

DESERT TORTOISE COUNCIL

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Via email only

13 March 2023

Shawn Sartorius
Field Supervisor
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, NM 87113
nmesfo@fws.gov

RE: N.M. Ranch Properties, Inc. (Armendaris Ranch) Bolson Tortoise Safe Harbor Agreement and Draft Environmental Assessment, Socorro and Sierra Counties, New Mexico

Dear Mr. Sartorius,

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 that the U.S. Fish and Wildlife Service (USFWS) email to us 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. Because the location of the proposed project is in vegetation associations used by the Bolson tortoise (*Gopherus flavomarginatus*), our comments pertain to enhancing protection of this species during activities funded, authorized, or carried out by the USFWS, which we assume will be added to the Enhancement of Survival (EOS) Permit Record for this project as needed. Please accept, carefully review, and include in the relevant project file the Council's following comments and attachments

for the proposed action.

Safe Harbor Agreement

Purpose and Description of Proposed Action

Purpose of Proposed Action: The purpose of this Safe Harbor Agreement (Agreement) is to provide abundant, suitable, secure habitat for a Bolson tortoise (Bolson tortoise/tortoise) population and facilitate population restoration activities for the tortoise, through the release of captive-raised tortoises on the N.M. Ranch Properties, Inc. (Applicant/Permittee) Armendaris Ranch. The Agreement is one of the actions required before the USFWS may issue an EOS Permit under section 10(a)(1)(A) of the Federal Endangered Species Act (FESA).

The EOS Permit is a type of recovery permit. In exchange for actions that contribute to the recovery of listed species, participating property owners or permittees receive formal assurances from the USFWS that if they fulfill the conditions of the Agreement, the USFWS will not require additional or different management activities by the permittees without their consent. In addition, at the end of the EOS Permit Term, permittees may return the enrolled property to the baseline condition that existed at the beginning of the EOS Permit. The Agreement must be in effect long enough to result in a conservation benefit/recovery benefit to the Covered Species in the Agreement/EOS Permit.

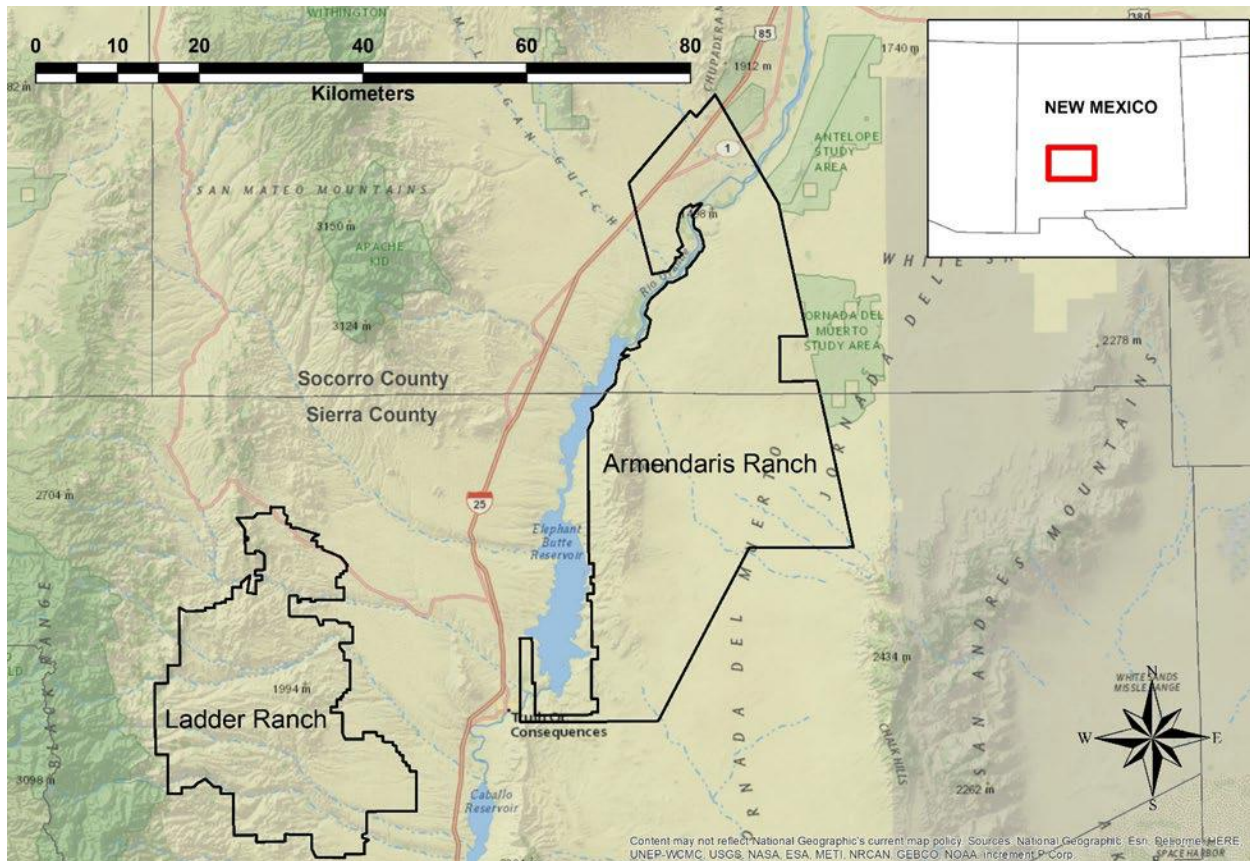
History of the Project: In 2006, 33 orphaned Bolson tortoises were taken into possession by the USFWS and transported from Arizona to the Armendaris Ranch in New Mexico. In a cooperative, non-commercial effort between Turner Endangered Species Fund (TESF) and the USFWS, a captive conservation population was established under the care of TESF staff.

