funding options for changed circumstances and post-construction restoration are described in Section 7. For each permit application package, project proponents must identify the selected funding option, submit applicable documentation of the selected funding assurance (as discussed in Section 7), and include an estimate of the cost to implement their specific activity.

Service Review and Notification of Permit Application Package Status

Within 30 days of the receipt of a permit application package, the Service will review the package for completeness and will notify the project proponent via e-mail (to the e-mail address included in the individual project package checklist) whether their permit application package is complete and ready for submission to the Federal Register. If the application package is not complete, we will provide suggestions for revising it.

Within 30 days of the close of the public comment period in the Federal Register, the Service will either provide the issued incidental take permit to the project proponent or notify the proponent that we have denied issuance. In the latter situation, the Service will provide the project proponent with an explanation of why we denied issuance of the incidental take permit.

Permit Application Submission

Permit application packages, all associated information described above (and in the application instructions), and the processing fee must be submitted to the Service's Palm Springs Fish and Wildlife Office. Project proponents should also submit an electronic copy of the application by email to XXXX@fws.gov with the subject heading "Plan Application – <Your Company Name>."

Under section 10(c) of the Act, the Service must publish a notice of receipt for each application received for an incidental take permit in the Federal Register. We will make the project-specific information available for public review through this notice for 30 days. At the conclusion of this public review, the Service will review all comments and consider them prior to reaching a decision regarding issuance of the incidental take permit.

Permit Implementation

If the Service issues an incidental take permit under this Plan, the project proponent will be responsible for:

1. Fully implementing their project-specific minimization and mitigation measures, as described in their application for an incidental take permit;
2. Complying with all terms and conditions of their incidental take permit;
3. Providing proof of implementing the mitigation to the Service prior to onset of any activities that have the potential to result in take. Project proponents must submit the receipt of mitigation form found at http://www.fws.gov/XXXXX along with supporting documentation to XXXX@fws.gov with the subject heading "Plan Mitigation Fulfillment – <Your Company Name>";
4. Monitoring and tracking their total take of, and impacts to, the desert tortoise; and
5. Providing an annual report that documents how they fulfilled the requirements of this section.

Impact, Mitigation, and Post-Construction Restoration Tracking

Following the Service's issuance of a permit, covered activities included in the individual project package may begin.

During implementation of covered activities, project proponents must track the take of desert tortoises and ensure that the measures in the incidental take permit are being fully implemented. The project proponent must track and report the effectiveness of all minimization and mitigation measures, as identified in Section 5 of this document. The project proponent must demonstrate that adequate mitigation is in place before the corresponding take occurs. If the mitigation is not in place prior to when the incidental take is likely to occur, the project proponent must provide assurance to the Service that the mitigation will occur and obtain the Service's approval before initiating activities that are likely to result in take of desert tortoises.

After project completion, the project proponent will document the final amount of incidental take of desert tortoises.

The total amount of incidental take approved by the Service in incidental take permits associated with the plan will be posted on our website, http://www.fws.gov/XXXXX. We will update the amount of take following each approval of an incidental take permit or as end-of-year reports are submitted.

Reporting

The project proponent must submit an annual report of covered activities and management activities undertaken under their specific incidental take permit to XXXX@fws.gov. The e-mail subject heading should read "Annual Report – Permit TEXXXXXXX – Individual Project Package #XXX" with the applicable year in four-digit format, permit number (found in Box 3 of the incidental take permit) and individual project package number (found in permit application package approval e-mail from Service) for the project. The project proponent must submit annual reports by March 31 of each year that the specific incidental take permit is in effect (i.e., while the project proponent is working under an active incidental take permit). The report must summarize information on the covered activities and management activities for the issued incidental take permit, including:

1. Permit number;
2. Description of activity conducted within habitat;
3. Location of impacts;
4. Map identifying the location of impacts;
5. Habitat types affected;
6. Minimization measures implemented;
7. Amount and type (project proponent-responsible, purchase of conservation bank credits, mitigation account) of mitigation;
8. Date of mitigation fulfillment (credit purchase, deposit to mitigation account, approval of conservation easement);
9. Total acres of mitigation provided for impacts but not yet applied to impacts; and
10. Summary of the above information by year and cumulative for entire duration of the permit.

If project activities conclude before the permit duration expires, project proponents are not required to continue to submit annual reports subject to coordination and/or approval from the Service. If no impacts occur during a given year of the permit's duration, project proponents may send an e-mail to the Palm Springs Fish and Wildlife Office at (XXXX@fws.gov) stating that no impacts occurred during that calendar year. E-mail subject heading should read "Annual Report – Permit TEXXXXXXX – No Impacts." In cases where development activities may have concluded but activities associated with mitigation responsibilities continue, the project proponents must submit an annual report detailing those responsibilities. Project proponents must notify us prior to transferring the responsibility for activities associated with mitigation to another party; in such cases, the party then conducting the management activities must provide the annual report as described above.

Notice of Permit Issuance

The Service will issue project-specific incidental take permits under this Plan once it determines that the project proponent has met all requirements for issuance. This document describes the statutory criteria for permit issuance in Section 1 under Regulatory Framework. We will notify the public of any incidental take permits we issue under the Plan through the publication of an annual notice in the Federal Register.

We will also post information regarding issued project-specific incidental take permits applications at https://ecos.fws.gov/ecp/report/conservation-plans-region-summary?region=8&type=HCP. We recommend that anyone interested in activities conducted under this Plan check the website; we will denote all incidental take permits that we consider or issue under this Plan with the acronym "DTGCP-CA" to facilitate searching for them.

Amendments to the Plan and Specific Incidental Take Permits

Clarifications and Administrative Changes

Provisions of the Plan or project-specific conservation measures may need to be clarified to address issues with respect to administration of the process or the precise meaning and intent of the language contained within those documents. Project proponents may also wish to have provisions clarified and may request that the Service provide such clarifications. Clarifications do not change the substantive provisions of any of the documents in any way but merely clarify and make more precise the provisions as they exist.

In addition, administrative changes to the Plan or project-specific conservation measures may be necessary that do not make substantive changes to any of the provisions, but which may be necessary or convenient, over time, to more fully represent the overall intent of the project proponent and the Service. The Service will review any request for clarification or any proposed administrative change. If the Service approves the change or clarification, the Service will process the change and will provide a response. Clarifications to the Plan or project-specific conservation measures will be approved locally by the Assistant Field Supervisor of the Palm Springs Fish and Wildlife Office. Administrative changes to the Plan or project-specific conservation measures will also be approved by the Assistant Field Supervisor of the Palm Springs Fish and Wildlife Office. Clarifications and administrative changes to the Plan or project-specific conservation measures will be memorialized by a letter of agreement that will be archived at the Palm Springs Fish and Wildlife Office and will be posted on the Plan website, http://www.fws.gov/Palm Springs/XXXX.

The Service may alter the Plan without changing issued incidental take permits when the alterations are of a minor or technical nature such that the net impacts on the desert tortoise and levels of take resulting from the change are not increased over those described in the original Plan and the Service's decision documents. Examples of changes to the Plan that would not require a permit amendment include, but are not limited to: (a) minor revisions to monitoring or reporting procedures; (b) minor revisions in accounting procedures; and (c) minor modifications

to covered activities in response to evolving technologies (provided that impacts associated with such activities will not exceed the level of take analyzed under the Plan and are compliant with other local and state laws and regulations).

Substantive Changes

Substantive changes are modifications that result in impacts not previously analyzed, such as (but not limited to), new listings of species as threatened or endangered not addressed by this Plan that may be affected by covered activities, expansion of the planning area, or the addition of covered activities. The Service will process substantive changes as an amendment in accordance with the provisions of the Act and regulations at 50 CFR Parts 13 and 17 and will be subject to appropriate environmental review under the provisions of NEPA. The Service may implement substantive changes to the Plan following publication of the approved, amended Plan. Following completion of a substantive change to the Plan, all future specific incidental take permits must include the modifications contained within the major amendment. Previously existing specific incidental take permits will not be required to incorporate any changes caused by a major amendment, unless a project proponent voluntarily chooses to modify their permit.

Substantive changes to specific incidental take permits would be required for any modification of the covered activities that is expected to cause take of desert tortoises not analyzed or authorized in the original incidental take permit or if the authorized amount of take is insufficient for the project proponent's need. These amendments must be completed prior to the activities causing take.

Permit Renewal

Section 10(a)(1)(B) permits may be renewed without the issuance of a new permit, provided that the permit is renewable, and that biological circumstances and other pertinent factors affecting covered species are not significantly different than those described in the original conservation plan. To renew a permit issued under this Plan, the project proponent must submit to the Service at least 30 days prior to the permit's expiration date, in writing: (1) a request to renew the permit with reference to the original permit number; (2) certification that all statements and information provided in the original individual permit package, together with any approved amendments, are still current and correct, or inclusion of corrected information; (3) a description of any take that has occurred under the existing permit; and (4) a description of any portions of the project still to be completed, if applicable, or what activities under the original incidental take permit the renewal is intended to cover.

If the Service concurs with the information provided in the request, it will renew the permit consistent with permit renewal procedures required by Federal regulation (50 CFR 13.22). If the project proponent files a renewal request and the request is on file with the issuing Service office at least 30 days prior to the permit expiration date, the incidental take permit will remain valid while the renewal is being processed. However, the project proponent may not take listed species beyond the quantity authorized by the original incidental take permit. If the project proponent fails to file a renewal request within 30 days prior to the incidental take permit's expiration date,

the incidental take permit will become invalid upon expiration. The project proponent must have complied with all annual reporting requirements to qualify for a renewal.

Permit Transfer

In the event of a sale or transfer of ownership of a company, property or project during the life of the specific incidental take permit, the following will be submitted to the Service by the new owner(s): (1) a new permit application; (2) permit fee; and (3) written documentation providing assurances pursuant to 50 CFR 13.25 (b)(2) that the new owner will provide funding adequate to fully implement the actions described in their individual permit package and the relevant terms and conditions of the permit, including any outstanding minimization and mitigation. The new owner(s) will commit to all requirements regarding the take authorization and mitigation obligations of this Plan unless otherwise specified in writing and agreed to in advance by the Service.

Such Other Measures that the Service May Require

If dead, injured, or sick desert tortoises are discovered, project proponents are required to contact the Palm Springs Fish and Wildlife Office at 760-322-2070 for care and disposition instructions within 72 hours of discovery. Extreme care must be taken in handling sick or injured individuals to ensure effective and proper treatment. Care must also be taken in handling dead specimens to preserve biological materials in the best possible state for analysis of cause of death. In conjunction with the care of sick or injured desert tortoises or preservation of biological materials from any dead specimens, project proponents and their contractors/subcontractors have the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

If, during the tenure of incidental take permits issued through participation in the Plan, the project design or the extent of habitat impacts is altered such that an increase in the anticipated take of desert tortoises may occur, project proponents must contact the Service and obtain a new permit or individual project package approval and/or amendment of their incidental take permit before commencing any construction or other activities that might result in take beyond that described in their existing incidental take permit.

The incidental take authorization granted by specific incidental take permits issued through participation in the Plan will be subject to full and complete compliance with, and implementation of, all specific conditions contained in resulting individual incidental take permits. The terms and conditions of specific incidental take permits will supersede and take precedence over any inconsistent provisions in the Plan or other documents.

Incidental take permits issued through the participation in the plan become effective upon the date the project proponent signs the incidental take permit, which must occur within 90 calendar days of issuance. 50 CFR 17.32(b)(4)(i). Acceptance of an incidental take permit serves as evidence that the project proponent understands and agrees to abide by the terms of the permit and all applicable sections of 50 CFR Parts 13 and 17.

Section 7. Funding

Section 10(a)(2)(A)(ii) of the Act requires conservation plans to specify the funding that will be available to implement actions that will be enacted to minimize and mitigate the impacts of the taking. The Act also requires that the Service must find that "the applicant will ensure that adequate funding for the plan will be provided" (section 10(a)(2)(B)(iii)). Project proponents must therefore demonstrate adequate funding sources to fully implement the actions described in this Plan and their individual project package. Expenses related to these activities are the sole responsibility of the project proponent. Failure to commit appropriate funding prior to approval (discussed above in Section 6) or to meet funding obligations after the specific incidental take permit is issued may be grounds for denying individual project packages for future projects or revoking or suspending an existing incidental take permit. Project proponents unable to meet the financial requirements described here may not meet qualifications for approval of individual project packages and should contact the Service for additional guidance or potential approval of alternative funding mechanisms.

Project proponents must ensure that adequate funding sources for Plan implementation, actions to be taken in response to changed circumstances, and implementation of other required measures are included in their individual permit package. Funding for mitigation obligations is directly related to the mitigation option(s) selected by the project proponent. If a project proponent chooses to fulfill mitigation requirements through the purchase of credits from a Service-approved conservation bank, the conservation bank will be responsible for the management of the mitigation lands secured through the purchase of bank credits. If a project proponent elects to fulfill mitigation obligations through proponent-responsible mitigation, all management responsibilities, including adaptive management procedures associated with those lands, must be fully funded and managed by the project proponent or designated third party entity.

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Appendix B
Scoping Report

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US Department of the Interior
US Fish and Wildlife Service, Palm Springs Fish and Wildlife Office

General Conservation Plan for the Desert Tortoise in California Environmental Impact Statement

Scoping Report

October 2023

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ACRONYMS AND ABBREVIATIONS

	Full Phrase
BLM	Bureau of Land Management
CEQ	Council for Environmental Quality
CFR	Code of Federal Regulations
EIS	environmental impact statement
HCP	habitat conservation plan
GCP	general conservation plan
NEPA	National Environmental Policy Act of 1969
NOI	Notice of Intent
Service	US Fish and Wildlife Service

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Chapter 1. Introduction

1.1 Project Overview

The US Fish and Wildlife Service (Service) is proposing to develop and implement a general conservation plan (GCP) for the federally threatened desert tortoise (*Gopherus agassizii*) in California. This proposal would standardize issuances of incidental take permits for covered non-federal activities in the range of desert tortoise in the state. Over the life of the GCP, the standardized incidental take permit process would incorporate effective conservation measures and consistent reporting to contribute to desert tortoise monitoring and recovery. Because developing and implementing a GCP is a federal undertaking, the Service is preparing an environmental impact statement (EIS), in cooperation with the Bureau of Land Management (BLM), pursuant to the National Environmental Policy Act (NEPA) to evaluate the potential environmental effects from approving and implementing the GCP.

1.2 Overview of the Public Involvement Process

Public involvement is a vital part of the NEPA process. It facilitates environmental disclosure and provides the opportunity for those affected by federal undertakings to take part in the decision-making process. Guidance for implementing public involvement under NEPA is codified in 40 Code of Federal Regulations (CFR) 1506.6, ensuring that federal agencies make a diligent effort to involve the public in the process. Public involvement in an EIS process generally occurs at three formal stages, including public scoping, review of the Draft EIS, and review of the Record of Decision, though the public is invited to engage the Service at any point in the process. This scoping report summarizes the public scoping portion of the public involvement process for the Desert Tortoise GCP EIS.

1.3 Description of the Scoping Process

NEPA and its implementing regulations require that "Agencies shall use an early and open process to determine the scope of issues for analysis in an environmental impact statement, including identifying the significant issues and eliminating from further study non-significant issues" (40 CFR 1501.9). Thus, scoping is an early and open process for determining the extent of issues to be addressed and identifying the potential significant issues to be evaluated in the Desert Tortoise GCP EIS. The Service will use the information provided during scoping to refine the GCP, identify alternatives, and refine issues for analysis.

The external public scoping period began with the publication of the Notice of Intent (NOI), titled "Notice of Intent To Prepare a Draft Environmental Impact Statement for the Desert Tortoise General Conservation Plan, CA" in the Federal Register on July 17, 2023 (88 Fed. Reg. 45437; **Appendix A**). The Service requested submission of public comments concerning identification of potential alternatives, information, and analyses relevant to the proposed action between July 17, 2023 and August 31, 2023 via US mail or through direct submission of comments to the regulations.gov website at https://www.regulations.gov/docket/FWS-R8-ES-2023-0084. The public was also notified of the scoping period via a press release and via email to those of the project mailing list.

The Service held two virtual and one in-person public scoping meetings during the scoping process. The virtual meetings included a presentation by the Service and a question and answer session that allowed the public to submit questions on the GCP and EIS to be answered by the Service and the BLM. The in-person meeting also included a presentation and question and answer session as well as an open house

session where the public could visit resource stations and engage in conversations with Service and BLM staff. Scoping materials from the virtual and in-person meetings may be found on the project website at: https://www.virtualpublicmeeting.com/usfws-desert-tortoise-gcp-eis.

Table 1-1 provides details of the scoping meetings.

Table 1-1. Public Scoping Meetings

Meeting Format	Meeting Date	Meeting Time*
Virtual (Zoom webinar)	July 25, 2023	10:00 a.m. to 12:00 p.m.
Virtual (Zoom webinar)	July 27, 2023	6:00 p.m. to 8:00 p.m.
In person (El Paso, Texas)	August 10, 2023	6:00 p.m. to 8:00 p.m.

* All times are Pacific time.

The 45-day public scoping comment period closed on August 31, 2023. Fifteen comment letters were received during the public scoping process. **Table 1-2** provides a listing of those who submitted comments during the scoping effort.

Table 1-2. Entities Providing Scoping Comments

Commenting Entity
Tribal
Colorado River Indian Tribes, Colorado River Indian Reservation
Federal
US Environmental Protection Agency
National Park Service
US Marine Corps, Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center
Regional and Local
San Bernardino County
QuadState Local Governments Authority
Metropolitan Water District of Southern California
Organizations
Desert Tortoise Council
Defenders of Wildlife
California Off-Road Vehicle Association
Individual
Yanina Aldao Galvan
Sam Easley
Jean Public
Anonymous (two submissions)

The Service reviewed all written submissions received during the scoping comment period. The process of analyzing comments is described in **Chapter 2**, while a summary of the comments is included in **Chapter 3**.

Chapter 2. Comment Analysis Methodology

Comment analysis is a process used to compile and combine similar public comments into a format that can be used by decision-makers and the NEPA team. The comment analysis assists the team in organizing, clarifying, and addressing technical information regarding the GCP. It also aids in identifying the topics and issues to be evaluated and considered in the EIS.

The comment analysis process includes five main components:

- Developing a coding structure
- Employing a comment database for comment management
- Reading and coding public comments
- Interpreting and analyzing the comments to identify issues and themes
- Preparing a scoping comment report summary

The Service developed a coding structure to help sort comments into logical groups by topics and issues. The coding structure was derived from an analysis of the range of topics discussed during internal Service review, a pre-scoping process performed by the Service in 2022 on the concept of a GCP for the desert tortoise, and the scoping comments themselves. The structure was designed to capture all comment content rather than to restrict or exclude any ideas.

The EIS team used the SmartComments database to manage the comments. The database stores the full text of all correspondence and allows statements within a scoping letter to be coded by topic and issue. Each substantive comment was categorized, based on the topic or topics discussed. Substantive comments are those that provide specific, detailed information about the effects of the proposed action and issues and concerns that should be considered for analysis in the EIS. During the development of alternatives considered in the EIS, the Service is taking into consideration the issues brought forward in these comments.

Notably, for the purposes of scoping, an "issue" is a point of disagreement, debate, or dispute with a proposed action based on some anticipated environmental effect. An issue is more than just a position statement, such as disagreement with grazing on public lands. An issue:

- Has a cause and effect relationship with the proposed action or alternatives
- Is within the scope of the analysis
- Has not been decided by law, regulation, or previous decision
- Is amenable to scientific analysis rather than conjecture

Issues point to environmental effects; as such, issues can help shape the proposed action and alternatives. Issues also may lead to the identification of measures to lessen potential effects.

