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**“The Leaky Ark: The Failure of Endangered Species Regulation  
on Private Land”**

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THE LEAKY ARK:  
THE FAILURE OF ENDANGERED SPECIES REGULATION ON PRIVATE LAND

Jonathan H. Adler\*

The Endangered Species Act was enacted with much fanfare and little controversy. In 1973, few anticipated that how broadly the law would affect both governmental and private activities.<sup>1</sup> Yet ever since its celebrated enactment, the nation's premier wildlife conservation law has been a source conflict and controversy. Arguably the most powerful environmental law in the nation, if not the world, the ESA is simultaneously loved and feared.<sup>2</sup> The World Wildlife Fund's Donald Barry famously called it the "pit bull" of environmental laws because "it's short, compact, and has a hell of a set of teeth."<sup>3</sup> For this reason the law is both revered and reviled.<sup>4</sup>

For all the Act's strength, it has not been a particularly effective at conserving species. The ESA may be the "most comprehensive of all our environmental laws."<sup>5</sup> It is not the most successful. Even strong advocates of regulatory measures to protect endangered species habitat acknowledge that "[n]o one . . . suggests that the federal ESA is realizing Congressional intent or that it has been implemented rationally or responsibly."<sup>6</sup> Concluded another, "the scientific question of whether the ESA works effectively to protect species remains open."<sup>7</sup>

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<sup>1</sup> Michael J. Bean, "The Endangered Species Act: Science, Policy, and Politics," *The Year in Ecology and Conservation Biology, 2009: Annals of the New York Academy of Sciences*, 1162 (2009):369.

<sup>2</sup> Donald C. Baur and William Robert Irvin, "Introduction," in *Endangered Species Act: Law, Policy, and Perspectives*, Donald C. Baur and William Robert Irvin eds. (Chicago: American Bar Association, 2002), xi ("the ESA stands out as perhaps the most stringent, most comprehensive, and most controversial" of the "landmark environmental laws" enacted in the 1970s); Mark W. Schwartz, "The Performance of the Endangered Species Act," *Annual Review of Ecology, Evolution, and Systematics*, 39 (2008): 280 ("the ESA has been labeled the world's most powerful legislation"); Erik Stokstad, "What's Wrong with the Endangered Species Act?" *Science* 309 (Sept. 30, 2005): 2150 (same); Virginia S. Albrecht and Thomas C. Jackson, "Battle Heats Up as Congress Begins Review of Endangered Species Act," *National Law Journal*, 14 (May 18, 1992), at S1 (ESA is "the most stringent environmental statute in the world.").

<sup>3</sup> Timothy Egan, "Strongest U.S. Environment Law may Become Endangered Species," *New York Times*, May 26, 1992, at A1.

<sup>4</sup> Michael J. Bean, "The Endangered Species Act: Science, Policy, and Politics," *The Year in Ecology and Conservation Biology, 2009: Annals of the New York Academy of Sciences*, 1162 (2009):369 (The ESA "is one of the most contentious of our federal environmental laws.").

<sup>5</sup> Gardner M. Brown Jr. and Jason F. Shogren, "Economics of the Endangered Species Act," *Journal of Economic Perspectives* 12, no. 3 (1998): 3.

<sup>6</sup> Lynn E. Dwyer, Dennis D. Murphy, & Paul R. Ehrlich, "Property Rights Case Law and the Challenges to the Endangered Species Act," *Conservation Biology* 9 (1995): 736.

<sup>7</sup> Mark W. Schwartz, "The Performance of the Endangered Species Act," *Annual Review of Ecology, Evolution, and Systematics*, 39 (2008), 280. This is not a new sentiment. As environmental law professor Daniel Rohlf observed in 1991, "the Act has had very limited success in achieving its stated goal of halting and reversing the trend toward species extinction." Daniel J. Rohlf, "Six Biological Reasons Why the Endangered Species Act Doesn't Work – And What to Do About It," *Conservation Biology* 5, no. 3 (1991): 274.

Perhaps the ESA's greatest failing has been species conservation on private land.<sup>8</sup> Habitat loss is the primary threat to endangered species in the United States.<sup>9</sup> At present, most endangered and threatened species habitat is privately owned. Over three-quarters of threatened and endangered species rely upon private land for some or all of their habitat.<sup>10</sup> Even if all federal lands were managed exclusively for species conservation, it would not be sufficient to save many imperiled species, as a significant percentage are not even found on federal lands.<sup>11</sup> Private land is also often (though not always) ecologically superior to equivalent government lands.<sup>12</sup>

As originally written and implemented, the ESA sought to conserve endangered species on private land by regulating land use so as to prevent the adverse modification or destruction of species habitat. Landowners were limited in their ability to make potentially harmful land use changes and threatened with civil or criminal prosecution for violating the Act's strictures. Only by regulating land-use in this fashion, many believed, could endangered species be saved. Yet this approach has proven largely ineffective. Whatever successes the ESA has had in other contexts, such as by forcing greater consideration of species impacts by federal agencies and encouraging more species-friendly land management, the regulatory model has failed. As *Science* reported in 2005, "it's become clear over three decades that its regulatory hammer isn't enough."<sup>13</sup> There is little question that "a purely regulatory approach will never be able to maximize the value of the working landscape for biodiversity."<sup>14</sup> The question today is what, if any, role regulation can play in encouraging conservation on private land.

### The Endangered Species Act

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<sup>8</sup> Martin B. Main, Fritz M. Roka, and Reed F. Noss, "Evaluating Costs of Conservation," *Conservation Biology* 13 (1999): 1263. ("Regulatory mechanisms such as the U.S. Endangered Species Act of 1973 (ESA) are controversial and have not been particularly effective at preventing the loss of wildlife habitat, especially on private lands.").

<sup>9</sup> David S. Wilcove, et al., *Quantifying Threats to Imperiled Species in the United States*, *BioScience* 48 (1998): 607 ("scientists agree that habitat destruction is the primary lethal agent"); *id.* at 609 (finding that habitat destruction and degradation contributed to the endangerment of 85 percent of species analyzed).

<sup>10</sup> U.S. General Accounting Office, *Endangered Species Act: Information on Species Protection on Nonfederal Lands* (1994). See also David S. Wilcove & Joon Lee, "Using Economic and Regulatory Incentives to Restore Endangered Species: Lessons Learned from Three Programs," 18 *Conservation Biology* 18 (2004): 640 (Wilcove and Lee estimate that "private lands harbor at least one population of two-thirds of all federally listed species . . . is almost certainly an underestimate"); Jodi Hilty & Adina Merenlender, "Studying Biodiversity on Private Lands," *Conservation Biology* 17 (2003): 133 (noting 95 percent of endangered plant and animal species have some habitat on private land); Barton H. Thompson, Jr., "Conservation Options: Toward a Greater Private Role," *Virginia Environmental Law Journal* 21 (2002): 249 (noting "much of the key riparian land in the West is in private hands" and that "some valuable ecosystems are found only on private lands").

<sup>11</sup> David S. Wilcove, "The Private Side of Conservation," *Frontiers in Ecology and the Environment*, vol. 2, no. 6 (2004): 326 ("between one-third and one-half of all species protected under the US Endangered Species Act (ESA) do not occur on federal lands; many of these species presumably reside on private lands.").