A captive breeding program was established on the Armendaris Ranch and its affiliated Ladder Ranch in Sierra and Socorro counties in New Mexico (see figure below). The Ladder Ranch has the “headstart” facility where hatchling growth is accelerated prior to release on the Armendaris Ranch. Tortoises will not be released on the Ladder Ranch but will be held in enclosures there.

About 450 Bolson tortoises are in the captive population now. The proposed Agreement would allow for the release and monitoring of about 190 of the captive Bolson tortoises on the Armendaris Ranch.

Description of Proposed Action: The N.M. Ranch Properties, Inc. (Applicant/Permittee) would conserve the Bolson tortoise, the only Covered Species in the Agreement. The tortoise was listed as a CITES Appendix II species on July 1, 1975 and elevated to Appendix I on June 28, 1979 (IUCN 2022). It was listed as endangered by the U.S. Fish and Wildlife Service (USFWS) (1978) for population declines resulting from human predation, habitat modification, competition from grazing, and collection of individuals. No critical habitat has been designated by the USFWS.

Because of the tortoise’s legal status, a EOS Permit issued by the USFWS under this Agreement would authorize the voluntary actions of the Applicant to establish populations of Bolson tortoises at the Armendaris Ranch.



The baseline population condition for the Bolson tortoise under this Agreement will be zero free ranging individuals (i.e., zero baseline). The free ranging population started with zero individuals at the Armendaris Ranch (current condition) and may be returned to that amount under this Agreement without violating the EOS Permit (NHNM 2017). The baseline population condition is zero because under the current condition, the conservation effort currently maintains tortoises in captivity or the tortoises are part of a research project that was initiated before this Agreement was developed. Tortoises in either the captivity or research group are not part of baseline population for this Agreement.

The enrolled property or area covered by the EOS Permit is the Armendaris Ranch. It encompasses an area of around 344,955 acres, in Sierra and Socorro counties located southwest of central New Mexico. The Ranch is in the Chihuahuan desert grassland ecosystem of south-central New Mexico is reasonably analogous to the Mapimí region in north central Mexico, with the exception of having longer winters with lower low temperatures. However, we believe that through the efforts of the Turner Endangered Species Fund (TESF) biologists and the tortoise’s history north of its current range during the Pleistocene, south central New Mexico winters appear to be within their tolerance for survival and reproductive success. With the projected climate change related warming of the southwestern United States, it is reasonable to assume this region will continue to be tolerable for Bolson tortoises for the foreseeable future.

Management of the Armendaris Ranch focuses on bison ranching, nature tourism, hunting and other recreation, limited solar energy generation, guest lodging, maintenance activities, and

wildlife conservation including restoration of imperiled species. Nearly 93 percent of the Armendaris Ranch, including areas to be occupied by free ranging tortoises due to this Agreement, is encumbered by a conservation easement held by the New Mexico Land Conservancy. Bolson tortoises would be located at the more remote part of the Armendaris Ranch to minimize the potential incidental “take” of a tortoise occurring from these activities. Visual inspections will be conducted to reduce the potential loss of tortoise from the activities.

The EOS Permit Term is 50 years or one generation for the Bolson tortoise (Kiestler et al. 2018).

Comments on the N.M. Ranch Properties, Inc. (Armendaris Ranch) Bolson Tortoise Safe Harbor Agreement

Purposes to Achieve Under the Agreement

The Applicant describes two purposes that it intends to achieve under the Agreement, (1) to provide abundant, suitable, secure habitat for a Bolson tortoise (Bolson tortoise/tortoise) population, and (2) to facilitate population restoration activities for the Bolson tortoise, through the release of captive-raised tortoises on the Permittee’s Armendaris Ranch.

The Council supports the ongoing efforts of the Applicant to conserve the Bolson tortoise/tortoise habitat and supports issuance of an EOS Permit. We believe this project represents a significant and valuable conservation effort for this species, along with providing an accessible population for which future scientific research can be conducted to expand our understanding of this understudied species. Given the perils this species faces in its native range and the already alarmingly low population, this project has the potential to substantially improve the status of the wild population of Bolson tortoises while providing assurances against catastrophic or continued degradation of the tortoise’s habitat in the Mapimí region of central Mexico. As we consider the expected shifts in climate continue and the restricted range and extremely low populations of wild Bolson tortoises in Mexico, we see efforts such as this as valuable conservation tools against extinction, or at minimum a reasonable assurance against potential extinction. This project not only has the potential to safeguard this species but might also serve as a model for other rare and climate change impacted chelonian species. This would make this project tremendously important work for the conservation of turtles and tortoises globally.

