

**DESERT TORTOISE COUNCIL**

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**Via email only**

January 16, 2024

Attn: [mitconnect@wildlife.ca.gov](mailto:mitconnect@wildlife.ca.gov)  
California Department of Fish and Wildlife  
Habitat Conservation Planning Branch  
P.O. Box 944209  
Sacramento, CA 94244-2090

RE: Draft Wildlife Connectivity Advance Mitigation Guidelines – October 2023

Dear Madam or Sir,

The Desert Tortoise Council (Council) is a non-profit organization comprised of hundreds of professionals and laypersons who share a common concern for wild desert tortoises and a commitment to advancing the public's understanding of desert tortoise species. Established in 1975 to promote conservation of tortoises in the deserts of the southwestern United States and Mexico, the Council routinely provides information and other forms of assistance to individuals, organizations, and regulatory agencies on matters potentially affecting desert tortoises within their geographic ranges.

Both our physical and email addresses are provided above in our letterhead for your use when providing future correspondence to us. When given a choice, we prefer to receive emails for future correspondence, as mail delivered via the U.S. Postal Service may take several days to be delivered. Email is an "environmentally friendlier way" of receiving correspondence and documents rather than "snail mail."

We appreciate this opportunity to provide comments on the above-referenced project. Given the location of the proposed project in habitats occupied/used by the Mojave desert tortoise (*Gopherus agassizii*) (synonymous with Agassiz's desert tortoise), our comments include recommendations intended to enhance protection of this species and its habitat during activities authorized by the California Department of Fish and Wildlife (CDFW), which we recommend be added to project terms and conditions in the authorizing document as appropriate. Please accept, carefully review, and include in the relevant project file the Council's following comments and attachments for the proposed project.

The Mojave desert tortoise is among the top 50 species on the list of the world’s most endangered tortoises and freshwater turtles. The International Union for Conservation of Nature’s (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers the Mojave desert tortoise to be Critically Endangered (Berry et al. 2021), “... based on population reduction (decreasing density), habitat loss of over 80% over three generations (90 years), including past reductions and predicted future declines, as well as the effects of disease (upper respiratory tract disease/mycoplasmosis). *Gopherus agassizii* (sensu stricto) comprises tortoises in the most well-studied 30% of the larger range; this portion of the original range has seen the most human impacts and is where the largest past population losses have been documented. A recent rigorous rangewide population reassessment of *G. agassizii* (sensu stricto) has demonstrated continued adult population and density declines of about 90% over three generations (two in the past and one ongoing) in four of the five *G. agassizii* recovery units and inadequate recruitment with decreasing percentages of juveniles in all five recovery units.”

This status, in part, prompted the Council to join Defenders of Wildlife and Desert Tortoise Preserve Committee (Defenders of Wildlife et al. 2020) to petition the California Fish and Game Commission in March 2020 to elevate the listing of the Mojave desert tortoise from Threatened to Endangered in California. The decision is still pending at the time of this writing.

### **Comments on “Draft Wildlife Connectivity Advance Mitigation Guidelines – October 2023”**

Page 1-6, Definitions, Wildlife – The document currently defines wildlife as, “Includes all wild animals, birds, plants, fish, amphibians, reptiles, and related ecological communities, including the habitat upon which the wildlife depends for its continued viability” and cites Fish and Game Code.

Because “animals” include birds, fish, amphibians, and reptiles, some of this wording is redundant. It should also include invertebrate species listed under the California Endangered Species Act (CESA) and candidates for listing under CESA. As such, we suggest it say “Includes all wild **mammals**, birds, plants, fish, amphibians, ~~and~~ reptiles, **invertebrates**, and related ecological communities...” This revision would support text found later in the document (page 4-26) that says, “An interconnected landscape can help to maintain ecosystem services such as pollination of crops and gene flow that helps to maintain biodiversity.” Most pollination occurs because of wind or visitation by invertebrates.

Page 1-7, Section 1.5 CDFW Banking and RCIS Programs – “The fees are adjusted annually for inflation.” This prescription should be required for all CDFW mitigation projects and programs.

Page 1-8, Section 1.5.2 Mitigation Credit Agreements (MCAs) – “A habitat connectivity analysis is required for all focal species and other conservation elements identified in the RCIS16, so there are usually connectivity-related conservation or habitat enhancement actions identified that may be implemented.”