Not all of the issues or concerns raised during scoping warrant detailed analysis in the EIS. Issues will be analyzed in detail if:

- Analysis of the issue is necessary to make a reasoned choice between alternatives. That is, does it relate to how the proposed action or alternatives respond to the purpose and need?
- The issue is significant (an issue associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of impacts).

All written submissions received on or before August 31, 2023, were evaluated. Once received, each submission was read and broken down into specific comments. Every submission was individually evaluated and considered by a Public Engagement Specialist for overall content and potential issues, and then parsed into individual unique substantive comments. These comments were then organized into topics and issue statements were developed from these comments. These issue statements are included in **Chapter 3**.

Chapter 3. Summary of Public Comments Received

The following issue statements, separated by topic area, were developed based on the submissions received during scoping. These do not represent the full scope of issues to be considered in the EIS; rather, they supplement information that has been and will continue to be gathered throughout development of the EIS.

3.1 General Conservation Plan

Concern: How will the Service revise the GCP to better meet its purpose and need?

Comment Summary

Commenters called for the Service to ensure that the management practices outlined in the GCP fully encompass its stated purpose and need. Recommendations included making the following revisions to the GCP:

- More strongly incorporate guidance from the Habitat Conservation Plan (HCP) handbook.
- Clarify or change wording and language to alleviate ambiguity, account for indirect impacts of covered activities, and better reflect language in other applicable laws.
- Include discussion regarding impacts from the operation and maintenance of new and existing developments.
- Include discussion on climate change and its associated impacts.
- Eliminate the proposed mitigation measures of allowing permittees to use in-lieu fees and donate acquired lands to federal land management agencies.
- Discuss in the "Synthesis" section the extent to which mitigation actions have been successful.
- Amend language to be consistent and compatible with other guidance such as state regulations and existing or future HCPs.
- Broadly revise Chapters 2 through 11 according to specific recommendations provided in comments.
- Enhance transparency by providing links to best available information that can be accessed by the public.

3.2 Consultation and Coordination

Concern: What government agencies, nonprofits, and local stakeholders does the Service plan to engage and cooperate with in the development of the GCP?

Comment Summary

Commenters noted the importance of engaging with state and federal agencies, including Tribes, during this process to take a collaborative approach to the GCP. Commenters noted that these partnerships can help the Service achieve ecological goals while accounting for and contributing to the management goals of other agencies and organizations. Commenters recommended the following list of agencies and organizations for the Service to collaborate with in this planning process:

- California Department of Fish and Wildlife
- Colorado River Indian Tribes
- Environmental Protection Agency
- National Parks Service
- QuadState Local Government Authority
- Desert Tortoise Council

3.3 TRIBAL CONSULTATION

Concern: How does the Service plan to engage with Tribes throughout the planning process?

Comment Summary

Commenters recommended that the Service consult with Tribes adjacent to the planning area. They called for the Service to provide written summaries of consultation efforts, including the identification of concerns expressed by Tribes and methods to address these concerns. Commenters also recommended implementing species habitat protection, mitigation, and enhancement measures identified by tribes. One commenter asked the Service to discuss how it plans to minimize or avoid adverse effects on cultural resources and archaeological sites throughout the planning process.

3.4 PUBLIC OUTREACH

Concern: How is the Service engaging interested parties throughout the planning process?

Comment Summary

Multiple commenters pointed out the need for the Service to inform management decisions with perspectives from local interested parties, requiring public outreach and engagement. One commenter urged the Service to engage with key interested parties beyond the standard 45-day public comment period to continuously receive input on proposed changes.

3.5 RELATIONSHIP TO OTHER LAWS, RULES, REGULATIONS, POLICIES, AND STATUTES

Concern: How is the Service ensuring compliance with existing permits and conservation plans?

Comment Summary

One commenter remarked that the proposed GCP should not affect, modify, or nullify current adopted conservation plans or the status of approved incidental take permits. The commenter stated that current permits should be honored, and that the proposed GCP should only apply to applications received after the plan's final approval.

3.6 RANGE OF ALTERNATIVES

Concern: How is the Service formulating its range of alternatives?

Comment Summary

Commenters offered several perspectives regarding formulation of the range of alternatives. One commenter asked the Service to clarify the rationale used to determine whether impacts of an alternative are considered significant. Another commenter stated that the Habitat Conservation Planning Handbook would not allow the Service to develop different alternatives by modifying effectiveness monitoring.

One commenter pointed out that the Service must adhere to the requirements of the Endangered Species Act in its formulation of alternatives. The commenter referenced Section 10(a)(2)(B)(ii) of the Endangered Species Act, which would require the Service to meet the legal standard of minimizing and compensating adverse impacts to the desert tortoise and its habitat to the maximum extent practicable. The commenter also recommended that the Service use the current five-year status review for the species in developing its baseline assessment.

Concern: What alternatives will the Service seriously consider?

Comment Summary

One commenter recommended that the Service formulate alternatives that meet the GCP's purpose and need. The commenter asked the Service to extend the duration of the GCP to accommodate the time that would be needed to effectively implement mitigation while accounting for the time required to complete development. The proposed duration of 10 years, according to the commenter, is neither flexible nor long enough to account for all aspects of covered activities.

Another proposed alternative from the commenter would be to expand the planning area— and thereby the permitting and mitigation area – to include the entire range of the federally-listed population of the desert tortoise.

3.7 FUNDING

Concern: How will the Service ensure that the GCP implementation is appropriately funded?

Comment Summary

Two commenters submitted feedback regarding funding that will be used to implement the GCP. One commenter recommended that the Service cite and follow Chapter 11 (Implementation Costs and Funding Assurances) of the HCP Handbook to provide for funding assurances. The commenter offered several other recommendations, including that the Service provide documentation of the costs required to implement the GCP (while accounting for inflation in these calculations), and explain how the GCP and all facets of its implementation would be fully funded.

One commenter offered to collaborate with the Service to identify funding and partnership opportunities to further desert tortoise conservation efforts.

3.8 BEST AVAILABLE INFORMATION

Concern: How will the Service incorporate the best available information and baseline data in its development of the GCP?

Comment Summary

Commenters emphasized the need for best available scientific data when comparing impacts across alternatives. Commenters suggested that the Service incorporate the best available, current scientific data and information regarding Desert Tortoise population, habitat, and conservation strategies. One commenter pointed out that the GCP must follow procedures outlined in the Habitat Conservation Planning Handbook (US Fish and Wildlife Service and National Marine Fisheries Service 2016[1]). Another

[1] https://www.fws.gov/media/habitat-conservation-planning-and-incidental-take-permit-processing-handbook

commenter questioned the Service's selection of five large desert tortoises as the threshold for assessing adequacy of minimization measures.

3.9 COVERED ACTIVITIES

Concern: How will the Service clarify what constitutes a covered activity?

Comment Summary

Two commenters suggested that the Service clarify what would constitute as a covered activity under the GCP. Although commenters' recommendations were varied, both asked the Service to be explicit about this matter to eliminate ambiguity.

One commenter asked that small residential projects be exempt from requirements to seek an incidental take permit and instead be subject to an expedited review process. The commenter remarked that requiring these projects to undergo the same process as a larger development project is time-consuming and resource-intensive, and disproportionately impacts smaller projects.

Another commenter asked the Service to be more inclusive of what it considers a covered activity (e.g., beyond development projects), and emphasized that activities should be assessed with respect to their potential to result in habitat loss or degradation and consequent take. The commenter recommended several additions, including, but not limited to, grazing, organized events, off-highway or off-road vehicle recreation, and mitigation activities that result from development.

The commenter also recommended that any covered activity should be analyzed and mitigated in the context of climate change and drought, and that covered activities should include tortoise habitat restoration.

Both commenters asked the Service to clarify whether covered activities and mitigation measures will apply to the ongoing operations and maintenance activities of existing projects and public infrastructure. One commenter remarked that the Service must ensure it considers the potential for projects to cause take in desert tortoise habitat that lies beyond project footprints.

3.10 MITIGATION MEASURES

Concern: How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?

Comment Summary

Multiple commenters pointed out that mitigation is most effective when it is site-specific and performed within or in proximity to restricted areas, mitigation sites, and conservation areas as opposed to multiple-use lands. Commenters also recommended that the GCP specify the definition of "the maximum extent practicable" with respect to minimization and mitigation measures. One commenter also noted that alongside mitigation, the Service must also ensure that a robust conservation plan is in place to improve desert tortoise numbers.

Commenters suggested several specific mitigation measures, including law enforcement to curtail unauthorized off-highway vehicle use; retirement of livestock grazing permits; tortoise exclusion infrastructure; acquisition of private land within critical habitat units; and predator reduction.

One commenter remarked on the temporal aspects of mitigation, and urged the Service to ensure that mitigation occur prior to the impacts of taking. The commenter also expressed opposition to two proposed mitigation measures, namely in-lieu fees and the placement of lands into conservation easements.

3.11 CUMULATIVE EFFECTS AND EFFECTS OF SIMILAR AND CONNECTED ACTIONS

Concern: How will the Service conduct its cumulative effects analysis?

Comment Summary

Commenters called for the Service to analyze the cumulative, interactive, and synergistic impacts of human activities that result in take and the impacts of this take. Commenters also recommended that the Service follow regulatory guidelines when conducting its cumulative effects analysis, including the eight principles of the Council on Environmental Quality's (CEQ) "Considering Cumulative Effects Under the National Environmental Policy Act" (1997) and procedures outlined in CEQ Regulations. One commenter suggested that the Service situate its cumulative impact discussions within broader discussions of environmental impacts, as opposed to discussing cumulative impact analyses in a separate chapter. The commenter further recommended that the Service focus on resources of concern that would be significantly impacted by covered activities before mitigation.

3.12 PERMIT PROCESS AND DURATION

Concern: How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?

Comment Summary

Commenters expressed various concerns regarding permitting procedures, including the process and ecological implications of streamlining permit issuance.

Commenters offered several recommendations for streamlining the permitting process and clarifying ambiguity. Multiple commenters suggested that the Service coordinate with the California Department of Fish and Wildlife to develop impact minimization and mitigation measures in the GCP. Commenters also suggested that the Service incorporate stronger language referencing covered species, state agency requirements, supplemental NEPA analysis, and clarification of how each permit would comply with NEPA. One commenter argued that small projects should be exempted from required mitigation actions and subject to a less intensive permitting process that reflects their smaller footprint on the landscape. Another commenter noted confusion regarding mitigation actions. The commenter questioned why mitigations required in an incidental take permit would not be regarded as covered activities under the same permit.

Two commenters urged the Service to consider the ecological impacts of permitting, especially if streamlining were to be prioritized. One commenter expressed concerns that efforts to streamline permits would be at the expense of desert tortoise habitat and species conservation.

The commenter also questioned the selection and rationale of the 12- to 24-month timeframe for standard mitigation practices, and stated that lenient mitigation requirements may allow developers to ignore the long-term impacts of projects on the desert tortoise.

Another commenter recommended that the Service collaborate with the US Geological Survey and university researchers to develop quantitative tools that would allow the Service, applicants, and the public

to understand how the impacts of take, including indirect take, would be fully offset by implementing mitigation actions.

3.13 REPORTING AND MONITORING

Concern: How will the Service design and implement reporting and monitoring procedures in the GCP?

Comment Summary

Commenters remarked on various aspects of reporting and monitoring. One commenter recommended that the Service implement a monitoring and inspection program to assess the effectiveness of mitigation measures.

Another commenter suggested that, in addition to language revisions, the Service change permitting procedures to require annual reports from permittees throughout the entire duration of the permit, regardless of whether activity is conducted. The commenter also called for the Service to monitor how covered activities may indirectly cause take.

3.14 DESERT TORTOISE

Concern: How is the Service ensuring its management decisions in the GCP account for the complexities of desert tortoise population dynamics, life history, and habitat range?

Comment Summary

Commenters expressed concern regarding complexities in desert tortoise population dynamics and habitat range. They urged the Service to consider the implications of these nuances and to ensure that they are reflected in the GCP.

For example, one commenter cited literature regarding the impact of ongoing drought on tortoise habitat range. The commenter recommended that the Service incorporate this information on the tortoise's life history in its assessment of whether proposed development is likely to result in take. It was also recommended that the Service manage for broad habitat connectivity and permeability, as opposed to focusing on discrete wildlife corridors.

3.15 AREA BOUNDARIES

Concern: How will the Service ensure that area boundaries outlined in the GCP effectively conserve desert tortoise in a manner that meets the needs of interested parties?

Comment Summary

Multiple commenters asked the Service to consider various factors in establishing area boundaries for the GCP, with some noting potential land use and right-of-way conflicts with respect to permitted actions.

Several comments were related primarily to ecological concerns. One commenter recommended that the Service account for climate change impacts on desert tortoise habitat and that the planning area should include areas higher in elevation and latitude where appropriate. The commenter also recommended that the Service change the current proposed planning area to better reflect conservation needs outlined in the 1994 and 2011 recovery plans.

3.16 TRANSLOCATION

Concern: How will the Service manage desert tortoise translocation?

Comment Summary

Multiple commenters questioned the use of translocation as a successful mitigation measure and called for the Service to inform its translocation practices with best available scientific information and data. Commenters cited a variety of concerns, including impacts to other species in translocation sites; ineffective use of BLM-administered lands for translocation; conflicts with existing uses; the need to implement monitoring and evaluation programs for translocation efforts; how road corridors may impact translocation site selection; and the importance of considering genetic differences across desert tortoise populations.

3.17 ADAPTIVE MANAGEMENT

Concern: Will the GCP include plans to implement adaptive management strategies?

Comment Summary

One commenter pointed out that since mitigation associated with GCP implementation would occur on public and private lands that are managed for conservation, the Service should implement adaptive management actions. The commenter stated that particular attention should be given to public lands managed by BLM where off-road vehicle recreation is allowed, and that changes in management decisions for off-road vehicle recreation may be necessary if monitoring shows that habitat is impacted or desert tortoises are killed by off-road vehicles.

Another commenter recommended that the Service add a change in language within the Adaptive Management section of the GCP. The commenter suggested that the Service use more specific language, including an explicit mention of the use of monitoring and evaluation for incidental take permits issued under the GCP.

3.18 AIR QUALITY

Concern: How will the Service evaluate impacts to air quality?

Comment Summary

One commenter recommended that the Service include a detailed discussion of air quality, including existing conditions, potential impacts related to greenhouse gas emissions and vehicle use, and mitigation measures. The commenter also recommended the use of fugitive dust source controls in the GCP as applicable.

3.19 CLIMATE CHANGE

Concern: How will the Service address climate change impacts in the GCP?

Comment Summary

Two commenters recommended that the GCP discuss the impacts of climate change on the Colorado/Sonoran and Mojave Deserts, with one commenter noting that climate change was not mentioned in the GCP. One commenter specifically recommended that the Service consult the HCP Handbook in consideration of climate change effects, biological objectives, mitigation, adaptive management and monitoring, changed circumstances, and funding. Commenters remarked that analysis of anticipated changed circumstances should include a discussion of changes in hydrology, wildfire patterns, diseases, invasive species, predation, and human activities.

3.20 CULTURAL RESOURCES

Concern: How will the GCP address the protection and conservation of cultural resources located in the plan area?

Comment Summary

Commenters pointed out that much of the region surrounding the planning area have a long history of Tribal presence, and remarked on the need for the Service to account for sacred and historically important sites located within the planning area. One commenter stated that the Service should practice flexibility in identifying sacred sites. The commenter stated that the definition of these sites should not be limited to National Register of Historic Places criteria, and that Tribes located outside the planning area should be included in the consultation process as they may still have spiritual or religious ties to the land. The commenter recommended that the Service include a discussion of how proposed covered activities would avoid or mitigate impacts to the physical integrity, accessibility, and use of sacred sites. One commenter asked the Service to discuss as well as how it plans to minimize or avoid adverse effects on cultural resources and archaeological sites throughout the EIS process.

3.21 ENVIRONMENTAL JUSTICE

Concern: How will the Service ensure that environmental justice needs are being met for communities surrounding the planning area?

Comment Summary

One commenter pointed out that the Service must comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and assess the impact of planning efforts to minority and low-income populations surrounding and adjacent to the planning area. The commenter recommended that the Service coordinate with affected populations and use the US Environmental Protection Agency's Environmental Justice Screening and Mapping Tool, or EJSCREEN, as part of this assessment.

3.22 FIRE

Concern: How will the Service acknowledge the presence of wildfires on the planning area?

Comment Summary

One commenter suggested that the GCP include more specific language regarding wildfires fueled by invasive grasses that have burned extensive areas of desert tortoise habitat. The commenter asked that the GCP mention the York Fire of August 2023 that burned more than 90,000 acres in the eastern Mojave Desert, much of which was tortoise habitat.

3.23 WATER RESOURCES

Concern: How will the Service ensure compliance with Sections 404 and 303(d) of the Clean Water Act?

Comment Summary

One commenter remarked that the Service must adhere to the requirements of Sections 404 and 303(d) of the Clean Water Act. The commenter recommended that covered activities avoid impacts to jurisdictional waters, in addition to early consultation with the US Army Corps of Engineers to determine whether a proposed covered activity would require a Section 404 permit. The commenter also recommended that the Service provide information on any Clean Water Act Section 303(d) impaired

waters in the planning area, a description of whether covered activities would contribute to impairment, as well as mitigation measures.

Concern: How will the Service ensure that desert washes in the planning area are protected?

Comment Summary

One commenter noted that although desert washes are not deemed jurisdictional under Section 404 of the Clean Water Act, they serve important ecological, hydrological, and geological functions. The commenter recommended micro-siting of covered activities to avoid and protect desert washes, ephemeral drainages, and dry wash woodlands.

Concern: How will the Service account for changing precipitation patterns in the planning area?

Comment Summary

One commenter asked the Service to consider the impacts of changing precipitation patterns on the planning area in order to improve the resilience of covered activities. The commenter noted that changes in overland flow and flooding throughout development areas may hold implications for critical infrastructure.

3.24 OTHER WILDLIFE

Concern: How will the Service ensure the protection of other wildlife in the GCP?

Comment Summary

One commenter recommended that the Service analyze the GCP's impacts to habitat connectivity and discuss measures that could mitigate identified impacts, such as guidance or structure to facilitate wildlife movement throughout the planning area.

3.25 OTHER RESOURCES

Concern: How will the Service manage off-road motorized recreation in the planning area?

Comment Summary

One commenter recommended that the Service notify non-federal entities that sponsor or allow off-road, off-highway, or other motorized vehicle use on land within the range of the desert tortoise. These entities include the City of California City, Onyx Ranch State Vehicle Recreation Area, and Red Rock Canyon State Park.

Another commenter questioned some of the Service's language and conclusions referring to off-road recreation throughout the planning area. The commenter argued that the language in the GCP does not accurately reflect the nature of off-road recreation in the Western Mojave Recovery Unit, and asked the Service to change or remove language regarding off-road vehicle use in the GCP.

Concern: How will the Service manage invasive species in the planning area?

Comment Summary

One commenter recommended that the Service include measures consistent with Executive Order 13112 on Invasive Species. The commenter suggested including existing Service direction for invasive species control and best management practices, as well as planned measures to reduce the introduction and spread of invasive species in the planning area. It was also suggested that the Service promote practices such as integrated weed management and early recognition to avoid or limit the use of herbicides.

Concern: How will the Service ensure that public health and safety needs are met in the planning process?

Comment Summary

One commenter noted that portions of the proposed planning area may include areas that contain *Coccidioides immitis*, a fungus causing Valley Fever in humans. The commenter recommended that the Service discuss the potential health and safety risks of ground-disturbing activities that may disperse *Coccidioides* spores, as well as measures that can prevent or reduce the risk of exposure.

