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**Via OHMVR Grants Online Submission Page**

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Sixto Fernandez, Grants Manager
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RE: Desert Tortoise Preserve Committee Pre-Application Grant Proposal for Restoration, Monitoring, and Education, Kern County, California

Dear Mr. Fernandez,

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.

The Mojave desert tortoise (*Gopherus agassizii*) 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), habit 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 had 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." It is one of three turtle and tortoise species in the United States to be critically endangered.

This status, in part, prompted the Council to join Defenders of Wildlife and Desert Tortoise Preserve Committee, Inc. (Desert Tortoise Council 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.

We are pleased to provide a Letter of Support for the Preliminary Grant Application submitted by the Desert Tortoise Preserve Committee, Inc. for habitat restoration, monitoring its success, and education. Funding this request would enable the Desert Tortoise Preserve Committee, Inc., which is celebrating its 50th anniversary in 2023, to implement the following activities at the Desert Tortoise Research Natural Area (DTRNA) and Expansion Area:

- monitor and repair fence breaks to the perimeter fencing of conservation lands;
- monitor and remove invasive plant species that proliferate along OHV routes and trails adjacent to the DTRNA and Expansion Area perimeter fencing and within the protected conservation land boundaries. This includes Cache Creek, a major streambed, that runs south to north from the southern and western parts of the project area to Koehn Dry Lake;
- restore habitat for the desert tortoise and other sensitive species through vertical and horizontal mulching and trash clean up;
- install signs educating the public to minimize illegal trespass and use of illegal trails and routes;
- provide maps with alternative routes for OHV users around the DTRNA and Expansion Areas; and
- provide interpretive and public education presentations and visitation opportunities at the DTRNA Interpretive Center and Nature Trails.

These actions are needed to effectively manage the DTRNA and Expansion Area for the conservation of the tortoise, other sensitive species, and their habitats. The site-specific actions would occur in/around 5,400 acres in the DTRNA with landscape surveys occurring on greater than 25,000 acres in the DTRNA.

The DTRNA has some of the highest densities of Mojave desert tortoises in California. This accomplishment is attributed to the excellent management of the DTRNA by the Desert Tortoise Preserve Committee, Inc. Tortoise densities inside the fenced area of the DTRNA were roughly 2.5 times higher than outside (Berry et al. 2014, 2020). In contrast, all eight populations of Mojave desert tortoise occurring on lands managed by the Bureau of Land Management (BLM) in California declined from 2004 to 2014 (Allison and McLuckie 2018) and many continued declining after 2014 (USFWS 2016, 2018, 2019, 2020, 2022a, 2022b). Seven of these populations have densities below population viability (USFWS 1994, Allison and McLuckie 2018). Thus, it is imperative that the Desert Tortoise Preserve Committee, Inc. continue its management of the DTRNA and maintain/increase the higher densities of tortoises by minimizing impacts to the tortoise and tortoise habitat. This includes impacts from OHV use.

Unfortunately, OHVs cause "significant social and environmental impacts" in arid lands (Switalski 2018), many of which extend beyond the locations of OHV tire tracks. From the perspective of the tortoise and other wildlife species, impacts from OHV use to habitat include soil compaction; decreased infiltration of water and inhibition of the growth of roots; soil erosion; burying seeds too deep for successful emergence; disrupting biological soil crusts that reduces the amount of

nitrogen available to plants and reduces plant growth; reducing photosynthetic activity in native plants from dust deposition and causing radiative heating in the leaves and other adverse physiological effects; air pollution; crushing native vegetation; spreading nonnative invasive plant species resulting in reduced diversity and abundance of native plants; and increasing the risk of wildfire (Ouren et al. 2007, Switalski 2018). The result is a reduction in native plant density, abundance, and diversity.

These impacts are compounded by climate change which is predicted to increase the frequency of fire and create environments more conducive to invasion by non-native plant species (Switalski 2018).

Impacts to wildlife species including the tortoise are numerous, too. They include direct mortality, injury, crushing burrows, avoiding areas with OHV use thereby reducing population connectivity, reduction in quality of habitat, loss of habitat, reduced quantity and quality of food sources, and reduced body weight (Ouren et al. 2007, Switalski 2018) .

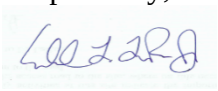
The Desert Tortoise Preserve Committee, Inc. is requesting funds to mitigate the impacts of OHV recreationists' riding along fence lines causing invasive weed proliferation (starting along linear pathways and then spreading into the DTRNA), fence breaks into the DTRNA (thus the need for more signs, the OHV trail maps), potential for injuring or killing wildlife, and soil erosion and disturbance.

While the DTRNA was initially established as a research natural area for the tortoise, it provides habitat for numerous other species of native fauna and flora. The tortoise is considered in the conservation biology community to be a keystone species – a species having impacts on many others, often far beyond what might have been expected from a consideration of their biomass or abundance (Simberloff 1998), and an umbrella species – a species that covers sufficient home ranges of individuals of other species so that these too will have viable populations (Caro 2010). Keystone species are regarded as species that are ecologically necessary to the healthy functioning of a given ecosystem (Mills et al. 1993). Thus, implementing restoration actions at the DTRNA for the tortoise and educating the public would benefit numerous other species of desert flora and fauna in addition to the tortoise. These include the state-threatened Mohave ground squirrel (*Xerospermophilus mohavensis*) and special status species including western burrowing owl (*Athene cunicularia*) and American badger (*Taxidea taxus*), among others.