This wording should be changed to read “so there are ~~usually~~ connectivity-related conservation or habitat enhancement actions identified that ~~may be~~ **are** implemented.”

Page 3-5, Section 3.3.1 Step 1: Credit Type Threshold Determination – Sixteen bullets are listed, Two of these are identical – Habitat Quantity and Habitat Quantity. We suggest changing the first one to Habitat **Quality**.

We suggest adding to the bulleted list “Distance to Next Closest Habitat Patch.”

Page 3-6, Section 3.3.2 Step 2: Credit Scoring, Species Credit Scoring – The categories and points for scoring for many species are a guess, as the location selected and effectiveness of the ecological benefit of the wildlife connectivity action will not be known until after the project has been implemented fully. Consequently, this scoring process is a best guess. Following completion of the wildlife connectivity action, the scoring should be redone by CDFW based on the effectiveness of the wildlife connectivity action. If it is more effective than indicated during the original evaluation, CDFW should increase the credit score. If it is less effective, CDFW should decrease the credit score. Determining the resulting effectiveness of the wildlife connectivity action must include science-based monitoring of the wildlife connectivity action. Information should be included in this section that the scoring is preliminary and subsequent scoring may revise this number.

Page 3-8, Table 2. Species-specific Scoring Matrix for Wildlife Connectivity Actions – We request that CDFW provide the data it used to determine the numerical values for these subcategories. CDFW should provide scientific references to support the selection of these numerical values. Without data to support these values, they appear to be arbitrary.

Pages 3-9 and 3-10. Table 3. Habitat Scoring Matrix for Wildlife Connectivity Actions – We request that CDFW provide the data it used to determine the numerical values for these subcategories. CDFW should provide scientific references to support the selection of these numerical values. Without data to support these values, they appear to be arbitrary.

Page 3-10, 3.3.3 Step 3: Crediting Factor – “The sponsor must multiply the final score (the percent) from Step 2 by a crediting factor to provide the final amount of credits for that credit type for the proposed wildlife connectivity action.” This sentence appears to be saying that the sponsor determines the final amount of credits. As stated above, the final amount of credit should be determined by CDFW. Please clarify.

Page 3-10, Section 3.3.3 Step 3: “Crediting Factor – This section presents the following equation, “Credit Amount = Crediting factor \* Credit scoring.”

“The crediting factor depends on a combination of characteristics including habitat type, wildlife connectivity structure, and target species.”

We agree with this statement, but by not defining a crediting factor or how to calculate it, this part of the calculation of a credit amount appears subjective.

Page 3-10 and 3-11, 3.4 Credit Proposal Review – “CDFW’s evaluation will account for the best available science on wildlife connectivity and related issues (e.g., population or occurrence status and trends of species or habitat), as well as the unique characteristics of each wildlife connectivity action and the target species’ or target habitats’ needs.”

We support this statement but remind CDFW that to implement it means hiring species specialists that stay current with the scientific literature and reports for each species about their connectivity needs and related issues.

Page 4-1, Section 4 Ecological Benefit Crediting Considerations – “CDFW will evaluate proposed wildlife connectivity actions based on the five key ecological benefit crediting considerations (see Section 3.4: Credit Proposal Review) listed below:

- Ecological Engineered Design;
- Value of the Habitat Connected;
- Value of the Particular Location;
- Critical Linkages; and
- Population-level Benefits to Target Species.”

We suggest that CDFW add a temporal component when evaluating proposed wildlife connectivity actions. The assumed benefits from providing the connectivity action may take some time to be realized. CDFW should not assume that the anticipated benefits would occur immediately. This temporal loss of connectivity should be factored into the calculation.

Page 4-1, Section 4 Ecological Benefit Crediting Considerations – “The sponsors’ credit proposal and supporting justification must use the best available science including, but not limited to, monitoring data collected or obtained by the sponsor, CDFW species data, peer-reviewed literature, pre-existing citable publicly available datasets, and reports from government agencies and universities.”

The Council fully supports this statement.

Page 4-2, 4.1 Ecological Engineered Design – “The long-term maintenance and monitoring needs for the wildlife connectivity action must be included in the Interim Management Plan and Long-term Management and Monitoring Plan (see Section 6.3: Long-term Management and Monitoring Plan).”

The Council strongly supports the need for science-based monitoring to determine whether the mitigation implemented to provide connectivity is working as effectively as projected, or whether it needs to be modified if it is not.