Appendix A
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DEPARTMENT OF HOMELAND SECURITY

Coast Guard

[Docket No. USCG–2023–0395]

Great Lakes Pilotage Advisory Committee Meeting; September 2023 Meeting

AGENCY: U.S. Coast Guard, Department of Homeland Security.

ACTION: Notice of Federal advisory committee meeting.

SUMMARY: The Great Lakes Pilotage Advisory Committee (Committee) will meet in Sault Saint Marie, Michigan to discuss matters relating to Great Lakes Pilotage, including review of proposed Great Lakes Pilotage regulations and policies. The meeting will be open to the public.

DATES:

Meeting: The Committee will meet on Thursday, September 7, 2023, from 8 a.m. to 5:30 p.m. Eastern Daylight Time (EDT). Please note that this meeting may adjourn early if the Committee has completed its business.

Comments and supporting documentations: To ensure your comments are received by Committee members before the meeting, submit your written comments no later than August 31, 2023.

ADDRESSES: The meeting will be held at the Cisler Conference Center of the Lake Superior State University (LSSU), 650 W Easterday Avenue, Sault Ste. Marie, MI 49783.

Pre-registration Information: Pre-registration is not required for access to the meeting.

The Great Lakes Pilotage Advisory Committee is committed to ensuring all participants have equal access regardless of disability status. If you require reasonable accommodation due to a disability to fully participate, please email Mr. Francis Levesque at *Francis.R.Levesque@uscg.mil.* or call (571) 308–4941 as soon as possible.

Instructions: You are free to submit comments at any time, including orally at the meeting, but if you want Committee members to review your comment before the meeting, please submit your comments no later than August 31, 2023. We are particularly interested in comments on the topics in the ''Agenda'' section below. We encourage you to submit comments through the Federal eRulemaking Portal at: *https://www.regulations.gov.* If your material cannot be submitted using *https://www.regulations.gov.*, email the individual in the **FOR FURTHER INFORMATION CONTACT** section of this document for alternate instructions. You must include the docket number USCG–2023–0395. Comments received will be posted without alteration at *https://www.regulations.gov* including any personal information you provided. You may wish to view the Privacy and Security Notice found via link on the homepage of *https://www.regulations.gov.* For more about the privacy and submissions in response to this document, see DHS's eRulemaking System of Records notice (85FR 14226, March 11, 2020). If you encounter technical difficulties with comment submission, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this notice.

Docket Search: Documents mentioned in this notice as being available in the docket, and all public comment, will be in our online docket at *https://www.regulations.gov* and can be viewed by following that website's instructions. Additionally, if you go to the online docket and sign-up for email alerts, you will be notified when comments are posted.

FOR FURTHER INFORMATION CONTACT: Mr. Francis Levesque, Alternate Designated Federal Officer of the Great Lakes Pilotage Advisory Committee, telephone (571) 308–4941 or email *Francis.R.Levesque@uscg.mil.*

SUPPLEMENTARY INFORMATION: Notice of this meeting is in compliance with the *Federal Advisory Committee Act* (Pub. L. 117–286, 5 U.S.C. ch. 10). The Committee is established under the authority of 46 U.S.C. 9307 and makes recommendations to the Secretary of Homeland Security and the U.S. Coast Guard on matters relating to Great Lakes pilotage, including review of proposed Great Lakes pilotage regulations and policies.

Agenda

The Great Lakes Pilotage Advisory Committee will meet on Thursday, September 7, 2023, to review, discuss, deliberate and formulate recommendations, as appropriate on the following topics:

1. Great Lakes Pilotage Advisory Committee Meeting Practices and Procedures.
2. Staffing Model.
3. Winter Navigation.
4. Pilots Providing ETA to Change Points.
5. Ratemaking Methodology.
6. Great Lakes Pilotage and American Pilots Association Best Practices.
7. 2024 Annual Rulemaking Update.
8. Projects and Current Staffing.
9. 2013 Memorandum of Understanding between U.S. Coast Guard and Canadian Great Lakes Pilotage Authority.
10. Double Pilotage and Daytime Only Navigation.
11. Expense and Revenue Reports for Rulemaking.
12. Public Comments.

A copy of all meeting documentation will be available at *https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Marine-Transportation-Systems-CG-5PW/Office-of-Waterways-and-Ocean-Policy/Great-Lakes-Pilotage-Advisory-Committee/* by September 1, 2023. Alternatively, you may contact Mr. Francis Levesque as noted in the **FOR FURTHER INFORMATION CONTACT** section above.

Public comments or questions will be taken throughout the meeting as the Committee discusses the issues and prior to deliberations and voting. There will also be a public comment period at the end of the meeting. Speakers are requested to limit their comments to 5 minutes. Contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section above, to register as a speaker.

Dated: July 11, 2023.

Michael D. Emerson,

Director, Marine Transportation Systems.

[FR Doc. 2023–15048 Filed 7–14–23; 8:45 am]

BILLING CODE 9110–04–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS–R8–ES–2023–0084; FXES11140800000–223–FF08ECAR00]

Notice of Intent To Prepare a Draft Environmental Impact Statement for the Desert Tortoise General Conservation Plan, CA

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of intent to prepare an environmental impact statement; notice of public scoping meetings; request for comments.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), provide this notice to open a public scoping period and announce public scoping meetings in accordance with the National Environmental Policy Act. We intend to prepare an environmental impact statement (EIS) to evaluate the impacts on the human environment related to our proposal to implement a general conservation plan for the federally threatened desert tortoise (*Gopherus agassizii*) in California, pursuant to the Endangered Species Act.

DATES:

Submitting Comments: We must receive any written comments on or before August 31, 2023.

Public Meetings: The Service will hold three public meetings during the scoping period to attempt to allow all interested parties to participate.

- *In-Person Public Meeting:* We will hold an in-person public meeting on August 10, 2023, from 6 p.m. to 8 p.m. Pacific Time in Victorville, California, at the Hilton Garden Inn (12603 Mariposa Road, Victorville, CA 92395).
- *Virtual Meetings:* We will hold virtual meetings on July 25, 2023, from 10 a.m. to 12 p.m., and on July 27, 2023, from 6 p.m. to 8 p.m. Pacific Time. More information about the public meetings is available at *https://www.virtualpublicmeeting.com/usfws-desert-tortoise-gcp-eis.*

ADDRESSES:

Obtaining Documents: To assist the public in evaluating the Service's proposed action, which would be approval of the general conservation plan (GCP), we have provided a preliminary draft GCP for review. You may obtain copies of the draft GCP online in Docket No. FWS–R8–ES–2023–0084 at *https://www.regulations.gov.* Public comments will also be available at *https://www.regulations.gov.*

Submitting Written Comments: You may submit your written comments using one of the following methods:

- *Online: http://www.regulations.gov.* Follow the instructions for submitting comments on Docket No. FWS–R8–ES–2023–0084.
- *U.S. Mail:* Public Comments Processing, Attn: Docket No. FWS–R8–ES–2023–0084; U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

For more information, see Public Availability of Comments under **SUPPLEMENTARY INFORMATION.**

Public Meetings: A link and access instructions to the public meetings will be posted to *https://www.fws.gov/office/carlsbad-fish-and-wildlife* at least 1 week prior to the public meeting dates.

FOR FURTHER INFORMATION CONTACT: Ray Bransfield, Fish and Wildlife Biologist, by email at *ray_bransfield@fws.gov* or via phone at (805) 677–3398. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION: We provide this notice of intent for preparing an environmental impact statement (EIS), opening a public scoping period, and announcing public scoping meetings in accordance with requirements of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) and its implementing regulations. The Service will serve as the lead Federal agency for purposes of NEPA. We intend to prepare an EIS to evaluate the impacts on the human environment related to our proposal to approve a general conservation plan for the desert tortoise in California, pursuant to the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 *et seq.*) The U.S. Bureau of Land Management (Bureau) will serve as a cooperating agency under NEPA, as some lands under consideration for mitigation activities are administered by the Bureau.

The primary purpose of the scoping process is for the public and other parties to assist in developing the draft EIS by identifying important issues and alternatives that should be considered. This scoping notice was prepared pursuant to the updated regulations implementing NEPA, issued by the Council on Environmental Quality on July 16, 2020 (85 FR 43304).

Purpose and Need for the Proposed Action

The purpose of the proposed GCP is to provide a mechanism by which the Service can increase efficiency and standardize compliance with section 10(a)(1)(B) of the ESA for activities on certain non-Federal lands in the plan area that have the potential to incidentally take desert tortoises. Instead of a lengthy and complicated processing of individual incidental take permit applications and associated habitat conservation plans for applicants, the proposed approval and implementation of the GCP would allow the Service to substantially reduce the time and effort needed to issue incidental take permits that meet the parameters established in the GCP while ensuring project mitigation contributes to long-term recovery for desert tortoise. The GCP would require use of minimization measures that have proven effective over time in reducing mortality of desert tortoises during various types of activities, including the translocation of desert tortoises from non-Federal project sites to conservation areas. The GCP would also direct required mitigation to fund or implement recommended actions in the revised recovery plan for the desert tortoise (76 FR 53482) and additional actions to ensure the mitigation contributes to the species' long-term recovery.

Section 10 of the ESA directs the Service to issue incidental take permits to non-Federal entities for take of endangered and threatened species when the permit applicant satisfies the criteria in section 10(a)(2)(B). Processing individual incidental take permits requires Service staff to conduct lengthy reviews of applicant-prepared minimization and mitigation measures for each individual project, to prepare appropriate documentation compliant with NEPA, and to conduct intra-Service consultation and coordination. The Service and potential permit applicants would greatly benefit if the Service is able to (1) streamline this process for desert tortoise incidental take permits, (2) provide specific direction to applicants to incorporate the most current measures to minimize the take of desert tortoises into their applications, and (3) better incorporate mitigation from incidental take permits into a comprehensive strategy that contributes to recovery of the desert tortoise.

The GCP would fulfill a need for better conservation of the desert tortoise within the California desert in a more comprehensive and consistent manner. It would also substantially reduce the time and effort expended by Service staff in processing individual incidental take permits while improving the appropriate standards for protection of desert tortoises in development areas and furthering the species' recovery in conservation areas.

Preliminary Proposed Action and Alternatives

As required by 40 CFR 1501.9(d)(2), we are providing a preliminary description of the proposed action, which is the Service's approval of a GCP for the desert tortoise in California. If we approve use of a GCP, project proponents within the GCP's permit areas would be able to apply for incidental take permits for the desert tortoise in a streamlined manner. The Service would only issue incidental take permits under the GCP if the individual applications met its issuance criteria, which would provide clear guidance on how to best minimize, mitigate, and monitor the effects of incidental take on desert tortoises. We will prepare a final EIS prior to deciding on whether to approve a GCP.

The EIS will include a reasonable range of action alternatives and a no-action alternative. The action alternatives will likely include

variations in the duration of the general conservation plan, the size and locations of permit and mitigation areas, potential translocation areas for desert tortoises found on project sites, and the types of effectiveness monitoring. At this time, the Service proposes to approve a GCP with a duration of 10 years, with an option to renew it if it is meeting expectations, covering a broad range of development activities, translocating desert tortoises into conservation areas to augment depleted populations, and implementing recovery actions within the broad desert tortoise conservation areas described in the recovery plan. Regarding the duration of the GCP, we may consider longer or shorter alternatives. We will consider alternatives to translocating desert tortoises long distances to conservation areas, such as moving them to parcels that are closer to the sites of development. We will also evaluate whether to include or exclude specific areas outside of conservation areas where the GCP would be available and whether to include or exclude specific areas within conservation areas to use for mitigation. Under the no-action alternative, the Service would not approve the GCP and would not implement a streamlined process for considering incidental take permits.

Background

Endangered Species Act

Section 9 of the ESA prohibits the ''take'' of fish and wildlife species listed as endangered under section 4 (16 U.S.C. 1538 and 16 U.S.C. 1533, respectively). The Endangered Species Act's implementing regulations extend, under certain circumstances, the prohibition of take to threatened species (50 CFR 17.31). Under section 3 of the ESA, the term ''take'' means to ''harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct'' (16 U.S.C. 1532(19)). The regulations define ''harm'' as ''an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering'' (50 CFR 17.3).

Under section 10(a)(1)(B) of the ESA, the Service may issue permits to authorize incidental take of listed fish and wildlife species. The implementing regulations for incidental take permits define ''incidental taking'' as ''any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity'' (50 CFR 17.3). Section 10(a)(2)(B) of the ESA lists the criteria for the Service's issuance of incidental take permits to non-Federal entities. If the applicant meets the following criteria, the Service must issue an incidental take permit:

1. The taking will be incidental;
2. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking;
3. The applicant will ensure that adequate funding for the plan will be provided;
4. The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and
5. The applicant will carry out any other measures that the Service may require as being necessary or appropriate for the purposes of the GCP in support of issuance of an incidental take permit.

Desert Tortoise General Conservation Plan

The Service proposes to approve a GCP that provides specific direction regarding how to best minimize, mitigate, and monitor the effects of incidental take to applicants seeking ESA section 10(a)(1)(B) permits for the desert tortoise within a defined permit area. Under standard practices, applicants are responsible for developing the ''conservation plan'' required by section 10(a)(2)(A) of the ESA; the development of the conservation plans and iterative reviews require substantial time and effort, both for the applicant and Service staff. The Service must then prepare a NEPA document for public review, address any comments received from the public, conduct an internal consultation pursuant to section 7(a)(2) of the ESA, and conclude the NEPA process before reaching a decision on whether to issue the incidental take permit.

In almost every incidental take permit that the Service has processed since the listing of the desert tortoise in 1990 (55 FR 12178), the applicant and Service agreed on the most appropriate means of minimizing, mitigating, and monitoring the effects of take on desert tortoises soon after the applicant contacted us. However, the standard practices described in the previous paragraph generally require at least 12 to 24 months to complete. A streamlined approach to the process, with more direction upfront from Service staff, would result in more effective means of minimizing and mitigating impacts to desert tortoises and allow staff to expend more time on implementing recovery work, with overall concomitant positive effects on the recovery of the species. Such a process would also provide a higher degree of certainty to applicants.

Covered Activities

We propose to cover commercial, agricultural, residential, industrial, and infrastructure development within the planning area that a Federal agency does not fund, authorize, or carry out. The GCP would also cover the operations and maintenance of existing facilities, such as utilities' transmission and distribution lines. The Service intends the covered activities to be inclusive; that is, we will consider for coverage any future activity that has the same general effects on the desert tortoise as those described in this GCP. The Service will retain the right to recommend that the non-Federal entity pursue an individual incidental take permit if the scope of the proposed activity is likely to affect desert tortoises in a manner that we have not considered in this GCP.

Additionally, the GCP would cover activities along existing rights of way in the California desert where the Federal agency no longer has discretionary authority; consequently, interagency consultation, pursuant to section 7(a)(2) of the ESA, does not apply in these areas. The GCP would apply to such rights of way that lie within conservation areas. Within conservation areas, the GCP would be available only for projects that intended to improve the safety and functionality of the existing right of way; the Service will not consider its use appropriate if the proposed project changes the basic function of the existing right of way.

Plan Areas

We propose to define ''permit areas'' and ''mitigation areas'' in the GCP. The permit area would be the area where incidental take permits deriving from the GCP would be available to applicants. Non-Federal lands outside of conservation areas in southern Inyo County, eastern Kern County, northern Los Angeles County, the desert portion of San Bernardino County, eastern Riverside County, and portions of Imperial County comprise the permit areas. As discussed in the previous section, the GCP would also apply to existing non-Federal rights of way across Federal lands under certain circumstances.

The required mitigation for issuance of an incidental take permit would occur within the boundaries of mitigation areas. Mitigation areas would generally include ''desert tortoise conservation areas,'' which the recovery

plan for the desert tortoise describes as Bureau of Land Management conservation lands (California Desert National Conservation Lands and areas of critical environmental concern) as identified in the California Desert Conservation Area Plan, as amended by the Desert Renewable Energy Conservation Plan, National Park Service lands, and other conservation areas or easements managed for desert tortoises.

Covered Species

The Mojave population of desert tortoise is the only species proposed for coverage under the GCP. The Service listed the Mojave population of desert tortoise (all desert tortoises north and west of the Colorado River in Arizona, Utah, Nevada, and California) as threatened on April 2, 1990. We designated critical habitat for the desert tortoise in California, Nevada, Arizona, and Utah in a final rule published February 8, 1994 (59 FR 5820).

The GCP includes an analysis of impacts to the desert tortoise that are likely to result from covered activities. We anticipate that incidental take permits under the GCP would result in the take of few desert tortoises. We have reached that conclusion because, since the listing of the desert tortoise in 1990, we have issued 14 incidental take permits for the desert tortoise in California that have resulted in the translocation of approximately 43 desert tortoises. We are unaware of any desert tortoises that died during permitted activities.

Additionally, we have limited the GCP's permit area to portions of the desert where conservation of the desert tortoise in the long term is infeasible, with the exception of non-Federal rights of way that comprise a negligible portion of plan area. Based on analysis in the original and revised recovery plans for the desert tortoise, we consider recovery of the desert tortoise to be infeasible in the permit area because most of the land there is in private ownership; it would be practically and financially impossible to secure and manage habitat in that area, which also frequently includes rural development and its associated impacts to desert tortoises.

We have not proposed a numerical limit on the number of desert tortoises that use of the GCP may affect. Instead, we would evaluate the survey results of individual applicants for incidental take permits and authorize an appropriate amount of incidental take based on the survey results and the nature of the proposed project. We would track the aggregate amount of incidental take and make that information available to the public.

The biological goals of the GCP focus on minimizing the amount of take of desert tortoises and maximizing the conservation benefits of the mitigation that results from the issuance of incidental take permits. To minimize the number of desert tortoises that proposed actions would kill or injure, the Service would require permittees to implement standard methods, such as fencing work areas, surveying for individuals within project areas, translocating desert tortoises to suitable off-site habitat, implementing worker education programs, implementing measures to manage predators on site, and contributing to the regional management program for common ravens (*Corvus corax*). Over the course of implementation of the GCP, the Service would update protocols for various protective measures, such as testing for disease, as new information and improved methods become available.

To mitigate the effects of take and maximize conservation benefits for desert tortoises, the GCP would provide applicants with several options, such as land acquisition (securing and conserving habitat), non-acquisition (restoration and enhancement of habitat), purchase of mitigation bank credits, other actions needed to protect and conserve desert tortoises, or a combination of these activities. The Service would require that all mitigation occur within the conservation areas as defined in the recovery plan for the desert tortoise and mapped in the GCP that will contribute to long term conservation of desert tortoise.

Summary of Anticipated Impacts

The draft EIS will identify and describe the effects of the GCP alternative and a range of other reasonable alternatives on the human environment that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action. This includes effects that occur at the same time and place as the proposed action or alternatives and/or effects that are later in time or farther removed in distance from the proposed action or alternatives. Expected impacts include, but are not limited to, positive and negative impacts to the desert tortoise, geology and soils, air quality, water resources, other biological resources, health and safety, land use, recreation, aesthetics, historical and cultural resources, transportation, public services and utilities, and socioeconomics. We will analyze the effects of these expected impacts in the draft EIS.

The analysis will consider the adequacy of each alternative to maintain or enhance the status of the desert tortoise in light of the expected effects and other best available information. Impacts on air quality, water resources, and other biological resources, such as fish, wildlife, and the desert ecosystem, will be evaluated at a broad, programmatic level of detail and are expected to include incremental negative impacts from development that are minimized and or mitigated at the landscape level through application of applicable law, including local and State regulations. Under each alternative, significant impacts to water resources, State-protected species, and ecosystems would typically be avoided or minimized by the local agency's compliance with local and State regulations governing development. We expect that most, if not all, of the projects that applicants may propose to cover under the GCP would undergo additional public review under the California Environmental Quality Act.

