

Testimony of
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Committee on Natural Resources
United States House of Representatives
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My qualifications

As a field biologist and conservation geneticist, I have 27 years of experience in conservation, research and management of threatened and endangered wildlife. I have worked with: peregrine falcons; California condors; goshawks; rainforest birds; desert, Sierra Nevada, and Rocky Mountain bighorn sheep, argali sheep of Asia, meadow jumping mice, and African elephants. I have studied parasites and pathogens including: Psoroptic scabies mites; respiratory bacteria, and HIV. I earned a Ph.D. from Cornell University in Ecology and Evolutionary Biology; a master's degree from Yale University in Wildlife Ecology; and a bachelor's degree in Biology and Natural History from the University of California Santa Cruz. My postdoctoral experience included research at University of Colorado, Boulder and as a visiting scientist at the Center for Reproduction of Endangered Species at the San Diego Zoo. I was Curator of Vertebrate Zoology at the Denver Museum of Nature & Science and served as a consulting Science Advisor to the Office of the Assistant Secretary of the Interior in Washington, D.C. I am member of the Caprinae Specialist Group at the International Union for the Conservation of Nature (IUCN). I presently consult on endangered species scientific issues and conduct scientific research with Wildlife Science International, Inc.

Introduction

This hearing is focused on questionable actions of the current administration relative to science. However, to avoid science falling prey to partisan politics, there is a need to focus briefly on the larger question of what distinguishes science from non-science. The fundamental distinction between science and non-science is the criterion of falsifiability. In other words, all hypotheses must be testable. When clear-cut criteria are laid out in advance of data collection and all information considered, then there is less room for bias through the selective interpretation of the information (the scientific method). For the Endangered Species Act (ESA), which relies on scientific information, that means that data must be publicly available, conclusions open to question, and all information considered - including contrary information. If ESA decisions are not made in such an open and transparent way, then the moral authority of the ESA is compromised and valuable resources are diverted away from conservation.

I write today because there does appear to be a "Crisis in Confidence" with some of the "science" used in Endangered Species Act decisions. This is an issue that crosses administrations and sides of the aisle. The examples below show that there is a "crisis" occurring, for reasons other than what you may have been led to believe. There can also be serious consequences for those who dare to ask questions about information used in some ESA decisions.

Case 1: The Preble's Mouse Jumping Mouse

In the case of the Preble's mouse (listed as an endangered subspecies), the record will ultimately show that special interest groups, individuals, and academics with vested financial interests, and some U.S. Fish and Wildlife Service (USFWS) staff, have managed to maintain an invalid subspecies as an ESA-listing by obfuscation, intimidation, and ignoring contrary evidence. I have five years of experience on this issue because I was the scientist who led the work that questioned the validity of the Preble's mouse subspecies and its presumed rarity, and concluded that it was not a valid subspecies.

Obfuscation

The USFWS erroneously reported twice in the Federal Register that the Preble's delisting petitions relied primarily on the results of our study. That is contrary to the fact that our research was only mentioned on half a page of the 106-page delisting petitions. The delisting petitions provided abundant information that these mice are more common and widespread than previously thought. Yet the USFWS has still failed to address these data over three years later.

The USFWS Denver office organized two sets of peer reviews of our research prior to publication. However, they had failed to rigorously review the weak evidence that was used previously in *support* of the listing.

After our original research refuting the validity of the Preble's mouse as a subspecies was published in 2005, the FWS at Region 6 went looking for another study that would support the listing. Shortly thereafter, a report came out by a USGS biologist that concluded that Preble's was a valid subspecies and made a wholesale portrayal of our work as inaccurate. This USGS report was leaked to the press by a pro-listing environmental group amidst much media fanfare. Most of the press did not bother to read any of the original papers, or our responses. The key difference between these studies was how the problem was approached. We set criteria in advance of data collection and measured to those thresholds, whereas the USGS study relied on post-hoc interpretations and used a level of divergence so low that almost any population could be listed as endangered under the ESA, effectively removing such decisions from the realm of science.