Page 4-2, 4.1 Ecological Engineered Design – “B. Wildlife connectivity structure dimensions and a written description of how these structure dimensions allow for the movement of the target species.”

This requirement should be explained/expanded. It should require the sponsor to provide the results of scientific studies on the efficacy of the structure dimensions the sponsor is proposing. Many wildlife overpasses or underpasses may be the appropriate size to allow passage of the target wildlife species. However, other factors such as lighting or darkness of the underpass, lengths, headlights, vehicular noise or vibration, locations, and creation of bottlenecks that allow predators to wait for prey species to pass through the underpass should be evaluated.

Page 4-3, 4.1 Ecological Engineered Design – “While it is important for CDFW to understand the structure’s overall design to ensure the species can use the structure...”

This statement is concerning. As mentioned in the preceding paragraph, just because the design of a structure is such that a species can use the structure does not mean that the species will. Other factors besides structural design affect whether a structure will be used by the target species. We strongly suggest that CDFW change this sentence to read “While it is important for CDFW to understand the structure’s overall design to ensure ~~the species can use the structure~~ **that it meets the current design based on the best available ecological information for that species and its use of connectivity structures...**”

Page 4-7, 4.1 Ecological Engineered Design, 4.1.5 Existing Conditions – The Council supports CDFW’s requirement “E. How the design includes elements that prevent unauthorized human use or trespass while allowing wildlife.”

Page 4-14, 4.2 Value Of The Habitat Connected, 4.2.3 Protection of the Land – “High - Most of the surrounding lands connected by the wildlife connectivity action with target species habitat have a conservation easement recorded on them or another long-lasting conservation mechanism such as fee title ownership by a park agency, or state or federal public lands maintained for conservation values.”

To be clear, public lands managed by the Bureau of Land Management (BLM) are managed for multiple use including Areas of Critical Environmental Concern (ACEC) and designated critical habitat. Other areas (e.g., solar energy projects) are managed for one use. Because the status of the tortoise is one of declining population demographics, and densities below population viability (USFWS 1994, USFWS 2015, Allison and McLuckie 2018) in tortoise ACECs and critical habitat on BLM land in California, we consider that these public lands are not being effectively maintained for their conservation value.

In addition, a conservation easement or other legal designation does not guarantee that the land is being managed effectively for conservation values. The landowner must actively manage the land for its conservation value and enforce the allowable uses.

We request that the sentence quoted above be changed to say “High - Most of the surrounding lands connected by the wildlife connectivity action with target species habitat have a conservation easement recorded on them or another long-lasting conservation mechanism such as fee title ownership by a park agency **and demonstrate that the land is effectively managed for conservation values**, or state or federal public lands **effectively** maintained for conservation values.”

Page 4-17, 4 Ecological Benefit Crediting Considerations, 4.3 Value of the Particular Location, 4.3.3 Vegetation and Other Cover – In this section we found no requirement that the vegetation growth and maintenance using native plant species would be required of the sponsor. Please include this requirement in this section of the document. Please see our comments under Page 6-1, 6 Bank and MCA Modifications, 6.1 Credit Release, Fees, and Securities – Credit Release that discuss why vegetation is important for the effective function of wildlife connectivity actions.

Page 4-23, 4 Ecological Benefit Crediting Considerations, 4.4 Critical Linkages, 4.4.1 Regional Connectivity – For the scoring scale for this criterion, the document says, “High – The site is located in ACE terrestrial connectivity Ranks 4 or 5; or the site is within federally designated critical habitat for the target species...” Similar wording is used for the Medium scale.

Please note that no major road is located in designated critical habitat for the tortoise because a road does not provide the physical and biological features needed for survival and recovery. As currently written in the document, the score for a connectivity project between Fenner and Chemehuevi critical habitat units for the Mojave desert tortoise via an undercrossing under Interstate 40 would receive a low or no score even though connecting these two critical habitat units would benefit the species. Consequently, we strongly recommend that this scoring verbiage for Regional Connectivity be modified to say, “... or the site ~~is within federally designated critical habitat for the target species~~ **connects designated critical habitat for the target species either side of the right-of-way or with areas actively managed for ecological conservation.**”

Pages 5-2 and 5-3, Real Estate Instruments, Maintenance, and Monitoring, 5.1.1. Long-term Durability Agreement – This section lists items that must be addressed in a long-term durability agreement. We recommend adding “effective enforcement.”

