



## Increasing Private Conservation through Incentive Mechanisms

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*The Endangered Species Act (ESA) is the nation's most powerful environmental law. The ESA, however, has been ineffective at achieving species conservation and recovery because the current command and control regulation imposes substantial costs on private landowners and creates perverse incentives that run contrary to the ESA's goals. It is widely known that the primary threat to endangered species is habitat loss. With approximately three-fourths of all endangered species relying on private land for habitat, food, or breeding grounds, meaningful conservation will not be achieved without private landowners on board. Incentive mechanisms offer a promising alternative to command and control regulation and have the potential to alleviate the problems associated with the ESA. Incentive mechanisms reward private landowners for conservation and stewardship efforts that create positive externalities for the public good. This Article discusses the various incentive mechanisms that have been used in the past and proposes that more should be used in the future to increase*

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*private conservation and meet the ESA's goals of species conservation and recovery.*

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## Introduction

Imagine a fly, with little known role in the local ecosystem, halting the construction of a \$470 million earthquake-proof hospital<sup>1</sup> when all that the landowner would have needed to do to avoid the situation was destroy the fly's habitat a few years before.<sup>2</sup> That was the situation the blue-collar city of Colton, California faced in 1993 when the Delhi Sands Flower-Loving Fly was listed as an endangered species.<sup>3</sup> On the date of listing, nearly all of the Fly's remaining habitat was located on privately owned land in Colton,<sup>4</sup> with three acres of the Fly's habitat falling on the proposed site of the San Bernardino County hospital.<sup>5</sup> The hospital project had been in planning for several years,<sup>6</sup> but after the Fly was listed the County was notified by the Fish and Wildlife Service (FWS) that the continued construction of the hospital would violate the Endangered Species Act (ESA) because it would likely result in the "take" of an endangered species.<sup>7</sup> The County had no real options but to halt construction and find a way to comply with the ESA. After moving the hospital site 250 feet,<sup>8</sup> and spending approximately \$3 million to mitigate the impact on the Fly's habitat, construction of the San Bernardino Hospital was finally able to resume.<sup>9</sup>

As all too often is the case, the ESA's approach of uncompensated land use regulation does not align with the interests of private landowners.<sup>10</sup> As a result, the ESA has largely failed<sup>11</sup> in meeting its stated goals of conserving ecosystems that threatened and

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<sup>1</sup> Nat'l Ass'n of Home Builders v. Babbitt, 130 F.3d 1041, 1044 (C.A.D.C. 1997).

<sup>2</sup> See Jonathan H. Adler, *Money or Nothing: The Adverse Environmental Consequences of Uncompensated Land Use Controls*, 49 B.C. L. REV. 301, 318 (2008) [hereinafter Adler, *Money or Nothing*] (discussing preemptive action taken by landowners to make conservation of their land less desirable).

<sup>3</sup> Kim Kowsky, *Protected Status for a Fly Stirs Up a Hornet's Nest*, L.A. TIMES, Oct. 5, 1993, at 2, available at [http://articles.latimes.com/1993-10-06/news/mn-42817\\_1\\_endangered-species-act?pg=2](http://articles.latimes.com/1993-10-06/news/mn-42817_1_endangered-species-act?pg=2) (last visited June 20, 2010).

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> *Babbitt*, 130 F.3d at 1044.

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> John Copeland Nagle, *Playing Noah*, 82 MINN. L. REV. 1171, 1184-85 (1998).

<sup>10</sup> Adler, *Money or Nothing*, *supra* note 2, at 303-04 (2008).

<sup>11</sup> *Id.* at 351.

endangered species depend on and reversing the trend toward species extinction.<sup>12</sup> The words of Aldo Leopold still hold true today: conservation policy “ultimately boil[s] down to reward[ing] the private landowner who conserves the public interest.”<sup>13</sup> Thus, the ESA will continue to struggle with success if it does not do more to encourage private conservation.

It is widely accepted that the primary threat to endangered species is habitat loss.<sup>14</sup> With approximately two-thirds of the land in the continental United States privately owned,<sup>15</sup> and “three quarters of all threatened or endangered species depend[ing] on private land for habitat, food, or breeding grounds,”<sup>16</sup> the success of the ESA is closely tied to conservation on private land. The current structure of the ESA, however, does very little to promote private conservation. In fact, the ESA creates disincentives for private landowners to conserve and actually encourages landowners to destroy the very habitats that the ESA is designed to protect.<sup>17</sup> Therefore, it is imperative that the ESA’s command and control regulation be changed to a more incentive based conservation policy that promotes private conservation. This Article will explore the various incentive mechanisms that have been used in the past and what must be done in the future for the ESA to thrive in harmony with private landowners.

This Article takes a big-picture look at incentive-based conservation and the Endangered Species Act. Part I provides a brief background of the ESA and discusses the sections that affect private landowners the most. First, the Part gives an overview of the ESA’s structure and describes the agencies responsible for administering the ESA. Second, the Part describes the listing process that triggers ESA protection and the designation of critical habitat. Third, the Part

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<sup>12</sup> J.B. Ruhl, *Endangered Species Act Innovations in the Post-Babbittian Era – Are There Any?*, 14 DUKE ENVTL. L. & POL’Y F. 419, 423 (2004) [hereinafter Ruhl, *Post-Babbittian*].

<sup>13</sup> Gregory M. Parkhurst & Jason F. Shogren, *Incentive Mechanisms*, in THE ENDANGERED SPECIES ACT AT THIRTY: RENEWING THE CONSERVATION PROMISE 247 (Dale D. Goble, et al. eds., Island Press, vol. 1 2006) [hereinafter Parkhurst & Shogren, *ESA AT THIRTY*].

<sup>14</sup> Adler, *Money or Nothing*, *supra* note 2, at 335.

<sup>15</sup> *Id.* at 301.

<sup>16</sup> Stephanie Stern, *Encouraging Conservation on Private Lands: A Behavioral Analysis of Financial Incentives*, 48 ARIZ. L. REV. 541, 545 (2006).

<sup>17</sup> Barton H. Thompson, Jr., *The Endangered Species Act: A Case Study in Takings & Incentives*, 49 STAN. L. REV. 305, 356 (1997) [hereinafter Thompson, Jr., *Takings & Incentives*].

discusses the requirement that federal agencies consult with the administering agencies of the ESA to insure that no federal action jeopardizes the existence of a listed species or causes habitat destruction. Fourth, the Part examines the take prohibition which provides species immediate protection after listing. Last, the Part explores the incidental take permits that provide some relief for private landowners complying with the take prohibition.

Part II discusses the current failings of the ESA. First, the Part examines the problems associated with command and control regulation and the government's "fiscal illusion" that regulation is less costly and more effective than it actually is. Next, the Part discusses the importance of conservation on private land by looking at the ESA's effect on private landowners and why the current structure of the ESA creates disincentives for conservation. Private landowners' interests do not align with the ESA's regulatory mechanisms, resulting in landowners engaging in political opposition, perverse incentives, and tactics to withhold information.

Part III summarizes the incentive mechanisms available to promote conservation. First, the Part looks at the various mechanisms that have been used in the past with the ESA, including Habitat Conservation Plans (HCPs), Safe Harbor Agreements (SHAs) and Candidate Conservation Agreements (CCAs). Second, the Part looks at compensation and market based incentive mechanisms. Compensation based programs help promote conservation efforts and alleviate the perverse incentives associated with command and control regulation. The programs include full compensation systems, fee simple acquisitions, subsidies, and conservation easements. The Part next looks at market based programs that replace government bureaucracy with economic incentives and market efficiencies. Market based programs, such as conservation banking and tradable development rights, mix market principles with regulation to meet conservation goals.

Part IV provides recommendations for what needs to be done in the future to promote private conservation through incentive mechanisms. No one incentive mechanism is perfect for all situations. Incentive mechanisms should be mixed and matched to ensure the most effective and efficient conservation results. This Article concludes that while there has been some movement towards using incentives, more must be done to understand and utilize these mechanisms in the future.

Instead of forcing the city of Colton to make the decision whether to destroy the Delhi Sands Flower-Loving Fly's habitat prior to listing or face regulation that would eventually cost \$3 million, the problem could have been solved without litigation had an incentive-based approach that took into account both the species' and the private landowners' interests been in place. Providing incentives to private landowners will not only encourage compliance with the ESA once a species is listed, but it will also help avoid the unfortunate destruction of habitat critical to species' survival that happens all too often under the current system. With private landowners on board, the ESA may finally be able to reach its full potential.

## I. Endangered Species Act

Passed in 1973 with strong bipartisan support,<sup>18</sup> the Endangered Species Act (ESA)<sup>19</sup> is the nation's most powerful environmental law.<sup>20</sup> Enacted "in response to findings that economic growth and development had both endangered the existence of many species and driven others extinction,"<sup>21</sup> the ESA has been a lightning rod of controversy ever since. While congressional debates focused around charismatic and symbolic species like the American Crocodile and Bald Eagle, the scope of the ESA protects all species with equal veracity.<sup>22</sup> Finding support and a sense of stewardship among Americans to protect the Bald Eagle is relatively easy. Difficulty arises, however, when species with little fanfare like the Delhi Sands Flower-Loving Fly

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<sup>18</sup> See Brian E. Gray, *The Endangered Species Act: Reform or Refutation?*, 13 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 1, 1 (2007) (recounting that the ESA passed in the House of Representatives with a vote of 355 to 4 and received unanimous support in the Senate).

<sup>19</sup> 16 U.S.C. §§ 1531-44 (2009).

<sup>20</sup> See *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978) (describing the ESA as "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation").

<sup>21</sup> Jessica Owley Lippmann, *Exacted Conservation Easements: The Hard Case of Endangered Species Protection*, 19 J. ENVTL. L. & LITIG. 293, 318 (2004) [hereinafter Lippmann, *The Hard Case of Endangered Species Protection*].

<sup>22</sup> Gray, *supra* note 18, at 7. But see Amy Whritenour Ando, *Waiting to be Protected under the Endangered Species Act: The Political Economy of Regulatory Delay*, 42 J. LAW & ECON 29, 31 (1999) (stating that "[t]he taking of plants on private property is not prohibited by the [ESA], and critical habitat is rarely determined for plant species").

stops construction of a hospital,<sup>23</sup> costing private landowners millions in actual and opportunity costs.