In March of 2006, the staff at Region 6 sought to rush through approval of a peer review panel composed largely of agency biologists and scheduled for a time when I could not attend. After their efforts failed, another peer review panel was organized. The lead author of the USGS study, as well as environmental groups, influenced the structure and composition of the panel. A double standard was applied to evaluating panelist's conflicts of interest and to evaluating the evidence itself. Instead of reviewing all of the available science, the panel arbitrarily created its own burden of proof, which it then unilaterally

applied only to our study. Rather than focus on the real issue of appropriate thresholds that can be used to define subspecies, they diverted attention by focusing criticism on results from a handful of specimens in our study. The panel failed to acknowledge that reanalysis of our data without these specimens, did not alter the overall results or conclusions of our study. Ultimately, if this panel's recommendations are followed and applied to other cases, it would mean that many inadequately defined subspecies would not be potentially falsifiable (i.e. could never be questioned). This effectively puts ESA-listed subspecies evaluations outside the realm of scientific investigation.

We respectfully disagreed with the conclusions of the USGS study and prepared a response paper. That paper was accepted for publication in February 2007, however, the lead author of the USGS study managed to delay publication of our paper for months.

Intimidation

Over the course of two years I was harassed and intimidated by USFWS Denver staff, most notably, the leader of the Preble's Recovery Team who cursed me in harassing telephone messages, wrote fallacious slander about me to my supervisors, and threatened to withhold research funding for the project. A Preble's mouse consultant, representing a coalition of environmental groups, USFWS staff, and academics, all of who have financial stake in the Preble's listing or others like it, put pressure on my employer.

Ignoring contrary evidence

Most contrary information to the Preble's listing is absent from the USFWS Preble's Meadow Jumping Mouse Home Page. The USFWS gives dismissive treatment to contrary information in Federal Register notices, or does not provide it to peer reviewers. This speaks volumes about the selective use of information by this agency. For example:

- The USFWS has not acknowledged that this supposed subspecies was originally based on measurements of only three specimens, nor have they acknowledged that the original scientist who described this subspecies in 1953 went on record in 2004 rejecting the validity of the subspecies.
- The USFWS has not acknowledged that an earlier (1997) genetics study that was used in support of the listing was never published and the data were never made publicly available, despite repeated requests. In short, that study was never subjected to a rigorous review.
- The USFWS has not acknowledged that the 1995 distribution study that was used in support of the listing was based on minimal effort and never published.
- The USFWS kept over a decade of Preble's trapping data in their files but never analyzed them. Independent analysis of those data showed that the supposedly rare Preble's mouse subspecies was far more common and widespread than previously thought.

- Contrary information missing from the USFWS website includes:

- 1) A 1981 dissertation that examined 9,000 specimens of jumping mice and concluded that there were *no subspecies* of meadow jumping mice.
- 2) A series of five papers in the journal *Animal Conservation* that followed our original study, including a 2006 response paper by my coauthors and myself. The only paper from this series that appeared on the website was the paper which supports the continued ESA listing.
- 3) A 1986 experimental study that showed that another species of rodent, the meadow vole, out-competes the meadow jumping mouse. In other words, when meadow vole numbers are high, meadow jumping mouse numbers are low and they are hard to catch.
- 4) An independent quantitative analysis of both the raw genetic data from our 2005 paper and the data from the USGS study. That quantitative analysis used thresholds from the literature and found no support for Prebles as a subspecies, let alone as an Evolutionary Significant Unit (ESU) or Distinct Vertebrate Population Segment (DPS).
- 5) Our August 2006 response to the Preble's review panel report that we provided to the USFWS.
- 6) Our response paper to the USGS study that we provided to the USFWS.
- 7) A 2003 study published in *Conservation Biology* that revealed that the Preble's subspecies ESA listing actually encouraged landowners to take steps that were counterproductive to conservation.