Page 5-3, 5.2 Long-Term Management Funding – “When a wildlife connectivity action is protected by a long-term durability agreement, the funding must provide for implementation for the duration of that agreement. That includes, but is not limited to, funding for the long-term success, maintenance, repair, **monitoring**, and upkeep of the wildlife connectivity action.”

As given above, please add monitoring to this paragraph. Monitoring is mentioned in the preceding paragraph for a wildlife connectivity action protected by a conservation easement.

Page 6-1, 6 Bank and MCA Modifications, 6.1 Credit Release, Fees, and Securities – Credit Release – “The first credit release for a wildlife connectivity action within a bank or MCA will be after the following have been completed:

- Bank or MCA has been established, in accordance with the approved BEI or MCA; and
- Construction of the wildlife connectivity action is complete, the sponsor has submitted as-built drawings to CDFW for review and approval, and the wildlife connectivity action is usable for the target species or habitat. Complete construction of the wildlife connectivity action includes completion of the wildlife connectivity structure, **providing for growth of native vegetation**, and any construction needed on the lands that are immediately adjacent and critical to the functioning of the wildlife connectivity action. This may include fencing, ramps, and the approach construction.”

We recommend that native vegetation specifically be mentioned in this requirement. Completing the construction of the physical parts of the connectivity action does not necessarily result in the connectivity being used by wildlife. Many species, including species that are prey for other species are not likely to use overpasses or approaches to underpasses unless vegetation for cover from predators is provided. This wording should also be added to page 6-2, Securities, Construction Security.

Page 6-1, 6 Bank and MCA Modifications, 6.1 Credit Release, Fees, and Securities – “Subsequent credit releases are based on, but not limited to, performance standards, long-term management funding, completed monitoring and management, and submission of annual reports.”

This wording addresses a concern mentioned above. Please see comments on Page 3-6, Section 3.3.2 Step 2: Credit Scoring, Species Credit Scoring; Page 3-10, 3.3.3 Step 3: Crediting Factor.

Page 6-3, 6 Bank and MCA Modifications, 6.3 Long-Management Monitoring Plan and Term – The document says, “The sponsor shall include a separate section in the Long-term Management and Monitoring Plan that describes specific activities required for the wildlife connectivity action that are separate activities from the standard bank and MCA lands. Sponsors must include the following, if:

- A map clearly indicating which areas of the wildlife connectivity action will have a conservation easement and which areas are proposed to be infeasible for a conservation easement and therefore will have a connectivity long-term durability agreement. Indicate the total acreage and associated maps for each;
- Frequent monitoring and maintenance of fencing associated with the wildlife connectivity action; ...”

We recommend removing “if” and that the sentence say, “Sponsors must include the following”

Appendix A – Wildlife Connectivity Action Resources – The Council recommends that the following documents be added to the list of resources to be used by the sponsor and CDFW when considering wildlife connectivity actions for the Mojave desert tortoise. We trust that CDFW will add these documents to Appendix A, use these and other relevant documents when evaluating a sponsor’s proposal for connectivity actions for the tortoise, and update this list as new scientific papers and reports are produced.

Averill-Murray, R.C., C.R. Darst, N. Strout, and M. Wong. 2013<sup>1</sup>. Conserving Population Linkages for the Mojave Desert Tortoise (*Gopherus agassizii*). *Herpetological Conservation and Biology* 8(1):1 – 15.

Averill-Murray, R.C., T.C. Esque, L.J. Allison, S. Bassett, S.K. Carter, K.E. Dutcher, S.J. Hromada, K.E. Nussear, and K. Shoemaker. 2021. Connectivity of Mojave Desert tortoise populations—Management implications for maintaining a viable recovery network. U.S. Geological Survey Open-File Report 2021–1033, 23 p., <https://doi.org/10.3133/ofr20211033>. <https://pubs.usgs.gov/of/2021/1033/ofr20211033.pdf>

