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Dear Mr. Roy Averill-Murray:

On behalf of Defenders of Wildlife (“Defenders”) and our more than 500,000 members and supporters, we are writing to comment on the revised recovery plan for the desert tortoise. Defenders of Wildlife is a national, nonprofit membership organization dedicated to the protection of all native animals and plants in their natural communities

From a historical perspective, the Mojave population of the desert tortoise was protected under the Endangered Species Act in 1990 and its recovery plan was published in 1994. Desert tortoise populations have continued to fall since the release of the original recovery plan in 1994. We are concerned that the new plan provides even less protection for the tortoise in a critical time where tortoise populations will be stressed not only by the traditional demographic pressures and habitat reduction, but also by climate change as well. We detail our principal reasons for this below:

Overly-adaptive management focused

The recovery strategy relies largely on adaptive management and focuses primarily on additional research and monitoring actions. Addressing known causes of habitat destruction and direct tortoise mortality such as continued off-road vehicle use and grazing in designated critical habitat should be higher prioritized.

We find it odd that point #1 of the recovery strategy is to ‘institute an adaptive management plan’. Moreover, point #4 (Monitor progress toward recovery) and point #6 (Develop, support, and build partnerships to facilitate recovery) are not conservation actions; they are related ways of saying the same thing that should encompass adaptive management. These could all be grouped together into one criterion.

As mentioned in pp. 14 of the document: “Many of the existing plans include language specific to protection of the species, such as limiting off-highway vehicle use and competitive/organized events, grazing, vegetation harvest, and collection of desert tortoises. However, management agencies frequently do not have sufficient funding to enforce their regulations.” Defenders of Wildlife would prefer to see available funds go towards this end, as opposed towards more research and adaptive management. This is related to our point below.

Lacking on-the-ground actions

Desert tortoise need specific on-the-ground actions for recovery. While the plan has many general prescriptions, we are concerned over the lack of specific actions called for. Point #2 of the recovery strategy is: "Protect and manage existing populations and habitat, instituting habitat restoration where necessary". How will this work be undertaken at the various administrative levels? FWS mentions it will be prioritized, but how? Page 42 mentions "Aggressive management needs to be applied within existing tortoise conservation areas or other import areas identified by Recovery Implementation Teams to ensure that populations remain distributed throughout the species' range". Defenders sees law enforcement as a key component within tortoise habitat and page 45 of your plan identifies this. But again, there is not a plan of action for prescribed increase in funding for patrols, nor discussion of how the burden of enforcement and protection is to be distributed across agencies. In cases where management burden falls outside of FWS' jurisdiction, suggestions of responsible agencies can be made. How are the regional Recovery Implementation Teams which report to the DTRO accomplishing the above?

Recovery Objective 4 (Threats) has a goal that "threats to the viability of desert tortoise populations are mitigated sufficiently to ***ensure persistence*** of the species within each recovery unit". Defenders of Wildlife would hope that all management agencies are looking towards more ambitious goals than persistence of the population. We would like to see stronger language reflected in threat goals related to improving the state of the desert tortoise's habitat, the resiliency of its population to withstand stochastic events, representation of healthy populations across unique and varied habitat types, etc. While we realize this is in part a matter of semantics, language detailing how a goal is improvement vs. just persistence is an important one because it sets a higher standard. Tortoise populations will improve with a host of measurable and quantifiable predictions for defining this state, as mentioned above and throughout FWS' own report. Moreover, FWS mentions that "a system to track the implementation of management actions" is needed but gives no guidance as to how local agencies are to do this.

The document argues that basing the criteria on *trends* has an important advantage over setting specific target numbers because it accounts for ecological differences between geographic areas that may underlie different initial population levels in those areas. But following this logic, why does the draft not set specific targets for each recovery unit? Moreover, setting the population trend as the sole criterion and failing to take into account *the degree of loss of the population* biases the trend determination by starting at an unnaturally low density. Under this criterion, areas that have the capacity to support much higher densities could be delisted because they only have to show the same marginal trend as in areas with less capacity. For example, under the situation where a population is reduced to 10 tortoises per square mile, having 11 per square mile after 25 years could be enough to trigger delisting. However, the fact that the

historic population in that area may have been much higher and thus the population would not recovered.