Case Two: The Coastal California Gnatcatcher

Two peer reviews of the coastal California gnatcatcher taxonomy were conducted by the USFWS (listed as an endangered subspecies). One internal peer review by federal agency biologists omitted substantial contrary information that was in the public record. The omitted contrary information included six technical reports reanalyzing the original data used to describe the subspecies, one peer-reviewed paper on gnatcatcher taxonomy, and a deposition by the scientist who described it as a new subspecies. In that deposition, the scientist recanted the reliability of key measurements, admitted to substituting estimates for missing data, and told of destroying original copies of his data *before* he finished his dissertation and published the results. Despite these revelations, the scientists who conducted the internal agency peer review then made a Powerpoint presentation to senior decision makers at the Department of Interior in Washington, D.C. That presentation

made no mention of the omitted contrary information and thus the subspecies listing of the coastal California gnatcatcher was maintained.

Case Three: Critical Habitat of Desert Bighorn Sheep in the Peninsular Ranges of California

The recovery plan for desert bighorn sheep in the Peninsular Ranges of southern California (listed as an endangered DPS) specifically called for a quantitative habitat analysis. Consequently, an extensive database of 21,055 bighorn sheep observations was compiled. However, Critical Habitat was subjectively defined by the USFWS and based upon the opinions of Recovery Team members rather than on a quantitative analysis of the observation data.

Several colleagues and I published a scientific paper on the determination of Critical Habitat for this population. We had to obtain the bighorn observation data under a Freedom of Information Act request because the local USFWS office would not release the data when requested. When we obtained the data, we found that it had been stripped of many attributes. When I asked for these additional data, I was told by the USFWS to go to the individual researchers. When I went to the individual researchers I was told: *"The USFWS data was deliberately provided in a format that would not facilitate a detailed analysis by those unfamiliar with the manner in which it was collected."*

In our subsequent analyses, we found that over 60 percent of designated Critical Habitat in the northern Santa Rosa Mountains had a near zero probability of bighorn sheep use. Critical Habitat for this DPS has been vacated in part and remanded for new rulemaking by the Court. In this case, both our analysis and the Court did not agree with the USFWS staff's so-called "science".

Conclusion

Congress and the Department of Interior could ask: "Why don't we ask the right questions in the first place *before* questionable subspecies and populations are added to the Endangered Species list?"

Obfuscation, intimidation, and ignoring of contrary evidence have contributed to the continued ESA-listing of the Preble's mouse subspecies. As shown with the second and third examples, the Preble's case is not an isolated incident; it is symptomatic of deeper problems within agencies charged with administration of the ESA. While there are many competent and dedicated staff within these agencies, there are neither adequate safeguards nor oversight to prevent other staff from cherry-picking, engaging in subjective interpretations, or completely ignoring contrary information altogether. There are scant few with the expertise or the time needed to detect such occurrences.

There are productive steps that could be taken to ensure that ESA decisions are based upon science rather than opinion and politics, while ensuring that priority for conservation effort goes to truly endangered species. I have suggested a number of these in previous Congressional testimony and publications.

Briefly, these include:

- 1) Take steps to ensure that all information, including contrary information, is considered in peer reviews, listing/delisting decisions and biological opinions. Consistent questions and standards in these peer reviews would serve conservation. Rather than internal agency peer reviews, require external/independent reviewers.
- 2) Require that data used in peer reviews, listing/delisting decisions, and biological opinions be publicly available.
- 3) Establish legally-definable minimum thresholds for the uniqueness of taxa that can be listed. Set the bar at a quantifiable and biologically meaningful level of distinctiveness.
- 4) Establish quantitative thresholds for "significance" used in DPS listings. This could be quantified in terms of percent range and/or census numbers.
- 5) Establish a quantitative approach for designating Critical Habitat.
- 6) Require compliance with priority rankings in order to allocate listing and recovery effort.
- 7) Take steps to eliminate financial and other conflicts of interest in Recovery Teams and peer reviews.
- 8) Evaluate hypothetical threats using a well-defined problem analysis approach.

In conclusion, I urge this Committee to pursue this reasonable and science-based path to protecting endangered species.

Thank you for the opportunity to write to you about these issues.