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THE ENDANGERED SPECIES ACT: REVIEWING THE NEXUS OF SCIENCE AND POLICY

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Thank you, Mr. Chairman and members of this subcommittee, for the invitation to testify regarding the nexus of science and policy under the Endangered Species Act. My name is Jonathan H. Adler, and I am the Johan Verheij Professor of Law and Director of the Center for Business Law and Regulation at the Case Western Reserve University School of Law, where I teach several courses in environmental, administrative, and constitutional law.

I particularly appreciate the opportunity to testify today about the Endangered Species Act (ESA). I have researched and written on environmental law and policy for over twenty years, and have conducted a significant amount of research on the ESA and species conservation generally. My work on the ESA includes an award-winning article, *Money or Nothing: The Adverse Environmental Consequences of Uncompensated Land-Use Controls*, 49 BOSTON COLLEGE LAW REVIEW 301 (2008), and a recently published book, *Rebuilding the Ark: New Perspectives on Endangered Species Act Reform* (AEI Press, 2011). I've drawn upon this work in preparing this testimony.

The ESA is among the nation's most important and powerful environmental laws. It is also a source of great conflict and controversy. There is little question that species conservation is an important and worthwhile endeavor. Regrettably, there are many reasons to question whether the ESA effectively serves that goal. The Act has likely helped prevent some species from going extinct, but the Act endeavors to do more. There is very little evidence the Act helps species recover from the brink of extinction and increasing evidence that the ESA itself creates incentives that undermine sound environmental stewardship and politicize scientific inquiry.

The listing of individual species, the designation of critical habitat and the implementation of conservation measures often prompt fierce legal and political battles. Sound science is often a casualty in these conflicts as the combatants twist and manipulate the available scientific evidence to support predetermined policy preferences. Activists on all sides claim that "sound science" supports their respective positions, and scoff at the "junk science" relied upon by the other side. In actual fact, what often divides the respective camps is not a devotion to science, but sharply divergent policy preferences dressed up in scientific garb. The political debate over the use of science under the ESA tends to obscure the dividing line between science and policy and undermines the development of more effective and equitable conservation strategies.

Species conservation efforts are heavily dependent upon science. Biological research is necessary to inform species conservation decisions. But species conservation is not – and cannot be – a wholly scientific exercise. Whether a given species is at risk of extinction may be a scientific question, but what to do about it is not. The likelihood that habitat loss or the introduction of an invasive species will compromise a species chance of survival in the wild is a question that can be answered by science. On the other hand, what conservation measures should be adopted to address such threats, and at what cost, are policy questions. Whether reducing the chance that given species of fish will go extinct is worth limiting water

use or imposing other regulatory controls is not a question science can answer. Science can – indeed, must – inform such inquiries, but science alone does not tell us what to do. Nonetheless, debates over conservation policy are often dressed up as debates over conservation science, hampering our ability to reach policy consensus and obscuring what is really at stake.

The addition of an imperiled species to the list of endangered and threatened species should be a relatively routine matter driven by scientific considerations. Unfortunately it is not. A proposal to list a species often signals the onset of fierce political and administrative battles in which true scientific concerns are subordinated to policy objectives. One reason for this is that the scientific determination that a given species is threatened or endangered triggers non-discretionary regulatory requirements. Therefore, the surest way to control a policy outcome is to control the science. Activists on all sides recognize this fact, which is why activists spend so much time trying to influence the scientific conclusions.

It is important to ferret out instances of scientific misconduct and science politicization. Agency personnel should not be permitted to distort or misrepresent scientific findings, whatever the purpose. The ends of species conservation and environmental protection do not justify distorting scientific inquiry. Nor does a desire to alleviate the regulatory burdens faced by landowners, businesses, and workers in resource-dependent industries. When science abuse occurs, it should be exposed and corrected, and those responsible should be disciplined. But it is also important to understand how the structure of the Act contributes to the politicization and manipulation of science and creates incentives that compromise the scientific integrity of conservation decisions.

It is now widely recognized that the ESA creates perverse incentives that can discourage species conservation on private land. What is less well understood is that the same regulatory provisions of the act can discourage the discovery and collection of needed scientific information about potentially imperiled species, particularly on private land.