#### A. *ESA's Structure and Administration*

Compared to other federal environmental laws, the ESA is short and compact, with a seemingly straightforward application.<sup>24</sup> Looks, however, can be deceiving. In practice, the ESA involves a complicated intersection between scientific and legal analysis.<sup>25</sup> “The ESA’s legal standards call for determinations that scientists are typically reluctant to make, and the information and analyses science produces often lead to inconclusive outcomes under the legal standards.”<sup>26</sup> The imperfection of the system leaves it susceptible to manipulation by the political process and special interest groups that have incentives in line with and contrary to the ESA.

The Fish and Wildlife Service (FWS)<sup>27</sup> and National Marine Fisheries Service (NMFS)<sup>28</sup> have the responsibility of administering several of the ESA’s programs.<sup>29</sup> The Secretary of Interior and Secretary of Commerce (collectively the “Secretary”),<sup>30</sup> acting through the FWS and the NMFS respectively, are required to make critical decisions regarding the status and protection of species.<sup>31</sup> Some of the programs that affect private landowners the most include listing and critical habitat designation, protection of species, prohibition of takings, and incidental take permits.<sup>32</sup>

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<sup>23</sup> *Babbitt*, 130 F.3d at 1044.

<sup>24</sup> Ruhl, *Post-Babbittonian*, *supra* note 12, at 422-23.

<sup>25</sup> *Id.* at 423.

<sup>26</sup> *See id.*

<sup>27</sup> The FWS and NOAA-Fisheries have jurisdiction over all terrestrial and fresh-water aquatic species. U.S. Fish & Wildlife Service, *ESA Basics: More Than 30 Years of Conserving Endangered Species 1*, available at [http://www.fws.gov/endangered/factsheets/ESA\\_basics.pdf](http://www.fws.gov/endangered/factsheets/ESA_basics.pdf).

<sup>28</sup> The NMFS has jurisdiction over marine species. *Id.*; see also Amy Whritenour Ando, *Waiting to be Protected under the Endangered Species Act: The Political Economy of Regulatory Delay*, 42 J. LAW & ECON. 29, 31 (1999).

<sup>29</sup> Ruhl, *Post-Babbittonian*, *supra* note 12, at 421.

<sup>30</sup> The “Secretary” is “the Secretary of the Interior or the Secretary of Commerce as program responsibilities are vested pursuant to the provisions” of the ESA. 16 U.S.C. § 1532(15) (2009).

<sup>31</sup> Ruhl, *Post-Babbittonian*, *supra* note 12, at 421.

<sup>32</sup> See Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 319-20.

**B. Section 4: Listing and Critical Habitat Designation**

Described as the gateway to the ESA, the listing process is the most critical event to species protection. The Secretary is given broad discretion in the listing process<sup>33</sup> and must base the decision solely on scientific factors that ignore the potential economic impact on private landowners.<sup>34</sup> Importantly, the ESA does not provide protection to species or impose limitations on private landowners until a species is listed as “threatened”<sup>35</sup> or “endangered”<sup>36</sup> by the Secretary.<sup>37</sup> Once a species is listed, the ESA protections are triggered, including section 9 prohibiting private landowners from “taking” a listed species.<sup>38</sup>

In addition to listing a species, section 4 also requires the FWS and NMFS to designate “critical habitat”<sup>39</sup> and create “recovery plans”<sup>40</sup> for species.<sup>41</sup> Unlike listing, there is an economic consideration that goes into the Secretary’s designation of critical habitat.<sup>42</sup> The Secretary, however, maintains significant discretion over the

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<sup>33</sup> Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 312; *see also* Jamison E. Colburn, *Trading Spaces: Habitat “Banking” Under Fish & Wildlife Service Policy*, 20-SUM NAT. RESOURCES & ENV’T 33, 33-34 (2005). The Secretary should determine a species’ listing based on five factors: “(A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) diseases or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.” 16 U.S.C. § 1533(a)(1)(A-E) (2009).

<sup>34</sup> Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 319.

<sup>35</sup> A “threatened species” is “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” 16 U.S.C. § 1532(20) (2009).

<sup>36</sup> An “endangered species” is “any species which is in danger of extinction throughout all or a significant portion of its range.” 16 U.S.C. § 1532(6) (2009).

<sup>37</sup> Amy Sinden, *The Economics of Endangered Species: Why Less is More in the Economic Analysis of Critical Habitat Designation*, 28 HARV. ENVTL. L. REV. 129, 139 (2004). A species may be listed individually or as a group. Ando, *supra* note 28, at 32.

<sup>38</sup> *See* discussion *infra* Part I.D.

<sup>39</sup> 16 U.S.C. § 1533(a)(3) (2009). “Critical habitat” is defined as habitation that is “essential to the conservation of the species,” whether the threatened or endangered species inhabits the area at the time or not. 16 U.S.C. § 1532(5)(A)(i-ii) (2009).

<sup>40</sup> 16 U.S.C. § 1533(f) (2009).

<sup>41</sup> Ruhl, *Post-Babbittonian*, *supra* note 12, at 421-22.

<sup>42</sup> *See* 16 U.S.C. § 1533(b)(2) (2009) (requiring the Secretary to make designations of critical habitat “on the basis of the best scientific data available and after taking into consideration the economic impact”).



designation decision and must only consider the economic impact.<sup>43</sup> Nothing mandates the Secretary from excluding potential areas from being designated as critical habitat because of the economic impact.<sup>44</sup>

**C. Section 7: Protection of Species**

Under section 7, federal agencies are required to “consult” with FWS or NMFS to insure that any action taken by the agency does not “jeopardize” the existence of a threatened or endangered species or cause the destruction or harmful modification to a listed species’ habitat.<sup>45</sup> Section 7’s jeopardy prohibition serves as the procedural guide to all federal actions in need of consultation and approval to cause a prohibited take that does not reach the level of jeopardy or adverse modification.<sup>46</sup> Section 7, however, has not proved to be very limiting in practice to federal actions.<sup>47</sup>

**D. Section 9: Prohibition of Takings**

The most significant restriction for private landowners is section 9 which prohibits any person to “take” a listed species.<sup>48</sup> “Take” is broadly defined to include “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”<sup>49</sup> Most the action revolves around the FWS’s definition of “harm”<sup>50</sup> which includes “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or

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<sup>43</sup> Sinden, *supra* note 37, at 149.

<sup>44</sup> *Id.* The inclusion of the economic consideration in designating critical habitat has not had a significant impact on the process because the FWS has rarely found that an area established as a critical habitat has suffered from significant economic loss. *Id.* at 159.

<sup>45</sup> 16 U.S.C. § 1536(a)(2) (2009).

<sup>46</sup> J.B. Ruhl, *How to Kill Endangered Species, Legally: The Nuts and Bolts of Endangered Species Act “HCP” Permits for Real Estate Development*, 5 ENVTL. L. 345, 365 (1999) [hereinafter Ruhl, *How to Kill Endangered Species*].

<sup>47</sup> *See id.* at 365-66.

<sup>48</sup> 16 U.S.C. § 1538 (2009).

<sup>49</sup> 16 U.S.C. § 1532(19) (2009).

<sup>50</sup> *See* Kevin W. Moore, *Seized by Nature: Suggestions on How to Better Protect Animals and Property Rights Under the Endangered Species Act*, 12 GREAT PLAINS NAT. RESOURCES J. 149, 152 (2008).

sheltering.”<sup>51</sup> Section 9 provides immediate protection for a listed species and often handcuffs a private landowner’s ability to use or develop their land freely.<sup>52</sup> A private landowner who violates the take prohibition may be subject to severe civil penalties or criminal prosecution.<sup>53</sup>

**E. Section 10: Incidental Take Permits**

Section 10 administers Habitat Conservation Plans (HCP) and was added to the ESA in 1983 to provide some relief to developers from section 9’s prohibition on habitat modification.<sup>54</sup> The Secretary is allowed to issue incidental take permits for otherwise unlawful take activities “if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.”<sup>55</sup> There are only two procedural requirements for HCP permits written in the ESA.<sup>56</sup> First, prior to issuing the incidental take permit, the private landowner must submit a conservation plan to the Secretary.<sup>57</sup> Second, the Secretary must publish a notice of the HCP application in the Federal Register, inviting comments from interested parties to be received within a thirty day period.<sup>58</sup> The conservation plans are designed to “minimize and

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<sup>51</sup> 50 C.F.R. § 17.3 (2006). See *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 704 (1995) (upholding the Secretary of Interior’s definition of “harm”).

<sup>52</sup> See Adler, *Money or Nothing*, *supra* note 2, at 313.

<sup>53</sup> See 16 U.S.C. § 1540(a)-(b) (2009).

<sup>54</sup> Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 320.

<sup>55</sup> 16 U.S.C. § 1539(a)(1)(B) (2009).

<sup>56</sup> Ruhl, *How to Kill Endangered Species*, *supra* note 46, at 377. The FWS and NMFS have assembled a more detailed guideline manual, titled the HCP Handbook, which provides private landowners a more in-depth template for the HCP process. *Id.* at 378.

<sup>57</sup> 16 U.S.C. § 1539(a)(2)(A) (2009). The conservation plan must specify “(i) the impact which will likely result from such taking; (ii) what steps the applicant will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps; (iii) what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and (iv) such other measure that the Secretary may require as being necessary or appropriate for purposes of the plan.” 16 U.S.C. § 1539(a)(2)(A)(i)-(iv) (2009).

<sup>58</sup> 16 U.S.C. § 1539(c) (2009).

mitigate” the potential harm caused to threatened and endangered species as a result of the proposed development.<sup>59</sup>

## II. ESA’s Current Failings

Described as the “pit-bull” of environmental law because it is “short, compact, and has a hell of a set of teeth,”<sup>60</sup> the ESA has largely failed to meet its primary objective of “species conservation and recovery.”<sup>61</sup> Since the ESA was enacted, 1414 species have been listed as threatened or endangered, while fourteen species are currently proposed for listing.<sup>62</sup> Only forty-seven of these species have been delisted, twenty-one of which have been deemed recovered while the remaining twenty-six either became extinct or were data errors.<sup>63</sup> The

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<sup>59</sup> Karin P. Sheldon, *Habitat Conservation Planning: Addressing the Achilles Heel of the Endangered Species Act*, 6 N.Y.U. ENVTL. L.J. 279, 296 (1998). For more discussion on HCPs, see *infra* Part III.A.1.