Our comments below on the Agreement and Draft Environmental Assessment (DEA) are intended to ensure these conservation efforts are successful; support the two purposes using science; and ensure the regulatory documents are complete, clear in their description of expected actions to be implemented by the Permittee and the USFWS, and comprehensive in their analysis of long-term adverse and beneficial impacts from conditions/events that may occur on the enrolled property during the EOS Permit Term.

Page 4: Regarding the purpose of providing “abundant, suitable, secure habitat for a Bolson tortoise population,” baseline data on the condition of the habitat would need to be collected with periodic sampling during the determined time frame (i.e., EOS Permit Term) of the habitat to determine whether the condition of the habitat is changing, and if so, how it is changing. Standard data collected on habitat would usually include weather data (e.g., temperature, precipitation, and humidity), soil moisture, and vegetation sampling for plant species composition, abundance, density, and cover. Vegetation sampling should include whether non-native plant species are increasing in composition, abundance, and density. The sampling would occur periodically and be

statistically robust (appropriate sample design and adequate sample size) to detect changes to the habitat of the Bolson tortoise.

Regarding the purpose of facilitating population restoration activities for the Bolson tortoise, data on demographics would need to be collected to document the baseline condition of the released animals. This would be followed during the determined time frame (i.e., EOS Permit Term) with periodic monitoring through data collection of an adequate sample size of the population to determine what change in population demographics has occurred. For tortoises, the data collected from individuals in the population usually include age, sex, size, health status, the amount of reproduction and recruitment that is occurring and mortality (disease, predation, etc.). To facilitate data collection in a wild population, tortoises released and any new tortoises subsequently recruited into the population are usually permanently marked, and telemetry is attached to find the animals. A survey methodology is usually implemented periodically to search for tortoises to determine whether animals are successfully recruited into the population and the size of the population during the determined time frame.

The only information we found in the Agreement (“Management Activities For The Covered Species,” page 9) said “releasing, monitoring, and managing more than 100 tortoises.” Please elaborate on how “monitoring and managing” tortoises would be implemented. Later in the Agreement (“Monitoring and Reporting,” pages 13 and 14) we found limited information on biological monitoring, population status monitoring, disease monitoring, and natural history attributes. To clarify the actions that would be implemented to facilitate population restoration activities for the Bolson tortoise, we suggest inserting a referral to the sections on “Management Activities For The Covered Species” and “Monitoring and Reporting” on page 4. The section on “Management Activities for the Covered Species” should refer to the “Monitoring and Reporting” section and vis a versa.

For example, the Agreement should answer the following questions - how will researchers determine this “viable population” potential? With regards to biological monitoring and understanding the success of the tortoise’s population status, will some aspect of the research examine potentially reproductive females for eggs or nesting behaviors? If there be reproductively active females, will any efforts be made to monitor the success of the nests? We imagine these questions have been considered, but has the Applicant or USFWS considered any of the methods or established techniques in acquiring this information?

We request a Methods section be added to the Agreement that explains how the two purposes of the Agreement will be accomplished with implementation of the management activities (e.g., conservation actions, conservation measures, minimization measures, etc.) and monitoring that the Applicant will conduct.

Page 11, Management Activities For The Covered Species, Minimization Measures: In the Agreement, the Applicant says, “[w]e do not expect the tortoises to expand from the Armendaris Ranch for the duration of the permit because of the high burrow site fidelity exhibited by the species.” “Wandering tortoises that do not have a burrow are highly susceptible to predation or mortality due to the conditions of the environment. Colonization off the property is not expected to occur in any timeframe relevant to this Agreement.”

We consider this an assumption that does not “fit” with the behavior of other species of *Gopherus*. For example, the Agreement says, “Bolson tortoises show a strong preference for a single burrow

which they defend against potential intruders by blocking the entrance with their bodies (TESF unpublished observation).” Mojave and Sonoran desert tortoises exhibits the same defensive behavior (Ruby and Niblick 1994) but use multiple burrows with the Mojave desert tortoise using deep dens in part of its range (Woodbury and Hardy 1948). At certain times of the year, Mojave and Sonoran desert tortoises do not use burrows but use pallets (Berry et al. 2013) or shrubs for cover.

During years with favorable temperatures and greater than average food supply, other species of *Gopherus* have been documented to greatly expand their home ranges and make long distance movements up to several miles in a short time (Berry 1986). Further, the Agreement says its contribution to conservation would include “[i]mproved understanding of the biology and ecology of the tortoise, including habitat use, movement patterns...” When large numbers Bolson tortoises have been observed during favorable years with limited stressors and threats from humans, we expect some Bolson tortoises would increase their movements to colonize new areas. We suggest the Agreement include this probability in its management of the Bolson tortoise population at the Armendaris Ranch.