<sup>12</sup> See Hilty & Merenlender, "Studying Biodiversity," 133 ("Although there are exceptions, private lands tend to be more productive, better watered, and higher in soil quality than public land."); Victoria L. Dreitz and Fritz L. Knopf, "Mountain Plovers and the Politics of Research on Private Lands," *Bioscience*, vol. 57 (2007), 681 ("In general, private lands are more productive, better watered, and higher in soil quality than public lands."). Both papers cite J.M. Scott, et al., "Nature Reserves: Do they Capture the Full Range of America's Biological Diversity?" *Ecological Applications*, vol. 11 (2001): 999-1007.

<sup>13</sup> Stokstad, 2152.

<sup>14</sup> Barton H. Thompson, Jr., "Managing the Working Landscape," 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), 125.

The groundwork for the Endangered Species Act was laid in the 1960s, as the modern environmental movement came of age and the federal government began to flex its regulatory muscles in environmental policy.<sup>15</sup> In 1966, Congress passed the Endangered Species Preservation Act, authorizing the Secretary of the Interior to establish a list of endangered and threatened species and purchase land deemed important for conservation purposes. A prohibition on the import of endangered species for most purposes followed shortly thereafter in 1969, as did the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international agreement to restrict trade in imperiled species and products derived therefrom.

Congress enacted the Endangered Species Act in 1973 by a wide margin. “Nothing is more priceless and more worthy of preservation than the rich array of animal life with which our country has been blessed,” declared President Nixon when he signed the bill into law.<sup>16</sup> He proclaimed that “countless future generations” would have their lives enriched, and the nation would be “more beautiful in the years ahead,” due to the Act.<sup>17</sup>

The 1973 Act built upon Congress’ prior enactments, incorporating the endangered and threatened species lists already established, while setting out new procedures for listing species, designating critical habitat, and developing species recovery plans. Most significantly, the new law included powerful provisions designed to limit government and private action that could imperil listed species. Under Section 7, federal agencies are required to consult with the Fish and Wildlife Service or National Marine Fisheries Service to ensure that no action “authorized, funded, or carried out” by that agency will “jeopardize the continued existence of any endangered species or threatened species” or destroy critical habitat for such species.<sup>18</sup> Section 9 prohibits the unpermitted “taking” of any endangered species, by anyone.<sup>19</sup> Violators are subject to civil and criminal penalties. As defined in the Act, “taking” an endangered species not only includes killing, wounding, or capturing an endangered species, but also otherwise harming the species, including by destroying or adversely modifying its habitat.<sup>20</sup> Section 10 provides for the granting of “incidental take permits” to authorize activities that would be otherwise prohibited under Section 9.

In 1978, in *Tennessee Valley Authority v. Hill*, the Supreme Court held that the ESA explicitly placed endangered species conservation above other social goals when in conflict.<sup>21</sup> Specifically, the Court held that the consultation requirement of Section 7 “admits of no exceptions,” and prohibited completion of the Tellico Dam in Tennessee lest the dam’s construction and operation push a small endangered fish, the Tennessee snail darter, over the

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<sup>15</sup> The modern environmental movement should be distinguished from the prior conservation movement, which began decades earlier. See Jonathan H. Adler, *Environmentalism at the Crossroads: Green Activism in America* (Washington, D.C.: Capital Research Center, 1995), 1-5. For a brief history of the rise of federal environmental regulation, see Jonathan H. Adler, “The Fable of Federal Environmental Regulation,” *Case Western Reserve Law Review* 55, no. 1 (2004): 93-113.

<sup>16</sup> Quoted in Michael J. Bean, “Historical Background to the Endangered Species Act,” in *Endangered Species Act: Law, Policy, and Perspectives*, Donald C. Baur and William Robert Irvin eds. (Chicago: American Bar Association, 2002), 16-17.

<sup>17</sup> *Id.*

<sup>18</sup> 16 U.S.C. §1536.

<sup>19</sup> 16 U.S.C. §1538.

<sup>20</sup> See *Babbitt v. Sweet Home Chapter of Communities. for a Great Oregon*, 515 U.S. 687 (1995).

<sup>21</sup> 437 U.S. 153 (1978).

brink of extinction. Explained the Court, “The plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost.”<sup>22</sup>

Congress responded with a set of amendments to impose greater procedures on the listing of new species, require consideration of economic effects during the designation of critical habitat, as well as to authorize a special cabinet-level committee, subsequently known as the “God Squad,” to exempt important projects from the ESA’s prohibitions. This latter provision was intended to permit completion of the Tellico Dam, although it did not work out that way, forcing Congress to come back again and explicitly approve the Dam’s construction. Congress amended the law again in 1982, further revising the procedures for listing species and expanding the power of the FWS and NMFS to authorize incidental “takes” of endangered species that would be otherwise prohibited under Section 7 or Section 9 pursuant to habitat conservation plans (HCPs). The Act was last reauthorized in 1988, an authorization that expired in 1992. Though numerous reform proposals have been introduced and debated since, the law has yet to be reauthorized.

### Assessing the Act’s Performance

Nearly four decades after the ESA’s adoption, there is ample reason to doubt whether the law has fulfilled Nixon’s promise. “Since the inception of the Endangered Species Act in 1973, the number of endangered and threatened species listed has risen steadily.”<sup>23</sup> In 1973 there were only 78 species on the endangered and threatened lists; by 1994 there were over 1,000. In two decades the list had increased more than twelve-fold.

As of August 23, 2009, there were 1320 species listed as threatened or endangered within the United States (1011 and 309, respectively).<sup>24</sup> Of these, 573 are animals, and 747 are plants. An additional 573 foreign species are listed, bringing the grand total of listed species up to 1893.<sup>25</sup> Of the 1320 species listed within the United States, the FWS reports that 1134 are covered by active recovery plans.<sup>26</sup>

The ESA’s stated purpose is to “conserve” threatened and endangered species.<sup>27</sup> As defined by the law, to “conserve” means “to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.” In other words, the express aim of the Act is to recover all imperiled species to the point at which the Act’s protection is no longer necessary.<sup>28</sup> As succinctly stated by wildlife law expert Michael Bean, “In a word, the Act’s goal is recovery.”<sup>29</sup> This goal may not be realistic with regard to all listed species. Some species are “conservation-reliant” and will require some degree of active support, such as

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<sup>22</sup> *Id.* at 184.

<sup>23</sup> J. Michael Scott, et al., “Recovery of Imperiled Species under the Endangered Species Act: The Need for a New Approach,” *Frontiers in Ecology and the Environment* 3 no. 7 (2005): 384.

<sup>24</sup> U.S. Fish & Wildlife Service, “Summary of Listed Species Listed Populations and Recovery Plans,” [http://ecos.fws.gov/tess\\_public/TESSBoxscore](http://ecos.fws.gov/tess_public/TESSBoxscore) (Last visited Aug 23, 2009).

<sup>25</sup> According to the FWS, 11 domestic and five foreign species are counted more than once because distinct populations are listed separately.