Many of the conservation areas and critical habitats have significant areas of private land. These private areas threaten the integrity of conservation areas, and may have associated access issues that cause habitat fragmentation and other impacts. Land acquisitions for conservation purposes within these conservation areas should be a priority. Without more habitat acquisition it will be difficult to ensure that habitat within each recovery unit is protected and managed to support long-term viability of desert tortoise populations.

The 1994 plan has specific recommendations for specific study units and lists those activities that should and should not be allowed to occur in desert tortoise habitat and in the desert tortoise conservation areas. It should be noted that specific recovery actions can always be changed later through adaptive management. ***Data inadequacies are no excuse for inaction.*** As taken from the Recovery Program on page 38, “There are few data available to evaluate the effects of these threats on tortoise demography or to even rank the relative effects or threats on the declines of tortoise populations.” Page 41 states that because very little is known of the demographic impacts on tortoise populations from the varied threats faced, meaningful and specific actions cannot be identified at this time. ***We strongly disagree with this statement.***

Dr. Kristin Berry prioritized actions back in 1997 with FWS to reduce the factors contributing to tortoise mortalities and reverse population declines. The recovery team identified the human activities considered to be incompatible with recovery of the tortoise and recommended that the following activities be prohibited: (1) all vehicle activity off of designated roads; all competitive and organized commercial and recreation events (associated with vehicles) on designated roads (2) habitat-destructive military maneuvers, clearing for agriculture, landfills, and other surface disturbances that diminish the capacity of the land to support desert tortoises, other wildlife, and native vegetation, (3) domestic livestock grazing and grazing by feral burros and horses, (4) vegetation harvest, except by permit, (5) collection of biological specimens, except by permit, (6) dumping and littering, (7) deposition of captive or displaced desert tortoises or other animals, except under authorized translocation research projects, (8) uncontrolled dogs out of vehicles; and (9) discharge of firearms, except for hunting of big game or upland game birds from September through February (Berry, 1997). No justification in the current draft plan is presented as to why these site specific recommendations have been deleted from the new draft. New or improved site-specific recommendations are not included. The 1994 Recovery Plan also lists 10 activities that are compatible with desert tortoise recovery and therefore allowable in DWMA's. Justification for eliminating these compatible activities is also not included. Instead, the proposal relies on future recommendations to be identified by the decision support system and by the Recovery Implementation Teams (RITs) (pp 42).

The criteria must be more specific in order to meet the standard of measurability. We suggest that a GIS model should also be developed to display and track threats spatially. It is difficult to envision the cumulative impacts of individual actions without a tool to look at the larger context. Page 55 mentions this in section 4.3: tracking changes in habitat quality and quantity over time. The model should not be based purely on records of desert tortoise occupancy, but incorporate relative habitat quality as there may not be a strict line between habitat and non-habitat and the designation may greatly depend on the history and land use of the land itself. Lands west of Mojave National Preserve for example are rich in tortoise habitat but lower in numbers due to a history of disease. Habitat quality analysis may also help guide in the determination of possible refugia for tortoises in the advent of climate change migrations that could occur in the near future.

Of course these actions are a challenge with BLM's multiple use mandates that allow many damaging activities within the DWMA's. But a historical look back at challenges would suggest prioritization of conservation actions along this path. Defenders of Wildlife recognizes the challenges of managing for wildlife with biological uncertainties. However, we want to underscore the fact that this should not be used as an excuse to delay management action. Moreover, uncertainties abound with regards to climate change, but we believe planning should start to direct research addressing this from a senior management level. The implementation schedule of the revised recovery plan is valuable and lists protecting tortoise habitat as 'on-going' with responsible parties listed such as BLM. However, it does not tell the reader what specific actions are on-going and which offices are responding with what actions of their own.

A matter of prioritization

Page 14 of the plan states, "The assessment of the 1994 Recovery Plan emphasized the need for a greater appreciation of the implications of multiple, simultaneous threats facing tortoise populations and a better understanding of the relative contribution of multiple threats". We recognize this challenge yet refer to the previous page of your plan which states, "The vast majority of threats to the desert tortoise or its habitat are associated with human land use. Since the 1994 Recovery Plan was published, research with regard to many of these issues has provided substantive information relative to individual threats". Defenders of Wildlife would like to see the multiplicity of interactions of threats recognized in this current revised recovery plan through collaboration in research. What we do not see is a solid strategy for addressing human caused threats and strengthening DWMA-related protections throughout the range, both inside and outside of BLM lands.