Pages 5, 9, 10, 11, and 15: In the Introduction section, the Applicant and USFWS state a purpose of the Proposed Action is “to establish a foundation from which viable populations (250 individuals or more) could become established at the Armendaris Ranch.” Later in the Agreement, we found the following, “Concerning viability, probably more than 250 adult tortoises are required, based on minimum viable population estimates for the gopher tortoise (*Gopherus polyphemus*) (Gopher Tortoise Council 2013), the Bolson tortoise’s closest relative.” As currently written, the Agreement gives the public the impression that only 250 Bolson tortoises are needed to have a viable population.

Given the recent and growing adverse impacts of climate change to the Bolson tortoise and its habitat, even for habitats managed for the tortoise on the Armendaris and Ladder Ranches, the small population size of this species in New Mexico that may have limited genetic diversity (initial population of 26 adult tortoises and 7 hatchlings), a population viability analysis of the Bolson tortoise has not been conducted, and the statement in the Agreement that “the loss of even one adult female tortoise can have a devastating effect on the population as whole,” the Council strongly recommends the Applicant modify the Agreement to remove the use of “250” Bolson tortoises from the Agreement. This wording implies to the public that when 250 Bolson tortoises of any age have been established, the species could be delisted. The Agreement should state that population viability for the Bolson tortoise is not known.

Page 9, Agreement and Permit Duration: We suggest adding information in this section that explains why the EOS Permit duration is for 50 years using the implementing regulations for Safe Harbor Agreements.

Pages 9-11, Management Activities for the Covered Species: The Agreement says, “Phase One of this Agreement will extend for the first 2 to 5 years and includes management activities that accomplish some of the net conservation benefit for the species and will consist mainly of 1) maintaining the captive breeding and head-starting (see below) programs to ensure that adequate numbers of tortoises are available for release.” However, earlier in the Agreement, is the following statement, “[t]his Safe Harbor only concerns the Armendaris Ranch where released tortoises and their progeny will be allowed to occupy suitable habitat” and “[t]he existing captive population of tortoises on the Armendaris and Ladder Ranches and tortoises involved in a study of movement

patterns and survival at a controlled environment at the Armendaris under section 9b of the ESA are not part of the baseline population for this property.”

We are confused by these statements. Are the tortoises from the captive breeding and head-starting facility at the Ladder Ranch that will be used for release on the Armendaris Ranch part of this Agreement? Please clarify what activities are covered under the Agreement including the source of the tortoises to be released during the EOS Permit Term.

The Agreement says, “[t]he minimum size for release [of Bolson tortoises from the head-start program] has not yet been determined, but juvenile desert tortoises (*Gopherus agassizii*) that have reached at least 4 in (10 cm) shell length exhibit high survivorship (Nagy et al 2015). Daly et al. (2019) reported that carapace length of released head-started tortoise similar in carapace length to tortoise from the Nagy et al. (2015) study did not increase survival of Mojave desert tortoise. Daly et al. (2019) suggested that shell hardness was likely a better indicator of survival of head started tortoises as the Nagy et al. (2015) tortoises were older. Nagy et al. (2020) reported, head-started Mojave desert tortoises developed fully-hardened shells (>98% of adult shell hardness) in 10 to 11 years in a head-start program. Because the Mojave desert tortoise is smaller than the Bolson tortoise and recent research indicates that shell hardness rather than carapace length is a better indicator of survival of head-started Mojave desert tortoises, we recommend using shell hardness rather than carapace length to determine when to release head-started Bolson tortoises.

Because one of the purposes in the Agreement is to provide “abundant, suitable, secure habitat for a Bolson tortoise population,” we expected to find information how the habitat for the Bolson tortoise would be managed and monitored during the EOS Permit Term. Please include this information in this or another appropriate section of the Agreement.

Pages 9, 13, 18, and 19: The term “conservation measures” is used on these pages. Unfortunately, we were unable to find a list of the conservation measures the Applicant is committing to implement. For example, on page 9 under Baseline Conditions, the Agreement specifies that “[a]s long as the Permittee implements the agreed-upon voluntary conservation measures the Permittee may make lawful use of the property even if such use results in the loss of tortoises or occupied habitat.” On page 18 is the statement, “[t]he proposed action and conservation measures identified in the SHA [Safe Harbor Agreement]...”

Identifying, listing, and describing these conservation measures in the Agreement is crucial to the administration of this Agreement and EOS Permit as it is a 50-year Permit. Current administrators for the Applicant and USFWS may “know” what these conservation measures are, but persons in these positions during the next five decades are unlikely to know. In addition, the EOS Permit, a regulatory document, will refer to the Agreement with respect to actions that are authorized or covered under the EOS Permit. Consequently, it is imperative that there is a section in the Agreement that lists and describes the conservation measures in the Agreement so the Permittee and USFWS know the measures the Permittee must implement under the EOS Permit. Please add a list and description of conservation measures that the Applicant will implement to the Agreement.

Page 11, Minimization Measures: We suggest naming this section “Minimization Measures and Incidental Take,” Because this section of the Agreement discusses some forms of incident take for the Bolson tortoise, we suggest adding a description of the types of activities that may result in take that are conducted by the Applicant and others on the Ranch and off the Ranch. This

information is helpful as it will clarify to those implementing this EOS Permit in the future the activities that are covered under this Permit and those that are not.