<sup>26</sup> According to the FWS, there are 591 draft and final recovery plans, some of which cover more than one species.

<sup>27</sup> 16 U.S.C. § 1531.

<sup>28</sup> J. Michael Scott, et al., “Recovery of Imperiled Species under the Endangered Species Act: The Need for a New Approach,” *Frontiers in Ecology and the Environment* 3 no. 7 (2005): 383.

<sup>29</sup> Bean, *ESA: Science, Policy & Politics*, 387.

predator control or regular habitat maintenance or modification.<sup>30</sup> Nonetheless, conservation-as-recovery is what Congress enacted into law.

Are species recovering? As of August 23, 2009, 47 species had been removed from the endangered and threatened species lists.<sup>31</sup> Of these, the FWS identified 21 as “recovered.” 17 were delisted due to data errors of one sort or another, and 9 were delisted because they went extinct. An additional 25 species have been reclassified as threatened from endangered, reflecting a significant improvement in their status, while another 9 had been reclassified to endangered from threatened.<sup>32</sup> The FWS believes another 28 listed species may have actually gone extinct but have yet to be delisted,<sup>33</sup> and at least 42 additional species have gone extinct awaiting listing under the Act.<sup>34</sup>

Of the recoveries, several are foreign species, including three species of kangaroo, and thus not subject to the ESA’s primary regulatory measures. Several others benefited from measures wholly independent of the ESA, such as the Environmental Protection Agency’s decision to ban domestic use of DDT in 1972 or hunting limits. There is little doubt the DDT ban was essential to the recoveries of the bald eagle, Arctic peregrine falcon, American peregrine falcon, and brown pelican. The ESA’s role is less clear. Several other species recovered on the island of Palau, including the Palau owl, Palau ground dove, and Palau fantail flycatcher, but this too was largely independent of the ESA.

Where the ESA has led to the recovery of endangered species, it has typically been because there was a specific identified threat that could be readily addressed through direct management measures. Recovery of the Aleutian Canada Goose, for instance, was facilitated by the removal of predators from nesting grounds, largely on federal lands, and hunting limitations.<sup>35</sup> The Robbins’ cinquefoil, an endangered plant, recovered due to changes in land management by the U.S. Forest Service and agreements with a local conservation organization to protect intact populations.<sup>36</sup>

The aim of species recovery “has been reached in distressingly few cases.”<sup>37</sup> Those species that have improved do not appear to have benefited much from the ESA’s primary regulatory provisions. It appears the ESA is more effective at addressing some threats to species populations, such as extractive resource use (which primarily occurs on federal land), hunting, and natural threats (e.g. predators), than others.<sup>38</sup> As noted above, the law has successfully

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<sup>30</sup> J. Michael Scott, et al., “Recovery of Imperiled Species under the Endangered Species Act: The Need for a New Approach,” *Frontiers in Ecology and the Environment* 3 no. 7 (2005): 387.

<sup>31</sup> U.S. Fish & Wildlife Service, “Delisting Report,” [http://ecos.fws.gov/tess\\_public/DelistingReport.do](http://ecos.fws.gov/tess_public/DelistingReport.do) (Last visited Aug 23, 2009).

<sup>32</sup> U.S. Fish & Wildlife Service, “Reclassified Species,” [http://ecos.fws.gov/tess\\_public/ReclassifiedSpecies.do](http://ecos.fws.gov/tess_public/ReclassifiedSpecies.do) (Last visited Aug 23, 2009).

<sup>33</sup> Martin Miller, “Three Decades of Recovery,” *Endangered Species Bulletin*, vol. 28, no. 4 (July/Dec. 2003), 4.

<sup>34</sup> 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.

<sup>35</sup> Dale D. Goble, “Recovery in a Cynical Time—With Apologies to Eric Arthur Blair,” *Washington Law Review*, vol. 82 (2007), 586-88.

<sup>36</sup> *Id.* at 589-90.

<sup>37</sup> Joe Kerkvliet & Christian Langpap, “Learning from Endangered and Threatened Species Recovery Programs: A Case Study Using U.S. Endangered Species Act Recovery Scores,” *Ecological Economics* 63 (2007): 500.

<sup>38</sup> Julie K. Miller, J. Michael Scott, Craig R. Miller, and Lisette P. Waits, “The Endangered Species Act: Dollars and Sense?” *Bioscience*, vol. 52, No. 2 (Feb. 2002), 164-66.

altered federal land management practices and raised the salience of species conservation in many federal agencies, but it does not appear to have done much to help species on private land.

Defenders of the Act argue that a better measure of its effectiveness is the extent to which it prevents extinctions. According to FWS biologist Krishna Gifford “counting only the number of recovery related delistings does not give a true measure of the Act’s success.”<sup>39</sup> One may gain an even more complete picture of the Act’s performance by considering whether it has slowed some species’ slide into extinction, stabilized threatened populations, or otherwise increased some species’ changes of survival.

A 1999 study estimated that the ESA prevented 192 domestic species extinctions during its first 26 years. Using this methodology, the Act is estimated to have saved 227 species from going extinct in its first thirty years.<sup>40</sup> If this estimate is accurate, it is greater than the 37 species believed to have gone extinct while under the Act’s protection.

Species recovery is not necessarily a quick process. Most listed species were not suddenly imperiled over night, and recovery may take as long, if not longer, due to a wide range of ecological and reproductive factors. Thus, it may take several decades more before we can completely evaluate the ESA’s effect. In the meantime, the FWS claims progress is being made. The Service reported that as of 2007 just over 40 percent of listed species were “doing better” since their initial listing.<sup>41</sup>

How do the ESA’s regulatory protections help species? Endangered animal species receive greater regulatory protections under the ESA than endangered plants. Yet this does not appear to translate into improved performance.<sup>42</sup> A recent study found that endangered species are less likely to be improving than threatened species, again despite the increased level of regulatory protection, although this could also be explained by the fact that endangered species populations were likely to be in worse condition in the first place.<sup>43</sup>

Although the ESA requires the designation of critical habitat when a species is listed as endangered, such designations have only limited legal import, particularly on private land. Whether designating critical habitat improves a species status is disputed. One study found that species for which critical habitat was designated were more likely to be improving.<sup>44</sup> Yet a subsequent study found no effect from designation once recovery spending was accounted for.<sup>45</sup> Indeed, there is some evidence that critical habitat designations can increase development pressure on private land.<sup>46</sup>

Several recent studies suggest that listing species and funding recovery efforts are beneficial to species, and increasingly so over time. For instance, one study concluded that the

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<sup>39</sup> Krishna Gifford, “Measuring Recovery Success,” *Endangered Species Bulletin* (Fall 2007), 4.

<sup>40</sup> J. Michael Scott, et al., “By the Numbers,” 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), 31.

<sup>41</sup> Krishna Gifford, “Measuring Recovery Success,” *Endangered Species Bulletin* (Fall 2007), 4.

<sup>42</sup> Martin F. J. Taylor, Kieran F. Suckling, and Jeffrey J. Rachlinski, “The Effectiveness of the Endangered Species Act: A Quantitative Analysis,” *Bioscience* 55 (2005): 365.

<sup>43</sup> Taylor, et al., “Effectiveness,” 365.