<sup>60</sup> Timothy Egan, *Strongest U.S. Environmental Law May Become Endangered Species*, N.Y. TIMES, May 26, 1992, at 2, available at <http://www.nytimes.com/1992/05/26/us/strongest-us-environment-law-may-become-endangered-species.html?pagewanted=2> (quoting Donald Barry).

<sup>61</sup> Adler, *Money or Nothing*, *supra* note 2, at 335; see also Jonathan H. Adler, *Bad for Your Land, Bad for the Critters*, WALL ST. J., Dec. 31, 2003, at 2-3, available at <http://online.wsj.com/article/SB107283504618484600.html> (describing the ESA as ineffective); *id.* at 1 (“Indeed, [the ESA] may be the greatest failure of all federal environmental laws.”).

<sup>62</sup> See U.S. Fish & Wildlife Service, *Species Report*, available at [http://ecos.fws.gov/tess\\_public/TessStatReport](http://ecos.fws.gov/tess_public/TessStatReport) (last visited June 20, 2010) (reporting there are 618 animals and 796 plants in the United States listed as threatened or endangered, and 14 animals and 0 plants currently proposed for listing). There are currently 1375 species still listed. U.S. Fish & Wildlife Service, *Species Report*, [http://ecos.fws.gov/tess\\_public/SpeciesReport.do?listingType=L&mapstatus=1](http://ecos.fws.gov/tess_public/SpeciesReport.do?listingType=L&mapstatus=1) (last visited June 20, 2010).

<sup>63</sup> U.S. Fish & Wildlife Service, *Delisting Report*, available at [http://ecos.fws.gov/tess\\_public/DelistingReport.do](http://ecos.fws.gov/tess_public/DelistingReport.do) (last visited June 6, 2010). For more detailed discussion of the seventeen endangered species recovered prior to 2007, see James L. Noles, Jr., *Is “Recovered” Really Recovered?: “Recovered” Species Under the Endangered Species Act*, 39 CUMB. L. REV. 387, 397-435 (2009). Defenders of the ESA argue the numbers do not do the Act justice because species recovery is not a quick process and there are a number of factors that go into recovery. See Jonathan H. Adler, *The Leaky Ark: The Failure of Endangered Species Regulation on Private Land*, in REBUILDING THE ARK: NEW PERSPECTIVES ON ENDANGERED SPECIES ACT REFORM 7 (Jonathan H. Adler ed., forthcoming 2010), available at <http://www.aei.org/docLib/Adler.pdf> [hereinafter Adler, *The Leaky Ark*]; *id.* at 8 (“[I]nsofar as the ESA helps, it is more effective at preventing extinction than fueling recovery.”); see also Michael J.

species that have recovered because of ESA regulations have often had an identifiable threat that regulation could directly address.<sup>64</sup>

It is no secret that the primary threat to endangered species is habitat loss.<sup>65</sup> While marginal conservation success has been achieved on public land, the regulation has failed to be effective in promoting conservation on private land.<sup>66</sup> The ESA does very little other than prevent harm<sup>67</sup> and is formally weak because it “only applies to the current critical habitats of listed endangered species.”<sup>68</sup> It does nothing to prevent private landowners from preemptively destroying species habitat prior to listing and does not require private landowners to make their land viable for species’ habitat after listing.<sup>69</sup> Stated another way,

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Bean, *The Endangered Species Act: Success or Failure?* 5-6 (Environmental Defense 2005), available at [http://www.edf.org/documents/4465\\_ESA\\_Success%20or%20Failure.pdf](http://www.edf.org/documents/4465_ESA_Success%20or%20Failure.pdf) (stating that an approach that labels recovery of listed species as either a success or failure does not take into account the complexity of wildlife recovery because it may take years for a given species to recover).

<sup>64</sup> Adler, *The Leaky Ark*, *supra* note 63, at 6; see also J.B. Ruhl, *Keeping the Endangered Species Act Relevant*, 19 DUKE ENVTL. L. & POL’Y. F. 275, 277 (2009) (describing the ESA as “the workhorse of species protection in the contexts for which a species-specific approach can effectively be employed to address discrete human-induced threats that have straightforward casual connections to the decline of a species, such as clearing of occupied habitat for development or damming of a river”). Professor Ruhl identifies three circumstances that often determine the ESA’s effectiveness: “(1) the nature of the casual mechanism leading to species decline, (2) the degree of federal presence in the casual mechanism, and (3) the closeness of match between the ESA’s species-specific focus and the ecosystem management policy objective.” *Id.* at 282. For more in-depth discussion of the three circumstances, see *id.* at 282-88.

<sup>65</sup> Adler, *Money or Nothing*, *supra* note 2, at 335.

<sup>66</sup> ENVIRONMENTAL DEFENSE, PROGRESS ON THE BACK FORTY: AN ANALYSIS OF THREE INCENTIVE-BASED APPROACHES TO ENDANGERED SPECIES CONSERVATION ON PRIVATE LAND 5 (Jan. 2000), available at [http://www.edf.org/documents/150\\_backforty.PDF](http://www.edf.org/documents/150_backforty.PDF) [hereinafter PROGRESS ON THE BACK FORTY]; see also Adler, *The Leaky Ark*, *supra* note 63, at 9 (“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.’ 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.’”); Sheldon, *supra* note 59, at 286 (stating that reports show that endangered species on private land are in worse condition than those found on federal land).

<sup>67</sup> Adler, *The Leaky Ark*, *supra* note 63, at 9.

<sup>68</sup> David A. Dana, *The New “Contractarian” Paradigm in Environmental Regulation*, 2000 U. ILL. L. REV. 35, 38.

<sup>69</sup> Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 351 (“Nothing prevents a property owner from destroying habitat prior to the listing of a species, and nothing requires a property owner to allow his land to become viable habitat

“[t]he ESA punishes those who do bad to species, but does nothing to make anyone do good.”<sup>70</sup> Importantly, the command and control regulation “ignores concerns of both efficiency and science,”<sup>71</sup> failing to achieve meaningful habitat and species conservation “in a cost-effective way.”<sup>72</sup>

The recovery statistics and perverse incentives call into question the ESA’s effectiveness at meeting its stated goal of recovery. With such limited success, looking for alternative conservation approaches like incentive mechanisms is a necessity going forward.

#### A. *Command and Control Regulation*

The ESA, like many other environmental statutes, relies too heavily on a command and control style of regulation.<sup>73</sup> Command and control regulation allows the government to prohibit development, limit activities, and control private actions.<sup>74</sup> This approach, however,

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after a listing.”); *see also* Dana, *supra* note 68, at 38 (stating that “the formal requirements of the ESA, although quite strict, are under-inclusive from any defensible ecological perspective”); Jonathan R. Nash, *Mark to Ecosystem Service Market: Repricing Conservation Easements to Protect Ecosystems*, in *REBUILDING THE ARK: NEW PERSPECTIVES ON ENDANGERED SPECIES ACT REFORM 3* (Jonathan H. Adler ed., forthcoming 2010), available at <http://www.aei.org/docLib/Nash.pdf> [hereinafter Nash, *Mark to Ecosystem Service Market*] (stating that “[w]hile the [ESA]’s primary focus on preserving species is laudable, environmental goals might be better achieved were more of the Act focused on preserving habitats and, more broadly, ecosystems”).

<sup>70</sup> Ruhl, *supra* note 64, at 289.

<sup>71</sup> Jonathan R. Nash, *Trading Species: A New Direction for Habitat Trading Programs*, 32 *COLUM. J. ENVTL. L.* 1, 2 (2007) [hereinafter Nash, *Trading Species*]. The ESA’s focus on species survival rather than habitat or ecosystem protection is scientifically flawed in two ways:

First, although the preservation of a species is integrally related to preservation of that species’ habitat, as currently drafted, the Act’s focus on survival of the species may allow substantial – and even irreversible – damage to the habitat to proceed unabated. Second, because the Act’s protections do not arise unless and until a species is endangered and not when a species’ habitat is destroyed, the Act arguably permits destruction of a species’ entire natural habitat as long as the species continues to exist outside of that natural habitat. However, from a scientific perspective, there may be considerable value in preserving species in their native habitats. The Act fails to achieve that goal.

*Id.* at 8.

<sup>72</sup> *Id.* at 9.

<sup>73</sup> *Id.* at 6-7.

<sup>74</sup> Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 317.

has been largely ineffective at meeting the ESA's stated goals<sup>75</sup> because it fails to adequately address the "fundamental tension between conservation and private development."<sup>76</sup> Furthermore, the regulation does not properly account for environmental externalities or public goods problems.<sup>77</sup> Making matters worse, these inherent limitations are only exacerbated the more complex the environmental issue,<sup>78</sup> highlighting the fact that incentive mechanisms which can adapt more readily to complex environmental problems should be utilized in the future.<sup>79</sup>

By overlooking the costs and benefits of restrictions on private landowners,<sup>80</sup> the ESA has had the effect of antagonizing the very people needed the most to achieve meaningful conservation.<sup>81</sup> In addition to antagonizing private landowners, the command and control approach has had problems with enforcement, perverse incentives, and promoting active habitat management.<sup>82</sup> As a result, species recovery has been limited under the ESA,<sup>83</sup> and the few successful cases of species improvement have not been because of the ESA's primary regulatory regime.<sup>84</sup>

### 1. *The Fifth Amendment's Takings Clause*

Some commentators have suggested that the ESA's uncompensated land use regulation runs afoul of the Fifth

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<sup>75</sup> Adler, *The Leaky Ark*, *supra* note 63, at 3.

<sup>76</sup> James Boyd et al., *The Law and Economics of Habitat Conservation: Lessons from an Analysis of Easement Acquisitions*, 19 STAN. ENVTL. L.J. 209, 211 (2000).

<sup>77</sup> Chad West, *Economics and Ethics in the Genetic Engineering of Animals*, 19 HARV. J.L. & TECH. 413, 436 (2006).

<sup>78</sup> Jonathan H. Adler, *Free & Green: A New Approach to Environmental Protection*, 24 HARV. J.L. & PUB. POL'Y 653, 667-68 (2001) [hereinafter Adler, *Free & Green*].

<sup>79</sup> See discussion *infra* Part III.

<sup>80</sup> Nash, *Trading Species*, *supra* note 71, at 9.

