

Testimony to the Congressional Committee on Science, Space, and Technology – Subcommittee on
Investigations and Oversight
The Endangered Species Act: Reviewing the Nexus of Science and Policy.”

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Chairman Broun, Ranking Member Edwards, and Members of the Subcommittee, my name is Neal Wilkins. I am director of the Texas A&M Institute of Renewable Natural Resources and the Texas Water Resources Institute. I am also a Professor of Wildlife Science at Texas A&M University. Thank you for the opportunity to appear before you today to emphasize the importance of using more reliable science in the implementation of the Endangered Species Act. Before joining the faculty of Texas A&M in 1998, I spent 6 years directing the endangered species and environmental compliance programs for a large private forest landowner in the Pacific Northwest. For much of my career – and specifically in the past 2 decades – I have worked to apply science to endangered species issues.

Working through Texas AgriLife Research, our Texas A&M scientists are deeply engaged in research and monitoring of ESA-listed species and the candidates for such listing. Under contract from the US Fish & Wildlife Service, my team has performed the science assessments for rangewide status reviews for golden-cheeked warblers and black-capped vireos. Our scientists have long-term research projects on species ranging from endangered Key deer in Florida to willow-flycatchers in the desert Southwest. We lead large multi-stakeholder efforts to provide for the conservation and recovery of species that depend upon the Edwards Aquifer for their survival while simultaneously providing reliable water supplies for San Antonio, Texas. Over the past year, our science group expanded ranks to include a team of freshwater mussel specialists that is already doing groundbreaking science on several species that are proposed for listing throughout the streams and river systems of Texas. We also have a research team that leads the research and monitoring efforts for the dunes sagebrush lizard – a species whose proposed listing as endangered and its potential implications for oil and gas development, became a subject of widespread national media coverage throughout this summer. This work keeps me constantly engaged in the space between science, policy and decision-making for managing related to the ESA.

Using science to conserve species has become more difficult over the last 20 years because although science and management have improved, the Endangered Species Act has not been updated. The last major change to ESA was the addition of the experimental population designation, which allowed the specific science for a species to guide its reintroduction. Around that same time, the Service began using species-specific science to guide the process for considering adding new species to list, but this approach has never been added to the law. Therefore, the Service is still required to review every potential new listing within 12 months regardless of the specifics of what we know about the species. The result is the well-known backlog of pending decisions, litigation, and court orders.

During the last 20 years, the Service has made great strides in considering the specific science of land management by entering into Habitat Conservation Plans. But, for lack of changes to ESA, the Service has not been able to apply this same approach to evaluating the conservation efforts of states, even when those state efforts are more effective and less costly than one-size-fits-all protections under ESA.

Applying good science to endangered species issues has always been tough, but it seems to be getting tougher. The US Fish & Wildlife Service faces some steep challenges in its lead role in administering the Endangered Species Act. Lawsuits and threats of lawsuits cause agency staff to be constantly on-guard, and this affects the administration of the ESA at all levels. For managing endangered species issues, the Service is now forced to focus so much on process and procedure that the use of reliable science has suffer. In my testimony today, I want to focus briefly on three interrelated topics:

- Barriers to collecting reliable information on species status
- Inadequate scientific information used for listing decisions
- Inconsistent use of peer-reviewed science for ESA decision-making

I will conclude with some recommendations for a fresh look at some reforms that would improve the use of science in guiding ESA policy and decision-making.

Barriers to collecting reliable information on species status.

In its annual report to Congress, the Service describes the status of species listed under ESA as stable, declining, or improving. For the reports from 1988 to 2002, it did not have information to assess status for about 40% of the species listed. Much of this information could be collected, but is not, because of denied access of scientists to private lands. Many private landowners simply fear that allowing scientists to access their property for endangered species surveys could create a regulatory burden and constrain their economic land use. And they have a good point – the threat.¹

How do we get beyond this? With some of our work, we have created data confidentiality agreements so that site-specific information we collect is not made public. These data confidentiality agreements have created some disputes with individual Service biologists and groups that would like to know about site-specific endangered species information – but by protecting this information we have been able to access millions of acres of private lands for scientific information that would have otherwise not been collected. We are able to report the overall results of our work – it is only the detailed locations of site-specific information that remains confidential.

The dunes sagebrush lizard. In December, 2010 the Service issued a proposed rule to list the dunes sagebrush lizard as endangered. This lizard is a habitat specialist that lives only in sand dune outcrops dominated by shinnery oak (a low-growing species of oak). For the lizard's 4-county range in West Texas, it was known to recently occur at only 3 locations. After the proposed listing, we conducted an intensive 3-4 week systematic survey of available habitats in Texas, resulting in an additional 28 locations for the species – most of which were previously undocumented. The collection of these data required our research crew of 14 wildlife biologists to get access to numerous private ownerships. Very few of those property owners would have allowed access if, in fact, we had not been able to provide them with some confidence that we would not release site-specific information from their property to the US Fish & Wildlife Service.