<sup>44</sup> Suckling and Taylor (2006).

<sup>45</sup> Joe Kerkvliet and Christian Langpap, “Learning from Endangered and Threatened Species Recovery Programs: A Case Study Using U.S. Endangered Species Act Recovery Scores,” *Ecological Economics* 63 (2007); 499-510

<sup>46</sup> Zabel and Patterson (2006); see also List et al.

longer a species is listed under the act, the more likely it is to be stable or improving.<sup>47</sup> It also found that the completion of a recovery plan has a similar effect.<sup>48</sup> There also appears to be a positive relationship between species recovery and the percentage of recovery goals set out in a species' recovery plan achieved for that species.<sup>49</sup> Yet another recent study found evidence that species-related spending correlates with preventing continued deterioration of a listed species status.<sup>50</sup> Yet insofar as these studies rely upon FWS assessments of species "status trends," they may be questioned. The data upon which status trends are based is "inconsistent and of questionable accuracy. . . trends for some species are simply the best guesses of USFWS personnel."<sup>51</sup> FWS assessments of species status are somewhat subjective, lack transparent criteria, and "may be manipulated to achieve agency objectives."<sup>52</sup>

With that caveat in mind, there is evidence that ESA-related spending helps at least some species. A 2007 study in *Ecological Economics* found, consistent with prior research, that "spending is correlated with improved status."<sup>53</sup> This study also found that "ESA-related spending is more effective in preventing deterioration than in promoting improvements in recovery status"<sup>54</sup> As the authors explained, "increased spending reduces the probability that FWS will classify a species as extinct or declining" but "evidence does not support the hypothesis that increased spending leads to increases in the probability that a species is stable or improving."<sup>55</sup> That is, insofar as the ESA helps, it is more effective at preventing extinction than fueling recovery. Yet this result could be explained by the fact that those species identified as having "high recovery potential" less likely to be declining or extinct, and slightly more likely to be classified as improving.<sup>56</sup> This same study found no effect from designation of critical habitat<sup>57</sup>

Other recent research casts doubt on the claim that listing species, in itself, is helpful for species. Indeed, a 2007 study found that listing a species can actually be detrimental if the listing is not followed with significant funding on species recovery.<sup>58</sup> Consistent with some prior studies, it found that the ESA can be effective at improving species status with substantial resource commitments, at least in some cases. Specifically, this study found that listing a species

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<sup>47</sup> See Martin F. J. Taylor, Kieran F. Suckling, and Jeffrey J. Rachlinski, "The Effectiveness of the Endangered Species Act: A Quantitative Analysis," *Bioscience* 55 (2005): 360-67.

<sup>48</sup> Taylor, et. al., *Effectiveness*, 364.

<sup>49</sup> R.J.F. Abbit and J.M. Scott, "Examining Differences Between Recovered and Declining Endangered Species," *Conservation Biology*, vol. 15 (2001): 1274-84.

<sup>50</sup> Joe Kerkvliet and Christian Langpap, "Learning from Endangered and Threatened Species Recovery Programs: A Case Study Using U.S. Endangered Species Act Recovery Scores," *Ecological Economics* 63 (2007); 499-510

<sup>51</sup> J. Alan Clark, et al., "Improving U.S. Endangered Species Act Recovery Plans: Key Findings and Recommendations of the SCB Recovery Plan Project," *Conservation Biology*, vol. 16 (2002), 1514; see also, P.D. Boersma, "How Good Are Endangered Species Recovery Plans," *Bioscience* 51 (2001): 643-49.

<sup>52</sup> Ferraro, McIntosh & Ospina, 247.

<sup>53</sup> Kerkvleit & Langpap, 506.

<sup>54</sup> Kerkvleit & Langpap, 506.

<sup>55</sup> Kerkvleit & Langpap, 508.

<sup>56</sup> Kerkvleit & Langpap, 508.

<sup>57</sup> Kerkvleit & Langpap, 506.

<sup>58</sup> Paul J. Ferraro, Craig McIntosh, and Monica Ospina, "The Effectiveness of the US Endangered Species Act: An Econometric Analysis Using Matching Methods," *Journal of Environmental Economics and Management* 54 (2007): 246. "Our results indicate that success can be achieved when the ESA is combined with substantial species-specific spending, but listing in the absence of funding appears to have adverse consequences for species recovery. This implies that using scarce conservation funding in the contentious process of listing a species may be less effective than using this funding to promote recovery directly."

alone has no positive effect, but listing combined with funding has a positive effect and listing with little or no funding has a significant negative effect.<sup>59</sup> On this basis, the authors concluded that “the ESA works when it is backed up with money, and not otherwise.”<sup>60</sup> As the authors explained: “Our analysis suggests that it is not the act of listing itself that matters, but rather high levels of expenditures for recovery combined with listing. Simply listing a species in the absence of such expenditures appears to lead to a decline.”<sup>61</sup> The authors could not conclude that the ESA is ineffective, as there is no counterfactual group of unlisted species that receive substantial funding.<sup>62</sup>

The authors of this study hypothesize that the negative effect of listing without funding is due to perverse incentives on private landowners, and that species-specific funding is a likely proxy for increased monitoring and enforcement of the ESA’s strictures. “Seen in this light, it is only the credible potential of enforcement that renders the ESA effective.”<sup>63</sup> Yet a closer look at the data may suggest something else.

The study looked at species-related expenditures aggregated by agency, and the results are interesting: “Forest Service spending has the strongest positive effect, followed by the Bureau of Land Management and the Fish and Wildlife Service.”<sup>64</sup> In other words, spending by land management agencies appears to be more effective than spending by the primary regulatory agency (which also has some land management responsibilities of its own). This would suggest that spending on species conservation on federal lands is more effective than expenditures seeking to protect species on private land, or that spending on direct conservation measures is more effective than spending on regulatory programs aimed at controlling private behavior.

While only suggestive, this interpretation is in line with other research showing that the ESA is more effective on federal land than on nonfederal land. Prior research has found that “[s]pecies found exclusively on federal lands are more likely to be improving than those with mixed or private ownership.”<sup>65</sup> One study in particular found that “[t]he ratio of declining species to improving species is 1.5 to 1 on federal lands, and 9 to 1 on private lands.”<sup>66</sup> As Robert Bonnie of the Environmental Defense Fund summarized, “species that occur exclusively on non-federal lands (the majority of which are in private ownership) appear to be faring considerably worse than species reliant upon the federal land base.”<sup>67</sup> These findings should not be a surprise, as the ESA can induce affirmative conservation measures on federal lands, but can do little more than prevent harm to species on nonfederal land, often at the cost of discouraging voluntary conservation. Insofar as many listed species are conservation dependent, this can make a real difference.

### **The Costs of Species Conservation**

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<sup>59</sup> Ferraro, McIntosh & Ospina, 252.

<sup>60</sup> Ferraro, McIntosh & Ospina, 256.

<sup>61</sup> Ferraro, McIntosh & Ospina, 256.

<sup>62</sup> It’s possible that efforts to conserve candidate species, through so-called “candidate conservation agreements” might eventually provide data that could be used for such a comparison.

<sup>63</sup> Ferraro, McIntosh & Ospina, 256.