<sup>81</sup> See discussion *infra* Part II.C.

<sup>82</sup> See Stern, *supra* note 16, at 546-47 (stating that the command and control regulation of the ESA has "suffered from enforcement difficulties, perverse incentives, failure to advance active management practices, and alienation of landowners").

<sup>83</sup> See discussion *supra* Part II.

<sup>84</sup> Adler, *The Leaky Ark*, *supra* note 63, at 6-7 ("[T]he law has successfully 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."); see also *id.* at 8 (stating the ESA has been "more effective at preventing extinction than fueling recovery").

Amendment.<sup>85</sup> The Fifth Amendment, however, has not been a viable constraint on command and control regulation. Thus, I argue that the Fifth Amendment has given the FWS little incentive to change their command and control regulatory regime to a more incentive-based approach that takes into account the concerns of private landowners.

The Takings Clause of the Fifth Amendment states “nor shall private property be taken for public use, without just compensation.”<sup>86</sup> This clause has traditionally applied when the government expropriates or physically occupies a person’s private property.<sup>87</sup> It wasn’t until *Pennsylvania Coal Co. v. Mahon*<sup>88</sup> that the takings analysis expanded to government regulation. In *Mahon*, Justice Oliver Wendell Holmes established that “[w]here a regulation ‘goes too far’ . . . it constitutes a ‘taking’ under the Fifth Amendment, because such regulation would be tantamount to ‘appropriating or destroying’ the property interest.”<sup>89</sup>

The takings analysis was first applied to an environmental regulation in *Lucas v. South Carolina Coastal Council*.<sup>90</sup> In *Lucas*, the Supreme Court had to determine whether a local environmental regulation constituted a taking under the Fifth Amendment. Lucas purchased two beachfront lots with the intention of building residential homes.<sup>91</sup> Two years later, the South Carolina Legislature enacted an environmental act that prohibited Lucas’s ability to undertake the necessary construction to build homes on his property.<sup>92</sup> Lucas challenged the legislation under the Fifth Amendment contending that the Act constituted a taking without just compensation.<sup>93</sup> Writing for the Court, Justice Scalia held that a private landowner suffers a taking “where regulation denies all economically beneficial or productive use of land.”<sup>94</sup>

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<sup>85</sup> See, e.g., James W. Ely, Jr., *Property Rights and Environmental Regulation: The Case for Compensation*, 28 HARV. J.L. & PUB. POL’Y 51, 52-55 (2004).

<sup>86</sup> U.S. CONST. amend. V., cl. 5.

<sup>87</sup> ERWIN CHEMERINSKY, CONSTITUTIONAL LAW: PRINCIPLES AND POLICIES 645 (3d ed. 2006).

<sup>88</sup> 260 U.S. 393 (1922).

<sup>89</sup> Adler, *Money or Nothing*, *supra* note 2, at 309 (quoting *Mahon*, 260 U.S. at 414, 415).

<sup>90</sup> 505 U.S. 1003 (1992).

<sup>91</sup> *Id.* at 1006-07.

<sup>92</sup> *Id.* at 1007.

<sup>93</sup> *Id.* at 1009.

<sup>94</sup> *Id.* at 1015.

Although the Court indicated that there was a taking in *Lucas*, the high standard remains a substantial obstacle for landowners challenging ESA regulations. Under *Lucas*, there will not be a taking simply because the regulation decreases the value of the property as long as there are still viable economic uses the landowner can undertake.<sup>95</sup> Thus, the only environmental regulations likely to deny all economical use of property are those focused on maintaining the property in its natural state.<sup>96</sup>

Landowners wanting to challenge ESA regulations face an uphill battle under the takings analysis. There are procedural obstacles in the ESA that make takings challenges difficult.<sup>97</sup> A landowner must first comply with the regulation to determine the exact property limitations imposed by the restrictions before even bringing a takings claim.<sup>98</sup> Landowners are aware of the difficulties in bringing successful takings claims,<sup>99</sup> and they have been unsuccessful in challenging section 9 restrictions,<sup>100</sup> with only one case finding that there was a taking under the ESA.<sup>101</sup>

The ESA currently does not require the FWS to provide compensation for regulation. Furthermore, “the FWS [likely] does not believe current takings law significantly constrains their actions under the ESA,”<sup>102</sup> making it unlikely the FWS will change its regulatory behavior going forward. This may be detrimental to environmental goals because a purely regulatory system can create perverse incentives

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<sup>95</sup> CHEMERINSKY, *supra* note 87, at 647.

<sup>96</sup> See Thompson, *Takings & Incentives*, *supra* note 17, at 352.

<sup>97</sup> Adler, *Money or Nothing*, *supra* note 2, at 346. One such procedural obstacle under the ESA is “the FWS’s reluctance to issue a final determination on whether a proposed use of land will violate the ESA.” *Id.*

<sup>98</sup> See William F. Pedersen, *Using Federal Environmental Regulations to Bargain for Private Land Use Control*, 21 YALE J. ON REG. 1, 45 (2004); see also Andrew G. Frank, *Reforming the Endangered Species Act: Voluntary Conservation Agreements, Government Compensation and Incentives for Private Action*, 22 COLUM. J. ENVTL. L. 137, 149 (1997) (stating the Supreme Court’s ripeness requirement prevents a landowner from bringing a regulatory takings claim “until (i) the restriction is applied directly to the landowner’s parcel, and (ii) any available exceptions or approval for scaled-down, but still profitable, development proposals have been applied for and denied” (citations omitted)).

<sup>99</sup> Adler, *Money or Nothing*, *supra* note 2, at 346.

<sup>100</sup> *Id.*; see also, e.g., Moore, *supra* note 50, at 158-62 (discussing unsuccessful takings suits that challenged ESA regulation).

<sup>101</sup> *Tulare Lake Basin Water Storage Dist. v. United States*, 49 Fed. Cl. 313 (Fed. Cl. 2001); Moore, *supra* note 50, at 162.

<sup>102</sup> Thompson, *Takings & Incentives*, *supra* note 17, at 336.



among government actors and private landowners.<sup>103</sup> The government may overlook incentive mechanisms and continue to rely on ineffective regulatory mechanisms. Private landowners, aware that litigation is an uphill battle, may be forced to pursue other options such as preemptive habitat destruction or political opposition that are detrimental to conservation efforts in order to protect their economic interests.<sup>104</sup>

## 2. *Government's Perverse Incentive*

A regime that does not require the government to compensate private landowners for regulation, such as the ESA, will create perverse incentives for government actors.<sup>105</sup> The government will act under the “fiscal illusion” that regulation is cheaper than it is, which will often result in the “adopt[ion] [of] suboptimal conservation strategies.”<sup>106</sup> The government regulation will be underpriced compared to other potential incentive mechanisms, and the government will rely too heavily on regulation without looking at solutions that may be more optimal for conservation.<sup>107</sup> This creates a problem “insofar as it prevents government agencies from considering the trade-offs inherent in environmental policy.”<sup>108</sup> In addition to the problem of using inefficient conservation tools, uncompensated land use can create a political distortion that frustrates the goals of the ESA.<sup>109</sup>

A perfect example of the government acting under the “fiscal illusion” is found in revisiting *Lucas*. After the Supreme Court found that the South Carolina beachfront controls likely constituted a taking,<sup>110</sup> the state ended up purchasing the lots from Lucas for \$1.5 million.<sup>111</sup> By purchasing the land, the government was no longer acting under the “illusion” that the beachfront controls were free. Rather than preserve the beachfront property in its natural state (which the regulations would have required Lucas to do), the state decided to sell the lots for residential development,<sup>112</sup> determining that the money

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<sup>103</sup> See discussion *infra* Part II.A.2.

<sup>104</sup> See discussion *infra* Part II.C.

<sup>105</sup> Adler, *Money or Nothing*, *supra* note 2, at 337.

<sup>106</sup> *Id.* at 337, 338-39.

<sup>107</sup> *Id.* at 339-40.

<sup>108</sup> *Id.* at 340.

<sup>109</sup> *Id.* at 337 (stating “the lack of a compensation requirement . . . creates political distortions that further frustrate the achievement of environmental goals”).

<sup>110</sup> *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1031-32 (1992).

<sup>111</sup> Adler, *Money or Nothing*, *supra* note 2, at 342.

<sup>112</sup> Ely, Jr., *supra* note 85, at 54.

could better serve the conservation goals if used elsewhere.<sup>113</sup> This illustrates that the government is perfectly willing to impose expensive restrictions on private landowners for environmental purposes but will change its position and look for other alternatives that might better serve its conservation goals if forced to bear the costs.

The government's failure to take into account incentive mechanisms and the economic consequences of their decisions can help explain some of the ESA's failings, particularly the perverse incentives imposed on private landowners to destroy and degrade species' habitats on their land.<sup>114</sup> Requiring some form of compensation will increase transparency and accountability for government agencies and force them to be more efficient in using resources for conservation.<sup>115</sup>

### 3. *Failure to Promote Active Habitat Management*

A major problem with the ESA is that the statute "is inherently reactive rather than proactive,"<sup>116</sup> making it "ill-suited" to encourage active habitat management practices that can be vital to species survival.<sup>117</sup> The ESA prohibits private landowners from degrading or destroying habitat and thus deters harmful behavior, but it does nothing to compel helpful actions.<sup>118</sup> For meaningful ecosystem and species conservation, more must be done than simply having regulation that punishes landowners who destroy habitat.<sup>119</sup> If private landowners do not engage in active habitat management, listed species will continue to suffer from population declines.<sup>120</sup>

Active habitat management practices "include prescribed burnings, alien species control, reduced use of the land for grazing, or

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<sup>113</sup> Adler, *Money or Nothing*, *supra* note 2, at 342.

<sup>114</sup> *Id.* at 351; *see also* discussion *infra* Part II.C.2.

<sup>115</sup> *See* discussion *infra* Part III.B.1.

<sup>116</sup> Dana Clark & David Downes, *What Price Biodiversity? Economic Incentives and Biodiversity Conservation in the United States*, 11 J. ENVTL. L. & LITIG. 9, 14 (1996).

<sup>117</sup> Stern, *supra* note 16, at 542 (stating that the command and control regulation does not promote "active and adaptive management practices tailored to individual parcels of land").

<sup>118</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 6.

<sup>119</sup> *See* Stern, *supra* note 16, at 548-49 (citing a study that found "63% of recovery plans for various species required either initial restoration or ongoing management").