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<sup>1</sup> [https://www.usgs.gov/media/data/open-file-report/2021-1033-conserving-population-linkages-mdt-libre-pd71642604246--response-content-disposition=inline%3Bfilename%3DConserving\\_Population\\_Linkages\\_for\\_the\\_Mojave\\_Desert\\_Tortoise.pdf&Expires=1705288348&Signature=RLHPXA-1KTRsb-bf-QoF0ZzGzEeR9CCu7mmVUUDLncGe-nXBu9M0BHPFWa7X3sdh17mD3hdK0JBE1tHbb12mpS3GcFsp9OTW9M9684rBJzWpBn-Sch-ps8Rcp30Y9FulhAWlmg5TDXRTWHZGcFn2cVwwAL988zFLmNKzFP9bBT4TtatumInD1hmYmsh8sq3AM9s9kL-yhK8\\_-jFR2h3Bbsh3luzgZLW0sKLSZsEXCH4gODd4fAXh0wR2Rcw8zGoF7PHLz9x0MaUWD2Hb--6LhNvT1nKPVO0gBHF8bVPLaTgr0KuCtLA\\_&Key-Pair-Id=APKAIJLGHF5GGSLRBV4ZA](https://www.usgs.gov/media/data/open-file-report/2021-1033-conserving-population-linkages-mdt-libre-pd71642604246--response-content-disposition=inline%3Bfilename%3DConserving_Population_Linkages_for_the_Mojave_Desert_Tortoise.pdf&Expires=1705288348&Signature=RLHPXA-1KTRsb-bf-QoF0ZzGzEeR9CCu7mmVUUDLncGe-nXBu9M0BHPFWa7X3sdh17mD3hdK0JBE1tHbb12mpS3GcFsp9OTW9M9684rBJzWpBn-Sch-ps8Rcp30Y9FulhAWlmg5TDXRTWHZGcFn2cVwwAL988zFLmNKzFP9bBT4TtatumInD1hmYmsh8sq3AM9s9kL-yhK8_-jFR2h3Bbsh3luzgZLW0sKLSZsEXCH4gODd4fAXh0wR2Rcw8zGoF7PHLz9x0MaUWD2Hb--6LhNvT1nKPVO0gBHF8bVPLaTgr0KuCtLA_&Key-Pair-Id=APKAIJLGHF5GGSLRBV4ZA)

- Dutcher, K.E., A.G. Vandergast, T.C Esque, A. Mitelberg, M.D. Matocq, J.S. Heaton, and K.E. Nussear. 2020. Genes in space: what Mojave desert tortoise genetics can tell us about landscape connectivity. *Conservation Genetics* 21:289–303(2020). <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0286820>
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- Huijser, M.P., and E.R. Fairbank. 2023. Mojave Desert Tortoise Conservation and Recovery Measures Along Roads; A Practical Guide. Final Report prepared for the U.S. Fish & Wildlife Service Headquarters Office, Falls Church, VA.
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We suggest a process to integrate wildlife connectivity actions into documents prepared under the California Environmental Quality Act (CEQA). The Council comments on CEQA documents for proposed projects in the range of the tortoise. A recurring issue is that the agency authoring the CEQA document says that a mitigation plan will be developed to offset a particular impact or impacts. However, the mitigation plan is not provided to the public for their review and comment. Consequently, the public has no information to determine whether the mitigation would be adequate or effective, nor does the decisionmaker.



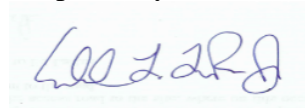
When mitigation plans are included in the public review process, this provides the public with the opportunity to provide comments based on their diverse knowledge and experience regarding the adequacy and soundness of the proposed mitigation plans. This public review process increases the likelihood that the mitigation plans when reviewed and finalized will be effective when implemented.

We recommend that mitigation for connectivity be included in CEQA documents and that the CEQA agency/lead CEQA agency coordinate with CDFW so the appropriate information on the mitigation that will be applied is included in the CEQA document. This approach would make the mitigation plans(s) available for the public to review and the decisionmaker to determine their potential effectiveness and adequacy.

We appreciate this opportunity to provide the above comments and trust they will help protect tortoises during any resulting authorized activities. Herein, we reiterate that the Council wants to be identified as an Affected Interest for this and all other projects funded, authorized, or carried out by the CDFW that may affect desert tortoises, and that any subsequent environmental documentation for this project is provided to us at the contact information listed above and [eac@deserttortoise.org](mailto:eac@deserttortoise.org). This will allow us an opportunity to ensure CDFW fully considers actions to conserve this species as part of its directive to conserve biodiversity in California.

Please respond in an email that you have received this comment letter so we can be sure our concerns have been registered with the appropriate personnel and office for this proposed action.

Respectfully,



Edward L. LaRue, Jr., M.S.  
Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

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