<sup>64</sup> Ferraro, McIntosh & Ospina, 256.

<sup>65</sup> Schwartz, 293

<sup>66</sup> Brown and Shogren, 10.

<sup>67</sup> Robert Bonnie, “Endangered Species Mitigation Banking: Promoting Recovery through Habitat Conservation Planning under the Endangered Species Act,” *The Science of the Total Environment* 240 (1999): 12.

The Supreme Court, in *TVA v. Hill*, declared that the ESA sought to prevent species extinction “whatever the cost,” and costs rarely come into play under the Act. Fittingly, then, there is no comprehensive study of the ESA’s economic costs, let alone its benefits.<sup>68</sup> We don’t even know for sure how much the federal and state governments spend to implement and comply with the Act. The most recent FWS summary of government expenditures reported that federal and state government agencies, combined, spent just under \$1.5 billion in FY 2005 and \$1.7 billion in FY 2006, approximately 96 percent of which was spent by the federal government.<sup>69</sup> This was a significant increase over the amounts reported in prior years. In FY 2000, for instance, FWS reported on \$0.61 billion in expenditures.

FWS reports on species-related government expenditures are not the whole picture. As a 2004 report by Randy T. Simmons and Kimberly Frost revealed, prior FWS reports significantly understated ESA-related costs to the federal government, in part because they only tabulated “expenditures reasonably identifiable” as having been due to the ESA.<sup>70</sup> Subsequent research, focusing on ESA-related expenditures by the U.S. Army Corps of Engineers, confirms that the ESA’s costs to the federal government are greater than reported by the FWS.<sup>71</sup> In the case of the Corps, costs were underestimated dramatically. Actual costs to the Corps were more than double what the agency had reported to the FWS.<sup>72</sup>

Agency expenditures do not capture the full costs of species conservation efforts, as some agency expenditures – such as those triggered by Section 7 requirements – will not be fully accounted for; private expenditures are not accounted for at all. Whatever the total costs of the ESA, they are far greater than has been accounted for in government reports.

Perhaps ironically, it appears the ESA is “underfunded,” in that appropriations for species-related activities are insufficient to meet the FWS and other conservation agencies’ (let alone individual species’) needs.<sup>73</sup> Consider just the listing process. Congress appropriated \$5.2 million to the FWS for new listings in FY 2007, the vast bulk of which was allocated to complying with Court judgments. By one estimate, current recovery funding is less than 20 percent of what is necessary.<sup>74</sup>

Whatever the total cost, the distribution of government expenditures across species is difficult to reconcile with the explicit goal of the Act. Between 1989 and 1991, over 50 percent of the money spent by federal and state agencies on species recovery was spent on just ten

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<sup>68</sup> Jason F. Shogren, “Benefits and Costs,” in *The Endangered Species Act at Thirty, Volume 2: Conserving Biodiversity in Human-Dominated Landscapes*, J. Michael Scott, Dale D. Goble, & Frank W. Davis eds. (Washington, D.C.: Island Press, 2006), 186; Wyman, 502 (“While there is data on governmental spending on endangered species, there is no data on the costs that the ESA imposes on society at large.”)

<sup>69</sup> U.S. Fish & Wildlife Service, *Federal and State Threatened and Endangered Species Expenditures, Fiscal Years 2005-2006*, [http://www.fws.gov/endangered/pdfs/expenditures/Expenditures\\_Report\\_FY05-06.pdf](http://www.fws.gov/endangered/pdfs/expenditures/Expenditures_Report_FY05-06.pdf).

<sup>70</sup> Randy T. Simmons & Kimberly Frost, *Accounting for Species: The True Costs of the Endangered Species Act* (Bozeman, MT: Property and Environment Research Center, 2004), [http://www.perc.org/pdf/esa\\_costs.pdf](http://www.perc.org/pdf/esa_costs.pdf).

<sup>71</sup> Jim. E. Henderson and Jennifer M. Smith, “Threatened and Endangered Species: At What Cost? The Corps of Engineers Looks at Expenditures and Priorities,” *Environmental Management* 39 (2007): 10.

<sup>72</sup> Jim. E. Henderson and Jennifer M. Smith, “Threatened and Endangered Species: At What Cost? The Corps of Engineers Looks at Expenditures and Priorities,” *Environmental Management* 39 (2007): 10.

<sup>73</sup> Mark W. Schwartz, “The Performance of the Endangered Species Act,” *Annual Review of Ecology, Evolution, and Systematics*, vol. 39 (2008), 281; Wyman, 499-500 (“There is no doubt” existing appropriations “Are insufficient to recover the species that have been listed, let alone the many other imperiled species that remain unlisted.”).

<sup>74</sup> Miller, et al., “Dollars and Sense,” 167.

species, including the bald eagle, Florida panther, and grizzly bear.<sup>75</sup> In FY 2004, 20 listed species accounted for half of all endangered species spending by the FWS.<sup>76</sup>

Federal spending is not driven by neutral scientific assessment of what species are in greatest need or where government support will be most helpful.<sup>77</sup> As NYU’s Katrina Wyman observes, “limited amounts of public funding available for species recovery are allocated primarily based on political and bureaucratic considerations,” instead of species-related or ecological factors.<sup>78</sup> FWS recovery expenditures, for instance are “poorly correlated” with species priority rankings.<sup>79</sup> Political and institutional incentives, and outside litigation, conspire to distort species funding priorities.<sup>80</sup> Responding to litigation can be particularly expensive, and consumes large portions of available funds.<sup>81</sup>

### The Private Land Problem

If endangered species habitat is not preserved on private land, many endangered species will not survive. As noted above, habitat modification is the greatest threat to endangered species, and the lion’s share of endangered species habitat is privately owned. There are many species, like the red-cockaded woodpecker, that rely upon private land, and are not effectively protected. “We have too many cases like it, where a species is listed for years, but the population continues to go straight down the tubes in spite of this allegedly stringent and restrictive law,” according to Michael Bean.<sup>82</sup>

Why is the ESA failing to conserve species on private land? The most likely culprit is the structure of the ESA itself, and the incentives it creates for private landowners. In the simplest terms, the ESA penalizes owners of species habitat. As a consequence, the ESA discourages habitat creation and conservation on private land. 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. Acquiring permits may be costly and time consuming, and can be the source of substantial uncertainty, particularly for smaller landowners, notwithstanding recent efforts to provide landowners with regulatory assurances and facilitate habitat conservation planning. “Taking” a species without a permit, including by adverse habitat modification, can lead to fines of up to \$25,000 and even jail time. While not always stringently enforced, the threat remains, and the FWS is notoriously slow to green light activities that could harm species habitat.

The ESA’s strictures can reduce private land values and antagonize private landowners who might otherwise cooperate with conservation efforts. As Fish and Wildlife Service Director

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<sup>75</sup> Brown and Shogren, 14.

<sup>76</sup> Schwartz, p. 283.

<sup>77</sup> Marco Restain and John M. Marzluff, “Funding Extinction? Biological Needs and Political Realities in the Allocation of Resources to Endangered Species Recovery,” *Bioscience*, Vol. 52, no. 2 (Feb. 2002), 170. The priority rank is based upon the degree of threat to the species, potential for recovery, and taxonomic distinctness. *Id.*

<sup>78</sup> Wyman, 501-502.

