Statement of Randy T. Simmons
Professor of Political Science • Department Head
Department of Political Science
Utah State University

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on HR 2829 and HR 3705

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Mr. Chairman, thank you for the opportunity to present my views on HR 2829 and HR 3705. As a political scientist I understand full well that even talking about making the slightest changes to the Endangered Species Act is going to be seen by many as attempting to make changes to holy writ. The symbolic value of the ESA has successfully swamped practical considerations about changing the act since at least 1992. Now, however, seems a good time to consider some practical changes to the way science is used under the ESA.

Although the two bills under consideration for this hearing have somewhat different approaches to the use of science in the listing, recovery planning, and consultation processes, they attempt to establish some common principles. Those principles are peer review, the primacy of field data over computer modeling, and the establishment of a more rigorous process for listing a species. These also have implications for the use of what has become known as the precautionary principle and for questions about what is science and what is policy.

Peer Review

Peer review can be understood as a form of scientific quality control. It is commonly used in the social and natural sciences to establish and maintain professional standards. It is a check on the exuberance of researchers who might not be satisfied to let the data speak for itself. The American political system is based on the notion that politics is more likely to achieve good

results if there is a system of checks and balances. No one is willing to assume that good intentions and hard work are enough to produce good political results. There must be checks on political exuberance, on good intentions and on bad ones. The same is true in science. I believe that most researchers mean well and conduct their studies carefully. But they will be more careful and more restrained in “torturing their data” to meet their own preconceptions if they know their work will be reviewed by a set of peers. If a good system of peer review is in place, at least two things are accomplished: 1) the people doing the initial work are going to produce a better, more defensible product, 2) the public and decision-makers are going to have more confidence in the scientists’ work.

It is important to have a good peer review process in place, not just any process. The first consideration in peer review is who chooses the reviewers. The Fish and Wildlife Service and National Marine Fisheries Service established a peer review process in 1994 that appears to have had little effect. But that is the predictable result because the FWS and NMFS are selecting the peer reviewers. Under that system a rational bureaucrat will select peer reviews from a stable of weak or pet scientists who will rubberstamp his or her assessments. For peer review to be effective, the ability to select reviewers must be removed from the agencies.

Another consideration is who is going to be the reviewer. HR 3705 places such severe restrictions on who can be a reviewer that finding good reviewers may be impossible. HR 2829 provides a better process. For a workable alternative, the committee may want to look at the process the National Academy of Science used to review the Klamath Basin issue. The Administration and Congress could have the NAS establish a permanent committee to oversee ESA science and have that committee prepare periodic assessments.

One more consideration is whether peer reviews should be anonymous. I do not know of data that demonstrate that this is preferable to having reviews signed. My preference is that reviewers identify themselves so that their reputation stands behind their reviews.

Field data and computer models

Whether field data should be considered superior to computer projections is a contentious issue among endangered species analysts. The best example is the conflict over rates of species loss. Some claim human actions are causing the sixth great species extinction. Edward O. Wilson, for example (1992:280) estimates that in rain forests "the number [of species] doomed each year is 27,000. Each day it is 74, and each hour 3." Adding possible rain forest extinctions to those that may be occurring in the rest of the world leads him to think that, worldwide, more than 100 species are going extinct daily. The London Zoological Society's internet site, Web of Life (2001), claims that "an average of 137 life forms are driven into extinction each day—or 50,000 a year." If such claims are correct, then somewhere between one-quarter to one-half of all species will disappear in our lifetimes.

These claims are based on the species-area relationship, a theoretical tool for estimating species loss. It is widely accepted and used by biologists and ecologists as a theoretical tool. The problem for policy discussions is that the grand predictions of species loss are not supported by field data. That is, by counting species that are known to have gone extinct, it is not possible to justify claims that 100 species per day are disappearing. IUCN can only identify about 1000 extinctions in 400 years. In the 10,000 years before Europeans came to North America, just two North American bird species are known to have gone extinct, the flightless marine duck and a small turkey. In the last 200 years five bird species have been lost. Internationally, the documented loss of mammals and birds has increased in the last 150 years from about one species every four years to one each year (Lomborg 2001: 254). That is a disturbing number, but far less disturbing than 3 per hour.