¹ For a discussion, see Wilkins, N. 2011. "Improving the ESA's Performance on Private Lands" in *Rebuilding the Ark: New Perspectives on Endangered Species Act Reform*, ed. J.H. Adler. The AEI Press, Washington, D.C., 56-80.

This lizard has been considered a candidate for ESA listing since 1982. The fact that more scientific information was collected in a 3-4 week period than in the previous 39 years speaks volumes about the barriers to encourage the collection and use of good science.

The Texas surveys were actually funded by members of the Texas Oil & Gas Association once they realized that scientific information could drive the development of a Texas Conservation Plan for the species. The Texas Conservation Plan for the dunes sagebrush lizard, prepared by an *Interagency Task Force on Economic Growth and Endangered Species*, is a serious conservation effort that conserves important habitats while allowing for greater regulatory certainty for oil and gas development as well as agricultural land use. Participants in the plan hope that it will either help avoid the species' listing or support an incidental take permit if the species is eventually listed. While the dune sagebrush lizard is not yet listed, the plan nevertheless provides for contributions to species recovery throughout the species' range in Texas. This is an excellent example of a state-level action that is likely to result in a net conservation benefit to the species and provide some tangible benefits to the plan's participants should the species actually become listed.

There are two additional lessons illustrated here:

- 1) By instituting some simple reforms that allow separation of site-specific data from regulatory oversight, we could make huge long-term gains in collecting the scientific information needed to adequately assess species status.
- 2) When given the incentive, the state-based groups can work directly with affected property owners, industry, conservation groups and other public agencies to create conservation plans that get buy-in from a wide range of stakeholders.

Inadequate scientific information used for listing decisions.

A determination that a species is warranted for threatened or endangered status under ESA – a “listing” decision – is supposed to be based entirely on scientific merit. There are times when the bright line of scientific merit is not as clear as it sounds. This stems from two main reasons. First, when it comes to gaining reliable knowledge about rare species, the science does not always lead to consensus. In other words, real science and real scientists can legitimately disagree. Over time, the scientific process tends to solve these disagreements. The second reason is that decisions can be made on material that is selective or intentionally slanted to make a case for a particular decision – this can be the case when special interest groups submit information.

Treating pre-existing information as authoritative science. Once a decision for listing a species is made, there is enormous resistance to reconsidering any of the “best available science” used to make the original decision. For many species, the information presented in the original status review is more influential than information later gathered, even if the later information is of higher quality. There are several reasons for this, one being that any new scientific evidence that might challenge or question the existing status of a species may require a large bureaucratic response. Information published as part of the original listing petition tends to have a strong

incumbent advantage over any new information that might challenge the basis for a prior decision – this is not how science is supposed to work.

The golden-cheeked warbler. When it was listed as endangered in 1992, the golden-cheeked warbler was thought to have been reduced to a population size of less than 32,000 individuals. Most of the species' potential breeding habitat is on private lands across 35 counties in central Texas. Until recently, there had been no systematic surveys to determine species status across private ranchland. Beginning in 2008, researchers from Texas A&M began a systematic survey to estimate the species' population. Using confidentiality agreements with private ranchers, this research team accessed hundreds of private ranches. The surveys of suitable habitat and succeeding analyses demonstrated that there were likely more than 200,000 male golden-cheeked warblers across the species' breeding range.

This effort demonstrated the flaws in the original information used to support listing of the golden-cheeked warbler. As you might expect, the results were controversial. Even though some of the results had already been accepted for peer-review publication, the US Fish & Wildlife Service required an independent peer-review process to determine if the work could be considered “best available science.” Our researchers involved in this work are well-published and serious scientists who focus their efforts on experimental design, survey methodology, statistical analyses, and interpretation of results to gain more reliable knowledge of species status, ecology, and management implications – so they welcomed the peer review.

Even following a largely positive peer review, there continues to be some resistance by the Service to using the new information on golden-cheeked warblers. There is external pressure on the Service to discredit the new information, and it is likely that any decision to reconsider the endangered status of golden-cheeked warblers would result in a lawsuit. Status reviews, compliance, consultation and recovery programs for individual species are generally managed by a small group of staff biologists who work closely together. The threat of controversy, increased scrutiny, and lawsuits can put a chill of resistance to accepting new scientific evidence that challenges the basis for previous decisions.²

Decoupling some of the functions under ESA administration would likely result in less entrenchment and more reliable use of new science for endangered species management.