<sup>79</sup> Marco Restain and John M. Marzluff, “Funding Extinction? Biological Needs and Political Realities in the Allocation of Resources to Endangered Species Recovery,” *Bioscience*, Vol. 52, no. 2 (Feb. 2002), 169-177.

<sup>80</sup> Schwartz., 287 (“social interest and politics retain the capacity to trump strict biological consideration when it comes to recovery expenditures.”).

<sup>81</sup> Katrina Miriam Wyman, “Rethinking the ESA to Reflect Human Dominion Over Nature,” *N.Y.U. Environmental Law Journal*, vol. 17 (2008), 496.

<sup>82</sup> Rudy Abramson, “Wildlife Act: Shield or Sword?” *Los Angeles Times* (Dec. 14, 1990).

Sam Hamilton, 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.”<sup>83</sup> The results are textbook economics.

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.”<sup>84</sup> 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.<sup>85</sup>

As a consequence of these negative incentives there is less and lower-quality available habitat for endangered species.<sup>86</sup> 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 are numerous accounts of landowners engaging in preemptive habitat destruction – that is, perfectly legal measures to make their land less hospitable to current or potential listed species before it is subject to regulation. Such accounts have been a staple of debates over the ESA for years. These accounts are not confined to a handful of species or one region of the country. In the Pacific northwest, for instance, the Fish & Wildlife Service found that land-use restrictions imposed to protect the northern spotted owl scared private landowners enough that they “accelerated harvest rotations in an effort to avoid the regrowth of habitat that is usable by owls.”<sup>87</sup> Meanwhile, down in Texas, landowners razed hundreds of acres of juniper tree stands after the FWS listed the golden-cheeked warbler as an endangered species.<sup>88</sup> At the same time, landowners in California destroy vegetation helpful for endangered species to prevent potential occupation, even at great personal expense. Said one, “the risk of not doing it is too great.”<sup>89</sup>

Several recent empirical studies confirm the negative effects of the ESA on private land conservation. Two such studies found evidence of widespread preemptive habitat destruction by forest landowners in the eastern United States due to the listing and presence of red-cockaded woodpeckers. The first found that private landowners engaged in preemptive habitat destruction when the presence of endangered red-cockaded woodpeckers placed the landowners at risk of

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<sup>83</sup> Betsy Carpenter, “The Best-Laid Plans,” *U.S. News & World Report* (Oct. 4, 1993), at 89.

<sup>84</sup> Main, Roka, & Noss, 1263

<sup>85</sup> *Id.* a 1265.

<sup>86</sup> Bean, *Overcoming*, 415.

<sup>87</sup> 60 *Federal Register* 9507-8 (February 17, 1995).

<sup>88</sup> See David Wright, “Death to Tweety,” *New Republic* (July 6, 1992), 9-10; James V. DeLong, *Property Matters* (New York: The Free Press, 1997), 103.

<sup>89</sup> David Parrish, “Environmental dilemma,” *Los Angeles Daily News*, March 19, 1995, p.10. Similarly, in California’s Central Valley, farmers plow fallow fields to destroy potential habitat and prevent the growth of vegetation that could attract endangered species. Jennifer Warren, “Revised Species Protection Law Eases Farmers’ Anxiety,” *Los Angeles Times* (Oct. 11, 1997), at A1.

federal regulation and a loss of their timber investment.<sup>90</sup> Providing habitat for a single woodpecker colony could cost a private timber owner as much as \$200,000 in foregone timber harvests.<sup>91</sup> 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.<sup>92</sup> 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.<sup>93</sup>

The second study of landowner responses to red-cockaded woodpeckers confirmed the existence of widespread preemptive habitat destruction in southeastern forests.<sup>94</sup> Specifically, this study found that “regulatory uncertainty and lack of positive economic incentives alter landowner timber harvesting behavior and hinder endangered species conservation on private lands” and 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.”<sup>95</sup> Thus, this study concluded, “at least for the [woodpecker], the ESA has a strong negative effect on the habitat,” and the effect appears to be “substantial.”<sup>96</sup>

The perverse incentives of the ESA unfortunately do not only affect the woodpeckers and other species dependent upon private timberland. A 2003 study published in *Conservation Biology* found that listing a species could undermine species and habitat conservation on private land.<sup>97</sup> 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.”<sup>98</sup> 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.”<sup>99</sup>

A fourth study, looking at yet another species in another part of the country, found further evidence that species listing can accelerate the rate of habitat loss.<sup>100</sup> Specifically, this study found that land designated as endangered Cactus Ferruginous pygmy owl habitat was, on average, developed one year earlier than equivalent parcels that were not designated as habitat.<sup>101</sup> This acceleration of development was facilitated, in part, because the pygmy owl was listed, and proposed critical habitat was published, months before regulatory responses were imposed,

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<sup>90</sup> Dean Lueck and Jeffrey Michael, “Preemptive Habitat Destruction under the Endangered Species Act,” *Journal of Law and Economics*, vol. 46 (2003); 27-\_\_\_.

<sup>91</sup> *Id.* at 33.

<sup>92</sup> *Id.* at 51-52.

<sup>93</sup> *Id.* at 53-54.

<sup>94</sup> Daowei Zhang, “Endangered Species and Timber Harvesting: The Case of Red-Cockaded Woodpeckers,” *Economic Inquiry*, vol. 32 (2004): 150.

<sup>95</sup> *Id.* at 151, 160.

<sup>96</sup> *Id.* at 162.

<sup>97</sup> Amara Brook et al., “Landowners’ Responses to an Endangered Species Act Listing and Implications for Encouraging Conservation,” *Conservation Biology*, vol. 17 (2003): 1638.

<sup>98</sup> *Id.* at 1643.

<sup>99</sup> *Id.* at 1644.

<sup>100</sup> John A. List, Michael Margolis, & Daniel E. Osgood, *Is the Endangered Species Act Endangering Species?* NBER Working Paper No. 12777 (December 2006), at 1-2.

<sup>101</sup> *Id.* at 2. As with the other studies, the authors found some reasons why their analysis could *underestimate* the anti-conservation incentives produced by ESA regulation. *See id.* at 16 n.15 (noting that some owners of owl habitat may have anticipated the subsequent invalidation of the critical habitat designation in federal court).

“allowing landowners ample time to respond.”<sup>102</sup> And respond they did in accordance with the incentives created by the Act.

These studies, taken together and combined with the wealth of anecdotal accounts, 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 programs and initiatives designed to encourage voluntary conservation efforts and provide landowners with greater regulatory certainty. Yet such regulatory assurances and “safe harbors” can only go so far to reduce the economic consequence of species listings for private landowners, and there is only so much flexibility in the law itself. Such reforms may ameliorate the anti-environmental incentives created by the Act, but they do not eliminate them.<sup>103</sup>

The threat of regulation can also affect the willingness of landowners to participate in voluntary conservation agreements.<sup>104</sup> As Michael Bean has observed, there is “a simple unwillingness to do the mundane management activities that could create or enhance habitat for rare species,” due to fears of potential ESA regulation.<sup>105</sup> This is a problem because, “in numerous cases, the absence of harmful behavior may not be enough” to conserve and recover endangered species.<sup>106</sup> Indeed, a large percentage, if not an absolute majority, of listed species subsist on land where active management is necessary for their conservation.<sup>107</sup> This means effective conservation requires either the imposition of greater regulatory requirements on private landowners, or innovative ways to encourage voluntary conservation efforts on private land.