We request that the Applicant develop and implement a worker and visitor education program about the Bolson tortoise. This program be taught to all workers and visitors to the Armendaris Ranch. It would include information on the biology and ecology of the Bolson tortoise and actions the workers/visitors should implement to avoid take of the tortoise while at the Ranches. The education program would be approved by the USFWS prior to implementation.

Page 11, Net Conservation Benefit: The Agreement says one net conservation benefit is the “Release of more than 100 tortoises as the foundation for facilitating restoration of viable populations (greater than 250 individuals) at the Armendaris Ranch.” We interpret this sentence to mean that more than one population of Bolson tortoises each with a size of 250 animals will occur at the Armendaris Ranch. Because this sentence is unclear and the size of a viable population is unknown, we request this sentence be rewritten to say the release of more than 100 tortoise on Armendaris Ranch will serve as the foundation for facilitating restoration of viable populations at this and other locations. Please clarify this sentence.

Several statements about expected net conservation benefit are presented in this section but we were unable to find scientific references to support these expectations or claims. We suggest providing citations from the scientific literature to support the statements presented in this section.

Page 12, “conservation actions” and other terms: The Agreement says, “The [US]FWS has worked with the Permittee to develop *conservation actions* [emphasis added] as described in this Agreement, that are expected to provide a net conservation benefit to the tortoise as described above” and “ [t]he *conservation actions* [emphasis added] above will increase the number of individuals on the landscape...”

We are confused. Are conservation actions the same as conservation measures? How do minimization measures differ from conservation measures? Because several terms are used in this Agreement but are not defined, we suggest adding a Glossary to the Agreement that defines these terms or define them the first time they are used in the Agreement.

In addition, we were unable to find conservation actions described in this Agreement that are directly linked/expected to provide a net conservation benefit to the species. Please see our comment above under “Pages 9, 13, 18, and 19.”

Pages 13 and 14, Monitoring and Reporting: We found only general descriptions of what data would be collected to monitor the released Bolson tortoises. If one of the purposes of the Agreement is to collect data to meet the Net Conservation Benefit stated on pages 11 and 12 of the Agreement and the two purposes of the Agreement, the section on Monitoring and Reporting should be expanded to match the scientific methodologies and data analyses needed to achieve the Net Conservation Benefit and Purposes. Please add information to the Monitoring and Reporting section that describes how the Applicant will accomplish the following:

- Provide abundant, suitable, secure habitat for a Bolson tortoise population;
- Facilitate population restoration activities for the Bolson tortoise, through the release of captive-raised tortoises on the Permittee’s Armendaris Ranch;
- Release and manage for more than 100 tortoises as the foundation for facilitating restoration of populations of the Bolson tortoise;

- Improved understanding of the biology and ecology of the tortoise, including habitat use, movement patterns, mortality factors, and food habits; closely monitoring the movements of the animals as well as understanding reproduction patterns, intervals, and climatic trigger; and
- Improved potential for the species to be reintroduced to suitable habitat to restore populations beyond the boundaries of the enrolled property, possibly including Mexico. This would be accomplished by finding similar habitat conditions on and off the ranches.

The EOS Permit that the Applicant is requesting is a Recovery Permit. The USFWS requires the following information for annual reports for Recovery Permits:

- Introduction
- Methodology
 - Population Management
 - Habitat Management
 - Locations
 - Persons Authorized
- Results
- Conclusion
- Literature Cited

We request that the information listed above be included in annual reports from the Applicant/Permittee so the USFWS is consistent with the information it requires from Permittees under Section 10(a)(1)(A) of the Endangered Species Act. This information requirement includes sections on methodology, conclusions, and literature cited that are not include in the Agreement.

The Monitoring and Reporting section of the Agreement has seven bullets that list information that will be contained in the annual reports. Because one of the purposes of the Agreement is habitat management, we request that information on the habitat and changes indicated by the data collected be included in this list.

Pages 14-16, Responsibilities of the Parties: One responsibility of the Permittee is to “[n]otify the FWS of any change to the enrolled property’s management, including prior notification for returning the enrolled property to baseline conditions; and identify the actions that would result in changed management or return to baseline. We recommend that this be amended to say notify the FWS *at least 60 days in advance* of any change to the enrolled property’s management.....”

Please explain why the USFWS and not the Permittee is responsible for acquiring “acquiring all necessary permits” with the New Mexico Department of Game and Fish. The Applicant is usually responsible for ensure that they have acquired all necessary permits.

Pages 16-18, Incidental Take: We suggest the following addition to this sentence, “Any take resulting from *conducting* these activities *in a conscientious manner* should be minimal and is expected to consist mainly of accidentally collapsing burrows and/or striking/killing tortoises with vehicles.”

Th Agreement says, “Although not currently planned, it is possible that in the future course of this agreement, tortoises from outside of the captive population could be brought to the Armendaris to

bolster genetic resources of the Armendaris population.” The Council supports implementing this action.

Page 18, Agreement Assurances & Permit Administration, Changed Circumstances: The Agreement says, “The proposed action and conservation measures identified in the SHA have taken into account changes in circumstances that can be planned for at this time. Therefore, no changed circumstances or responses to those changes are identified in this SHA.” We disagree with this conclusion.