<sup>120</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 7; *see also id.* at 7 (stating that active habitat management "is important because most species on the endangered list cannot be recovered or often even sustained at their current levels without the landowners' active involvement").

reduced use of pesticides on the conserved land to maintain habitat suitable for species recovery.”<sup>121</sup> The ESA, however, does not require private landowners to undertake any of these techniques.<sup>122</sup> The ESA largely ignores this concern, failing to include habitat preservation or ecosystem protection into the Act<sup>123</sup> and not requiring landowners to manage land in ways that encourage species to occupy the land in the future.<sup>124</sup> Incentives may offer the only solution to motivate private landowners to participate in active stewardship<sup>125</sup> and must be utilized more to promote conservation.

### *B. Importance of Conservation on Private Lands*

The importance of conservation on private land cannot be understated. Approximately half of all the threatened or endangered species reside entirely on private lands<sup>126</sup> and three-fourths use private lands for habitat, food, or breeding grounds.<sup>127</sup> Similarly, most ecosystems at least partially fall on private lands.<sup>128</sup> These numbers make it obvious that meaningful conservation goals will not be achieved unless conservation on private land occurs.<sup>129</sup> Arguably the ESA’s greatest failure has been its inability to promote such conservation.<sup>130</sup> The current regulation is ineffective at addressing the conservation problems on private lands because, rather than having a system that adapts to the problems, the ESA essentially neglects the

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<sup>121</sup> Gregory M. Parkhurst & Jason F. Shogren, *Evaluating Incentive Mechanisms for Conserving Habitat*, 43 NAT. RESOURCES J. 1093, 1132 (2003) [hereinafter Parkhurst & Shogren, *Evaluating Incentive Mechanism*].

<sup>122</sup> *Id.*

<sup>123</sup> Nash, *Trading Species*, *supra* note 71, at 6.

<sup>124</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 7.

<sup>125</sup> *See* Stern, *supra* note 16, at 549.

<sup>126</sup> Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 316.

<sup>127</sup> Stern, *supra* note 16, at 545.

<sup>128</sup> Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 316. *See also* Stern, *supra* note 16, at 545. (“Private lands, especially large, contiguous parcels, contain biologically diverse ecosystems as well as rare, threatened, and endangered species.”)

<sup>129</sup> Adler, *Money or Nothing*, *supra* note 2, at 302.

<sup>130</sup> *See* PROGRESS ON THE BACK FORTY, *supra* note 66, at 5 (stating the species residing entirely on private land have fared much worse than species that are found exclusively on public land).

problems.<sup>131</sup> There is growing empirical evidence that the ESA's regulatory mechanisms have been counterproductive to conservation on private lands and cause political opposition to listing, incentivize habitat destruction, and lead to reliance on unreliable information about species.<sup>132</sup>

### C. *ESA's Effect on Private Landowners*

The ESA punishes private landowners that have species habitat on their land.<sup>133</sup> Put succinctly, the ESA "is every property owner's nightmare."<sup>134</sup> Unlike finding oil or a precious ore, which would increase the value of landowner's property, a landowner who discovers a threatened or endangered species will likely see their property value decline, often dramatically.<sup>135</sup>

Once it has been determined that a private land possesses an endangered or threatened species, the ESA precludes a private landowner from "taking" the species.<sup>136</sup> The regulation imposes substantial costs on private landowners and can limit the landowner's use or development.<sup>137</sup> These costs can often be categorized as "actual expenditures, opportunity costs of restricted land use, and opportunity costs of public expenditures on endangered species."<sup>138</sup>

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<sup>131</sup> William F. Pedersen, *Using Federal Environmental Regulations to Bargain for Private Land Use Control*, 21 YALE J. ON REG. 1, 4 (2004).

<sup>132</sup> R. Neal Wilkins, *The Power of Incentives: Can We Get Better ESA Performance from Private Lands?*, in REBUILDING THE ARK: NEW PERSPECTIVES ON ENDANGERED SPECIES ACT REFORM 2 (Jonathan H. Adler ed., forthcoming), available at <http://www.aei.org/docLib/Wilkins.pdf>.

<sup>133</sup> Adler, *The Leaky Ark*, *supra* note 63, at 11.

<sup>134</sup> Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 345.

<sup>135</sup> See, e.g., Randy T. Simmons & Kimberly Frost, *Accounting for Species: The True Costs of the Endangered Species Act* 11, available at [http://www.perc.org/pdf/esa\\_costs.pdf](http://www.perc.org/pdf/esa_costs.pdf) (discussing how a landowner in Austin, Texas saw her 15 acres of property drop in value from approximately \$1 million to \$30,000 after the FWS declared her property contained critical habitat for the endangered golden-cheeked warbler).

<sup>136</sup> See discussion *supra* Part I.D.

<sup>137</sup> Adler, *Money or Nothing*, *supra* note 2, at 313.

<sup>138</sup> Jason F. Shogren & Patricia H. Hayward, *Biological Effectiveness and Economic Impacts of the Endangered Species Act*, 32 LAND & WATER L. REV. 531, 538 (1997); see also PROGRESS ON THE BACK FORTY, *supra* note 66, at 8 (describing the private landowners costs as "the cost of surveying for endangered species, the opportunity cost associated with forgone revenue because of regulatory restrictions, the cost of altering management activities to avoid violating the law, and, if the landowner seeks a permit to destroy endangered species habitat, the cost of securing the permit").

The ESA, however, does not take into consideration the costs and benefits that regulation has on private landowners.<sup>139</sup> The belief that the ESA imposes “draconian restrictions” on private landowners has led to considerable opposition.<sup>140</sup> The regulations often have the effect of antagonizing the private “landowners who view the ESA as an unfair and costly burden,” resulting in very people whose cooperation is needed the most becoming less willing to cooperate.<sup>141</sup> These landowners argue that the ESA requires a select group of individuals to bear all the costs for conservation efforts that benefit society as a whole.<sup>142</sup> The effects of losing private cooperation are potentially large,<sup>143</sup> as demonstrated by political opposition, perverse incentives, and information problems associated with the ESA.<sup>144</sup> The perverse incentives created by command and control regulation are largely to blame for the ESA’s lack of success.<sup>145</sup>

### 1. Political Opposition

The ESA has drawn heavy criticism from people of all political ideologies. The most common criticisms focus on the ESA’s infringement on property rights and the narrow “species-specific framework.”<sup>146</sup> Political opposition can be detrimental and has led to

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<sup>139</sup> Nash, *Trading Species*, *supra* note 71, at 9; *see also* Sinden, *supra* note 37, at 139 (stating the ESA’s “prohibitions are nearly absolute, based entirely on biological standards, with no room for consideration of economic impacts”).

<sup>140</sup> Nash, *Mark to Ecosystem Service Market*, *supra* note 69, at 1. By overlooking the costs and imposing strict rules on private landowners, the ESA has drawn considerable opposition and has encouraged private landowners to engage in activities that run contrary to the conservation goals of the Act. *See* Jonathan H. Adler, *Bad for Your Land, Bad for the Critters*, WALL ST. J., Dec. 31, 2003, at A8, *available at* <http://online.wsj.com/article/0,,SB107283504618484600,00.html> (arguing that for better results the government should attempt to work with private landowners rather than against them with such regulation).

<sup>141</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 4.

<sup>142</sup> Jeffrey A. Michael, *The Endangered Species Act and Private Landowner Incentives* 29, *available at* [http://www.aphis.usda.gov/wildlife\\_damage/nwrc/symposia/economics\\_symposium/michael.HR.pdf](http://www.aphis.usda.gov/wildlife_damage/nwrc/symposia/economics_symposium/michael.HR.pdf) (“Opponents of the current ESA argue that the act requires a few private landowners to provide a benefit to the public (endangered species habitat), while private landowners bear all the costs (restrictions on land use and development).”).

<sup>143</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 5.

<sup>144</sup> *See* discussion *infra* Part II.C.1-3.

<sup>145</sup> Adler, *The Leaky Ark*, *supra* note 63, at 11.

<sup>146</sup> Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 318.

“less than optimal environmental protection.”<sup>147</sup> Incentive mechanisms offer a solution to ease some of the political tension by providing compensation and assurances to private landowners and increasing conservation efforts that benefit all species.

A combination of strong beliefs in private property rights and a general distrust of government bureaucracy and regulation have led many people to believe the ESA has gone too far.<sup>148</sup> Property rights advocates argue that the government should be forced to pay private landowners for restrictions imposed by regulation—even if not required to do so under the Fifth Amendment—because compensation would improve fairness and require the government to weigh the costs of regulation.<sup>149</sup> The significant “citizen backlash” has resulted in backlash against legislative efforts aimed at species protection and regulation on private land without compensation.<sup>150</sup>

Because the ESA’s protections and restrictions kick in when a species is listed, property owners will often focus their efforts to “vehemently oppose new listings.”<sup>151</sup> Landowners have an incentive to use political and legal pressures to delay listing rather than face substantial economic costs imposed by regulation.<sup>152</sup> A delay in the species listing will benefit the private landowner at the detriment of conservation. Listing delays will increase the time private landowners have to engage in the perverse incentives and give the landowners

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<sup>147</sup> Adler, *Money or Nothing*, *supra* note 2, at 347.

<sup>148</sup> Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 317. One movement that believes government has gone too far is the idea of free market environmentalism. Free market environmentalism believes that the private market can provide better solutions to environmental problems than government regulation and bureaucracy. West, *supra* note 77, at 436; *see also* The Thoreau Institute, *FAQs about Free-Market Environmentalism*, <http://www.ti.org/faqs.html> (last visited Nov. 3, 2009) (describing free market as believing the market will provide a better solution for conservation in many, but not all, situations). For criticism of free market environmentalism, *see* Michael C. Blumm, *The Fallacies of Free Market Environmentalism*, 15 Harv. J.L. & Pub. Pol’y 371 (1992).

<sup>149</sup> *See* John D. Escheverria & Thekla Hansen-Young, *The Track Record on Takings Legislation: Lessons from Democracy’s Laboratories*, 28 STAN. ENVTL. L.J. 439, 443 (2009).

<sup>150</sup> Stern, *supra* note 16, at 548. This may prompt individuals to vote for candidates that do not promote conservation efforts. *Id.*

<sup>151</sup> Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 312; *see also* Adler, *Money or Nothing*, *supra* note 2, at 348 (“The chief reason for focusing on the listing process is that once a species is listed as endangered, restrictions on habitat modification and other activities that could harm the species are automatic.”).