A flawed sense of 'recovery'

The Recovery Objectives do not consider the population declines that have continued over the 18 years since the desert tortoise was listed. Given the declines portrayed in the Recovery Plan Assessment, even if the population within each recovery unit grow over the next 25 years, the population would still

be significantly below the levels of 1989 when the desert tortoise was listed. How could the species possibly be considered for removal from the Endangered Species list if it has not even recovered to the population density at its initial listing?

Moreover, if the 2001-2005 line-distance-sampling data will be used as the baseline, (as was suggested at the November 6 open house) then this baseline will bias the “recovery” to artificially low levels in many areas. The Mojave population of desert tortoise had declined significantly by 2001-2005 throughout most of its range. To use these artificially low numbers will allow for recovery goals and potential delisting to be reached with the desert tortoise numbers still well below historic population numbers. Defenders of Wildlife does not see this as accurate recovery.

What is the recovery strategy in the revised plan? The Endangered Species Act requires that Recovery Plans incorporate “a description of such site-specific management actions as may be necessary to achieve the plan’s goal for the conservation and survival of the species.” The current draft uses a very general range-wide approach instead of recommending ***site-specific management actions***. While recognizing that there are distinct recovery units, the plan has been written without actual knowledge of how many recovery units there are let alone what the differences are between them. How can this situation be reconciled with the ESA requirement for a description of such site-specific management actions as may be necessary to achieve the plan’s goal for the conservation and survival of the species?

We object to the “no net loss” statement in Recovery Criterion 3a. The undefined restoration component in this plan could allow degradation of the conservation area habitat while still meeting the “no net loss” criterion. Restored areas have never been documented to support all of the ecological functions of undisturbed habitats (Longcore 1997). Restoring a disturbed area in order to develop undisturbed habitat would allow for continuing functional declines in the habitat while meeting the “not net loss” standard. Much stronger language needs to be included here limiting the amount of habitat destruction in the conservation areas. Recovery Criterion 3b needs to include a definition of “improving” and clarify a quantitative methodology for evaluating the habitat. The baseline data also needs to be identified.

DWMA’s and terminology shifts

As per pp. 19: “Among the most important recovery actions implemented pursuant to the 1994 Recovery Plan has been formalizing Desert Wildlife Management Areas (DWMAs) through Federal land use planning processes. Particularly on Bureau of Land Management lands, DWMAs are administered and designated as Areas of Critical Environmental Concern”. Yet we are unclear from reading the plan to what degree the recovery plan will rely upon DWMA’s? It was mentioned that “The Science Advisory Committee is currently reviewing the available information before final recommendations are made to revise recovery unit boundaries”. At the Vegas meeting Defenders of Wildlife attended

it was mentioned that critical habitat was the first way of discussing habitat in early desert tortoise conservation activities. Then the terminology moved on to DWMA's, and currently there was talk of something called 'core populations'. What are the differences in protection afforded? How will DWMA's and more solid enforcement within them remain a high priority?

While boundaries for DWMA's have been incorporated into many land use management plans, explicit scientifically based recommendations for management within these areas need to be included, recognizing that the DWMA's were established to recover desert tortoise and require reserve-level protection. Some actions are recommended only for specific Recovery Units and this is confusing because they are still not identified.

Climate Change

We appreciate seeing climate change mentioned in the document, but we would like to see specific planned actions, or possibilities for responding to this threat. For example, we were pleased to see the following issues identified as potential threats: increased susceptibility to predation/disease, dehydration, malnutrition, and starvation, reduced reproduction output in females, altered behavior: failure to seek shelter, and reduced movement/activity.

Are there studies planned on how changes in temperature regimes will possibly alter tortoise foraging capabilities? Will research and monitoring go to this? Will there be research looking at where habitat ranges could shift to? Most importantly, how will there be agency uptake of results which ensure that the newest research surrounding climate change and tortoise populations is incorporated?