The last few decades have shown us that the environment is changing much faster than in the past, and threats to tortoises in the southwestern United States are increasing in types, frequency, and intensity. Hence, we believe, the Applicant should be able to use recent scientific literature that describe recent changes (e.g., invasive plant species, wildfires, drought, pathogens, etc.) and predict future changes that are likely to occur during the EOS Permit Term. Consequently, the Applicant should incorporate management and monitoring actions in the Agreement to deal with these anticipated changes (Changed Circumstances). For example, wildfires are likely to increase in frequency, intensity, and size. The scientific literature has documented the direct and indirect impacts of fires on tortoise and tortoise habitats. Management actions to reduce the likelihood of large, frequent, and/or intense wildfires should be incorporated into the Agreement to protect Bolson tortoise and tortoise habitat.

In implementing the Agreement, two diverse possibilities are likely to occur with other possibilities lying somewhere between these. The two diverse possibilities are the successful establishment of a healthy Bolson tortoise population with recruitment at the Armendaris Ranch. Another possibility is that increasing stressors and threats will prevent this from happening (e.g., invasive plant species, wildfires, drought, pathogens, development adjacent to the Armendaris Ranch with impacts that extend into the Ranch, etc.).

To provide flexibility to effectively manage for the best outcome for the Bolson tortoise at both ranches, we suggest the Applicant expand the functions of the Ladder Ranch as a potential release area for Bolson tortoises, if needed. For example, establishing more than one population with several metapopulations at a different location (= redundancy) is an effective way to reduce the likelihood of loss of a small population from various stochastic threats. Providing options for where management actions for the tortoises may be implemented would eliminate the need to amend the Agreement, produce another National Environmental Policy Act (NEPA) document, and amend the EOS Permit in the future, as there is uncertainty in the outcome of proposed management actions for the tortoise on the Armendaris Ranch during the EOS Permit term of 50 years. A change in future management actions may need to occur swiftly to be effective or prevent the loss of most/all of the free ranging population. Amending a EOS Permit is not a swift process. Consequently, the Council strongly recommends the Applicant modify the Agreement to maximize flexibility in the management of the Bolson tortoise on the Armendaris and Ladder Ranches and consider all likely scenarios of impacts from stressors using the history of stressors on *Gopherus* species from the past few decades (e.g., invasive plant species, fire, climate change, increased predation, disease, etc.). These stressors should be included in the Changed Circumstances section of the Agreement. We make this suggestion with the assumption that the habitat at the Ladder Ranch does/is likely to in the foreseeable future provide the requisite habitat requirements that would support a free ranging population of Bolson tortoises.

Draft Environmental Assessment

Page 1, Introduction: In the DEA, the USFWS says, “the Permittee will work to enhance and maintain the enrolled property. This will be accomplished through...repatriation of pre-European habitat; insurance against catastrophic events; establishment of buffers for other protected areas...and creation of areas for testing and implementing new conservation strategies.” When we read the Agreement, we did not find a description/discussion of these actions. Please ensure that these conservation measures/conservation actions are included Agreement in the sections on “Management Activities for the Covered Species Management” and “Monitoring and Reporting” along with a list of tasks that would be implemented to achieve these.

Page 5, Alternatives: “Pursuant to NEPA, an EA should include a discussion of alternatives to the Proposed Action and the impacts of both the Proposed Action and alternatives considered (Section 102(2)(e) of NEPA; 40 CFR 1501.5(c)(2e) [2020]). This section describes the Proposed Action and an alternative to that action, which is the No Action Alternative.”

According to the implementing regulations for NEPA and the USFWS NEPA Handbook, the NEPA document should describe and analyze alternatives [emphasis added] that would implement the proposed action (40 CFR 1502.14(a) and (b)). Agencies shall “(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated. (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.” Thus, the No Action Alternative is not an alternative that would implement the proposed action.

According to the USFWS NEPA Handbook, section 4.5.6 Two Alternatives: Go/No Go (USFWS 2022b), “In special cases, it is possible for there to be just one action alternative — the ‘go/no go’ or project/no project situation. The purpose and need may be so limited by budget, spatial, or personnel factors that the planned project is the only feasible alternative. If this is the case, you will need to clearly explain your rationale for choosing this approach.”

The Council believes there could be more than one action alternative that would achieve the purpose and need of the proposed action. Earlier in this letter we suggested another action alternative that added the Ladder Ranch as a possible release site, as our assumption is that the habitat at the at the Ladder Ranch would support a population of Bolson tortoises. We request that this alternative be described and analyzed in the DEA if it is feasible. If it is not, the DEA should explain why this alternative was considered and dismissed from analysis.

Page 6, Alternative 1, No Action: “[T]he private lands on the Armendaris Ranch are somewhat protected from residential development by existing Conservation Agreements...” We are not aware of the specifics of these conservation agreements, we suggest they may exclude or restrict other types of development/large-scale surface disturbance.

Page 6, Alternative 2, Issuance of and EOA Permit: In this section, net conservation benefit is defined. We thank you for providing this definition and request that it be added to the Agreement.