Incumbent information in an overburdened system. The listing process has recently been driven by large multi-species petitions and legal action from advocacy groups seeking multiple listings. This flood of listing petitions eliminates efforts by the Service to conduct a rational science-driven process for prioritizing listing decisions. In evaluating the scientific evidence for these listings, the Service tends to simply accept the information as presented, particularly when evaluating the petitions for little-known and cryptic species. Consider this example from a recent 90-day finding from the petition seeking a listing decision on over 400 species in the southeastern US.

² For a discussion see McCleery, R.A., R.R. Lopez, N.J. Silvy. 2007. Transferring research to endangered species management. *Journal of Wildlife Management*. 71(7):2134–2141.

“Due to the large number of species reviewed, we were only able to conduct cursory reviews of the information in our files and the literature cited in the petition. For many of the narrowly endemic species included in the 374 species, we had no additional information in our files and relied solely on the information provided in the petition and provided through NatureServe.”³

When information like this is published in a 90-day finding, it is more likely to find its way into a 12-month status review and ultimately become part of the foundation for a listing proposal. This is another case of pre-existing information gaining undeserved authority simply because it was all that could be used at the time, not because it was reliable.

Using speculation as best available science. At times, what is presented as “best available science” is not always good enough for decision-making. This is certainly the case when speculation is mistaken for good science. When listing decisions are driven by the petition process, the speculations of scientists are often used to support the petition.

The recent 12-month finding for five species of freshwater mussels that live in the rivers and streams of central Texas provides a good example of the use of speculation as best available science. The bulk of the information used to support the petition – and ultimately used to support the finding – originated from a collection of un-reviewed agency reports. While these reports did contain some valuable information, they lacked standard detail on methods for data collection and they reported mainly on opportunistic surveys at bridge sites and reservoirs. The reports made observations and offered speculation on why certain species might be absent from a site – these speculations, once cited in the petition, were then interpreted as fact in the 12-month finding. These species of freshwater mussels may have indeed suffered reductions and might actually deserve a determination of endangered – but the current record relies on speculation that may turn out to be unreliable. Scientists speculate about cause and effect all the time – this is part of the scientific process. Speculation is how hypotheses are posed; and those hypotheses are then tested by collecting data. But treating speculation as science is a mistake – and it weakens the credibility of ESA determinations.

Inconsistent use of peer-reviewed science for ESA decision-making

By subjecting their methods, results and conclusions to the scrutiny of other experts in the field, scientists maintain standards and ultimately improve the reliability of their findings. Reliable information for many species is often scarce, lacking, contradictory and/or not easily interpreted. The only remedy is subjecting status reviews to an independent, more consistent, and transparent expert peer-review. Status reviews that support listings and other ESA decisions should be developed using reliable information – some of which may be from peer-reviewed science.

Too often, the “science” included in citizen listing petitions is directly relied upon in the 90-day findings and is then codified as “fact” by the time the 12-month review is completed. The 12-month reviews are sometimes subjected to ad hoc and informal peer reviews that may amount to no more than an email distribution of the document with informal comments received. This would not pass as an independent peer-review process in any other situation.

³ Federal Register Vol. 76, No. 187:59836-59862

Conclusions

In conclusion, the effectiveness of the ESA could be improved through improving the use of science. Specific reforms that could insure better use of science include:

- Require a standardized independent peer-review of scientific information used in the listing process. The science for inclusion in the 12-month status review deserves the greatest scrutiny; and it is that information that tends to gain a special status once published in the federal register. There has been recent action by the Service to conduct peer-review. The current peer reviews are not independently administered; and they tend to ignore the biggest question of all: Is the available science substantial enough to support a decision?
- Clear the backlog of multi-species listing petitions by authorizing the ESA listing process to work according to science-based priority system instead of a 12-month deadline. The requirement to decide on each petition within 12 months often forces the Service to accept substandard scientific information or disregard species that are a higher priority. Such a deadline also forces listing decisions into the courts. A science-based priority system would return these decisions to field science and an open public process.
- Separate the listing and recovery functions of the ESA by delegating recovery planning to the states as an option. This separation would create an incentive to drive recovery programs with the most reliable science and policy innovations, supporting a more effective recovery effort. This would also remove some barriers blocking access to private lands thus increasing the amount of information available for informing recovery actions
- Incentivize species recovery by linking the delisting process to reaching recovery goals. This would accelerate the recovery process and provide additional incentives for research and monitoring efforts that could contribute to the science-base for listed species.

In the end, if the ESA is to meet its goals there will need to be reforms that result in more appropriate use of reliable science to inform policy.

Thank you for the opportunity to speak with the Committee about this important topic.