I am not arguing that computer modeling is inconsistent with doing sound science, just that field data may not support the claims made by the modelers. Part of the scientific method is to draw conclusions about the future based on available information and theories about what the information means. As the available information improves or changes or theories are modified, the conclusions about the future can then be changed. Scientists who base predictions about future

species losses do just that—they revise their predictions as available information changes. What ought to be important for endangered species policy is that there is a process in place to make sure that as more field data becomes available, it is used to modify policy conclusions.

Improving the listing process

Among the more persistent complaints about the Endangered Species Act are claims that there is little rigor in the listing process and that landowners are often ambushed as species that occur on their property are listed without landowners having adequate opportunity to participate in the listing process. These bills address each of these issues. First, requiring peer review will make sure that those proposing a listing meet the standards of the scientific process. Second, by requiring the Secretary to consider data from landowners and other affected interests ensures that the Secretary takes more information into account.

HR 3705 takes the notice requirements one step further by requiring the Secretary to publish the petitions to list species on the Internet, publish the receipt of the petitions in a local newspaper in the affected area, and notifying the Governor of the affected state. HR 3705 also creates a review of the Secretary's finding on a petition to list or delist a species. These changes would help the affected state and landowners by providing them notice and an opportunity to present the Secretary with more information, earlier in the process. In turn, providing the Secretary with more information earlier in the process would help the Secretary to make better decisions.

One improvement in the petition process was included in Mr. Miller's HR 960 from the 106th Congress. Section 104 of that bill improved petition requirements by calling for more information in the listing petition. HR 2829 could be enhanced by including these improvements. HR 3705 increases these requirements even more than Mr. Miller's bill. While it would be valuable to increase the requirements beyond what Mr. Miller called for, the only concern I have is that the requirements in HR 3705 may be more cumbersome than is necessary.

The precautionary principle

One argument the committee may hear is that taking the time for reviewing the science behind agencies' proposed decisions might be dangerous. If we are going to err, such arguments go, we should err on the side of caution and caution demands moving ahead quickly to protect a species that may be in trouble.

But if we want to exercise caution, it would be useful to know which the cautious decision is. For example, environmental groups and some agency personnel argued that exercising caution in the Klamath Basin meant increasing stream flows down the Klamath. But increasing those flows from the reservoir meant that more warm water was added to the river, potentially raising the water temperature to higher than lethal levels. Which was the cautions thing to do, add the water or not? As the NAS has shown, there was no scientific basis for adding the water, just the strong feelings of some well-meaning agency bureaucrats.

Sound science requires just that–sound science. Sound science does not mean that we act "cautiously" when we don't know what "acting cautiously" means in a given case. As the Klamath situation shows, if we act cautiously as some argue, we actually do more harm than good. This is neither cautious nor sound.

Science and policy

Sound science is also not policy decisions cloaked as scientific decisions. One of the aims of these bills is to separate out policy and science. It is obvious that the drafters of these bills recognize there is a great deal of uncertainty in science and that is why, I believe, they want to establish clear, workable review processes—they hope the reviews will highlight where the science is relatively certain and where it is not certain. That highlighting can help separate science from policy. Where the science is relatively clear, the policy choices are often relatively clear. But when the science is not clear and a choice has to be made anyway, it is important that it is clear that a political decision, as opposed to a scientific decision, is being made. Again, the Klamath Basin is an example. When the policy was established to increase river flows and keep Upper Klamath Lake

at high levels, the FWS and NMFS claimed these were scientific decisions. The NAS disagrees and claims that the decision did not have a substantial scientific basis. Agencies must make policy choices, but they should disclose what is science and what is policy.

Conclusion

I thank the Committee for the opportunity to testify on these bills. I hope we can make some changes so the ESA will work better for species and people alike. I will be pleased to answer any questions.