The reason the ESA creates perverse incentives against species conservation is that the Act effectively penalizes the owners of land upon which endangered species depend. Under Section 9 of the act, it is illegal for a private landowner to engage in activities that could "harm" an endangered species, including habitat modification, without first obtaining a federal permit. Knowing violations can lead to fines of up to $25,000 and even jail time. As a practical matter, the law requires private landowners to obtain permission from the FWS before modifying endangered species habitat on their own land.

Such regulations can reduce private land values and antagonize private landowners who might otherwise cooperate with conservation efforts. Writing in *Conservation Biology,* a group of wildlife biologists observed that "the regulatory approach to conserving endangered

species and diminishing habitats has created anti-conservation sentiment among many private landowners who view endangered species as economic liabilities." [1] They further explained:

> Landowners fear a decline in the value of their properties because the ESA restricts future land-use options where threatened or endangered species are found by makes no provisions for compensation. Consequently, endangered species are perceived by many landowners as a financial liability, resulting in anticonservation incentives because maintaining high-quality habitats that harbor or attract endangered species would represent a gamble against loss of future opportunities.[2]

As the late Sam Hamilton, former Director of the Fish & Wildlife Service, observed in 1993, when he oversaw FWS efforts in Texas: "The incentives are wrong here. If I have a rare metal on my property, its value goes up. But if a rare bird occupies the land, its value disappears."[3]

The effect of the ESA on private landowners, and the incentives it creates, are important because a majority of listed species rely upon private land for some or all of their habitat. In some cases, such regulations may even encourage landowners to destroy or degrade potential habitat on their land. It is not illegal to modify land that might become endangered species habitat some day in the future, nor are landowners required to take affirmative steps to maintain endangered species habitat.

There is increasing empirical evidence that the perverse incentives created by the ESA are undermining species conservation efforts and compromising scientific inquiry. Several recent empirical studies document how the ESA undermines effective conservation on private land. One study found that private landowners engage in preemptive habitat destruction when the presence of endangered red-cockaded woodpeckers places landowners at risk of federal regulation and a loss of their timber investment.[4] Providing habitat for a single woodpecker colony could cost up to $200,000 in foregone timber harvests. To avoid the loss, those landowners at greatest risk of restrictions were most likely to harvest their forestlands prematurely and reduce the length of their timber harvesting rotations. The ultimate consequences of this behavior were potentially significant in that it resulted in a loss of several thousand acres of woodpecker habitat, a major habitat loss for a species dependent upon private land for its survival.

A second study involving the red-cockaded woodpecker similarly found that "regulatory uncertainty and lack of positive economic incentives alter landowner timber harvesting behavior and hinder endangered species conservation on private lands."[5] This study further

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[1] Martin B. Main, Fritz M. Roka, and Reed F. Noss, *Evaluating Costs of Conservation*, 13 CONSERVATION BIOLOGY 1263 (1999).
[2] *Id.* at 1265.
[3] Betsy Carpenter, "The Best-Laid Plans," *U.S. News & World Report* (Oct. 4, 1993), at 89.
[4] *See* Dean Lueck and Jeffrey Michael, *Preemptive Habitat Destruction under the Endangered Species Act*, 46 JOURNAL OF LAW AND ECONOMICS 27 (2003).
[5] *See* Daowei Zhang, *Endangered Species and Timber Harvesting: The Case of Red-Cockaded Woodpeckers*, 32 ECONOMIC INQUIRY 150 (2004).

found that "a landowner is 25% more likely to cut forests when he or she knows or perceives that a red-cockaded woodpecker cluster is within a mile of the land than otherwise." This study concluded that "the ESA has a strong negative effect on the habitat" of the red-cockaded woodpecker and the effect appears to be substantial.

The perverse incentives of the ESA unfortunately do not only affect the woodpeckers and other species dependent upon private timberland. A third study published in *Conservation Biology* found that listing a species could discourage landowners from participating in conservation efforts.[6] Based on surveys of private owners of habitat for the Preble's Meadow jumping mouse, this study found that a substantial percentage of landowners would respond to a species listing by making their land less hospitable for it, and that "the efforts of landowners who acted to help the Preble's were cancelled by those who sought to harm it." This led the study's authors to conclude that "as more landowners become aware that their land contains Preble's habitat, it is likely that the impact on the species may be negative."