### **Ending Anti-Conservation Incentives**

Species listings trigger the regulation of government activities and private land. As a consequence, the ESA inevitably penalizes private owners of species habitat, and thus discourages the creation and maintenance of habitat conditions. Eliminating these negative incentives requires eliminating the economic burdens imposed by species listings.<sup>108</sup> Easing permit conditions or providing modest assurances for good behavior may be all that the current statute allows, but any lasting solution to the private land problem in species conservation requires much more.

Protecting private landowners from potential negative consequences of owning endangers species habitat – either by ending the regulation of habitat modification or ensuring that landowners are compensated when their ability to make reasonable use of their land is limited for the benefit of an endangered species would remove the largest obstacle to greater landowner participation in conservation efforts. Many landowners are very willing to cooperate with conservation goals, so long as they are not forced to bear the lion’s share of the cost. Many

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<sup>102</sup> *Id.* at 16.

<sup>103</sup> Richard A. Epstein, “*Babbitt v. Sweet Home Chapters of Oregon: The Law and Economics of Habitat Preservation*,” *Supreme Court Economic Review* 5 (1997): 33.

<sup>104</sup> Christian Langpap and JunJie Wu, “Voluntary Conservation of Endangered Species: When Does No Regulatory Assurance Mean No Conservation?” *Journal of Environmental Economics and Management* 47 (2004), 435.

<sup>105</sup> Bean, “Overcoming,” 415.

<sup>106</sup> Langpap & Wu, 436.

<sup>107</sup> David S. Willcove, “The Private Side of Conservation,” *Frontiers in Ecology and the Environment*, vol. 2, no. 6 (2004): 326.

<sup>108</sup> It can also be argued that simple fairness requires the elimination of these disproportionate burdens as well.

landowners are often naturally willing to learn about, and even enhance, the ecological value of their land. Again, however, this must be something for which they will not be punished economically.

There are many different tools available for the promotion of conservation objectives. Although rarely relied upon by regulatory agencies, “voluntary mechanisms (such as fee simple purchase, easements, conservation banking, and subsidies) are an effective and flexible method for targeting low cost land with high-quality habitat.”<sup>109</sup> In addition to various federal incentive programs, there are an estimated *four hundred* state incentive programs covering approximately 70 million acres of private land.<sup>110</sup> These programs range from financial incentive and easement purchases to education and technical assistance of various sorts.<sup>111</sup> The experience with non-regulatory wetland conservation programs suggests that it is often possible to save more land at lower economic (and political) cost through voluntary, cooperative efforts than through coercive regulation.<sup>112</sup> Despite efforts by recent administrations, such tools have been grossly underutilized, and their effectiveness compromised by the underlying incentive structure created by the Act.

A compensation requirement is one way to virtually eliminate the ESA’s anti-environmental incentives on private land. Yet compensation is not a cure-all for the failings of current environmental land-use controls, such as those imposed under the ESA. Indeed, a compensation requirement, if not paired with broader programmatic reforms, may reduce the perverse incentives faced by landowners, but would do little to address the equally perverse incentives faced by government agencies. Nonetheless, requiring compensation would provide the surest foundation for successful conservation reforms on private land.

### Endangered Science

The punitive nature of the ESA’s restrictions on private land not only undermine conservation, they 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. 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.

The threat of land-use regulation discourages private landowners from disclosing information and cooperating with scientific research on their land, further compromising species conservation efforts.<sup>113</sup> Some landowners fear that the discovery of endangered or threatened species populations will result in the regulation of their land.<sup>114</sup> “Private landowners are often

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<sup>109</sup> Gregory M. Parkhurst ad Jason F. Shogren, “An Economic Review of Incentive Mechanisms to Protect Species on Private Lands,” in *Species at Risk: Using Economic Incentives to Shelter Endangered Species on Private Lands* (Jason F. Shogren ed., 2005), 121.

<sup>110</sup> See Jason F. Shogren, “Introduction,” in *Species at Risk: Using Economic Incentives to Shelter Endangered Species on Private Lands* (Jason F. Shogren ed., 2005), 10.

<sup>111</sup> *Id.*

<sup>112</sup> See Jonathan H. Adler, “Money or Nothing: The Adverse Environmental Consequences of Uncompensated Land Use Controls,” *Boston College Law Review* 49, no. 2 (2008): 354-61; David Sunding, “An Opening for Meaningful Reform,” *Regulation* (Summer 2003): 31-33.

<sup>113</sup> Polasky & Doremus, 41.

<sup>114</sup> Hilty & Merenlender, 136.

reluctant to take part in research programs targeted at species of conservation concern” due to “fear of agency restrictions on the private landowners’ freedom to manage their land if a protected species is found in their holdings.”<sup>115</sup> Perhaps as a consequence, most research on endangered species occurs on government land, despite the importance of private land for species preservation.<sup>116</sup> This can have broad consequences due to the importance of private land for species conservation.

Consider that in some cases, “a private landowner might be the only individual who knows a listed species is on his or her land.”<sup>117</sup> This information asymmetry makes government efforts to conserve species on private land particularly difficult.<sup>118</sup> Insofar as the ESA discourages landowner cooperation with scientific research, current estimates may actually underestimate the presence of endangered species on private lands.<sup>119</sup> 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.<sup>120</sup> “Many landowners appeared to defend themselves against having their land-management options restricted by refusing to allow surveys for the Preble’s.”<sup>121</sup> Yet such data is essential to the development of effective species recovery plans.<sup>122</sup> The lack of more complete data on endangered species and their habitat complicates species conservation efforts.<sup>123</sup>

With so much at stake when a species is listed, the scientific integrity of the listing process is also threatened. The ESA requires that decisions to list endangered and threatened species should be determined by the “best available” scientific evidence. Yet there is ample empirical data suggesting that political and other factors, in addition to ecological concerns, influence listing decisions.<sup>124</sup> Early listing decisions in particular were driven by politics and preferences.<sup>125</sup> Species that are more “charismatic” – that is that are more “warm and fuzzy” and those more politically popular – appear more likely to be listed and to receive funding.<sup>126</sup> Other recent studies have found that the political and environmental attitudes of legislators on relevant

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<sup>115</sup> Dreitz and Knopf, 681.

<sup>116</sup> Hilty & Merenlender, 133.

<sup>117</sup> *Id.* at 217.

<sup>118</sup> See Thompson, “ESA,” 315; see also James Salzman, “Creating Markets for Ecosystem Services,” *N.Y.U. Environmental Law Review* 80 (2005) 916 (noting information asymmetry between government regulators and private landowners).

<sup>119</sup> See Wilcove & Lee, 640 (noting likely underestimate due to “the reluctance of many private landowners to cooperate with surveys for endangered species”).