On October 7, 2020, Governor Newsom issued an executive order (N-82-20) to combat the biodiversity crisis and climate change crisis. The Governor directed the Natural Resources Agency, which includes California State Parks, to "prioritize investments in cooperative, high priority actions that promote biodiversity protection, habitat restoration, wildfire-resistant, sustainably managed landscapes and other conservation outcomes," and "implement actions to increase the pace and scale of environmental restoration…" Funding this grant proposal would show support for the Governor's Executive Order on combating the biodiversity and climate change crisis by funding efforts to restore habitats for the tortoise and other wildlife species, removing invasive plant species that compete with native plants for resources thereby assisting biodiversity, and helping to combat the effects of climate change by reducing the presence of nonnative invasive plant species and potential for wildfires.

For these reasons, we believe the Desert Tortoise Preserve Committee, Inc.'s proposal should be fully funded. We appreciate this opportunity to express support for this proposal. Should you have any questions regarding our reasons for supporting the award of this grant to the Desert Tortoise Preserve Committee, Inc., please contact us at the email address in our letterhead.

Respectfully,



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

**Literature Cited**


Berry, K.H., L.M. Lyren, J.L. Yee, and T.Y. Bailey. 2014. Protection benefits desert tortoise (*Gopherus agassizii*) abundance: The influence of three management strategies on a threatened species. Herpetological Monographs 28: 66–92 .

Berry, K.H. J.L. Yee, 2020. T.A. Shields, and L. Stockton. 2020. The Catastrophic Decline of Tortoises at a Fenced Natural Area. Wildlife Monographs 205:1–53.

Berry, K.H., L.J. Allison, A.M. McLuckie, M. Vaughn, and R.W. Murphy. 2021. *Gopherus agassizii*. The IUCN Red List of Threatened Species 2021: e.T97246272A3150871. https://dx.doi.org/10.2305/IUCN.UK.2021-2.RLTS.T97246272A3150871.en

Caro, T., and S. Girling. 2010. Conservation by proxy: Indicator, umbrella, keystone, flagship, and other surrogate species. Washington DC: Island Press, Washington, D.C.

Desert Tortoise Council. 2020. A Petition to the State of California Fish and Game Commission to change the status of *Gopherus agassizii* from Threatened to Endangered. Formal petition submitted on 11 March 2020.

Mills, S. L., M.E. Soulè, and D.F. Doak. 1993. The keystone-species concept in ecology and conservation. Bioscience 43(4): 219–224.

Ouren, D.S., C. Haas, C.P. Melcher, S.C. Stewart, P.D. Ponds, N.R. Sexton, L. Burris, T. Fancher, and Z.H. Bowen. 2007. Environmental effects of off-highway vehicles on Bureau of Land Management lands: A literature synthesis, annotated bibliographies, extensive bibliographies, and internet resources: U.S. Geological Survey, Open-File Report 2007-1353, 225 p.
https://www.researchgate.net/profile/Phadrea-Ponds/publication/242537198_Environmental_Effects_of_Off-Highway_Vehicles_on_Bureau_of_Land_Management_Lands_A_Literature_Synthesis_Annotated_Bibliographies_Extensive_Bibliographies_and_Internet_Resources/links/56095c5708ae576ce63e1e98/Environmental-Effects-of-Off-Highway-Vehicles-on-Bureau-of-Land-Management-Lands-A-Literature-Synthesis-Annotated-Bibliographies-Extensive-Bibliographies-and-Internet-Resources.pdf

Simberloff, D. 1998. Flagships, umbrellas and keystones: is single species management passe´ in the landscape era? Biol. Conservation 83:247–25.

Switalski, A. 2018. Off-highway vehicle recreation in drylands: A literature review and recommendations for best management practices. Journal of Outdoor Recreation and Tourism 21 (March 2018): 87-96. https://www.sciencedirect.com/journal/journal-of-outdoor-recreation-and-tourism

[USFWS] U.S. Fish and Wildlife Service. 2016. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2015 and 2016 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. https://www.fws.gov/sites/default/files/documents/USFWS.2016%20report.%20Rangewide%20monitoring%20report%202015-16.pdf

[USFWS] U.S. Fish and Wildlife Service. 2018. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2017 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. https://www.fws.gov/sites/default/files/documents/USFWS.2018%20report.%20Rangewide%20monitoring%20report%202017.pdf

[USFWS] U.S. Fish and Wildlife Service. 2019. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2018 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. https://www.fws.gov/sites/default/files/documents/USFWS.2019%20report.%20Rangewide%20monitoring%20report%202018.pdf

[USFWS] U.S. Fish and Wildlife Service. 2020. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2019 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. 42 pages. https://www.fws.gov/sites/default/files/documents/2019_Rangewide%20Mojave%20Desert%20Tortoise%20Monitoring.pdf

[USFWS] U.S. Fish and Wildlife Service. 2022a. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2020 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. https://www.fws.gov/sites/default/files/documents/USFWS.2022%20report.%20Rangewide%20monitoring%20report%202020.pdf

[USFWS] U.S. Fish and Wildlife Service. 2022b. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2021 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. https://www.fws.gov/sites/default/files/documents/USFWS.2022%20report.%20Rangewide%20monitoring%20report%202021.pdf