These studies, combined with numerous anecdotal accounts, taken together, provide powerful evidence that the ESA has the potential to discouraging species conservation on private land. Worse, they suggest that the net effect of the ESA on private land could be negative. Recent administrations have sought to offset these effects through various cooperative conservation programs designed to encourage voluntary conservation efforts and provide landowners with greater regulatory certainty. Insofar as these initiatives have been effective, however, they have effectively deactivated the ESA' regulatory provisions.

The punitive nature of the ESA's restrictions on private land not only undermine conservation, they also appear to be undermining the science upon which successful species conservation efforts depend. This occurs in two ways. First, landowners are increasingly resistant to allowing biologists and others onto their land to conduct research, survey species populations and the like out of fear that regulatory constraints could follow the discovery of a rare animal or plant. Second, because the listing of a species as endangered automatically triggers regulatory consequences, there are substantial stakes up for grabs when a listing decision is made, leading to efforts to control the outcome, without regard for the science.

Just as the threat of land-use regulation discourages the creation or maintenance of species habitat, the threat of regulation discourages private landowners from disclosing information and cooperating with scientific research on their land.[7] The aforementioned *Conservation Biology* study of the effect of listing the Preble's Meadow jumping mouse on landowner behavior found that more landowners would refuse to give biologists permission to conduct research on their land to assess mouse populations, out of fear that land-use restrictions would follow the discovery of a mouse on their land, than would allow such research.[8] Yet information about the location and status of species populations is essential to the

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[6] *See* Amara Brook et al., *Landowners' Responses to an Endangered Species Act Listing and Implications for Encouraging Conservation*, 17 CONSERVATION BIOLOGY 1638 (2003).
[7] Stephen Polasky & Holly Doremus, *When the Truth Hurts: Endangered Species Policy on Private Land with Imperfect Information*, 35 JOURNAL OF ENVIRONMENTAL ECONOMICS AND MANAGEMENT 41 (1998).
[8] Brook, et al.

development of effective species recovery plans. The lack of more complete data on endangered species and their habitat greatly complicates species conservation efforts.[9] This, again, is a particularly severe problem because so many endangered and threatened species rely upon private land. Due to information asymmetries, if private landowners do not allow researchers on their land, important scientific information about potentially imperiled species may never be discovered.

The structure of the ESA also creates tremendous pressure to twist or distort scientific research. The decision to list a species can have substantial regulatory consequences. The ESA may require that decisions to list endangered and threatened species are determined by the "best available" scientific evidence. Yet there is ample empirical evidence that political and other non-scientific factors influence listing decisions. Species that were more "charismatic" – that is that are more "warm and fuzzy" and those more politically popular – were more likely to be listed and to receive funding.[10] Other recent studies have found that the political and environmental attitudes of legislators on relevant congressional committees appear to influence listing decisions as well.[11] These findings should not surprise. Listing decisions can force the federal government to adopt various regulatory measures with significant economic consequences. With so much at stake, it would be surprising if political and other factors did not influence listing decisions.

Given the structure of the ESA, various interest groups seek to manipulate the listing process so as to trigger or preempt the imposition of land-use restrictions. Property owners who own potential habitat for a given species are likely to oppose listing of the species so as to prevent regulation of their land.[12] Opponents of development are likely to take the opposite view. Interest group activity also appears to influence how quickly species move through the ESA listing process.[13] Interest group opposition to species listing proposals increases as listings threaten development.[14] At the extreme, this has produced incentives to manipulate the scientific evidence supporting species listing.

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[9] *See* Jason F. Shogren, Rodney B. W. Smith, & John Tschirhart, "The Role of Private Information in Designing Conservation Incentives for Property Owners," in *Species at Risk: Using Economic Incentives to Shelter Endangered Species on Private Lands* 217 (Jason F. Shogren ed., 2005) (noting that "imperfect information" complicates conservation efforts).