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

<sup>122</sup> *Id.* (“Without this information, formulating conservation plans is difficult, and those that are formed may be inaccurate, perceived as illegitimate, or challenged in the courts because of a lack of supporting data.”).

<sup>123</sup> 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).

<sup>124</sup> Ferraro, McIntosh & Ospina, 246.

<sup>125</sup> Doremus (1997).

<sup>126</sup> Dawson and Shogren (2001); Metrick and Weitzman (1998).

congressional committees appears to influence listing decisions as well.<sup>127</sup> 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.

Under the ESA, various interest groups seek to manipulate the listing process so as to trigger or preempt the imposition of land-use restrictions.<sup>128</sup> 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.<sup>129</sup> Interest group activity also appears to influence how quickly species move through the ESA listing process.<sup>130</sup> Empirical research confirms that interest group opposition to species listing proposals increase as listings threaten development.<sup>131</sup> At the extreme, this has produced incentives to manipulate the scientific evidence supporting species listing.<sup>132</sup>

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.<sup>133</sup> Delay in listing a species increases the opportunity for landowners to respond to the perverse incentives created by the Act.<sup>134</sup> It also deprives conservation-minded landowners and others of the information that a given species is in need of assistance if it is to survive.

Not only may delay allow for the preemptive destruction of habitat, but it also may enable those in the regulated community to marshal scientific evidence that may suggest the listing is unwarranted.<sup>135</sup> As a listing is delayed, there is a possibility that the scientific data upon which the potential listing was based could become outdated.<sup>136</sup> Empirical research confirms that the longer it takes for a species listing to be proposed, its chances for eventual listing appear to decline.<sup>137</sup> If listing is the first step toward a species' recovery – a debatable

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<sup>127</sup> Bonnie Harlee, Myungsup Kim, and Michael Nieswiadomy, "Political Influence on Historical ESA Listings by State: A Count Data Analysis," *Public Choice* vol. 140 (2009), 21-42. Harlee, et al. survey the relevant academic literature at 23-24.

<sup>128</sup> Epstein, 34 ("designation systems have two substantial costs: one is destruction before designation, and the other is the use of the political process to deny, delay or deflect the designations that might come.").

<sup>129</sup> Thompson, "ESA," 350..

<sup>130</sup> Amy Whritenour Ando, "Waiting to Be Protected under the Endangered Species Act: The Political Economy of Regulatory Delay," *Journal of Law and Economics* 42 (1999): 52..

<sup>131</sup> See Amy Whritenour Ando, "Economies of Scope in Endangered-Species Protection: Evidence from Interest Group Behavior," *Journal of Environmental Economics and Management* 41 (2001): 312; see also Amy Whritenour Ando, "Do Interest Groups Compete? An Application to Endangered Species," *Public Choice* 114 (2003): 137 (finding interest group involvement in species listings increases with the expected costs and benefits of such listings).

<sup>132</sup> For a recent example of such manipulation see Juliet Eilperin, "Report Faults Interior Appointee; Landowner Issues Trumped Animal Protections, IG Says," *Washington Post* (Mar. 30, 2007), A05 (senior Bush Administration official altered scientific field reports to minimize protections for imperiled species).

<sup>133</sup> Ando, 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.").

<sup>134</sup> Ando, 36 ("delay can enable private citizens and firms to take preemptive irreversible actions (harvesting trees, developing land) on the land that will be protected once the listing is made.").

<sup>135</sup> *Id.* ("Timing may also influence outcome" because "delay in the early stages of the process probably makes it more likely that a candidate species is sent back in the process rather than being moved forward during listing.").

<sup>136</sup> *Id.*

<sup>137</sup> *Id.* at 45.

proposition for reasons discussed above – political opposition to listing is environmentally worrisome.<sup>138</sup>

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 Endangered Species Act.<sup>139</sup> 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.<sup>140</sup> 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. During the 1990s, outside groups sued to list threatened species three times as often as for endangered species.<sup>141</sup>

Insofar as such litigation sets listing priorities, it diverts 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.<sup>142</sup> As Professor Wyman explains, “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.”<sup>143</sup> 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. Professor Katrina Wyman of New York University recommends “decoupling” the listing decision from mandatory conservation measures.<sup>144</sup> This would enable federal agencies “to develop protections tailored to the needs of each species and its circumstances.”<sup>145</sup> At present, however, the ESA’s “protections” are triggered once a species is listed, irrespective of their value for that particular species.<sup>146</sup> Decoupling would also “reduce the contentiousness of listing decisions by reducing the momentousness of listing.”<sup>147</sup> 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

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<sup>138</sup> Thompson, “ESA,” 350.

<sup>139</sup> See Sugg, 53, n335.

<sup>140</sup> Marco Restain and John M. Marzluff, “Funding Extinction? Biological Needs and Political Realities in the Allocation of Resources to Endangered Species Recovery,” *Bioscience*, Vol. 52, no. 2 (Feb. 2002), 175.

<sup>141</sup> Marco Restain and John M. Marzluff, “Funding Extinction? Biological Needs and Political Realities in the Allocation of Resources to Endangered Species Recovery,” *Bioscience*, Vol. 52, no. 2 (Feb. 2002), 174.

<sup>142</sup> Wyman, 497.

<sup>143</sup> Wyman, 496.

<sup>144</sup> Wyman, 516.

<sup>145</sup> *Id.*

<sup>146</sup> Michael J. Bean, “The Endangered Species Act: Science, Policy, and Politics,” *The Year in Ecology and Conservation Biology, 2009: Annals of the New York Academy of Sciences* 1162 (2009), 373 (noting that species are listed without regard for whether the Act’s prohibitions “address the threats that imperil a species”).

<sup>147</sup> *Id.*

species as a proxy for other battles. As she 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.”<sup>148</sup>

### **Foundational Reforms**

If the ESA, as currently constituted, cannot do the job of conserving species, what would do the trick? Three foundational reforms, suggested above, are necessary, combined with the funding to carry them out. First, the ESA must no longer penalize landowners for owning endangered species habitat. If anything, owning habitat should be rewarded; it should never be penalized. This requires compensating landowners for the costs of habitat regulation, and greater resort to various incentive programs in place of regulation.

Second, the listing process should be insulated from political and economic pressure. The surest way to accomplish this is to “decouple” listing from mandatory regulatory measures. Such a reform would necessarily increase agency discretion in selecting among conservation policy options, but this is a feature not a bug. Not every species will benefit from the same set of conservation tools, and enabling conservation agencies to pick from a menu of tools – and even develop new ones – is preferable to an automatic regulatory hammer triggered by a precautionary scientific finding. Conservation policy measures should be chosen by politically accountable regulators, and not be a function of triage or outcome of litigation in federal courts.

Third, Congress should recognize that insofar as species habitat is a public good of value to the nation, it should be provided like any other public good through government subsidy, direct or indirect. This could well mean that federal resources devoted to species conservation increase. Yet that is the cost of this nation’s conservation commitment. In 1973, the country declared it would take the measures to conserve the nation’s biodiversity. Substantial ESA reform, and adequate funding, are the only way that promise can be fulfilled.

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<sup>148</sup> Wyman, 519.