<sup>152</sup> Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 312.

more time to find scientific information that suggests the listing is unnecessary.<sup>153</sup>

## 2. *Perverse Incentives*

Rather than promote conservation on private land, the ESA creates perverse incentives among private landowners to destroy critical habitat in order to avoid complying with the ESA. Recent studies have shown that a species listing can actually be detrimental to the species if not followed by significant resources aimed at species recovery as a result of perverse incentives.<sup>154</sup> Similarly, preemptive habitat destruction caused by fear of regulation imposed by the ESA may result in long-term damage to habitat and listed species population.<sup>155</sup> The landowner's decision to make their land less desirable for conservation is often "economically inefficient, socially wasteful, and potentially environmentally devastating."<sup>156</sup>

The structure of the ESA encourages perverse incentives in three ways.<sup>157</sup> First, a landowner who discovers an endangered species habitat on their land before the government will have an incentive to discourage the species from inhabiting the land in any manner and will be encouraged to expel the species in such a way that the species will not return.<sup>158</sup> Similarly, a landowner who believes a species may inhabit their land in the future will have an incentive to make sure that will not happen.<sup>159</sup>

Second, if a species that inhabits private land has not been listed as endangered or its habitat identified as protected, but the private landowner believes the listing is forthcoming, the landowner's best strategy would be to destroy the habitat prior to listing to avoid

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<sup>153</sup> Adler, *Money or Nothing*, *supra* note 2, at 349-50; *see also* Ando, *supra* note 22, at 34-36. For further discussion on the perverse incentives of private landowners, *see infra* Part II.C.2.

<sup>154</sup> Adler, *The Leaky Ark*, *supra* note 63, at 8-9. The negative effect of listing without funding may be because of the perverse incentives of private landowners, whereas if the listing has funding there may be greater monitoring and enforcement of the ESA's rules. *Id.* at 9.

<sup>155</sup> Dean Lueck & Jeffrey A. Michael, *Preemptive Habitat Destruction under the Endangered Species Act*, 46 J.L. & ECON. 27, 30 (2003).

<sup>156</sup> Adler, *Money or Nothing*, *supra* note 2, at 318.

<sup>157</sup> Nash, *Trading Species*, *supra* note 71, at 10.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.*

regulation.<sup>160</sup> Thus, a private landowner is encouraged to “shoot, shovel, and shut up.”<sup>161</sup>

Third, if the landowner is on notice that the presence of an endangered species on the land will restrict development in the future, the landowner has the incentive to develop the land sooner rather than later to avoid restrictions on development.<sup>162</sup> This “race to develop” is not only economically inefficient but harmful to species because premature development increases the amount of habitat that is destroyed and makes it more likely that a species will be listed in the near future.<sup>163</sup>

Landowners engaging in perverse incentives have obvious negative effects on conservation efforts. There is some disagreement whether private landowners participate in these perverse incentives on a widespread basis, or if it happens only in a few celebrated instances.<sup>164</sup> Because most private landowner behavior is unobservable, it is difficult to know just how prevalent these perverse incentives are.<sup>165</sup> Empirical evidence, however, supports the anecdotal and theoretical claims that uncompensated land use regulation creates perverse incentives for private landowners that negatively affect species conservation efforts on private lands.<sup>166</sup> Furthermore, groups such as the National Association of Home Builders have promoted the “scorched earth” technique to preemptively destroy habitat so that

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<sup>160</sup> *Id.*

<sup>161</sup> Richard A. Epstein, *Babbitt v. Sweet Home Chapters of Oregon: The Law and Economics of Habitat Preservation*, 5 SUP. CT. ECON. REV. 1, 33 (1997). This strategy of habitat destruction does not work in all situations, but absent strong property ownership rights or landowner confidence in “safe harbor” promises the landowner will often have the strong incentive to destroy habitat today in order to maintain freedom in the future. *Id.*

<sup>162</sup> Nash, *Trading Species*, *supra* note 71, at 10. “[T]he ‘race to develop’ . . . flouts both science and efficiency.” *Id.* at 10-11.

<sup>163</sup> Nash, *Mark to Ecosystem Service Market*, *supra* note 69, at 4.

<sup>164</sup> Lueck & Michael, *supra* note 155, at 30-31.

<sup>165</sup> See Adler, *Money or Nothing*, *supra* note 2, at 314.

<sup>166</sup> *Id.* at 326 (stating “there is significant empirical support for the anecdotal and theoretical claims that land use regulations harm species conservation efforts on private land as a result of the incentives created for private landowners”); see, e.g., Lueck & Michael, *supra* note 155, at 52 (concluding that evidence shows that the habitat for the endangered red-cockaded woodpeckers’ has been reduced on private land as a result of ESA regulations).



endangered species will not inhabit the private land in the future and the landowner will thus not face ESA regulation.<sup>167</sup>

Although concrete evidence demonstrating the full effect of perverse incentives on all species may never be realized, ignoring the reality that they occur and failing to address the reasons behind them will continue to have devastating effects on conservation efforts. Private landowners will continue to be influenced by economic concerns and resort to the means available to them to protect their interests, even if that means destroying species habitat to avoid costly regulation.

### 3. *Information Problems*

A third major problem with antagonizing private landowners is that landowners will be less willing to provide vital information. The ESA requires information, like the prevalence of species habitat, prior to listing and actually imposing regulations.<sup>168</sup> The asymmetry of information between a private landowner and the government makes it difficult for regulators to obtain accurate information and effectively regulate private land.<sup>169</sup> A private landowner fearful of potential regulation will be discouraged from coming forward with information vital to species recovery or from participating in scientific research, imposing significant costs on conservation efforts.<sup>170</sup>

To be successful, the ESA needs reliable site-specific information from private landowners for “[s]pecies listing, critical habitat designations, status reviews, recovery plans and enforcement actions.”<sup>171</sup> Currently, most of the research on endangered species is

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<sup>167</sup> See Michael, *supra* note 142, at 32 (quoting the Developers Guides to Endangered Species Regulation which states that “[t]he highest level of assurance that a property owner will not face an ESA issue is to maintain the property in a condition such that protected species cannot occupy the property . . . This is referred to as the ‘scorched earth’ technique”).

<sup>168</sup> See Wilkins, *supra* note 132, at 4; see also Barton H. Thompson, Jr., *Conservation Environmental Thought: The Bush Administration and Environmental Policy*, 32 *ECOLOGY L.Q.* 307, 335 (2005) (stating that command and control regulation requires the government to obtain “accurate information about both costs and benefits in order to determine the appropriate regulatory standard”).

<sup>169</sup> See Christopher S. Elmendorf, *Ideas, Incentives, Gifts, and Governance: Toward Conservation Stewardship of Private Land, in Cultural and Psychological Perspective*, 2003 *U. ILL. L. REV.* 423, 432 (2003).

<sup>170</sup> Adler, *The Leaky Ark*, *supra* note 63, at 15-16.

<sup>171</sup> Wilkins, *supra* note 132, at 4.

conducted on government land.<sup>172</sup> If landowners do not participate in scientific research, estimates of species presence on private lands may be wrong,<sup>173</sup> resulting in inefficient conservation efforts and limiting the government's ability to make meaningful plans targeting specific species effectively.

### III. Incentive Mechanisms

The concept of incentive-based species conservation is simple: private landowners will be more likely to embrace and engage in conservation efforts if they are not forced to pay the entire bill.<sup>174</sup> Instead of punishing landowners for having endangered species on their land, it is time to reward and encourage them to create positive externalities that benefit the public at large.<sup>175</sup> Given the marginal success of the ESA, a more innovative approach—one embracing incentive mechanisms that encourage private conservation—should be preferred going forward. Incentives offer a promising alternative to command and control regulation that can increase conservation and stewardship on private land.<sup>176</sup> Similarly, incentives have the potential to promote active habitat management while reducing or eliminating the perverse incentives created by a purely regulatory regime.<sup>177</sup>

#### A. *The First Generation of Incentives Mechanisms*

The ESA has taken some steps towards using incentives to promote conservation efforts among private landowners. Section 10 was added to the ESA to alleviate the strict restrictions on private landowners. Since then, the ESA has embraced programs such as Habitat Conservation Plans, Safe Harbor Agreements, and Candidate Conservation Plans with some success.

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<sup>172</sup> Adler, *The Leaky Ark*, *supra* note 63, at 16.

<sup>173</sup> *Id.*

<sup>174</sup> See generally Adler, *The Leaky Ark*, *supra* note 63, at 14.

<sup>175</sup> See Stern, *supra* note 16, at 543.

<sup>176</sup> *Id.* at 542 (“Incentives offer a promising method of increasing conservation and stewardship without alienating landowners.”).

<sup>177</sup> *Id.* at 550.

1. *Habitat Conservation Plans*

The addition of section 10 incidental take permits in the 1983 Amendments to the ESA was the first move away from a purely command and control regulatory regime.<sup>178</sup> Under section 10, developers may prepare Habitat Conservation Plans (HCPs) as a way of dealing with section 9's take prohibition.<sup>179</sup>

A HCP permit is required for private development projects that will result in the "take" of a listed species.<sup>180</sup> HCPs are prepared as part of the incidental take permit<sup>181</sup> and provide landowners with a degree of flexibility and assurance not found in other provisions of the ESA.<sup>182</sup> The plans are negotiated between the government and private landowners and usually result in high transaction and administration costs.<sup>183</sup> Landowners are typically required to survey the existing habitat on their land, prepare a plan to minimize and mitigate any take of a listed species, and continue to monitor the species population, among other things.<sup>184</sup> Although larger landowners see HCPs as a way

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<sup>178</sup> See Christopher S. Mills, *Incentives and the ESA: Can Conservation Banking Live up to Potential?*, 14 DUKE ENVTL. L. & POL'Y F. 523, 527 (2004); see also PROGRESS ON THE BACK FORTY, *supra* note 66, at 16 ("Before 1982, the ESA's take prohibition was, theoretically, absolute.").