Schedule for the Decision-Making Process

The Service will conduct an environmental review to analyze the effects of the proposed action, along with a range of other reasonable alternatives in the draft EIS. Following completion of the environmental review, the Service will publish a notice of availability and request for public comments on the draft EIS and the revised draft GCP. The Service expects to make the draft EIS and revised draft GCP available to the public in summer 2023. After public review and comment, we will review any comments we receive and any other new information to determine whether to approve the GCP for use. We will also evaluate whether implementation of the GCP would comply with section 7(a)(2) of the ESA. The Service expects to make the final EIS and final GCP available to the public in late 2023. At least 30 days after the final EIS is available, the Service will complete the record of decision in accordance with applicable timeframes established in 40 CFR 1506.11.

Public Scoping Process

The issuance of this notice of intent provides an opportunity for public involvement in the scoping process to guide the development of the EIS.

To attempt to allow all interested parties to participate, the Service will hold three public meetings during the scoping period, both in-person and

virtual. See **DATES** and **ADDRESSES** for the dates and times of the public scoping meetings. The public scoping meetings will provide the Service an opportunity to present information pertinent to the GCP and for the public to ask questions on the scope of issues and alternatives we should consider when preparing the draft EIS and to discuss ideas with Service staff. We will not record comments at the public meetings; we will accept scoping comments only in writing, by the methods listed in **ADDRESSES**.

Reasonable Accommodations

Persons needing reasonable accommodations to attend and participate in the public scoping meetings should contact the Service's Palm Springs Fish and Wildlife Office, using one of the methods listed in **FOR FURTHER INFORMATION CONTACT** as soon as possible. To allow sufficient time to process requests, please make contact no later than 1 week before the desired public meeting. Information regarding this proposed action is available in alternative formats upon request.

Request for Identification of Potential Alternatives, Information, and Analyses Relevant to the Proposed Actions

We request data, comments, views, arguments, new information, analysis, new alternatives, or suggestions on the proposed action from the public; affected Federal, State, Tribal, and local governments, agencies, and offices; the scientific community; industry; or any other interested party. We will consider these comments in developing the draft EIS. Specifically, we seek:

1. Biological information, analysis and relevant data concerning the desert tortoise and other wildlife;

2. Potential effects that the GCP could have on the desert tortoise and its associated ecological communities or habitats;

3. Potential effects that the GCP could have on other aspects of the human environment, including ecological, aesthetic, historic, cultural, economic, social, environmental justice, or health effects;

4. Other possible reasonable alternatives to the proposed action that the Service should consider, including additional or alternative avoidance, minimization, and mitigation measures;

5. The presence of historic properties—including archaeological sites, buildings and structures, historic events, sacred and traditional areas, and other historic preservation concerns—in the proposed permit area, which are required to be considered in project planning by the National Historic Preservation Act;

6. Information on other current or planned activities in, or in the vicinity of, the plan area and their possible impacts on the desert tortoise, including any connected actions that are closely related and should be discussed in the same draft EIS; and

7. Other information relevant to the GCP and its impacts on the human environment.

Once the Service has prepared the draft EIS, we will provide further opportunity for comment on the GCP through an additional public comment period.

Public Availability of Comments

You may submit your comments and materials by one of the methods listed in **ADDRESSES**. Before including your address, phone number, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, might be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public disclosure in their entirety.

Comments and materials we receive and supporting documentation we use in preparing the draft EIS will be available for public inspection online in Docket No. FWS–R8–ES–2023–0084 at *https://www.regulations.gov* (see **FOR FURTHER INFORMATION CONTACT**).

Decision Maker and Nature of Decision To Be Made

The decision maker is the Assistant Regional Director for Ecological Services (ARD) of the Pacific Southwest Region of the Service. If, after publication of the record of decision, we determine that all requirements are met for approval of incidental take permits under the GCP, the ARD will issue a decision on whether to approve the GCP.

Authority

We provide this notice in accordance with the requirements of section 10(c) of the Endangered Species Act of 1973 (16 U.S.C. 1539(c)) and its implementing regulations (50 CFR 17.22) and National Environmental Policy Act regulations pertaining to the publication of a notice of intent to issue an environmental impact statement (40 CFR 1501.9(d)).

Michael J. Senn,

Assistant Regional Director—Ecological Services, Pacific Southwest Region, U.S. Fish and Wildlife Service, Sacramento, California.

[FR Doc. 2023–15037 Filed 7–14–23; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[Docket No. FWS–HQ–IA–2023–0011; FXIA16710900000–234–FF09A30000]

Endangered Species; Issuance of Permits

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of issuance of permits.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), have issued the following permits to conduct certain activities with endangered species. We issue these permits under the Endangered Species Act (ESA).

ADDRESSES: Information about the applications for the permits listed in this notice is available online at *https://www.regulations.gov.* See **SUPPLEMENTARY INFORMATION** for details.

FOR FURTHER INFORMATION CONTACT: Brenda Tapia, by phone at 703–358–2185, or via email at *DMAFR@fws.gov.* Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION: We, the U.S. Fish and Wildlife Service (Service), have issued permits to conduct certain activities with endangered and threatened species in response to permit applications that we received under the authority of section 10(a)(1)(A) of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*)

After considering the information submitted with each permit application and the public comments received, we issued the requested permits subject to certain conditions set forth in each permit. For each application for an endangered species, we found that (1) the application was filed in good faith, (2) the granted permit would not operate to the disadvantage of the endangered species, and (3) the granted permit would be consistent with the purposes

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Appendix B

Public Comment Matrix

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Appendix B. Public Comment Matrix

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
Best Available Science and Information	Request for Information	Yanina	Aldao Galvan	N/A	The public demands scientific research and peer-reviewed processes during the preparation of the draft. There is not enough data to support the statement that translocations benefit the species. We are shrinking the habitat and telling the tortoise where its range should be, all in the name of "streamlining" the process. The only beneficiaries of this plan are the developers and utility companies.	BAI-01	How will the Service incorporate the best available information and baseline data in its development of the GCP?
Best Available Science and Information	General GCP Comments	Edward	LaRue	Desert Tortoise Council	The USFWS must ensure that the GCP is developed using the latest research and follows the regulations and Habitat Conservation Planning (HCP) Handbook (USFWS and NMFS 2016). It must use science to inform decisions, implement effective methods, and monitor results to effectively contribute to the recovery of the tortoise. It must follow the HCP Handbook and document this process in the GCP to provide clarity to the public and permit applicants and avoid successful legal challenges.	BAI-01	How will the Service incorporate the best available information and baseline data in its development of the GCP?
Best Available Science and Information	Request for Information	Edward	LaRue	Desert Tortoise Council	Page 28 : "[T]he Service will track the amount of incidental take permitted for each activity under the Plan through the approval of incidental take permits. If five large desert tortoises die because of activities permitted under this Plan in any calendar year, the Service will first assess the adequacy of the minimization measures in the Plan and the individual incidental take permits. If modifying the minimization measures in the Plan and the individual incidental take permits is not practical, we will not approve additional incidental take permits unless it revises the Plan." Please provide data to support the selection of five large desert tortoises as the threshold the USFWS is using to take action. Absent these data on demographics, threshold number, period of time, and size class, this threshold appears to be arbitrary in its selection. In other words, we are asking USFWS to show the science and scientific process it used to determine that this metric is an appropriate threshold.	BAI-01	How will the Service incorporate the best available information and baseline data in its development of the GCP?
Best Available Science and Information	Desert Tortoise Population Status	Edward	LaRue	Desert Tortoise Council	See Appendix A: Demographic Status and Trend of the Mojave Desert Tortoise including the Western Mojave Recovery Unit (pages 33-39 of Desert Tortoise Council Letter) for population statistics and summaries.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
Consultation and Coordination	N/A	Dawn	Rowe	San Bernardino County	Coordination with State Agencies: Currently, an applicant who has obtained a federal incidental take permit can ask to be exempted from applying for a California state permit so long as their application is consistent with the California Endangered Species Act (CESA). The FWS should coordinate with the California Department of Fish and Wildlife. This will ensure that any changes do not create greater in consistencies and inadvertently make the process more burdensome by requiring applicants to obtain both state and federal permits.	CC-01	What government agencies, nonprofits, and local stakeholders does the Service plan to engage and cooperate with in the development of the GCP?
Consultation and Coordination	Tribal Consultation	Amelia	Flores	Colorado River Indian Tribes	To understand how these comments were taken into account in your decision making, we ask for a written response prior to a final decision. Please copy the Tribes' Attorney General Rebecca A. Loudbear, at rloudbear@critdoj.com and THPO Director Bryan Etsitty, at betsitty@crit- nsn.gov, on all correspondence to the Tribes.	CC-02	How does the Service plan to engage with Tribes throughout the planning process?
Consultation and Coordination	Tribal Consultation	Jason	Gerdes	Environmental Protection Agency	In the Draft EIS, summarize the results of tribal consultation and identify the main concerns expressed by tribes (if any), and how those concerns were addressed. We also recommend identifying any protection, mitigation, and enhancement measures identified by tribes. EPA Region 9 has a robust tribal program. If you need assistance with consultation or updated tribal contacts, please contact John (JR) Herbst at (619) 235-4787 or herbst.john@epa.gov.	CC-02	How does the Service plan to engage with Tribes throughout the planning process?
Consultation and Coordination	Tribal Consultation	Jason	Gerdes	Environmental Protection Agency	In the Draft EIS, discuss how the Service would avoid or minimize adverse effects on the physical integrity, accessibility, or use of cultural resources or archaeological sites, including traditional cultural properties, throughout the plan area. Clearly discuss mitigation measures for archaeological sites and TCPs. We encourage the Service to append any Memoranda of Agreements to the Draft EIS, after redacting specific information about these sites that is sensitive and protected under Section 304 of the NHPA. We also recommend providing a summary of all coordination with tribes and with the SHPO/THPOs, including identification of NRHP eligible sites and development of a Cultural Resource Management Plan.	CC-02	How does the Service plan to engage with Tribes throughout the planning process?

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Consultation and Coordination	Cooperating Agencies	William	Shott	National Park Service	Three NPS units – Mojave National Preserve, Death Valley National Park, and Joshua Tree National Park – have an established history partnering with other government agencies and organizations towards range-wide population recovery of desert tortoise. There might be opportunities for the NPS to coordinate recovery efforts with the USFWS. While the Plan/DEIS would propose a number of mitigations that would affect NPS lands, the NPS lacks the resources to address NEPA compliance requirements of such actions that extend beyond park operations. The NPS lacks the resources to comply with USFWS screening, monitoring, and tracking requirements for translocated tortoises. The Ivanpah Desert Tortoise Research Facility (IDTRF) situated in Mojave National Preserve was established to advance scientific research, head-starting, and best practices for the recovery of desert tortoise. The IDTRF and the Preserve present opportunities to bolster tortoise populations along fenced road corridors and by head starting research. The NPS can work with the USFWS to identify funding and partnership opportunities to further these and other tortoise conservation efforts.	CC-01	What government agencies, nonprofits, and local stakeholders does the Service plan to engage and cooperate with in the development of the GCP?
Cumulative Effects	N/A	Edward	LaRue	Desert Tortoise Council	Cumulative Impacts: In the cumulative effects analysis of the DEIS, please ensure that the CEQs "Considering Cumulative Effects under the National Environmental Policy Act" (1997) is followed, including the eight principles, when analyzing cumulative effects of the proposed action to the tortoise and its habitats.	CE-01	How will the Service conduct its cumulative effects analysis?
Cumulative Effects	N/A	Jason	Gerdes	Environmental Protection Agency	Discussions of cumulative impacts are usually more effective when included in the larger discussions of environmental impacts from the action (the environmental consequences chapter), as opposed to discussing cumulative impact analyses in a separate chapter.	CE-01	How will the Service conduct its cumulative effects analysis?
Cumulative Effects	N/A	Jason	Gerdes	Environmental Protection Agency	In the cumulative impacts analysis, identify how resources, ecosystems, and communities in the vicinity of the plan area have already been, or will be, affected by past, present, or future activities. Characterize these resources in terms of their response to change and capacity to withstand stresses. We recommend focusing on resources of concern or resources that are "at risk" and/or are significantly impacted by the covered activities before mitigation. This analysis provides an opportunity to identify potential large, landscape level regional impacts, as well as potential large-scale mitigation measures.	CE-01	How will the Service conduct its cumulative effects analysis?
Cumulative Effects	N/A	Jason	Gerdes	Environmental Protection Agency	The CEQ Regulations also require analysis of "reasonably foreseeable environmental trends and planned actions in the area(s)" (40 CFR 1502.15). In the Draft EIS, for example, discuss the influx of proposed solar projects in the plan area. The EPA recommends that the Draft EIS identify which resources will be analyzed, which ones are not, and why. For each resource analyzed, we recommend including the following information: Identify the current condition of the resource as a measure of past impacts. Identify the trend in the condition of the resource as a measure of present impacts. For example, the health of the resource is improving, declining, or in stasis. Identify all on-going, planned, and reasonably foreseeable projects in the study areas which may contribute to cumulative impacts. Identify the future condition of the resource based on an analysis of impacts from reasonably foreseeable projects or actions added to existing conditions and current trends. Identify mitigation measures or conservation management actions that can be consistently and transparently applied to future projects.	CE-01	How will the Service conduct its cumulative effects analysis?
Cumulative Effects	Effects of Similar and Connected Actions	Jeff	Aardahl	Defenders of Wildlife	The environmental baseline should account for the cumulative impacts of all past federal, State and private sector activities on the desert tortoise and its critical habitat, including those federal actions that have undergone ESA Section 7 consultation.	CE-01	How will the Service conduct its cumulative effects analysis?
Direct and Indirect Effects	General GCP Comments	Edward	LaRue	Desert Tortoise Council	The USFWS expects "that incidental take permits issued through this Plan may cause an increase in the number of translocations to a small degree as developers use the expedited process to take desert tortoises, primarily in the form of capture, rather than altering project boundaries to avoid a few individuals." Please expand the discussion on impacts to include operations and maintenance of new and already implemented projects and other relevant activities (e.g., OHV recreation, etc.).	GCP-01	How will the Service revise wording throughout the GCP to better reflect its purpose and need?
Early Attention	Cooperating Agencies	L. Darrell	Lacy	QuadState	QuadState and local counties would like to have a seat at the table to help USFWS develop and coordinate with local planning and permitting actions.	CC-01	What government agencies, nonprofits, and local stakeholders does the Service plan to engage and cooperate with in the development of the GCP?
GCP	Covered Activities	Dawn	Rowe	San Bernardino County	Small Project Exemptions: Small projects such as accessory dwelling units, single-family homes, multi-family housing developments under 20 units or other similar projects should be considered exempt from requirements to seek an incidental take permit. At a minimum, these types of projects should fall into an expedited review process, for example a process where the public comment period is eliminated. The additional time to process an incidental take permit disproportionately affects smaller projects. With a significantly smaller impact on habitat, an expedited process for these types of projects will also reduce the permitting workload for the FWS.	CA-01	How will the Service clarify what constitutes as a covered activity?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Mitigation Measures	Dawn	Rowe	San Bernardino County	Appropriate Mitigation: Mitigation requirements for the incidental take permit should vary depending on the size and scope of the project rather than a one-size-fits-all approach for all applicants. The FWS should tailor its required mitigation measures to appropriately fit the size of the project by including in the new Plan specific criteria that clearly defines the scope of smaller projects that are subject to reduced mitigation efforts.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Covered Activities	Dawn	Rowe	San Bernardino County	Public Infrastructure: It is unclear if the Conservation Plan will apply to the maintenance of existing public facilities and infrastructure such as roads and flood control channels. The County asks that future drafts clarify this.	CA-01	How will the Service clarify what constitutes as a covered activity?
GCP	Covered Activities	Edward	LaRue	Desert Tortoise Council	In addition to specific development/construction projects, human activities should be identified and included in the GCP. These activities would include the operation and maintenance activities of non-federal entities in the permit area for new projects, operation and maintenance activities for existing projects, and certain activities that are not associated with development/construction projects. [e.g., public works agencies, off-highway vehicle (OHV) events, OHV use in State Recreation Areas, etc.]. Examples - any non-federal entity sponsoring off-highway or off-road vehicle (ORV) recreation should be included as a covered activity. California City, which has an active OHV/ORV recreation program and includes the sales of permits to operate ORVs, should be included as a covered activity. Organized events on the 25,000-acre Onyx Ranch, which was purchased by the Off-Highway Motor Vehicle Recreation (OHMVR) Division of California State Parks that overlaps the range of the tortoise, should be included as a covered activity. The plan at Onyx Ranch is to inventory the area for desert tortoises to establish a baseline and then monitor the effects of OHV/ORV use during the next few years. Red Rock Canyon State Park is another non-federal entity that allows motorized vehicle use on designated routes within desert tortoise habitat. This should be a covered activity. Grazing on non-federal land should be included as a covered activity.	CA-01	How will the Service clarify what constitutes as a covered activity?
GCP	Permit Process	Edward	LaRue	Desert Tortoise Council	Coordination with CDFW – "In almost every situation where an applicant is seeking a section 10(a)(1)(B) permit from the Service, they would need to comply with [Section 2080-2081 of] the California Endangered Species Act. We envision that, at every step in the process of applying for a federal incidental take permit, the applicant would engage the Department [CDFW] at the same time. We did not insert this important concept throughout this document…" Please insert this requirement at all appropriate locations throughout the GCP. Many people, do not read the entire document, but use the Table of Contents to find the specific information they are looking for. Ideally the Final GCP would be coordinated with CDFW and the science-supported methods used to determine impacts of the taking; processes/methodologies to determine minimization, mitigation, and monitoring to fully offset the impacts; and guaranteed funding would be something the USFWS and CDFW could agree on.	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Covered Activities	Edward	LaRue	Desert Tortoise Council	Pages viii, 1, and Chapter 2: Covered Activities – "The Plan covers otherwise lawful commercial, agricultural, residential, industrial, and infrastructure development. It will also cover operations and maintenance of these activities." The GCP should cover recreational activities and operations and maintenance of existing development that is likely to result in take. Examples of each type of activity should be provided as currently these broad terms are not clear as to what activities would be covered, and each person is going to assume different activities are covered or not. In addition, this information is needed to analyze the impacts of these activities for NEPA compliance and section 7 consultation.	CA-01	How will the Service clarify what constitutes as a covered activity?
GCP	General GCP Comments	Edward	LaRue	Desert Tortoise Council	Pages viii and ix: Amount of Incidental Taking – "Incidental take is likely to occur in the form of killing, wounding, harming, and capturing desert tortoises during the conduct of covered activities." We suggest rewording this sentence to say "…capturing desert tortoises while conducting covered activities."	GCP-01	How will the Service revise wording throughout the GCP to better reflect its purpose and need?
GCP	Reporting and Monitoring	Edward	LaRue	Desert Tortoise Council	Page ix: Monitoring Plan – "Each permittee will provide an annual report on March 31 each year that its incidental take permit is in effect or until the Service agrees that an annual report is no longer needed." Please delete "…or until the Service agrees that an annual report is no longer needed." We are not sure why an annual report would no longer be needed during the term of the permit. Other USFWS permits require annual reporting even when no activity is conducted.	RM-01	How will the Service design and implement reporting and monitoring procedures in the GCP?
GCP	Area Boundaries (Permit/Mitigation)	Edward	LaRue	Desert Tortoise Council	Page 2: Planning Area – Please ensure that the map of the planning area considers the impacts of climate change and includes areas higher in elevation and latitude where appropriate. This is needed especially if the GCP will be renewed or the permit term will be longer than a decade. This comment also applies to the map of the permit area and mitigation area.	AB-01	How will the Service ensure that area boundaries outlined in the GCP effectively conserve Desert Tortoise in a manner that meets the needs of interested parties?