[10] *See, e.g.*, Deborah Dawson & Jason Shogren, *An Update on Priorities and Expenditures under the Endangered Species Act*, 77 LAND ECONOMICS 527 (2001); Andrew Metrick & Martin L. Weitzman, *Conflicts and Choices in Biodiversity Preservation*, 12 JOURNAL OF ECONOMIC PERSPECTIVES 21 (1998).

[11] *See*, Bonnie Harllee, Myungsup Kim, and Michael Nieswiadomy, *Political Influence on Historical ESA Listings by State: A Count Data Analysis,*140 Public Choice 21 (2009).

[12] *See* Barton H. Thompson, Jr., *The Endangered Species Act: A Case Study in Takings and Incentives*, 49 STANFORD LAW REVIEW 315, 350 (1997).

[13] *See* Amy Whritenour Ando, *Waiting to Be Protected under the Endangered Species Act: The Political Economy of Regulatory Delay*, 42 JOURNAL OF LAW AND ECONOMICS 52 (1999).

[14] *See* Amy Whritenour Ando, *Economies of Scope in Endangered-Species Protection: Evidence from Interest Group Behavior*, 41 Journal of Environmental Economics and Management 312 (2001); *see also* Amy Whritenour Ando, *Do Interest Groups Compete? An Application to Endangered Species*, 114 PUBLIC CHOICE 137 (2003) (finding interest group involvement in species listings increases with the expected costs and benefits of such listings).

Delay in the listing of a species can benefit those landowners and economic interests would have borne the costs of the ESA's regulatory limitations. At the same time, it can be harmful to conservation.[15] Delay in listing a species increases the opportunity for landowners to respond to the perverse incentives created by the Act. It also deprives biologists, environmental groups, conservation-minded landowners, and others of the information that a given species is in need of assistance if it is to survive.

Groups opposing development or resource extractive industries also have an incentive to manipulate the listing process and identify potentially endangered species that can serve as a proxy for their other goals. Environmentalist groups have acknowledged that some species listings are sought out of a desire to control land use. For example, Andy Stahl of the Sierra Club Legal Defense Fund acknowledged that "the ultimate goal" of litigation to list the northern spotted owl was "to delay the harvest of old growth forests so as to give Congress a chance to provide specific statutory protection for those forests." According to Stahl, the owl was a "surrogate" that could ensure "protection for the forests" under the ESA.[16] The spotted owl litigation was not without its environmental costs, however. In order to respond to environmentalist lawsuits, the FWS was forced to divert resources from more pressing needs, compromising overall recovery efforts.[17] This does not appear to be an isolated instance, as the pattern of environmentalist litigation challenging FWS listing decisions does not appear to align with species conservation priorities.

Insofar as such litigation sets listing priorities, it threatens to divert resources away from those species most in need. According to the FWS, it has spent "essentially all" of its listing appropriations on litigation-related and administrative costs.[18] As Professor Katrina Wyman of NYU has explained, "the FWS has lost control over the listing process as decisions about whether to list species are largely made in response to citizen petitions for listing and litigation."[19] Both environmentalist groups and development interests wage legal wars over the listing and delisting of individual species as a proxy for fights over policy and regulatory priorities.

The ESA's current regulatory structure both discourages conservation and compromises conservation science. One possible remedy for this problem, suggested by Professor Wyman is "decoupling" the listing decision from mandatory conservation measures.[20] This would release the pressure to manipulate listing decisions and enable federal agencies "to develop

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[15] *See* Ando, *Waiting*, at 34 ("Long delay in the addition of a species to the endangered species list can reduce the likelihood that the species will escape extinction; species have even been thought to have become extinct while waiting for final action from the agency. Thus, delay diminishes the benefits of a listing. It also reduces the costs.").
[16] *Quoted in* Ike C. Sugg, *Caught in the Act: Evaluating the Endangered Species Act, Its Effects on Man and Prospects for Reform*, 24 CUMBERLAND LAW REVIEW 1, 53, n335 (1993).
[17] *See* Marco Restain and John M. Marzluff, *Funding Extinction? Biological Needs and Political Realities in the Allocation of Resources to Endangered Species Recovery*, BIOSCIENCE (Feb. 2002), at 175.
[18] Katrina Miriam Wyman, *Rethinking the ESA to Reflect Human Dominion Over Nature*, 17 NYU ENVIRONMENTAL LAW JOURNAL 490, 497 (2008).
[19] *Id.* at 496.
[20] *Id.* at 516.