<sup>179</sup> Mills, *supra* note 178, at 527. HCPs, however, were not widely used until Secretary of Interior Bruce Babbitt began promoting the program as a way to creatively balance the interests of private landowners and environmentalists. Ruhl, *Post-Babbittonian*, *supra* note 12, at 430-32; see discussion *infra* notes 186-197 (describing the influence of the "No Surprises" policy in increasing HCP participation). Babbitt pushed a two-part agenda that emphasized using ecosystem-level management of habitat and resources to boost species conservation while simultaneously working with private landowners whose property contained habitat for threatened and endangered species by giving the landowners more of a voice and looking for more equitable solutions for these landowners. Ruhl, *Post-Babbittonian*, *supra* note 12, at 431-32. At the center of Babbitt's agenda was the use of the HCP program. *Id.* at 431. Landowners embraced the program because it provided a contractual way to resolve some of their issues with the ESA and the FWS was able to sell the program as conserving species. *Id.* at 432. Only a handful of HCP permits had been issued prior to Babbitt, a number that increased to the hundreds by the end of his term. *Id.* at 431-32. This was helped by the greater certainty provided by the No Surprises policy. See Mills, *supra* note 178, at 526-27.

<sup>180</sup> Ruhl, *How to Kill Endangered Species*, *supra* note 46, at 355. This involves a threshold problem of what constitutes a take and when must a project apply for a HCP permit. *Id.* at 357.

<sup>181</sup> See discussion *supra* Part I.E.

<sup>182</sup> Nash, *Trading Species*, *supra* note 71, at 5.

<sup>183</sup> *Id.* at 11.

<sup>184</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 16.

of minimizing some of the costs of complying with the ESA, the high transaction costs and often extended approval process can discourage small landowners from preparing HCPs.<sup>185</sup>

Arguable the greatest benefit of HCPs is the certainty provided to private landowners.<sup>186</sup> In 1994 the “No Surprises” policy was adopted as a way to induce greater participation in HCPs.<sup>187</sup> The policy guarantees private landowners that if they adhere to the HCP’s conservation activities—even if the plan fails to adequately compensate for the actual species habitat loss—any additional financial or conservation obligations will be limited.<sup>188</sup> This allows the landowner to factor in the costs associated with conservation<sup>189</sup> and protects the landowner from having to pay for unforeseen circumstances that would require the HCP to change.<sup>190</sup> By reducing the regulatory uncertainty going forward, the market value of the land is increased.<sup>191</sup> Landowners also benefit from a long-term reduction in the “cost of processing development permits” and facilitating the “negotiation of changes in development plans necessitated by market conditions.”<sup>192</sup>

Reducing the costs associated with creating and maintaining HCPs has had the effect of creating more incentives for private landowners to participate in the program.<sup>193</sup> Increased certainty frees up money and increases land values, which allow the landowner to contribute more for species conservation and stewardship efforts.<sup>194</sup> These assurances also provide conservation benefits for listed and unlisted species,<sup>195</sup> including increased protection for endangered

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<sup>185</sup> *Id.*

<sup>186</sup> *Id.* at 17.

<sup>187</sup> *Id.* at 16. The “No Surprises” policy is not popular with environmental groups that believe that the program constrains the agency’s ability to use adaptive management techniques. J.B. Ruhl, *Regulation by Adaptive Management – Is it Possible?*, 7 MINN. J.L. SCI. & TECH. 21, 48 (2005) [hereinafter Ruhl, *Adaptive Management*].

<sup>188</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 17. The costs associated with any new and necessary mitigation measures will primarily be spread to the government, private conservation organizations, or private landowners that develop HCPs in the future. Sheldon, *supra* note 59, at 317.

<sup>189</sup> Fred P. Bosselman, *The Statutory and Constitutional Mandate for a No Surprises Policy*, 24 ECOLOGY L.Q. 707, 713 (1997).

<sup>190</sup> Mills, *supra* note 178, at 526-27.

<sup>191</sup> Bosselman, *supra* note 189, at 711.

<sup>192</sup> *Id.* at 717.

<sup>193</sup> Mills, *supra* note 178, at 532.

<sup>194</sup> See Bosselman, *supra* note 189, at 710-11.

<sup>195</sup> See *id.* at 713-17.

plants and habitats not currently occupied by listed species.<sup>196</sup> Additionally, the assurances “provide a framework of funding and cooperation” important for adaptive management techniques.<sup>197</sup>

Despite the few success stories of HCPs, there have been many complete failures.<sup>198</sup> Critics argue that HCPs do not have a basic scientific foundation and are reactive because the program only involves mitigation of the development’s effect and does not promote conservation efforts aimed at recovery.<sup>199</sup> Even though HCPs are not perfect, they continue to be a viable alternative for private landowners and are a significant improvement over a strict command and control regulatory regime.<sup>200</sup> To date, 1017 HCPs have been approved,<sup>201</sup> indicating landowners and regulators see HCPs as an improvement over strict command and control regulation.

A properly prepared HCP can address private landowner concerns and simultaneously advance conservation.<sup>202</sup> Because private landowners are involved in the program, the number of resources available for threatened and endangered species, and efforts to conserve on private land, are improved.<sup>203</sup>

## 2. Safe Harbor Agreements

Safe Harbor Agreements (SHAs) provide private landowners who voluntarily undertake conservation efforts assurance from regulators that their efforts will not subject them to additional restrictions.<sup>204</sup> With SHAs, the landowner enters into an agreement with the FWS to “restore, enhance or create habitat” for the benefit of a

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<sup>196</sup> *Id.* at 713-15.

<sup>197</sup> *Id.* at 715-16.

<sup>198</sup> Mills, *supra* note 178, at 530.

<sup>199</sup> *Id.* at 530-31; *see also* Clark & Downes, *supra* note 116, at 50 (identifying the two fundamental problems associated with HCPs: that the program “is driven by the habitat needs of specific listed species and that it is reactive to species endangerment rather than proactive for species protection”).

<sup>200</sup> *See* Mills, *supra* note 178, at 531.

<sup>201</sup> U.S. Fish & Wildlife Service, *Species Report*, available at [http://ecos.fws.gov/tess\\_public/TessStatReport](http://ecos.fws.gov/tess_public/TessStatReport) (last visited June 20, 2010).

<sup>202</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 18.

<sup>203</sup> Mills, *supra* note 178, at 531.

<sup>204</sup> *See* U.S. Fish & Wildlife Service, *supra* note 27, at 2; *see also* PROGRESS ON THE BACK FORTY, *supra* note 66, at 30. The SHA does not reduce the private landowner’s legal responsibilities to species on the property prior to signing the agreement. *Id.* at 31.

listed species.<sup>205</sup> The existing habitat on the property at the time of the agreement is the “baseline”<sup>206</sup> and the landowner’s responsibilities with respect to the ESA are frozen at that level.<sup>207</sup> Essentially, the landowner agrees to improve conditions for a species over a specified period of time and may return the property to its baseline at the end of the agreement.<sup>208</sup> Under an SHA, the landowner is authorized to “take endangered species that may inhabit the property in the future as a result of the landowner’s stewardship activities.”<sup>209</sup>

SHAs have been successful in promoting active habitat management efforts and reintroducing species to private lands.<sup>210</sup> SHAs have been utilized successfully for species like the red-cockaded woodpecker that nest in mature longleaf pine forests.<sup>211</sup> Instead of preemptively harvesting the timber,<sup>212</sup> resulting in economic and ecological inefficiencies, landowners can instead participate in SHAs. These SHAs allow woodpeckers to inhabit the forests until the timber reaches proper harvesting age, benefiting both the landowner and the woodpecker. SHAs, however, “can only do so much.”<sup>213</sup> Their conservation benefit may only be temporary because landowners only have to return the property to the baseline condition.<sup>214</sup> Furthermore, there are a limited number of situations – like that of the red-cockaded

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<sup>205</sup> Blake Hudson, *Promoting and Establishing the Recovery of Endangered Species on Private Lands: A Case Study of the Gopher Tortoise*, 18 DUKE ENVTL. L. & POL’Y F. 163, 193-94 (2007); see also J. Michael Scott et al., *By the Numbers*, in THE ENDANGERED SPECIES ACT AT THIRTY: RENEWING THE CONSERVATION PROMISE 28 (Dale D. Goble et al. eds., 2006) [hereinafter Scott et al., *By the Numbers*]. The FWS may authorize SHAs through section 10(a)(1) of the ESA. PROGRESS ON THE BACK FORTY, *supra* note 66, at 33.

<sup>206</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 31.

<sup>207</sup> Hudson, *supra* note 205, at 194.

<sup>208</sup> Michael J. Bean, *Species Protection and the Law: Endangered Species Act, Biodiversity Protection, and Invasive Species Control* (American Law Institute, 2005); see also U.S. Fish & Wildlife Service, *supra* note 27, at 2.

<sup>209</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 33.

<sup>210</sup> *Id.* at 36; see also Hudson, *supra* note 205, at 194 (listing benefits of SHAs such as active habitat management techniques and reintroducing species to private land).

<sup>211</sup> See U.S. Fish & Wildlife Service, *Pine Tree Farming and Endangered Woodpeckers: A Safe Harbor for Both in South Carolina 1*, available at <http://www.fws.gov/endangered/factsheets/Skeet%20Burris'%20Safe%20Harbor%20fact%20sheet%208-27-09%20515%20Kelly%20Fike.pdf>.

<sup>212</sup> Lueck & Michael, *supra* note 155, at 51.

<sup>213</sup> Adler, *Money or Nothing*, *supra* note 2, at 337.

<sup>214</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 34.

woodpecker—in which private landowners’ and species’ interests align perfectly so that landowners will seek out SHAs.

SHAs have the positive effect of promoting conservation without alienating private landowners. SHAs, coupled with incentive mechanisms that compensate good stewardship,<sup>215</sup> could increase the utility of these plans and promote lasting active habitat management practices. Landowners who undertake conservation efforts should not be subject to greater restrictions as a result of those efforts, but that promise alone is not enough to entice a significant number of landowners to participate. Incentives, including compensation, can help to increase participation rates and usher in meaningful conservation results.

### 3. *Candidate Conservation Agreements*

Candidate Conservation Agreements (CCAs) are voluntary agreements in which landowners agree to undertake conservation efforts for candidate species or species that may be listed in the future.<sup>216</sup> The hope behind CCAs is that proactive conservation efforts will make listing unnecessary in the future.<sup>217</sup> Private landowners may receive CCAs with “assurances” that if the species is listed in the future, no regulatory obligations exceeding the CCA will be imposed.<sup>218</sup> Like SHAs, CCAs are a promising tool that can be coupled with incentive mechanisms to compensate stewardship.