Pages 7 and 8, Alternative 2: “The conservation activities that are identified within the Agreement include:

1. Release, monitor, and manage more than 100 tortoises during the initial 2 to 5 years of this Agreement to improve understanding of the species’ natural history and establish the foundation from which viable populations (250 individuals on the ranch) could arise.”

The remaining conservation activities listed in this section do not mention activities to be performed after year 5. Because the EOS Permit Term is 50 years, we request that conservation activities that will be implemented for the entire EOS Permit Term be included in this section.

Page 8, Alternative 2: “The management activities identified above are expected to provide a net conservation benefit for the tortoise through better understanding of natural history requirements; repatriation of the species in pre-historic habitat; maintenance/increase of population; insurance against catastrophic events; establishment of buffers for other protected areas; improved understanding of the species’ natural history; and creation of areas for testing and implementing new conservation strategies.”

Please identify the management activities in Alternative 2 to the following conservation benefits – insurance against catastrophic events and establishment of buffers for other protected areas. We ask this as we were unable to find them in the description of Alternative 2.

Pages 8 – 11, Affected Environment: Some standard NEPA resource issues were not addressed in this section such as climate change and environmental justice. We recommend adding these resource issues to Table 1 to ensure NEPA compliance and ask that the DEA explain whether the Proposed Action would or would not affect them.

Page 11, Affected Environment, Vegetation: “The combined effects of increased drought, overgrazing by livestock, and/or decreases in fire frequency over the last 70-250 years (Buffington and Herbel 1965, Ahlstrand 1979, Donart 1984, Dick-Peddie 1993, Gibbens et al. 2005).”

We believe the citations provide above were to support a conclusion vegetation change, perhaps creosote invasion, that has occurred but the conclusion is not provided. Please add this conclusion.

Page 12, Affected Environment, Wildlife: We believe the oryx (*Oryx gazella*) is not native to the Chihuahuan Desert.

Page 15, Environmental Consequences: We read many statements and conclusions about the impacts of the No Action and Proposed Action alternatives but found no references to support these statements and conclusions. We suggest adding references from the scientific literature to the DEA to support these statements and conclusions.

Page 15, Environmental Consequences, Alternative 2, Vegetation: “The Participant proposes to undertake conservation activities that will restore and maintain natural range vegetation through prescribed conservation activities that are ongoing. Invasive species pose a major threat to all lands; therefore, the Permittee will work to eliminate these threats on the enrolled property by sanitizing vehicles and equipment prior to visiting release sites or by having equipment for the sole use of this project.”

In reviewing the Agreement, we do not recall any discussion on invasive plant species and the actions/measures the Applicant would implement. Please ensure that the description and analysis of actions analyzed in the DEA are the same as the description of actions in the Agreement and include a discussion on managing invasive plant species.

Page 16, Environmental Consequences, Alternative 2, Vegetation: “We expect conservation activities to be highly structured to reduce the time and intensity of livestock impacts to vegetation.” The impacts from livestock grazing may decrease “with partial fencing and the development and implementation of new ranch management plans, which would result in improvements in vegetation cover on the participating property.”

We do not recall any discussion about conservation activities in the Agreement that discuss livestock operations to reduce the time and intensity of livestock impacts, partial fencing, or development and implementation of new ranch management plans. Please ensure that the description and analysis of actions analyzed in the DEA are the same as the description of actions in the Agreement.

Pages 15-17, Environmental Consequences, Vegetation, Wildlife, Alternative 2: We agree that affects to native animal and plant species would likely be minimal and restricted to the local site, as in a mammal burrow used by a juvenile tortoise. These impacts would be negligible and unlikely to impact endangered species. Affects to box turtles (*Terrapene ornata*) are yet to be determined, and perhaps disease monitoring in the tortoise and local box turtles can be conducted to determine if any upper respiratory tract disease spread is occurring. With that we also recognize the potential benefit a large burrowing tortoise might have on the local animal community. The gopher tortoise (*Gopherus polyphemus*) is a well-known example of a keystone species (White and Tuberville 2017) in its longleaf pine ecosystem of the southeastern United States, their burrows known to provide crucial micro habitat to hundreds of animal species. The same is true for the Mojave desert tortoise (*Gopherus agassizii*) in the Mojave and Colorado deserts (Berry and Medica 1995). Perhaps the Bolson tortoise also provides valuable habitat in their burrows for Chihuahuan desert species.

A study of interspecific burrow cohabitation could be useful data for determining the net benefit of having tortoises in a given area. In all, the Bolson tortoise is likely to have less of an impact on the landscape than domestic species commonly introduced such as cattle, horses, sheep, and goats to private ranches across the southwest. With the Bolson tortoise’s low numbers, lighter footprint on the landscape, and burrowing behavior, it is likely to result in a net positive impact on local wildlife populations especially when compared to these other common domestic species.

Page 18, Environmental Consequences, Listed, Proposed, and Candidate Species: “The Proposed Action would likely result in a long-term benefit to the tortoise by improving range conditions...”

Again, we do not recall any discussion in the Agreement for implementing actions that would improve range conditions. Please ensure that the description and analysis of actions analyzed in the DEA are the same as the description of actions in the Agreement.