From a larger bio-geographical and protected area planning perspective, connectivity between population centers will be more important with the advent of climate change. We don't know where species ranges may shift to so management needs to make overall genetic fitness, migration, and species permeability across the human-influenced (matrix) landscape a key focus. Habitat linkages should be secured to ensure an intact landscape configuration of habitat for the desert tortoise. A reserve network of core habitat and linkages should be identified and local jurisdiction should be required to direct development away from these areas. Metapopulation theory supports this and suggests that agencies should also look towards viable, yet unoccupied habitat to reduce potential future stresses on the population, as metapopulations require unoccupied habitat in order for long-term survival. This is because local extinction and colonization occur across the larger landscape inhabited by individuals of the metapopulation. Reserve areas should be clearly marked and delineated, fencing should be added in areas of high trespass potential, and dog leash laws should be strictly enforced.

Road mortalities

Defenders recommends that hotspots of roadkills for desert tortoise be identified, mapped out, and that the road segments be improved to include directional tortoise-proof fencing and culvert underpasses. New roads should not

be developed through critical habitat, especially considering the potential growth-inducing impacts and encouragement for illegal off-road vehicle activity.

Defenders recommends increased and effective enforcement to prevent illegal off-road activity within critical habitat. Additionally, strategic route closures and rehabilitation based on reducing overall road density within desert tortoise critical habitat must occur. Efforts to ground-truth which routes we should strategically focus in on first could be in part coordinated with the Recovery Implementation Teams. We were pleased to see Table A-3 on page 100, which details Law Enforcement resources within tortoise habitat by agency. It gives a picture of the large areas of land understaffed agencies are responsible. A good follow up exercise would be prioritizing actions with a timeline and detailing how key shortfalls will be addressed across agencies collaboratively.

It should also be noted that Defenders of Wildlife is doubly concerned about roads and trails because they facilitate the spread of invasive plants, which in turn affect tortoise forage and physiology and aid in the proliferation and damage caused by wildfire (Boarman, 2007).

Demography

Page 38 on population demography of the plan states, “Although a convention exists in general to consider 95 percent confidence intervals, natural variability in population size and measurement would make it extremely difficult to detect all but the largest population increases. Instead, we propose use of a narrower 90 percent confidence band”. Defenders of Wildlife disagrees with this rationale and feels that the highest confidence level of 95% should be maintained.

The explanation given for decreasing the confidence interval to 90% in the rationale on page 38 is inadequate. It is precisely because natural variability in population densities is high, that we use 95% confidence intervals to make sure that we draw sound conclusions from our data. Natural variability is not a reason to double our risk of reaching an incorrect conclusion.

Clarity in terminology

In addition to our asking to what degree the DWMA’s will be relied upon, there are several other ambiguous terms found within the report.

- How do we define “net loss”? By acreage? By habitat quality?
- In the demography section of the recovery objective 1, how do we define “well-represented” when it states that, “All size classes of tortoises must be well-represented”? The plan needs either hypothetical or actual demographic or size class data to establish measurable criteria.

Science versus stakeholder buy-in

Another problem in the proposal is the lack of clarity of implementation. The functioning of the RIT's is one example of this. The number of RIT's is not clarified. Because Recovery Units are based on scientific delineations of populations, there should be a RIT for every recovery unit. The Recovery Units are also not identified. RIT's are proposed to be composed of a broad base of interest groups, including managers, stakeholders, and scientists (pp.33). The agency should not give responsibility for the recovery of the desert tortoise to stakeholders; rather, recovery needs to be developed by the best available science. The best available science will not necessarily be the consensus of majority-rule stakeholder processes.

Independent Scientific Advisory Capacity

Perhaps most important is the issue of objectivity. If the Science Advisory Committee (SAC) is to advise the DTRO objectively, it should be independent of the DTRO. Why then is it to be chaired by the DTRO (page 30/31) and not independent?

In conclusion, the Endangered Species Act (ESA) imposes mandatory duties on FWS when developing recovery plans. They must include as required by the ESA:

- (i) a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species;
- (ii) objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list; and
- (iii) estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal.

In particular we have mentioned how the plan fails to incorporate points (i) and (ii). We will need to see much improvement in these areas before we could consider supporting this recovery process. Defenders appreciates this opportunity to convey our priority actions for desert tortoise recovery. We appreciate the fact that FWS has reclassified the species from recovery priority number 8c (moderate threat) to 5c (high threat). Along with this we hope to see the above recommendations with strong actions associated to help recover this imperiled population. We look forward to the incorporation of our recommendations and to further participation in the desert tortoise recovery process.

Sincerely,

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References:

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