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GCP	Permit Process	Edward	LaRue	Desert Tortoise Council	Page 3: "…we intend to issue individual incidental take permits for desert tortoises, provided that the applicants meet the general issuance criteria in our regulations and the specific criteria described in this Plan. Annually, the Service will publish notices of individual incidental take permits that we have issued through this general conservation plan." Please explain in the Final GCP how USFWS intends to comply with NEPA for each ITP issued.	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	General GCP Comments	Edward	LaRue	Desert Tortoise Council	Page 5: "The general conservation plan would not be available to applicants in [established] mitigation areas, even if the proposed action is on non-federal land." This statement should be highlighted and reiterated at the beginning of the document so project proponents know their development/activities that are likely to result in take should not be located in mitigation areas. We also think adding the word, "established," clarifies the statement.	GCP-01	How will the Service revise wording throughout the GCP to better reflect its purpose and need?
GCP	General GCP Comments	Edward	LaRue	Desert Tortoise Council	Page 7: "For example, if the proposed action would involve the incidental take of desert tortoises and the permittee can fully implement the mitigation and monitoring over a brief time, the duration of that incidental take permit would be relatively short. For projects where incidental take and the implementation of mitigation are likely to be require a long time, the incidental take permit for that project could extend for decades." We appreciate the inclusion of this statement and ask that a reference to the HCP Handbook be added to this statement. This statement with a reference to the HCP Handbook should be used throughout the GCP to support regulatory statements. This provides clarity and removes the appearance of arbitrary statements.	GCP-01	How will the Service revise wording throughout the GCP to better reflect its purpose and need?
GCP	Permit Process	Edward	LaRue	Desert Tortoise Council	Page 8: Incidental Take Permit Process – The USFWS has briefly summarized much of the process here. We suggest referencing appropriate sections of the HCP Handbook here and throughout the GCP. "During the second phase, the applicant prepares a plan that integrates the proposed project or action with conservation of listed species." We suggest changing "listed species" to "covered species."	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Covered Activities	Edward	LaRue	Desert Tortoise Council	Page 9: "Section 2080 of the California Endangered Species Act prohibits the take of state-listed endangered or threatened species but allows for the incidental take of such species resulting from otherwise lawful development projects under section 2081(a) and (b)." Because a 2081 permit is required for a "project or activity," we suggest this sentence be rewritten to say "…resulting from otherwise lawful projects or activities" and delete "development." Some operations and/or maintenance activities may result in take and would be a violation of CESA unless the entity has an incidental take permit from CDFW.	CA-01	How will the Service clarify what constitutes as a covered activity?
GCP	Out of Scope	Edward	LaRue	Desert Tortoise Council	Page 10: Covered Species – Please see our earlier comment about adding other species such as the Mohave ground squirrel. In addition, please provide information on how the GCP would deal with non-FESA-listed bird species under the Migratory Bird Treaty Act and compliance with the Bald and Golden Eagle Protection Act that may be taken during implementation of GCP covered activities (please see sections 7.4.1 and 7.4.2 in the HCP Handbook).	Out of scope	Out of scope
GCP	Desert Tortoise Species Information	Edward	LaRue	Desert Tortoise Council	Page 11 : "Also, desert tortoises move over time; an animal that is outside the project boundary during resource surveys may move to within the project's boundary at the time of implementation." USFWS should provide citations from the scientific literature to support its statement, when available. The Council appreciates that the USFWS acknowledges that a tortoise's lifetime home range can be quite large (Tracy et al 2004) and that tortoises make forays of several miles in a few weeks (Freilich et al. 2000, Berry 1986a, 1986b). It also means that tortoise signs may not be detected in a project area depending on the year/time of year that the tortoise survey is conducted. This is because home range size, number of different cover sites (e.g., burrows) used, average distances traveled per day, and levels of surface activity are significantly reduced during drought years (Duda et al. 1999). In the last few decades, a majority of the years have been drought years - an influence of climate change - thus restricting tortoise aboveground activity, movement, and associated tortoise sign until there is a year with much higher-than-average precipitation. The USFWS should incorporate this information on the tortoise's life history in its assessment of whether a proposed project/activity is likely to result in take of the tortoise, especially as most projects/activities have an expected life of several decades or are considered permanent.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
GCP	Climate Change	Edward	LaRue	Desert Tortoise Council	Page 13: Climate – We found no information in this section on how climate is changing in the Colorado/Sonoran and Mojave deserts now, in the next decade (proposed GCP permit term), and foreseeable future according to climate scientists. Please add this information with citations.	CLIM-01	How will the Service address climate change impacts in the GCP?

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GCP	Desert Tortoise Habitat and Range	Edward	LaRue	Desert Tortoise Council	Page 15: Five-Year Reviews – "For this reason, we are incorporating the 5-year review of the status of the desert tortoise (Service 2022) by reference to provide most of the information needed for this section of the biological opinion…" In the 5-year review, the USFWS discusses the status of the desert tortoise as a single distinct population segment and summarizes that "… habitat occupied by the Mojave (distinct population segment) is relatively continuously distributed, and genetic differentiation within the (distinct population segment) is consistent with isolation-by-distance in a continuous-distribution model of gene flow." The Council's understanding is that Dutcher et al. (2022) reported that data "support historical gene flow with isolation-by-resistance and reveal reduced genetic connectivity across two parallel linear features bisecting our study area (a railway and a highway). Our work demonstrates the potential for tortoises to use a range of habitats, spanning valleys to mountain passes, but also indicates habitat fragmentation limits connectivity with relatively rapid genetic consequences." Thus, Dutcher's findings do not align with the statement above by the USFWS in the GCP.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
GCP	General GCP Comments	Edward	LaRue	Desert Tortoise Council	Page 15: Five-Year Reviews – "For this reason, we are incorporating the 5-year review of the status of the desert tortoise (Service 2022) by reference to provide most of the information needed for this section of the biological opinion…" We are unsure what "biological opinion" in this sentence refers to; e.g., is it referencing a future biological opinion for the GCP? Please clarify this statement.	GCP-01	How will the Service revise wording throughout the GCP to better reflect its purpose and need?
GCP	Fire	Edward	LaRue	Desert Tortoise Council	Page 16: "Wildfires fueled by invasive grasses have burned extensive areas of desert tortoise habitat." Please add to this paragraph as an example the York Fire of August 2023 that burned more than 90,000 acres in the eastern Mojave Desert, much of which was tortoise habitat.	FIRE-01	How will the Service acknowledge the impact of wildfires on the planning area?
GCP	Desert Tortoise Species Information	Edward	LaRue	Desert Tortoise Council	"The threats that led to the listing of the desert tortoise (i.e., the five-factor analysis required by section 4(a)(1) of the Endangered Species Act) continue. The status of the desert tortoise has continued to decline and most of the previously identified threats continue to affect populations. Given the reproductive ecology of the desert tortoise, measurable increases in the size of populations will require years." We consider this last sentence by the USFS an understatement. Unfortunately, when the Council considers all the threats to the tortoise that are exacerbated by climate change and looks at the demographic data for the tortoise and its life history strategy, we see a more dire future for the survival of the tortoise (hence Defenders of Wildlife et al. 2020). Rather than refer to a summary document and not present data on the status and trend of the tortoise in the GCP, we request that the USFWS report the results of these findings by researchers in this section of the GCP. The Council has developed a document, Appendix A - Demographic Status and Trend of the Mojave Desert Tortoise including the Western Mojave Recovery Unit, that summarizes the density and abundance data for the tortoise using USFWS data through 2021, which is attached for addition to the GCP. Because the focus of the GCP is the tortoise in California, you can delete the data for Nevada, Arizona, and Utah, unless our previous recommendations for expanding the planning area are adopted.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
GCP	Desert Tortoise Population Status	Edward	LaRue	Desert Tortoise Council	It is noteworthy that reproduction levels are inconsequential to a species survival if recruitment is not occurring and at a level to fully replace adult mortality or exceed adult mortality when the goal is to increase population numbers and densities. Allison and McLuckie (2018) indicate in all recovery units "the odds of encountering a juvenile have declined since 2007." "Declining adult densities through 2014 have left the Western Mojave adult numbers at 49% and in the Eastern Mojave at 33% of their 2004 levels. Such steep declines in the density of adults are only sustainable if there were suitably large improvements in reproduction and juvenile growth and survival. However, the proportion of juveniles has not increased anywhere since 2007, and in these two recovery units the proportion of juveniles in 2014 has declined to 91% and 77% of their representation in 2004, respectively. This may be a continuation of ongoing population declines." Also, recruitment is less likely to increase in the future because of the increasing speed at which climate change impacts are progressing. Many climate scientists have reported that desert species live on the edge of viability, and climate change is pushing many species beyond their physiological limits to survive in the future. This information should be presented in the GCP and the EIS. as it is relevant to the significance of permitting additional take for tortoise populations that are below the viability threshold or on the edge with declining trends.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?