protections tailored to the needs of each species and its circumstances." At present, however, the ESA's "protections" are triggered once a species is listed, irrespective of their value for that particular species. Decoupling would also make species listing decisions less contentious and monumental, and reduce the time and expense it takes for such decisions to be made. FWS biologists would be able to focus on getting the science right, and devote less time responding to litigation. While it would still make sense for listing to trigger a legal obligation for the FWS to develop a conservation strategy and recovery plan, it would not force the imposition of specific regulatory controls. This would mean that outside organizations would no longer be able to use endangered species as a proxy for other battles. As Professor Wyman explains, "One of the advantages of decoupling the listing of a species from decisions about how it should be protected is that there should be greater room for developing creative measures tailored to species' needs and circumstances."[21]

Finally, I think it is worth stepping back and looking at the overall record of the ESA. Congress enacted the ESA in 1973. Since that time, approximately 2,000 species of plants and animals, foreign and domestic, have been listed as "endangered" or "threatened."[22] The express goal of the ESA is to recover listed species so that they no longer need the Act's extraordinary protections. Yet in nearly forty years, this goal has been reached with scarcely over one percent of listed species. As of this month, the U.S. Fish & Wildlife Service reports that only 48 species have been removed from the list of endangered and threatened species.[23] Of these, only 22 are deemed to have recovered. Of the remaining 26 species, 17 were delisted due to data errors of one sort another, such as a mistaken taxonomic classification or undercounting of a species' population, and nine were delisted because they are believed to have gone extinct. In other words, fewer listed species have been recovered than have been delisted because they went extinct or never should have been listed in the first place.

The above statistics may actually *overstate* the Act's relative effectiveness at recovering species. In addition to the nine species that were delisted because the FWS believes they went extinct, there are another 28 listed species believed to have gone extinct that have yet to be delisted.[24] In addition, at least 42 additional species have gone extinct awaiting listing under the Act.[25] Looking at FWS recoveries, some recovered species saw their status improve for reasons wholly unrelated to the ESA. In other cases, as the GAO has reported, species have been delisted before their respective recovery criteria have been met.[26]

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[21] *Id.* at 519.
[22] *See* U.S. Fish & Wildlife Service, Threatened/Endangered Species 'Box Score,' *available at* http://ecos.fws.gov/tess_public/pub/Boxscore.do (accessed Oct. 11, 2011).
[23] *See* U.S. Fish & Wildlife Service, Delisting Report, *available at* http://ecos.fws.gov/tess_public/pub/delistingReport.jsp (accessed Oct. 11, 2011).
[24] Martin Miller, "Three Decades of Recovery," *Endangered Species Bulletin*, vol. 28, no. 4 (July/Dec. 2003), 4.
[25] D. Noah Greenwald, Kieran F. Suckling, and Martin Taylor, "The Listing Record," in *The Endangered Species Act at Thirty, Volume 1: Renewing the Conservation Promise*, Dale D. Goble, J. Michael Scott, & Frank W. Davis eds. (Washington, D.C.: Island Press, 2006), 51.
[26] *See* U.S. Government Accountability Office, *Endangered Species Act Decision Making*, GAO-08-688T (May 21, 2008), at 20-22.

As I stated at the outset of my testimony, species conservation is an important goal. Serious efforts are necessary to stem the loss of biological diversity and to reconcile our nation's environmental aspirations with other social goals. Whether or not this committee accepts my policy recommendations, I hope all members recognize that substantial reform is necessary, both to insulate scientific research from political pressures, as well as to advance the cause of species conservation more generally. Saving endangered species should be more important than saving the Endangered Species Act.

Thank you again for the opportunity to present my views on this important subject, Mr. Chairman. I hope that my perspective has been helpful to you, and will seek to answer any additional you might have.