“The negative impacts of removing population sites reestablished under the proposed Agreement would be outweighed by the reestablishment of population sites above the current baseline for the tortoise, the reproduction and dispersal of individuals from these reestablishment sites to adjacent

Federal lands, and their contribution towards recovery for the 50-year term of the Agreement and associated EOS permit.”

As we interpret this statement, the USFWS expects Bolson tortoise to disperse to adjacent Federal lands. If so, this statement contradicts statements in the Agreement that “We do not expect the tortoises to expand from the Armendaris Ranch for the duration of the permit because of the high burrow site fidelity exhibited by the species.” “Colonization off the property is not expected to occur in any timeframe relevant to this Agreement.”

To clarify this and other discrepancies between what the Agreement says and the DEA says, we strongly suggest that each measure or action that will be implemented and is likely to affect, either beneficially or adversely, the Bolson tortoise and/or its habitat be listed and matched to a description and analysis of its impacts. This should eliminate the current confusion between what the Agreement says and the DEA says.

Pages 14-19, Environmental Consequences, Cumulative Impacts Analysis: We were unable to find this section in the DEA.

Please see *Grand Canyon Trust v. F.A.A.*, 290 F.3d 339, 345-46 (D.C. Cir. 2002) in which the court decided that agencies must analyze the cumulative impacts of actions in environmental assessments.

Under cumulative impacts analysis, “other Service actions, other Federal actions, and non-Federal (including private) actions must be considered in the NEPA cumulative effects analysis (USFWS 2022b). This analysis should include that the Council on Environmental Quality’s (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 affected resource issues. The USFWS (2022b) says, “[f]or a detailed discussion on developing cumulative impact analyses, see the CEQ guidance document entitled “Considering Cumulative Effects Under the National Environmental Policy Act.”

CEQ states, “Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystems, and human communities of concern. The range of actions that must be considered includes not only the project proposal but all connected and similar actions that could contribute to cumulative effects.” The analysis “must describe the response of the resource to this environmental change.” Cumulative impact analysis should “address the sustainability of resources, ecosystems, and human communities.”

CEQs guidance on how to analyze cumulative environmental consequences, which contains eight principles listed below:

1. Cumulative effects are caused by the aggregate of past, present, and reasonable future actions.

The effects of a proposed action on a given resource, ecosystem, and human community, include the present and future effects added to the effects that have taken place in the past. Such cumulative effects must also be added to the effects (past, present, and future) caused by all other actions that affect the same resource.

2. Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, non-federal, or private) has taken the actions.

Individual effects from disparate activities may add up or interact to cause additional effects not apparent when looking at the individual effect at one time. The additional effects contributed by actions unrelated to the proposed action must be included in the analysis of cumulative effects.

3. Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.

Environmental effects are often evaluated from the perspective of the proposed action. Analyzing cumulative effects requires focusing on the resources, ecosystem, and human community that may be affected and developing an adequate understanding of how the resources are susceptible to effects.

4. It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.

For cumulative effects analysis to help the decision maker and inform interested parties, it must be limited through scoping to effects that can be evaluated meaningfully. The boundaries for evaluating cumulative effects should be expanded to the point at which the resource is no longer affected significantly or the effects are no longer of interest to the affected parties.

5. Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.

Resources are typically demarcated according to agency responsibilities, county lines, grazing allotments, or other administrative boundaries. Because natural and sociocultural resources are not usually so aligned, each political entity actually manages only a piece of the affected resource or ecosystem. Cumulative effects analysis on natural systems must use natural ecological boundaries and analysis of human communities must use actual sociocultural boundaries to ensure including all effects.

6. Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.

Repeated actions may cause effects to build up through simple addition (more and more of the same type of effect), and the same or different actions may produce effects that interact to produce cumulative effects greater than the sum of the effects.

7. Cumulative effects may last for many years beyond the life of the action that caused the effects.

Some actions cause damage lasting far longer than the life of the action itself (e.g., acid mine damage, radioactive waste contamination, species extinctions). Cumulative effects analysis need to apply the best science and forecasting techniques to assess potential catastrophic consequences in the future.

8. Each affected resource, ecosystem, and human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters.

Analysts tend to think in terms of how the resource, ecosystem, and human community will be modified given the action's development needs. The most effective cumulative effects analysis focuses on what is needed to ensure long-term productivity or sustainability of the resource.

Please add an analysis of cumulative impacts of each alternative to the DEA for the resource issues carried forward in the DEA for analysis.

We appreciate this opportunity to provide comments on this project and trust they will provide support and recommendations to improve this important Bolson Tortoises conservation effort. Herein, we reiterate that the Desert Tortoise Council wants to be identified as an Affected Interest for this and all other projects funded, authorized, or carried out by the USFWS that may affect the Bolson tortoise and other species of tortoises in the southwestern United States, and that any subsequent environmental documentation for this project is provided to us at the contact information listed above. Additionally, we ask that you 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 project.

Respectfully,



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

Cc: Amy Lueders, Regional Director, Southwest Region, USFWS; amy_lueders@fws.gov

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