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GCP	Desert Tortoise Population Status	Edward	LaRue	Desert Tortoise Council	"In the 5-year review, the Service concluded by recommending that the status of the desert tortoise as a threatened species be maintained because of the large extent of its range and a total number in the hundreds of thousands of individuals (all size classes) at last estimation." The Council disagrees with these reasons for recommending the status of the tortoise remain threatened. Species viability depends on a myriad of factors. If there is no recruitment to replace the adults, which the USFWS says is occurring and has stated this in the GCP, the species will be extirpated in one generation. We recommend this statement be removed from the GCP. In addition, we recommend the USFWS consult with several respected population ecologists and conservation biologists, provide them with the life history and survival strategy of the tortoise, the demographic data over time, the threats to the species, and ask them if the tortoise meets the definition of endangered.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
GCP	Desert Tortoise Population Status	Edward	LaRue	Desert Tortoise Council	Pages 19: "Through the consultation process, when determining whether a proposed action is likely to jeopardize the continued existence of a species, we are required to consider whether the action would reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 Code of Federal Regulations 402.02)." While this may be a regulatory requirement to analyze survival and recovery of a listed wildlife species, it is biologically flawed. For the tortoise, reproduction may be occurring but there may be no recruitment. The number of animals may be many but the species may only be represented by older adults that are unlikely to survive much longer. Distribution may not change even though density has been substantially reduced thus affecting recruitment; populations have been fragmented leading to greater likelihood of experiencing substantial declines in population survival from genetic, demographic, and environmental stochasticity. - (e.g., extreme weather events driven by climate change is one example of environmental stochasticity). We recommend that the USFWS use the best available science to determine whether a proposed action is reasonably expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild. We reiterate our recommendation for the USFWS to consult with several respected population ecologists and conservation biologists before making this determination. Consideration of reproduction, numbers, and distribution would be part of the process but not limited to these factors.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
GCP	Desert Tortoise Habitat and Range	Edward	LaRue	Desert Tortoise Council	Page 21: Distribution – "Attempting to quantify the amount of habitat lost is difficult…" The Council agrees. However, with advanced remote imaging and computer analysis, we ask whether the USFWS has consulted with U.S. Geological Survey (USGS) scientists and/or university researchers recently to determine the best way to use available data and analyze it to determine changes that have occurred to tortoise habitat. This approach would seem appropriate rather than saying "the difficulties associated with determining areas that it actually occupies….quantifying its distribution with precision" are insurmountable. What level of precision is the USFWS seeking for its data on the tortoise? In addition, NEPA has requirements on obtaining data for preparation of an EIS (please see 40 CFR 1502.22).	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
GCP	Permit Process	Edward	LaRue	Desert Tortoise Council	Page 22: "[T]he management of acquired lands and the implementation of other mitigation activities (e.g., restoration of habitat, fencing of roads, etc.) have some potential to take limited numbers of desert tortoises and may be addressed through a recovery permitting process (i.e., section 10(a)(1)(A) of the Endangered Species Act) or consultation under section 7 of the Act associated with this Plan, through existing permits and consultations, or through separate project specific processes." We are confused. If these mitigation actions are required in an ITP as mitigation, please explain why they would not be covered activities under the permit? Why would a separate permit be needed?	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Effects of Similar and Connected Actions	Edward	LaRue	Desert Tortoise Council	Page 23: We suggest using Tracy et al. (2004; Chapter 5 - pages 108 to 120) as a starting point to describe the cumulative, interactive, and synergistic impacts of human activities that result in take and the impacts of this take.	CE-01	How will the Service conduct its cumulative effects analysis?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Translocation	Edward	LaRue	Desert Tortoise Council	"No one has studied the effects of moving desert tortoises from harm's way. We expect that the placement of the desert tortoise up to several hundred feet from its original location is not likely to adversely affect individuals because they are likely still within their home range." The USFWS should provide citations from the scientific literature to support the conclusion in the second sentence. It has been our personal experience that, if tortoises are moved during very warm or very cold temperatures, they are either unable to reach a burrow for shelter from very warm temperatures because of the hundreds of feet or more they must travel to reach their burrow or they are unable to construct a new burrow (burrow construction would involve an additional expenditure of energy that a tortoise may not be able to afford) and this would result in take. During cold temperatures, tortoises would have a very slow metabolism and move slowly. They may not be able to reach a burrow for protection from predators in a short time because of their slow mobility or they would be unable to construct a new burrow making them susceptible to increased predation. When the USFWS issues a biological opinion, our understanding is it has the authority to require monitoring of the effectiveness of terms and conditions to minimize take. We are surprised by the USFWS's revelation that it has not required monitoring of any tortoises moved from harm's way under a biological opinion to determine whether that form of take was successful in preventing mortality/injury or not.	TRANSLOC-01	How will the Service manage desert tortoise translocation?
GCP	Translocation	Edward	LaRue	Desert Tortoise Council	Page 24: "The Service is currently working with the U.S. Geological Survey to identify specific augmentation sites that meet specific criteria" for translocation. "[P]rior to the establishment of specific augmentation sites, the Service would direct applicants to translocate desert tortoises to general areas that meet these criteria on a case-by-case basis, in coordination with the land manager." The Council requests the USFWS to provide in the GCP the criteria that the USFWS will use to determine whether a population would receive translocated tortoises, how many recipient tortoises it can support, and how the likelihood that this augmentation is successful can be calculated. The locations where tortoise are translocated as a mitigation measure should be to lands that are managed for the conservation of the tortoise in perpetuity and not for multiple use. USFWS should provide in this section of the GCP the criteria and process that would be used to determine where to translocate tortoises so they would have the greatest success of surviving and recruiting young tortoises into the population. The criteria should include an analysis of the quality of the habitat to support additional tortoises in the translocation area along with the current and likely future impacts to this area. Monitoring the success of the translocation would also be required to determine its effectiveness in meeting the biological goals and objectives of the GCP and ITPs issued under it.	TRANSLOC-01	How will the Service manage desert tortoise translocation?
GCP	Translocation	Edward	LaRue	Desert Tortoise Council	For research results on tortoise translocation the USFWS reports that "[i]n some cases (e.g., movement patterns), the behavior pattern of translocated desert tortoises resembled those of controls and residents after 2 to 3 years. Consequently, we conclude that translocation is an effective tool for protecting desert tortoises, if those conducting the translocation follow specific protocols designed to increase the chance of success." Absent from this summary is a study by Mulder et al. (2017) that discovered that translocated adult male tortoises had not produced offspring with resident or translocated female tortoises four years after the translocation. Thus, the translocated male tortoises were not contributing to the recruitment of new tortoises or the genetic diversity of the tortoise population. This is a serious demographic issue with respect to translocated tortoises that should be studied further to determine if this behavior can be changed so these animals contribute to recruitment and genetic diversity of the population.	TRANSLOC-01	How will the Service manage desert tortoise translocation?
GCP	Desert Tortoise Population Status	Edward	LaRue	Desert Tortoise Council	Page 25: Augmentation of Depleted Populations – "[T]he Service considers population augmentation as a necessary recovery tool because of 'appreciable declines of … populations across the range.' We have proposed to approach this strategy experimentally." The Council applauds the USFWS's scientific approach to determining successful ways to augment depleted populations as a mitigation measure to fully offset the impacts of the taking of the tortoise. However, if the results are not successful, which means the mitigation does not fully offset the impacts of the taking or offset it to the level expected, the permittee would need to implement additional mitigation to comply with the issued permit. Please show how this situation would be addressed in the GCP following the process in the HCP Handbook, specifically sections 9.0 and 9.5 of the HCP Handbook.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Reporting and Monitoring	Edward	LaRue	Desert Tortoise Council	Page 25: "Table 2 depicts the incidental take permits that the Service issued that resulted in the take of desert tortoises. Most of the take was in the form of capture to move individuals from harm's way or to translocate them." We ask whether the USFWS required other sources of take to be monitored and reported? Two likely sources would be the project/activities (1) provided nesting sites or subsidized food or water for ravens that then preyed on tortoises, or (2) reduced a tortoise's long-term home range that overlapped the project site such that its habitat needed for breeding or feeding were adversely impacted and it could no longer survive there. These indirect sources of take should be discussed in the GCP.	RM-01	How will the Service design and implement reporting and monitoring procedures in the GCP?
GCP	Covered Activities	Edward	LaRue	Desert Tortoise Council	Page 27: The USFWS also anticipates "that most incidental take under the Plan would occur in the form of capture (i.e., capture is a form of take defined in the Act) when permittees translocate desert tortoises from project sites to conservation areas…" and The Service expects "that the implementation of projects under the Plan is likely to result in death or injury of few large desert tortoises because biologists find and translocate most of those individuals." These statements appear to apply to new construction projects and areas in the project footprint. They do not address the tortoises in adjacent areas (impacts of increased predation, invasive plant species, etc.) or ongoing operations and maintenance activities, both of which can result in "indirect" take of tortoises in adjacent areas through harm and increased access into otherwise remote areas that facilitates collection and vandalism. Projects and activities that cause surface disturbance create conditions for establishment, proliferation, and reseeding of invasive plant species that favor these species over native plants. This shift in plant composition has altered food availability for Mojave Desert tortoise (Drake et al. 2016). The "negative indirect effects of invasive grasses, such as red brome, in desert ecosystems, and provides definitive evidence of a larger negative consequence to health, survival, and ultimately population recruitment for Mojave desert tortoises."	CA-01	How will the Service clarify what constitutes as a covered activity?
GCP	Desert Tortoise Population Status	Edward	LaRue	Desert Tortoise Council	Page 29: Jeopardy Analysis – Please see our earlier comment on survival and recovery for the tortoise. We request this information be incorporated here in the jeopardy analysis.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
GCP	General GCP Comments	Edward	LaRue	Desert Tortoise Council	Page 30: Biological Goals and Objectives – Please revise this section so it complies with the HCP Handbook. For example, under Objective 2.1, ensure that this objective complies with section 9.2 of the Handbook, including listing objectives that are specific, measurable, achievable, resultoriented, and time fixed.	GCP-01	How will the Service revise wording throughout the GCP to better reflect its purpose and need?
GCP	Mitigation Measures	Edward	LaRue	Desert Tortoise Council	Page 30: "Goal 2: Mitigate the effects of take to help meet recovery criteria and/or support long-term viability of the desert tortoise." Please add at the end of this sentence "in this recovery unit where the impacts of the taking would occur." Our intent is to ensure that, if take occurs in the West Mojave Recovery Unit, the mitigation would not occur in the Colorado Desert Recovery Unit, for example. Recovery unit boundaries have been delineated using genetic data	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Covered Activities	Edward	LaRue	Desert Tortoise Council	Page 31: 5.3 Measures to Minimize Impacts – These measures address new construction projects. They do not address the ongoing take from operations and maintenance activities of these new projects, the operations and maintenance activities of existing projects, or the take from authorization of new or ongoing activities (e.g., vehicle use, etc.). Please revise this section of the GCP to include these projects/activities.	CA-01	How will the Service clarify what constitutes as a covered activity?
GCP	Permit Process	Edward	LaRue	Desert Tortoise Council	Page 34: "At a minimum, the amount of land acquisition will generally follow the guidelines in the Bureau's (2016; see Table 18) Desert Renewable Energy Conservation Plan." As we recall, these BLM guidelines would not fully offset the impacts of the taking, which is the goal of an HCP according to the Handbook (USFWS and NMFS 2016). The DRECP did not have this requirement, as it was approved by the USFWS under section 7(a)(2) of FESA with only the requirement to minimize take. We recommend the USFWS develop algorithms that calculate the impacts of the taking for the life of the project (including what we are calling indirect take), the value of these lost/modifier resources, and the value of the proposed mitigation so the USFWS, the applicant, and the public may clearly see how the impacts of the taking would be fully offset by implementation of the mitigation. These algorithms should be included in the Draft GCP for the public to review. We recommend the USFWS coordinate with USGS scientists and university researchers in the development of this algorithm.		How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Mitigation Measures	Edward	LaRue	Desert Tortoise Council	Page 34: "The permittee will either directly fund implementation of the project or place funds into a regional recovery account to provide for its implementation by an entity approved by the Service." This mitigation option is similar to the in-lieu fee measure in the HCP Handbook. In section 9.4.3 of the Handbook, the USFWS says, "If the funds paid to a sponsor do not result in on-the-ground conservation in advance or contemporaneously with impacts, there could be temporal impacts to the species and there is the possibility that the mitigation may not occur. Therefore, development of an in-lieu fee program agreement must be carefully crafted as a safety net for the species. The agreement should be time-limited. If the sponsor cannot get conservation on-the-ground according to the agreement, the sponsor must report this to the permittee and to the Services immediately. If the agreed-upon conservation cannot be accomplished in a timely fashion, the permittee may have to pay additional fees to offset those temporal impacts." In this case, the USFWS is the sponsor and it would be reporting to itself. This arrangement sounds like a conflict. We strongly recommend this mitigation method be removed from consideration in the GCP.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Mitigation Measures	Edward	LaRue	Desert Tortoise Council	Page 34: "If the Service and applicant are interested in pursuing a non-acquisition option on lands managed by the Bureau, they would work with the Bureau to find an area within California Desert National Conservation Lands [NCL] or an area of critical environmental concern [ACEC] within a mitigation area as defined by the Plan." In the GCP, the USFWS stated that the "permittee must place acquired lands under a conservation easement and provide for long-term management and funding to ensure in-perpetuity conservation." We do not believe this same level of assured conservation is possible on lands managed by the BLM as their management authorities allow multiple uses and surface disturbance. In addition, their land management plans may be amended and funding reduced, so there are no assurances that these lands would result in a conservation benefit for the tortoise to offset the impacts of the taking in perpetuity. Ultimately Congress can change the management status of federal lands and has recently done so in tortoise habitat. Consequently, we oppose this mitigation measure and strongly request that it be deleted. We note that not all NCL- and ACEC-designated lands were intended to benefit tortoise conservation and promote recovery; i.e., there are ACECs managed to protect archaeological and cultural resources. So, if this measure is retained contrary to our recommendation that it be removed, please be sure to clarify NCL and ACEC lands specifically designated for tortoise conservation. We also recommend that these public lands occur within USFWS-designated critical habitat (USFWS 1994), as there are both NCL and ACEC lands outside designated critical habitat.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Mitigation Measures	Edward	LaRue	Desert Tortoise Council	Page 34: "The permittee could also provide funding to the recovery account for desert tortoises held by the National Fish and Wildlife Foundation, after determining the appropriate amount of funding with the Service. The National Fish and Wildlife Foundation would combine this funding from other sources and issue annual requests for proposals to implement recovery actions for the desert tortoise." Please see our earlier comment on in-lieu fees as this scenario has similar issues. The mitigation needs to occur prior to the impacts of the taking. Again, we request that the USFWS closely follow the HCP Handbook in the development of this GCP and cite it throughout the GCP.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Reporting and Monitoring	Edward	LaRue	Desert Tortoise Council	Pages 33 and 34: Monitoring – This section of the GCP appears to limit monitoring to construction projects, because it uses the term "post- construction compliance report." Please revise this section to state "post-activity compliance reports" as this term includes construction projects, operations and maintenance activities, and other activities that are likely to result in take. Please implement this revision throughout the GCP.	RM-01	How will the Service design and implement reporting and monitoring procedures in the GCP?
GCP	Adaptive Management	Edward	LaRue	Desert Tortoise Council	Pages 34 and 35: Adaptive Management Strategies – "The Service will monitor and analyze the effects of minimization and mitigation actions prescribed in this Plan to determine whether they are producing the anticipated results. If the desired results are not being achieved, we can use adaptive management to adjust minimization and mitigation measures to increase the conservation Plan's effectiveness for specific activities." We request these sentences be revised to say, "The Service will monitor and analyze the effects of minimization and mitigation actions prescribed in this Plan and the ITPs issued under it to determine whether they are producing the anticipated results. If the desired results are not being achieved, we will implement adaptive management to adjust minimization and mitigation measures to increase the conservation Plan's effectiveness."	AM-01	How is the Service addressing the need for adaptive management in the GCP?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Climate Change	Edward	LaRue	Desert Tortoise Council	Pages 35 and 36: Changed Circumstances - For the two foreseeable changed circumstances presented (i.e., in the Plan area, new species listed/critical habitat designated and newly found listed species) please add a time frame in which the USFWS and the permittee must mutually agree. In this section, we were unable to find the standard changed circumstances included in recently issued ITPs for the tortoise. These include new disease or variant, drought, changes in invasive species occurrence, wildfire, and development in an inholding of a mitigation area or adjacent to a mitigation area that impacts the mitigation area. Another changed circumstance is a delay in implementing the minimization and/or mitigation such that there are temporal impacts that were not calculated in the mitigation plan. Please add these changed circumstances to this section of the GCP. Please follow and cite section 9.6.1 and relevant sections beginning with 9.6.4 of the HCP Handbook in the GCP's Changed Circumstances section. In addition, please add to the GCP a discussion of section 9.7 Considering Climate Change.	CLIM-01	How will the Service address climate change impacts in the GCP?
GCP	Funding	Edward	LaRue	Desert Tortoise Council	Page 39: Funding Assurances – In the GCP, please cite and follow Chapter 11 - Implementing Costs and Funding Assurances of the HCP Handbook. Funding assurances is a complicated process and deserves more than one paragraph as a general description. Without funding assurances and "up front mitigation" the USFWS has no leverage to ensure that the minimization and mitigation measures are successfully implemented.	FUND-01	How will the Service ensure that the GCP implementation is fully funded?
GCP	Mitigation Measures	Edward	LaRue	Desert Tortoise Council	Page 40: "If the mitigation is not in place prior to when the incidental take is likely to occur, the permittee must provide assurance to the Service that the mitigation will occur and obtain the Service's approval before to initiating activities that are likely to result in take of desert tortoises." If this situation arises, and it should occur rarely or not at all, please add to this requirement that the USFWS will require additional mitigation for the temporal impacts.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Funding	Edward	LaRue	Desert Tortoise Council	Page 45: Funding – In the GCP, please cite and follow Chapter 11 - Implementing Costs and Funding in the HCP Handbook. Without funding assurances and "up front mitigation" the USFWS has no leverage to ensure that the minimization and mitigation measures will be implemented.	FUND-01	How will the Service ensure that the GCP implementation is fully funded?
GCP	Permit Process	Edward	LaRue	Desert Tortoise Council	Streamlining the ITP Process – California Endangered Species Act: One of the purposes of a GCP is to streamline the process of obtaining an ITP from the USFWS for a landowner. However, in California, the landowner must comply with the California Endangered Species Act (CESA) and obtain an ITP from CDFW under section 2081 of the California Fish and Game Code in addition to complying with FESA. To truly streamline the process for the landowner and the wildlife agencies, the GCP should include the requirements of obtaining an ITP from CDFW (California Fish and Game Code section 783.2) or a Natural Communities Conservation Plan (NCCP) to comply with CESA and California Fish and Game Code. This combination would streamline the process for obtaining an ITP from the USFWS and CDFW. Absent the inclusion of the process to obtain an ITP from CDFW, the landowner must develop an individual HCP, apply to CDFW, and wait for a permit. There is little streamlining for the landowner with the latter process. We recommend incorporating the USFWS's GCP process with the CDFW's ITP/NCCP process.	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Area Boundaries (Permit/Mitigation)	Edward	LaRue	Desert Tortoise Council	Permit Area/Plan Area: The USFWS has proposed a map of the permit area, that is, where take would be authorized. It appears to include most of the private land in the Western Mojave Recovery Unit for the tortoise (i.e., Antelope Valley, Victor Valley, Indian Wells Valley, Lucerne Valley, south slope of the San Gabriel Mountains, I-15 corridor between Victorville and Barstow east to Daggett and Yermo), Colorado Desert Recovery Unit (i.e., Morongo Basin and tribal land in southeastern Imperial County), and Anza Borrego State Park which has tortoises but is outside the mapped boundaries of the three Mojave desert tortoise recovery units in California (USFWS 2011). The USFWS's 1994 and 2011 recovery plans for the Mojave desert tortoise and numerous scientific papers and reports clearly show that the threats to and conservation needs of the tortoise are different in different recovery units and Tortoise Conservation Areas (TCAs). In the Western Mojave Recovery Unit, they are numerous and complex. We suggest the USFWS focus on the conservation needs within one recovery unit for the tortoise in California rather than the two plus recovery units currently proposed on the map. This approach is supported by the USFWS policy which says that the "GCP is not a substitute for a regional, multiple action HCP."	AB-01	How will the Service ensure that area boundaries outlined in the GCP effectively conserve Desert Tortoise in a manner that meets the needs of interested parties?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Covered Activities	Edward	LaRue	Desert Tortoise Council	Covered Activities: Covered activities in the GCP should include restoration of tortoise habitat from unauthorized/illegal activities such as unauthorized OHV use, illegal grading, unpermitted development, and illegal cannabis grow farms as well as past authorized activities. These restoration activities would be considered as mitigation for legal development elsewhere. To be clear, habitat restoration means restoring the ecological functions and values of the habitat prior to its disturbance. It does not mean recontouring the land or using methods to discourage future incursions. Restoration may use these methods as part of the process to restore the functions and values of the habitat but these measures alone to not result in restoration. "Habitat restoration is a countermeasure to many of the impacts [to the tortoise] … such as grazing, military operations, off-highway vehicle use, roads and trails, construction, mining, horses and burros, invasive species, fire, environmental contaminants, and utility corridors. As such, this action is highly prioritized within the Western Mojave and Colorado Desert recovery units" (USFWS 2011). Hence, we recommend that activities that result in the loss of habitat (e.g., grading, for residential, commercial, or industrial developments, new/improved access routes, mining, etc.) be covered activities in this GCP. Once the GCP is completed and implementation initiated, the USFWS with CDFW would pursue covered activities that degrade habitat quality. However, drought/climate change will be the overarching threat for any covered activity and should be analyzed and mitigated in the USFWS/CDFW ITP process and NEPA/CEQA documents.	CA-01	How will the Service clarify what constitutes as a covered activity?
GCP	Translocation	Edward	LaRue	Desert Tortoise Council	Current management of BLM lands in TCAs in California has not been effective. For the TCAs in California, three in the Western Mojave Recovery Unit, the three in the Colorado Desert Recovery, and one in the Eastern Mojave Recovery Unit, all are below the threshold for population viability for the tortoise (see USFWS 2015, 2016, 2018, 2019, 2020, 2022a, 2022b). This means that BLM is not providing effective on-the-ground management for the survival (emphasis added) of the tortoise. Until BLM can demonstrate they are implementing effective on-the-ground management actions for the tortoise, BLM should not receive translocated tortoises. Translocation is supposed to be an effective mitigation measure to help conserve the tortoise.	TRANSLOC-01	How will the Service manage desert tortoise translocation?
GCP	Mitigation Measures	Edward	LaRue	Desert Tortoise Council	Because BLM lands are managed for multiple use, there is no guarantee that the sites will not be managed for activities that are not compatible with tortoise conservation in the future. Although the John D. Dingell, Jr. Conservation, Management, And Recreation Act of 2019 allows BLM to remove some multiple use activities that adversely impact the tortoise from lands that are used as mitigation for HCP, GCPs, and NCCPs, it did not remove all. Thus, the BLM lands with relocated/translocated tortoises now occur on lands with fewer multiple uses that adversely impact the tortoise. These tortoises could be relocated/translocated again or killed during authorized activities approved at a relocation/translocation site. BLM needs to provide legal assurances that relocation/translocation sites are mitigation lands to be managed for the conservation of the tortoise and no longer multiple use lands. The permanent development of non-federal lands should be offset with permanent mitigation (see "Minimize and Mitigate to the Maximum Extent Practicable").	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Translocation	Edward	LaRue	Desert Tortoise Council	Congress has the authority to change land ownership and management of BLM lands, and has done so in the past in the CDCA to the detriment of the tortoise (e.g., expansion of China Lake Naval Air Weapons Station, etc.). Consequently, we are reluctant, and we think USFWS should be reluctant, to use BLM lands as translocations sites until BLM can demonstrate that, because the translocation sites are mitigation, they would be managed permanently for the benefit of the tortoise. For now, we would support placing translocated tortoises on non-federal lands such as those managed by an NGO for conservation purposes, CDFW with a conservation easement in perpetuity, or possibly the National Park Service, until BLM can demonstrate its legal authority and "on-the-ground" management ability for the tortoise cannot be changed by BLM management, Department of the Interior, or Congress.	TRANSLOC-01	How will the Service manage desert tortoise translocation?
GCP	Mitigation Measures	Edward	LaRue	Desert Tortoise Council	Minimize and Mitigate to the Maximum Extent Practicable: One of the conditions for issuance of an ITP by the USFWS is that the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the takings. "If habitat will be permanently lost, alternative habitat must be protected in perpetuity to offset the loss and the appropriate habitat conditions at the mitigation site must be maintained in perpetuity" (USFWS & NMFS 2016). Because there have been several court rulings against the USFWS on this condition for ITP issuance by the USFWS, the USFWS should ensure that the GCP provides a thorough discussion and documentation of what is "the maximum extent practicable" and that the measures to minimize and mitigate are effective in conserving the covered species. The court ruled that FWS may not simply accept an applicant's assertion that a lesser-impact alternative is impracticable. In addition, the court ruled against the USFWS when issuing an ITP, when they relied on mitigation measures that were ineffective.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Climate Change	Edward	LaRue	Desert Tortoise Council	Changed Circumstances: Given the breadth of data on the threats and their impacts to the tortoise, there should be an extensive identification and discussion of changed circumstances including new diseases, megadrought, new invasive species, more frequent fire, increased predation, climate change, and increased human activities/development resulting in increased take of tortoises and loss, degradation, and fragmentation of habitat.	CLIM-01	How will the Service address climate change impacts in the GCP?
GCP	Permit Process	Edward	LaRue	Desert Tortoise Council	In one court case, the court held that the USFWS had not fulfilled its duty to determine that the habitat conservation plan would mitigate impacts to covered species to the maximum extent practicable where the mitigation fees were set "at the minimum amount necessary to meet the minimum biological necessities of the covered species," and where the record was "devoid" of evidence that the FWS conducted its own examination of the practicability of the proposed fee base or "attempted to determine if a higher fee base would also be practicable." 128 F. Supp. 2d at 1292-1293. The court also held that the Permittee had not ensured adequate funding, as required by FESA section 10(a)(2)(B)(iii), because the Permittee had not guaranteed that adequate funding would be available, but instead relied on funds to be provided by subsequent participants. The court stated that while it was not clear that a funding mechanism not backed by the applicant's guarantee would ever meet the "ensure" funding requirement, "where the adequacy of funding depends on whether third parties decide to participate in the Plan, the statute requires the applicant's guarantee."	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Funding	Edward	LaRue	Desert Tortoise Council	We request that in the GCP, the USFWS (1) provide documentation of the costs of implementing the GCP annually for the proposed permit term, (2) ensure that inflation and other relevant factors are included in the explanation of the calculations for the cost of implementing the GCP, (3) explain how the GCP plan would be fully funded including research, management, monitoring, adaptive management, and unforeseen circumstances. This request applies especially to the fees paid to the raven management fund that should be reassessed for implementation costs (research, management, monitoring, and adaptive management) and inflation annually.	FUND-01	How will the Service ensure that the GCP implementation is fully funded?
GCP	Mitigation Measures	Edward	LaRue	Desert Tortoise Council	The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild: For the Mojave desert tortoise, the issuance of any ITP in California may reduce its likelihood of survival and recovery. The USFWS's monitoring data on tortoise densities for the nine tortoise populations monitored in California show that seven populations are at densities below the population viability level, one is at the threshold between populating viability and non-viability, and one is above. Thus, additional authorized take of the tortoise especially in the Western Mojave Recovery Unit without appreciable increases in densities will continue the downward trend on tortoise densities that have been below the viability level since before 2014 (see USFWS 2015, 2016, 2018, 2019, 2020, 2022a, and 2022b). Thus, it is imperative that the GCP have a robust and effective conservation plan that will be implemented to reverse this downward trend on tortoise densities and numbers. In addition, recovery of the tortoise is not possible unless the tortoise in each recovery unit is recovered.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Area Boundaries (Permit/Mitigation)	Jennifer	Harriger	Metropolitan Water District of Southern California	Based on review of the NOI, the proposed GCP's mitigation area includes Metropolitan's fee and easement property. The enclosed map depicts the CRA alignment and Metropolitan's property in relation to the proposed GCP's mitigation and permitting areas. While Metropolitan supports the creation of the GCP, we are concerned about the inclusion of the CRA, its related facilities, and transmission lines in the Plan's proposed mitigation area. Metropolitan's ownership and operation of the CRA and its associated facilities, including the 230-kV transmission lines, is vital to its mission to provide Metropolitan's 5,200-square-mile service area with adequate and reliable supplies of high- quality water to meet present and future needs in an environmentally and economically responsible way. Therefore, we respectfully request that Metropolitan's fee and easement property be excluded as the USFWS prepares the EIS for the GCP and analyzes action alternatives, including variations in the size and location of the proposed mitigation area, as stated in the NOI. Metropolitan intends to follow up with the USFWS to provide the appropriate right-of-way files for the exclusion of Metropolitan's fee and easement property in the proposed GCP.	AB-01	How will the Service ensure that area boundaries outlined in the GCP effectively conserve Desert Tortoise in a manner that meets the needs of interested parties?
GCP	Area Boundaries (Permit/Mitigation)	E.	Adams	USN	Ensure the GCP text and map exclude all desert tortoise mitigation sites from the potential permit area. (Supplemental National Environmental Policy Act (NEPA) analysis and Endangered Species Act (ESA) consultation would be needed if there are conflicts with ongoing DoD mitigation commitments.)	AB-01	How will the Service ensure that area boundaries outlined in the GCP effectively conserve Desert Tortoise in a manner that meets the needs of interested parties?
GCP	Mitigation Measures	E.	Adams	USN	Request non-federal applicants implement mitigation consistent with the mitigation framework being implemented in the Mojave Desert to increase the chance of species recovery. Mitigation actions are even more impactful when they occur within or in proximity to Restricted Areas or mitigation sites. The proposed Mojave Desert Sentinel Landscape, primarily devised to assist desert tortoise recovery, will encompass both proposed GCP permit and mitigation areas (enclosure (2)).	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Area Boundaries (Permit/Mitigation)	E.	Adams	USN	Exclude the area within one-mile of the Combat Center boundary from the permit area. While most projects would be compatible with the military mission, there is the potential for development to degrade current and future military training capabilities. Development adjacent to military training ranges can result in impacts to restricted airspace, tortoise conservation, and electromagnetic spectrum. MAGTFTC could engage with project applicants on a case-by-case basis; however, this may be challenging because non-federal applicants would not typically be required to comply with NEPA and federal agencies may not have leverage during California Environmental Quality Act or other state permitting processes.	AB-01	How will the Service ensure that area boundaries outlined in the GCP effectively conserve Desert Tortoise in a manner that meets the needs of interested parties?
GCP	Permit Process	E.	Adams	USN	Include language explaining that supplemental NEPA analysis is required prior to the issuance of ESA incidental take permit that may affect the military mission or ongoing mitigation efforts on BLM lands.	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Area Boundaries (Permit/Mitigation)	E.	Adams	USN	Include language explaining that the streamlined procedures do not apply to existing rights-of-way that bisect or come within 400 feet of the MCAGCC boundary (Figure 3). This will ensure that ongoing actions are subject to NEPA.	AB-01	How will the Service ensure that area boundaries outlined in the GCP effectively conserve Desert Tortoise in a manner that meets the needs of interested parties?
GCP	Permit Process	Amelia	Flores	Colorado River Indian Tribes	In particular, the Tribes are concerned about the ongoing threats that development and infrastructure present for the endangered desert tortoise. For over two decades, the federal government has permitted large-scale utility and energy development that has irreparably harmed fragile habitat and resulted in the deaths of countless tortoises and other fauna. The Tribes are concerned that this management plan could make it easier for further prioritization of infrastructure development over desert tortoise protection by streamlining tortoise take. This is especially troubling, given that the desert tortoise holds power and spiritual value in Native American belief systems and oral traditions. With respect to the proposed conservation plan, the Tribes are in support of more habitat-scale, species-wide mitigation efforts to lessen impacts to the desert tortoise. However, CRI T remains concerned about USFW's focus on streamlining take permitting and the underlying assumption that development activities will continue to be approved throughout desert tortoise habitat.	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Permit Duration	Amelia	Flores	Colorado River Indian Tribes	USFWS's Notice mentions that the current "standard practices" used for desert tortoise mitigation typically take 12 to 24 months to complete, but does not explain why or elaborate on the streamlining that would supposedly reduce this amount of time. Any environmental impact analysis should consider whether this amount of time is, in fact, appropriate and necessary for adequate desert tortoise impact mitigation. CRIT has concerns that if the mitigation requirements are too lenient or perfunctory, the Tribes worry that this will allow developers to press forward with projects that ignore the long-term desert tortoise take impacts of their operations.	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Translocation	Amelia	Flores	Colorado River Indian Tribes	The Tribes also have concerns about the mitigation measures referenced in USFWS s notice. Translocation of the desert tortoise, in particular, has been called into question over the last decade and a half as an ineffective method1. 1See, e.g., "Disastrous Desert Tortoise Translocation Suspended," Center for Biological Diversity Press Release, Oct. 10, 2008, available at https://www.biologicaldiversitY.or2/news/press releases/2008/desert-tortoise-10-10-2008.html.	TRANSLOC-01	How will the Service manage desert tortoise translocation?
GCP	Reporting and Monitoring	Jason	Gerdes	Environmental Protection Agency	The proposed covered activities will impact a variety of resources for an extended period. As a result, we recommend that these activities be designed to include an environmental inspection and monitoring program to ensure compliance with all mitigation measures and assess their effectiveness. In the Draft EIS, describe the monitoring program and how it will be used as an effective feedback mechanism (i.e., adaptive management) so that any needed adjustments can be made to the GCP to meet environmental objectives throughout the life of the plan. We also recommend that the Draft EIS describe a mechanism to consider and implement additional mitigation measures.	RM-01	How will the Service design and implement reporting and monitoring procedures in the GCP?
GCP	Translocation	William	Shott	National Park Service	Translocating desert tortoises onto lands that are currently devoid or depauperate of desert tortoise may have adverse impacts to other species utilizing the habitat.	TRANSLOC-01	How will the Service manage desert tortoise translocation?
GCP	Translocation	William	Shott	National Park Service	Tortoise translocation would need to avoid conflict with existing uses including, but not limited to, visitor use and recreation.	TRANSLOC-01	How will the Service manage desert tortoise translocation?
GCP	Translocation	William	Shott	National Park Service	Translocation plans need to account for substantial levels of tortoise depletion along road corridors in Mojave National Preserve from vehicle mortality and predator depredation. The Preserve has both a considerable desert tortoise population and extensive protected desert tortoise habitat where various genetic lines come together. It is centrally located within the desert tortoise's range and will be critically important for its recovery. The NPS is undertaking extensive roadside fencing in strategic locations of the Preserve to reduce tortoise mortality due to vehicles.	TRANSLOC-01	How will the Service manage desert tortoise translocation?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Funding	William	Shott	National Park Service	The Ivanpah Desert Tortoise Research Facility (IDTRF) situated in Mojave National Preserve was established to advance scientific research, head-starting, and best practices for the recovery of desert tortoise. The IDTRF and the Preserve present opportunities to bolster tortoise populations along fenced road corridors and by head starting research. The NPS can work with the USFWS to identify funding and partnership opportunities to further these and other tortoise conservation efforts.	FUND-01	How will the Service ensure that the GCP implementation is fully funded?
GCP	Permit Process	Jeff	Aardahl	Defenders of Wildlife	Impact minimization and mitigation measures in the GCP should be developed in coordination with the California Department of Fish and Wildlife (CDFW) so that they meet state requirements to fully mitigate adverse impacts to the desert tortoise and its habitat. This will further enhance permit streamlining for applicants that need to obtain an ITP for the desert tortoise from CDFW.	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GCP	Desert Tortoise Population Status	Jeff	Aardahl	Defenders of Wildlife	Terms and conditions included in the GCP and any subsequent ITPs for individual projects for the desert tortoise must ensure that they effectively minimize and mitigate adverse impacts to the maximum extent practicable. This is especially important because the species continues to decline within all designated Critical Habitat Units in California and its population is below the minimum viable density threshold of 3.9/km2 established by the FWS in the 1994 Recovery Plan for the Mojave Population of the Desert Tortoise. The only know area where the population is increasing is in non-critical habitat within the Desert Tortoise Natural Area in the western Mojave Desert where livestock grazing and motorized vehicle use were excluded in 1978. Allison and McLuckie (2018) stated, "Prevailing declines in the abundance of [desert tortoise] adults overall and in four of the five recovery units indicate the need for more aggressive implementation of recovery actions and more critical evaluation of the suite of future activities and projects in tortoise habitat that may exacerbate ongoing population declines" and "The negative population trends in most of the [Tortoise Conservation Areas] for Mojave Desert Tortoises indicate that this species is on the path to extinction under current conditions. This may reflect inadequate recovery action implementation, slow response by tortoises and their habitat to implemented actions, or new and ongoing human activities in the desert that have not been mitigated appropriately. It may also be a result of stochastic or directional climatic events that impact large expanses of tortoise habitat (e.g., drought, fire, climate change) and are largely beyond the realm of local land management activities."	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
GCP	Mitigation Measures	Jeff	Aardahl	Defenders of Wildlife	Compensatory mitigation lands should be free of all activities that pose a threat to desert tortoises (e.g., off-road vehicle use, livestock grazing and mining). A fee should be collected and deposited in an interest bearing account to provide a permanent source of funding for management and monitoring of the acquired habitat. We recommend that priority compensatory mitigation include acquisition of private land with high quality desert tortoise habitat within critical habitat units designated by the USFWS in 1994, and installation of desert tortoise barrier fencing along unfenced highways or freeways with high traffic volumes. Habitat restoration as a form of compensatory mitigation should be a low priority due to the uncertainty that it would be successful and the long period of time required to restore habitat in arid environments.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Mitigation Measures	Jeff	Aardahl	Defenders of Wildlife	Compensatory mitigation in the form of non-acquisition measures for the desert tortoise should not exceed 30% of a permittee's total mitigation fee requirement. Non-acquisition measures for the desert tortoise should include the following, in priority order: Law enforcement in Critical Habitat Units to curtail unauthorized off-highway vehicle use. Purchase of BLM livestock grazing permits from ranchers on a willing seller basis for permanent retirement of allotments. Tortoise-exclusion fencing and culverts to allow for desert tortoise movements across paved roads. Predator (i.e., common raven) reduction.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
GCP	Translocation	Jeff	Aardahl	Defenders of Wildlife	Desert tortoises translocated from a project area should be placed in the same recovery unit from which they were removed so that genetic and behavioral traits match those of the desert tortoise recipient population. In addition, we are unaware of any population augmentation areas designated in California by the BLM. If population augmentation is deemed necessary under the GCP, the USFWS would need to identify such areas in concert with BLM and CDFW. Please note that the BLM's Desert Tortoise Natural Area in the western Mojave Desert is managed for natural recovery of the population and population augmentation in this area is not allowed under the management plan.	TRANSLOC-01	How will the Service manage desert tortoise translocation?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
GCP	Adaptive Management	Jeff	Aardahl	Defenders of Wildlife	Since mitigation associated with implementation of the Plan would occur on public lands managed by BLM that are designated as California Desert National Conservation Lands or ACECs, National Park Service Lands, or on non-federal lands that are being managed for conservation, adaptive management should apply to these lands. If monitoring shows that biological goals and objectives for compensatory mitigation are not being met on these lands, management actions may be needed to provide for conditions that protect acquired land habitat and any translocated desert tortoises. Such actions would be the responsibility of the land manager or owner. Particular attention should be given to public lands managed by BLM where off-road vehicle recreation is allowed, and especially within ACECs that correspond to designated critical habitat units throughout the CDCA. Off-road vehicle use is widespread and intense in the Fremont-Kramer, Superior-Cronese and Ord-Rodman ACECs, which correspond to designated critical habitat. Changes in management of off- road vehicle recreation may be necessary if monitoring shows that habitat is impacted or desert tortoises are killed by off-road vehicles.	AM-01	How is the Service addressing the need for adaptive management in the GCP?
GCP	Permit Process	L. Darrell	Lacy	QuadState	Any required mitigation in the plan should be reasonable, and preferably exempt small projects and individual homeowners from the requirement to obtain an ITP. The discussion in the draft plan focuses on large projects, and the application process, public notice, mitigation and monitoring provisions will be expensive and time consuming compared to a typical local HCP process. A local HCP process is typically an 'over the counter' permit for small projects, and this general plan needs to identify a similar process for small projects.	ITP-01	How will the Service reconcile conservation needs with the need to streamline the permitting process for incidental take permits?
GIS/Mapping	Area Boundaries (Permit/Mitigation)	E.	Adams	USN	Create a one-mile buffer around Restricted Areas where permitted actions will not occur.	AB-01	How will the Service ensure that area boundaries outlined in the GCP effectively conserve Desert Tortoise in a manner that meets the needs of interested parties?
No Further Response Required	Out of Scope	Anonymous	Anonymous	N/A	I recommend creating more protected habitat for the tortoise. There should be mandatory jail time for any grazing on protected tortoise habitat	Out of scope	Out of scope
Public Outreach	Mitigation Measures	Sam	Easley	N/A	Mitigation activities need to be completed strategically and intentionally, with all parties at the table. Mitigation needs to occur where conservation activities are also taking place. We cannot settle for postage stamp mitigation in convenient locations where land is cheap. We need to fill in gaps of existing conserved land to make management of those areas easier and more beneficial for the Desert Tortoise.	MIT-01	How will the Service ensure that mitigation measures outlined in the GCP are effective and feasible?
Public Outreach	N/A	Dawn	Rowe	San Bernardino County	Stakeholder Engagement: It is essential that the FWS engage with key stakeholders beyond the standard 45-day public comment period to properly receive quality input on any proposed changes. Stakeholders should include counties, cities, and other local government agencies who serve as the permitting agencies for development, as well as the development community, homeowner groups, and utilities that are most affected by changes to the application process.	PUB-01	How is the Service engaging interested parties throughout the planning process?
Public Outreach	N/A	L. Darrell	Lacy	QuadState	QuadState is ready and available to cooperate with USFWS on the development of the details of this plan and strongly recommend that your Agency coordinate with local governments and local planning activities.	PUB-01	How is the Service engaging interested parties throughout the planning process?
Range of Alternatives	New Alternative Proposed	Edward	LaRue	Desert Tortoise Council	According to the USFWS, GCP alternatives would likely "include variations in the duration of the general conservation plan, the size and locations of permit and mitigation areas, potential translocation areas for desert tortoises found on project sites, and the types of effectiveness monitoring." As mentioned above, another action alternative would be to expand the plan area to include the entire range of the federally-listed population of the Mojave desert tortoise. This would be an expanded variation on the size and locations of the permits and mitigation areas.	RANGEALT-02	What alternatives will the Service seriously consider?
Range of Alternatives	General Alternatives Comment	Edward	LaRue	Desert Tortoise Council	Types of effectiveness monitoring should be science-based and tailored to answer questions about the effectiveness of achieving the specific objectives of the issued ITPs. According to the USFWS HCP Handbook (2016), these biological objectives should be specific, measurable, achievable, result-oriented, and time-fixed. Thus, the biological objectives of the GCP should be broad and general to encompass the range of specific objectives. Consequently, modifying effectiveness monitoring to develop different action alternatives for NEPA would not be an appropriate alternative for the GCP.	RANGEALT-01	How is the Service formulating its range of alternatives?
Range of Alternatives	Out of Scope	Edward	LaRue	Desert Tortoise Council	For other alternatives, we suggest the USFWS consider the addition of other covered species. The California state-threatened Mohave ground squirrel (Xerospermophilus mohavensis) would be one species to add to the GCP, as it occurs in the proposed permit area and is listed under the California Endangered Species Act (CESA). Its range overlaps the tortoise's range in the western portion of the Mojave Desert. Coordination with California Department of Fish and Wildlife (CDFW) is needed for the GCP because the tortoise is listed under CESA. In addition, recent research indicates the status of the species continues to decline (Leitner 2015, 2021) and climate change will have a substantial impact on the species' habitat in the foreseeable future (Esque et al. 2013).	Out of scope	Out of scope

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
Range of Alternatives	General Alternatives Comment	Jason	Gerdes	Environmental Protection Agency	Please clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Develop thresholds of significance based on the context and intensity of the action and its effects. To the greatest extent possible, quantify the potential environmental impacts of each alternative (e.g., tons per year of emissions, linear feet of road, acres of road areas disturbed, loading rates of pollutants of concern).	RANGEALT-01	How is the Service formulating its range of alternatives?
Range of Alternatives	General Alternatives Comment	Jeff	Aardahl	Defenders of Wildlife	Any alternative analyzed in the EIS to the proposed GCP must meet the legal standard of minimizing and compensating adverse impacts to the desert tortoise and its habitat to the maximum extent practicable as stated in Section 10(a)(2)(B)(ii) of the ESA. Thus, the alternatives would range from one that meets the minimum standard to those that exceed the minimum standard, and all of them must meet the definition of practicable.	RANGEALT-01	How is the Service formulating its range of alternatives?
Range of Alternatives	General Alternatives Comment	Jeff	Aardahl	Defenders of Wildlife	Since the action area for the GCP is the range of the desert tortoise in California, the USFWS should use the current five-year status review for the species published in May 202211 in developing the environmental baseline in the EIS. 11 https://ecos.fws.gov/docs/tess/species_nonpublish/3734.pdf	RANGEALT-01	How is the Service formulating its range of alternatives?
Relationship to Other Laws Rules Regulations Policies and Statutes	N/A	Dawn	Rowe	San Bernardino County	Current Plans: Changes to the general conservation plan should not affect, modify, or nullify current adopted general conservation plans or the status of approved incidental take permits. Current permits must be honored, and any proposed changes should only apply to applications received after a new plan's final approval.	LAWS-01	How is the Service ensuring compliance with existing permits and general conservation plans?
Resource Topics	Cultural Resources	Amelia	Flores	Colorado River Indian Tribes	Significant portions of public and private lands in California, Arizona, and Nevada were occupied by the ancestors of the Tribes' Mohave and Chemehuevi members since time immemorial. These landscapes remain imbued with substantial cultural, spiritual, and religious significance for the Tribes' current members and future generations. For this reason, we have a strong interest in ensuring that potential cultural resource and other environmental impacts associated with development throughout the Mojave Desert region are adequately considered and mitigated.	CULTURE-01	How will the GCP address the protection and conservation of cultural resources located in the plan area?
Resource Topics	Other Resources	Amy	Granat	California Off-Road Vehicle Association	However, CORVA strongly objects to the mischaracterization and bias exhibited against motorized recreation on the bottom of page 13, Chapter 3.4: "Numerous roads traverse the planning area. These roads include interstate and state highways, local roads, unpaved but maintained roads, and unpaved and unmaintained roads. Hiking, equestrian, and mountain bike trails also occur in the planning area. The planning area also includes state and local parks. Non-federal lands also support motorized recreation, at least some of which is unauthorized, and other staged recreation events." The authors of the document, and by extension the US Fish and Wildlife Service, cannot take it upon themselves to discredit off-road recreation by stating that off-road recreation exists in the project area that is unauthorized without providing factual evidence. Yet there is no evidence provided in the document. Therefore, this statement is an opinion, not fact and has no place in an otherwise well-reasoned proposal. We ask you to immediately remove this sentence from any future tiered document released by the agency	OTHER-01	How will the Service manage off- road motorized recreation in the planning area?
Resource Topics	Other Resources	Amy	Granat	California Off-Road Vehicle Association	The document also contains disparaging comments about motorized recreation on page 17, Chapter 3.5.4, Factor D: *"The Bureau continues to face challenges in managing compliance with use of its off highway vehicle network in the Western Mojave Recovery Unit. As of 2019, the Bureau documented 24,518 kilometers of ground transportation linear features in this area, which is more than 2.5 times the 9,651 kilometers designated as open or limited. The Bureau has an active program of restoring unauthorized routes and signing open routes."* This scoping document was released in July of 2023, yet has not presented the most relevant and up-to-date information. To quote the number of ground transportation linear features as of 2019 assumes that the same situation exists as of today, more than 4 years since those figures were released by the Bureau of Land Management.	OTHER-01	How will the Service manage off- road motorized recreation in the planning area?
Resource Topics	Other Resources	Amy	Granat	California Off-Road Vehicle Association	*"The Bureau continues to face challenges in managing compliance with use of its off highway vehicle network in the Western Mojave Recovery Unit. As of 2019, the Bureau documented 24,518 kilometers of ground transportation linear features in this area, which is more than 2.5 times the 9,651 kilometers designated as open or limited. The Bureau has an active program of restoring unauthorized routes and signing open routes."* The statement also includes the information that the BLM is actively restoring routes yet does not include the restoration numbers that have been accomplished since 2019, again pointing to a bias in this document against motorized recreation.	OTHER-01	How will the Service manage off- road motorized recreation in the planning area?
Resource Topics	Other Resources	Amy	Granat	California Off-Road Vehicle Association	CORVA remains committed to the importance of scientific accuracy in public documents and the use of the best available science. The Draft General Conservation Plan for the Desert Tortoise in California, released in July 2023, does not meet those standards.	OTHER-01	How will the Service manage off- road motorized recreation in the planning area?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
Resource Topics	Water Resources	Jason	Gerdes	Environmental Protection Agency	Clean Water Act Section 404 Applicability In the Draft EIS, describe all waters of the U.S. that could be affected by proposed covered activities and include maps that clearly identify all waters within the plan area. Avoidance of any wetlands/waters of the U.S is strongly recommended. If avoidance is not possible, we recommend early consultation with the U.S. Army Corps of Engineers (Corps) to determine if the proposed covered activities would require a Section 404 permit under the Clean Water Act. If so, it is advisable to ensure that the NEPA alternatives are consistent with the alternatives analysis required under the CWA Section 404 (b)(1) Guidelines. In comparing alternatives, specify the acreages and channel lengths, habitat types, values, and functions of the waters that would be affected. We recommend including a verified jurisdictional determination from the Corps in the Draft EIS if waters cannot be avoided.	WATER-01	How will the Service ensure compliance with Sections 404 and 303(d) of the Clean Water Act?
Resource Topics	Water Resources	Jason	Gerdes	Environmental Protection Agency	Avoidance of Desert Washes In addition to avoiding wetlands and waters of the U.S., we recommend careful micro-siting of covered activities to avoid and protect ephemeral drainages, desert washes, and dry wash woodlands. Desert washes perform a diversity of hydrologic, biochemical, and geochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Healthy ephemeral washes with characteristic plant communities control rates of sediment deposition and dissipate the energy associated with flood flows. Ephemeral washes also provide habitat for breeding, shelter, foraging, and movement of wildlife. Many plant populations are dependent on these ecosystems and have adapted to their unique conditions. These values are present regardless of whether the washes are deemed jurisdictional under Section 404 of the CWA.	WATER-02	How will the Service ensure that desert washes in the planning area are protected?
Resource Topics	Water Resources	Jason	Gerdes	Environmental Protection Agency	Flood Control and Sizing Stormwater Infrastructure Consider in the Draft EIS the impacts of changing precipitation patterns on the plan area. For example, discuss the anticipated extent and depth of overland flows throughout the development areas, given a 100-year flood event as compared to a 500-year event, including where critical infrastructure would be located, so that early consideration may be given to improving the resiliency of covered activities.	WATER-03	How will the Service account for changing precipitation patterns in the planning area?
Resource Topics	Water Resources	Jason	Gerdes	Environmental Protection Agency	Clean Water Act Section 303(d) The CWA requires States to develop a list of impaired waters that do not meet water quality standards, establish priority rankings, and develop action plans called Total Maximum Daily Loads (TMDLs) to improve water quality. The Draft EIS should provide information on any CWA Section 303(d) impaired waters in the plan area, describe whether covered activities could contribute to this impairment, and include any mitigation measures that will be implemented to avoid further degradation of impaired waters.	WATER-01	How will the Service ensure compliance with Sections 404 and 303(d) of the Clean Water Act?
Resource Topics	Climate Change	Jason	Gerdes	Environmental Protection Agency	Climate Change We recommend that the Draft EIS consider how climate change could potentially influence the GCP, and how implementation of the proposed covered activities could lessen or potentially mitigate for these impacts. In this discussion, include anticipated changes to the watersheds in the plan area in terms of 3 quantity and timing of precipitation and runoff and how these changes may impact the hydrology in the plan area. This discussion should include impacts to water temperature, flow, sediment transport, and beneficial uses.	CLIM-01	How will the Service address climate change impacts in the GCP?
Resource Topics	Air Quality	Jason	Gerdes	Environmental Protection Agency	In the Draft EIS, include a detailed discussion of ambient air conditions (existing conditions), National Ambient Air Quality Standards, and criteria pollutant non-attainment areas in the plan area and vicinity. We recommend estimating criteria pollutant emissions for the plan area and a discussion of the timeframe for release of these emissions through the lifespan of the proposed covered activities. We also recommended clearly discussing mitigation measures to minimize impacts to air quality from proposed covered activities.	AQ-01	How does the Service plan to evaluate impacts to air quality?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
Resource Topics	Air Quality	Jason	Gerdes	Environmental Protection Agency	GCP Emissions Include a list of all mitigation measures to be implemented as part of plan covered activities. In addition to measures necessary to meet all applicable local, state, and federal requirements, the EPA recommends the following mitigation measures be included in the Draft EIS: Fugitive Dust Source Controls Use wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) where soils are disturbed in construction, access and maintenance routes, and materials stockpile areas. Keep related windbreaks in place until the soil is stabilized or permanently covered with vegetation. Phase grading operations where appropriate and operate water trucks for stabilization of surfaces under windy conditions. Provide covers for vehicles used to transport solid bulk material on public roadways and that have potential to cause visible emissions. Alternatively, sufficiently wet and load materials onto the trucks in a manner to provide at least one foot of freeboard. When hauling material and operating non-earthmoving equipment, limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph. Provide gravel ramps of at least 20 feet in length at tire washing/cleaning stations and ensure construction vehicles exit construction sites through treated entrance roadways unless an alternative route has been approved. Sweep the first 500 feet of paved roads exiting construction sites, other unpaved roads en route from the construction site, or construction staging areas whenever dirt or runoff from construction activity is visible on paved roads, or at least twice daily (less during periods of precipitation). Mobile and Stationary Source Controls Minimize use, trips, and unnecessary idling of heavy equipment.1 Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies. Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.2 Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. Use grid-based electricity for construction activities, onsite renewable electricity generation, and/or hydrogen for construction activities rather than diesel and/or gasoline generators, to the extent possible. Lease new, cleaner equipment using the best available emissions control technologies that meets the most stringent of applicable federal or state standards. *Deploy Best Available Control Technology (BACT)* – Require BACT during construction and operation of projects, employing the cleanest On-Highway Vehicles – On-highway vehicles servicing infrastructure sites should meet or exceed the EPA exhaust emissions standards for model year 2017 and newer light-duty vehicles and model year 2021 and newer heavy-duty vehicles (e.g., long-haul trucks, refuse haulers, shuttle buses, etc.).7, 8 *Nonroad Vehicles and Equipment* – Nonroad vehicles and equipment servicing infrastructure sites should meet or exceed the EPA Tier 4 exhaust emissions standards for heavy-duty nonroad compression-ignition engines (e.g., nonroad trucks, construction equipment, cargo handlers, etc.).9 *Locomotives* – Locomotives servicing infrastructure sites should meet or exceed the EPA Tier 4 exhaust emissions standards for line-haul and switch locomofive engines.10 *Marine Vessels* – Marine vessels servicing infrastructure sites should meet or exceed the latest EPA exhaust emissions standards for marine compression-ignifion engines (i.e., Tier 4 for Category 1 and 2 vessels, and Tier 3 for Category 3 vessels).11 *Low Emission Equipment Exemptions* – The equipment specifications outlined above should be met unless: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit exisfing equipment, or purchase/lease new equipment, but the funds are not yet available.	AQ-01	How does the Service plan to evaluate impacts to air quality?

Topic	Sub-Topic	First Name	Last Name	Oragnization	Comment	Issue code	Issue Statement
Resource Topics *(cont.)*	Air Quality *(cont.)*	Jason *(cont.)*	Gerdes *(cont.)*	*(see above.)*	*Advanced Technology Demonstration and Deployment* – Infrastructure project proponents should be encouraged to demonstrate and deploy mobile source technologies that exceed the latest EPA emission performance standards for the equipment categories that are relevant for a given project (e.g., plug-in hybrid-electric vehicles-PHEVs, battery-electric vehicles-BEVs, fuel cell electric vehicles-FCEVs, advanced powertrain nonroad equipment, locomotives, and marine vessels, etc.).12, 13, 14 Administrative Controls Reduce the number of commuter vehicles travelling to and from the project site. Include carpooling or transit subsidies. Plan construction scheduling to minimize vehicle trips and/or nonroad operational hours. Locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners. Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow. Identify all commitments to reduce construction emissions and update the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures. Identify where implementation of mitigation measures is rejected based on economic infeasibility. 1 https://ww2.arb.ca.gov/capp-resource-center/heavy-duty-diesel-vehicle-idling-information. 2 https://www.epa.gov/enforcement/epa-tampering-policy-epa-enforcement-policy-vehicle-and-enginetampering-and 3 https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-phase-2-greenhouse-gas-emissions-standards 4 https://ww2.arb.ca.gov/our-work/programs/optional-reduced-nox-standards 5 https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-air-pollution-motorvehicles-tier-3 6 https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-phase-2-greenhouse-gasemissions-standards 7 https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-air-pollution-motorvehicles-tier-3 8 https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-phase-2-greenhouse-gas-emissions-standards 9 https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf 10 https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA09.pdf 11 https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA0B.pdf 12 https://www.fueleconomy.gov/feg/evsbs.shtml 13 https://www.fueleconomy.gov/feg/fcv_sbs.shtml 14 https://globaldrivetozero.org/tools/zero-emission-technology-inventory/	*(see above.)*	*(see above.)*
Resource Topics	Other Resources	Jason	Gerdes	Environmental Protection Agency	Valley Fever Portions of the proposed plan area may include areas15 that contain *Coccidioides immitis* , a fungus causing Valley Fever in humans. Ground disturbing activities associated with the proposed covered activities may result in dispersal of Coccidioides spores. Include, in the Draft EIS, a discussion of this potential health and safety impact, as well as measures that can prevent or reduce the risk of exposure to workers and residents. 15 https://www.cdc.gov/fungal/diseases/coccidioidomycosis/images/valley-fever-map-2017.jpg	OTHER-02	How will the Service ensure that public health and safety needs are met in the planning process?
Resource Topics	Environmental Justice	Jason	Gerdes	Environmental Protection Agency	Environmental Justice and Public Participation In the Draft EIS, assess impacts to local communities consistent with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 1994). Discuss in the Draft EIS the potential for disproportionate adverse impacts to minority and low-income populations and the approaches used to foster public participation by these populations. We recommend using the EPA's Environmental Justice Screening and Mapping Tool, EJSCREEN16 to help identify potential communities with environmental justice concerns that may be impacted in the plan area. Assessment of plan impacts on minority and low-income populations should reflect coordination with those affected populations. For more information on effective public participation in the NEPA process, please also consult the following resources: Promising Practices for EJ Methodologies in NEPA Reviews; 17 The Citizen's Guide to the National Environmental Policy Act;18 and Community Guide to Environmental Justice and NEPA Methods. 19 16 https://www.epa.gov/ejscreen 17 https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf 18 https://ceq.doe.gov/docs/get-involved/citizens-guide-to-nepa-2021.pdf 19 https://www.energy.gov/sites/prod/files/2019/05/f63/NEPA%20Community%20Guide%202019.pdf	EJ-01	How will the Service ensure that environmental justice needs are being met for communities surrounding the planning area?

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Resource Topics	Other Wildlife	Jason	Gerdes	Environmental Protection Agency	In the Draft EIS, analyze the proposed GCP's impacts to habitat connectivity and discuss measures that could mitigate any identified impacts. Such measure may include appropriate infrastructure to facilitate wildlife movement across the plan area. If appropriate, include design commitments that: 1) remove barriers to safe wildlife passage; 2) enhance use of identified wildlife corridors; and 3) provide crossings with suitable habitat and topography to accommodate multiple species. Include commitments to how covered activities will ensure design elements would be constructed to enable wildlife connectively, including types of features and approximate locations.	OTHERWL-01	How will the Service ensure the protection of other wildlife in the GCP?
Resource Topics	Desert Tortoise Habitat and Range	Jason	Gerdes	Environmental Protection Agency	Additionally, we recommend the Service manage desert tortoise habitat for persistence and connectivity. Managing the entire remaining matrix of desert tortoise habitat for permeability may be better than delineating fixed corridors, particularly given the uncertainty about habitat under a changing climate. Limit landscape-level disturbance by extending surface disturbance caps similar to those enacted by the Desert Renewable Energy Conservation Plan to the rest of the desert tortoise's range. Minimize mortality from roads and maximize passages under roads. Utilize adaptive management to incorporate new information relevant to desert tortoise habitat, distribution, and population connectivity. Evaluate the ability of solar energy facilities and other proposed development within the plan area to support tortoise movement and presence by leaving washes intact; leaving vegetation intact whenever possible; and allowing tortoise to reoccupy the sites. Ensure all covered activities, even those that may not have found any evidence, or found antiquated evidence of desert tortoise during surveys, have a protocol in place should tortoise later be found on or near the project site.	DT-01	How is the Service ensuring its management decisions in the GCP account for the complexities of Desert Tortoise population dynamics, life history, and habitat range?
Resource Topics	Other Resources	Jason	Gerdes	Environmental Protection Agency	In Draft EIS, include measures that are consistent with Executive Order 13112 on Invasive Species. We suggest including any existing Service direction for noxious weed management, a description of current conditions, and best management practices, which will be utilized to prevent, detect, and control invasives in the plan area. Discuss measures that would be implemented to reduce the likelihood of introduction and spread of invasive species within the plan area. We encourage the Service to promote integrated weed management, with prioritization of management techniques that focus on non-chemical treatments first, and mitigation to avoid herbicide transport to surface or ground waters. Early recognition and control of new infestations is critical to stop the spread of the infestation and avoid wider future use of herbicides, which could correspondingly have more adverse impacts on biodiversity, water quality and fisheries.	OTHER-03	How will the Service manage invasive species in the planning area?
Resource Topics	Cultural Resources	Jason	Gerdes	Environmental Protection Agency	It is important to note that a sacred site may not meet the NRHP criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site. It is also important to note that sacred sites may not be identified solely in consulting with tribes located within geographic proximity of the plan area. Tribes located outside the plan area may also have religiously significant ties to lands within the plan area and should be included in the consultation process.	CULTURE-01	How will the GCP address the protection and conservation of cultural resources located in the plan area?
Resource Topics	Cultural Resources	Jason	Gerdes	Environmental Protection Agency	In the Draft EIS, address the existence of Indian sacred sites in the plan area that may be considered spiritual sites by regional tribal nations. Discuss how the Service would ensure that the proposed covered activities would avoid or mitigate for the impacts to the physical integrity, accessibility, or use of sacred sites.	CULTURE-01	How will the GCP address the protection and conservation of cultural resources located in the plan area?

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Resource Topics	Other Resources	Jeff	Aardahl	Defenders of Wildlife	Below are three non-federal entities that sponsor or allow off-road, off-highway or otherwise motorized vehicle use on lands within the range of the desert tortoise. As such, the USFWS should notify them that they should apply for a desert tortoise ITP once the GCP is finalized. City of California City : The City of California City has over 1,800 miles of dirt roads and trails available for off-highway vehicle recreation.4 According to the California City Chamber of Commerce5 , "Roads and designated routes take riders through creosote scrub, teaming [sic] with life, and wide-open views of the land for a hundred or more miles." Operators of off-road vehicles within California City are required to purchase a permit from California City.6 The lands available for off-road vehicle use within California City are within the range of the desert tortoise and are in nonfederal ownership. Onyx Ranch State Vehicle Recreation Area: The Onyx Ranch State Vehicle Recreation Area7 (SVRA) is owned and managed by the California Department of Parks and Recreation. It is located in eastern Kern County and adjacent to State Route 14 in the western Mojave Desert and comprised of over 26,000 acres. All-terrain, motorcycles, off-highway and four-wheel drive vehicle use is allowed. The California Department of Parks and Recreation contracted for a desert tortoise survey of suitable habitat for the desert tortoise within the lands proposed for acquisition and establishment of the SVRA, which is included in the Environmental Impact Report for the land acquisition and establishment as a SVRA.8 Approximately 0.9 square-miles or 7% of the 13 square-mile study area considered suitable habitat was sampled for desert tortoises from April 30 to May 15 in 2012, resulting in observations of 10 juvenile, sub-adult and adults, indicating a reproducing population was present. Red Rock Canyon State Park: The 27,000-acre Red Rock Canyon State Park9 is located in the western Mojave Desert between the southern Sierra Nevada and the El Paso Mountains. Both licensed and non-licensed street-legal vehicles are allowed to use the system of primitive roads within the park. A majority of the lands in the park are located east of Highway 14 in the western El Paso Mountains. The entire park is within the range of the desert tortoise. The CDFW recommended that State Parks apply for and obtain an ITP for the desert tortoise in its comments on the Draft Plan and EIR for Red Rock Canyon State Parks.10 A desert tortoise ITP issued to the three non-federal entities identified above will ensure that requirements for impact avoidance, minimization and compensation under the California Endangered Species Act as a result of off-road, off-highway or motorized vehicle use. 4 https://www.californiacity-ca.gov/CC/index.php/designated-ohv-areas 5 https://www.californiacitychamber.com/ohv 6 https://www.californiacity-ca.gov/CC/index.php/purchase-permits 7 Onyx Ranch SVRA (ca.gov) 8 https://ohv.parks.ca.gov/?page_id=27211 9 https://www.parks.ca.gov/?page_id=631 10 Red Rock Canyon State Park, FEIR Pt 1 (squarespace.com)	OTHER-01	How will the Service manage off- road motorized recreation in the planning area?
Scope of Analysis	Out of Scope	Edward	LaRue	Desert Tortoise Council	Additional Covered Species: Currently, the USFWS is proposing one covered species, the Mojave desert tortoise. We recommend that the Mohave ground squirrel (Xerospermophilus mohavensis) be added. This species is listed as threatened under CESA. Recent data indicate that its distribution and numbers have declined substantially and its age structure shows little recruitment. In addition, Esque et al. (2013) developed models showing that drought/climate change will have an increasing significant adverse impact on the species by 2030 and more so by 2080. These data indicate that the Mohave ground squirrel may have already met the definition of threatened under the FESA and will likely meet the definition of endangered in the foreseeable future. Although much of the range of the tortoise and Mohave ground squirrel overlap, their habitat and connectivity needs differ. Consequently, developing a GCP for the tortoise does not automatically include the conservation needs of the Mohave ground squirrel. For these reasons, we recommend that the Mohave ground squirrel be included as a covered species so the GCP provides a streamlined process for covered activities for both species.	Out of scope	Out of scope

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Scope of Analysis	Area Boundaries (Permit/Mitigation)	E.	Adams	USN	USFWS permittee and agency engagement (e.g., Bureau of Land Management (BLM)) better protect MAGTFTC's ongoing tortoise conservation and recovery actions, including: Contact MAGTFTC for input to avoid permitting actions on or adjacent to: (a) MCAGCC Restricted Areas, which are designed to protect dense populations of desert tortoises on the installation (shown as blue polygons in enclosure (1)). (b) MCAGCC translocation sites (labeled as recipient and control areas in enclosure (1)), for which translocation and RASP recovery actions have been developed via explicit USFWS consultation and BLM cooperation, for immediate and long-term recovery actions and commitments. The MAGTFTC requests continued awareness of and deconfliction with these commitments. (c) RASP focal areas, for which Department of Defense (DoD) and Department of the Interior have committed to interagency focus and cooperation for the Western Mojave Desert and may expand to additional areas in the future (e.g., enclosure (2) and draft GCP mitigation areas). Right-of-way on or adjacent to MCAGCC, its translocation sites, and RASP focal areas. (2) Contact MAGTFTC for input before authorizing mitigation actions on or near existing RASP focal areas and MCAGCC Restricted Areas and translocation sites. (3) Consider buffering mitigation areas from permit areas that may encroach on mitigation areas (e.g., influences of predator subsidies [transmission lines], roads [the road effect] and invasive plant introductions [affecting tortoise habitat and nutrition]) as permitted projects may influence nearby mitigation areas (enclosures (1) and (2)). Contact MAGTFTC for input before considering mitigation or permit actions on or near installation access routes, current and proposed, on BLM land (Figure 3).	AB-01	How will the Service ensure that area boundaries outlined in the GCP effectively conserve Desert Tortoise in a manner that meets the needs of interested parties?