## B. *Solutions for Private Landowners: Current and Future Incentive Mechanisms*

The growing consensus in the economic literature is that failure to compensate private landowners will have significant negative effects on the environment,<sup>219</sup> illustrating the necessity to use incentive mechanisms that reward conservation efforts. Wealth and incentives

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<sup>215</sup> See discussion *infra* Part III.B.

<sup>216</sup> Scott et al., *By the Numbers*, *supra* note 205, at 26.

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

<sup>218</sup> *Id.*

<sup>219</sup> Adler, *Money or Nothing*, *supra* note 2, at 314; see also Jason F. Shogren et al., *Why Economics Matters for Endangered Species Protection*, 13 CONSERVATION BIOLOGY 1257, 1258 (1999), available at [http://courses.forestry.ubc.ca/Portals/59/shogren-1999\\_SAR-economics.pdf](http://courses.forestry.ubc.ca/Portals/59/shogren-1999_SAR-economics.pdf) (stating that the ESA’s “consistent exclusion of economic behavior in the calculus of endangered species protection has led to ineffective and, in some instances, counterproductive conservation policy”).

matter for conservation purposes.<sup>220</sup> There is a correlation between compensating private landowners and increased habitat quality, indicating that incentive mechanisms have a positive influence on the environment.<sup>221</sup>

Incentives are a powerful tool for changing behavior and have proven more effective than “education, persuasion, prompting, or feedback.”<sup>222</sup> Incentives have the “ability to tap into decentralized behavior-coordinating mechanisms” and give agencies more flexibility to implement policies and decisions “adaptively.”<sup>223</sup> Incentives, such as compensation programs and market-based solutions, will help change private landowners’ negative behavior toward the ESA and improve conservation efforts on private land.

### 1. Compensation Programs

Professor Richard A. Epstein posed the question: “if the protection of endangered species is so important, why should the public not pay for it?”<sup>224</sup> This is the contention of many private landowners forced to foot the bill of conservation on private land. Why should a select—often unfortunate—few individuals be forced to pay for the greater good in society simply because their land contains habitat for threatened and endangered species? Instead of creating animus and perverse incentives among private landowners that will limit conservation efforts, many scholars have argued a better mechanism would be to compensate these landowners.<sup>225</sup> Voluntary compensation programs would help eliminate many of the perverse incentives associated with command and control regulation and align private landowners’ interests with conservation goals.

The fear behind a compensation requirement is the implicit belief that compensating private landowners for regulation will come at the cost of environmental conservation.<sup>226</sup> This, however, may not be

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<sup>220</sup> Terry L. Anderson, *Markets and the Environment: Friends or Foes?*, 55 CASE W. RES. L. REV. 81, 86 (2004).

<sup>221</sup> *Id.* at 86-87. Evidence shows that “environmental quality eventually increases with wealth.” *Id.* at 87.

<sup>222</sup> Stern, *supra* note 16, at 562.

<sup>223</sup> Ruhl, *Adaptive Management*, *supra* note 187, at 27.

<sup>224</sup> Epstein, *supra* note 161, at 57.

<sup>225</sup> See, e.g., Ely, Jr., *supra* note 85; Adler, *Money or Nothing*, *supra* note 2, at 351-52.

<sup>226</sup> Adler, *Money or Nothing*, *supra* note 2, at 313; see also West, *supra* note 77, at 436 (stating the traditional view among environmentalists is that the government is



true. Not only does a system of uncompensated land use lead to perverse incentives for government agencies and private landowners, with the effect of hampering conservation efforts,<sup>227</sup> compensation programs may actually increase cooperation in conservation efforts and lead to more efficient and effective use of private lands.

A compensation requirement for regulation will require the government to assess the costs and benefits of regulations more carefully.<sup>228</sup> Taxpayers forced to compensate for environmental protections will either be willing to accept the costs of the regulation or they will not.<sup>229</sup> This would increase efficiency because if the taxpayers are unwilling to fund the regulation then the regulation should not be imposed on the private landowner.<sup>230</sup> Compensation would likewise increase transparency and accountability for government agencies<sup>231</sup> and would result in “a more efficient balance among the resources devoted to species protection and recovery.”<sup>232</sup> Government agencies would thus be forced to take into consideration the inherent tradeoffs and costs-effectiveness of their decisions.<sup>233</sup> This would motivate agencies to look at more optimal incentive mechanisms and combine the tools available to reach maximum conservation levels rather than relying solely on direct regulatory mechanisms.<sup>234</sup>

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more effective at conservation and that private actors neglect harmful environmental externalities to reduce costs).

<sup>227</sup> See discussion *supra* Part II.C.2.

<sup>228</sup> Ely, Jr., *supra* note 85, at 53; see also Alder, *Money or Nothing*, *supra* note 2, at 354-55 (stating the budgetary restraints government agencies will face because of a compensation program will require the agencies to optimize their resources and put them towards their best use). *But see* John D. Escheverria & Thekla Hansen-Young, *The Track Record on Takings Legislation: Lessons from Democracy's Laboratories*, 28 STAN. ENVTL. L.J. 439, 502 (2009) (arguing that takings compensation does not result in “careful calculations of the relative costs and benefits of regulatory action, but instead virtually stop[s] it altogether”).

<sup>229</sup> Ely, Jr., *supra* note 85, at 53-55.

<sup>230</sup> *Id.* at 55; see also Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 359 (stating for the ESA, a system of “compensation would probably improve efficiency”). *But see* Michael, *supra* note 142, at 32-33 (“Standard takings compensation (full payment of the loss in private use value in the event of endangered species regulation) is inefficient for 2 reasons. First, it fails to reward landowners for improvements in the public conservation value. Second, it creates an incentive to overdevelop in some settings because landowners do not need to consider the public conservation value of their land.”).

<sup>231</sup> Adler, *Money or Nothing*, *supra* note 2, at 362.

<sup>232</sup> Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 366.

<sup>233</sup> Adler, *Money or Nothing*, *supra* note 2, at 362.

<sup>234</sup> See *id.* at 359-60.

A compensation program would have a positive influence on private landowners. While compensating landowners for fair market value will not pay the full subjective value of the land, it will lessen the opposition to the conservation efforts of the ESA.<sup>235</sup> A complete compensation program would likely limit private landowner opposition to the ESA and would help eliminate premature development of property and destruction of habitat essential for species conservation.<sup>236</sup> In addition to eliminating perverse incentives, a compensation program will encourage private landowners to take into account the economic and ecological value of their land and direct efforts to maximize this value.<sup>237</sup> Private landowners will have incentives to voluntarily learn about potential ecological use of their land and will engage in proactive practices that enhance ecological value.<sup>238</sup> Similarly, private landowners would be more willing to provide information about species on their land if they don't live in fear of uncompensated regulation.<sup>239</sup>

Direct compensation programs are not perfect, however. While the programs can provide a cost-effective way for governmental agencies to fix short-term needs, they can be ineffective with long-term or permanent preservation because the programs become expensive and there is uncertainty that a private landowner might holdout for more money.<sup>240</sup> These programs still require monitoring and enforcement to ensure that private landowners comply.<sup>241</sup> Full compensation programs may also create perverse incentives among private landowners "to make socially inefficient investments in their

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<sup>235</sup> *Id.* at 352.

<sup>236</sup> Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 351-52; *see also* Ely, Jr., *supra* note 85, at 56-57.

<sup>237</sup> Adler, *Money or Nothing*, *supra* note 2, at 353; *see also* Michael, *supra* note 142, at 33 ("An efficient compensation scheme will cause a private landowner to value each of their [sic] land use alternatives at the same level as society.").

<sup>238</sup> Adler, *Money or Nothing*, *supra* note 2, at 353-54. Compensating private landowners for ESA regulation would not face the same moral hazard as in other regulatory contexts because the goal is to keep land in its natural condition. Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 352. Other regulatory settings the property owner may have an incentive to develop their land prematurely because the program would compensate the landowners more for the increased value if the government decides to regulate. *Id.*

<sup>239</sup> Adler, *Money or Nothing*, *supra* note 2, at 352.

<sup>240</sup> Stern, *supra* note 16, at 551.

<sup>241</sup> *Id.* at 556.

property.”<sup>242</sup> Compensation programs are also not immune to cries of cost-inefficiency and political opposition.<sup>243</sup> Furthermore, requiring taxpayers to fit the bill can also raise a revenue issue and create its own inefficiencies.<sup>244</sup>

Despite these concerns, purchasing private lands for public use in conservation efforts appears to be the most effective answer, but its viability as an option is limited to only a small portion of species because of obvious financial and political constraints.<sup>245</sup> A voluntary purchase regime is not always feasible for large continuous tracks of land because of potential landowner holdout.<sup>246</sup> In this situation, the government can utilize eminent domain<sup>247</sup> or, preferably, use other incentive mechanisms that target large land more effectively such as market-based solutions.<sup>248</sup>

Compensation will provide a solid foundation for promoting conservation efforts on private land, but it must also be paired with broader reform to the ESA.<sup>249</sup> Although the federal government has not embraced a compensation program, states have begun experimenting with incentives that reward private landowners through compensation. Compensation programs have included fee simple acquisition, subsidies, and conservation easements.<sup>250</sup>

#### a. Fee Simple Acquisition

A fee simple acquisition for the purpose of conservation involves a government agency, land trust, or non-profit organization purchasing all the property rights from a private landowner.<sup>251</sup> It is a voluntary transaction between the landowner and conservator that allows market forces to determine the price of the transfer.<sup>252</sup> The conservator will typically pay the private landowner the value of the land, including

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<sup>242</sup> Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 348.

<sup>243</sup> Stern, *supra* note 16, at 556.

<sup>244</sup> See Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 354-55.

<sup>245</sup> Wilkins, *supra* note 132, at 6.

<sup>246</sup> Ely, Jr., *supra* note 85, at 57.

<sup>247</sup> *Id.*

<sup>248</sup> See discussion *infra* Part III.B.2.

<sup>249</sup> Adler, *The Leaky Ark*, *supra* note 63, at 15.

<sup>250</sup> See Wilkins, *supra* note 132, at 6.

<sup>251</sup> Boyd, et al., *supra* note 76, at 214; see also Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1117.

<sup>252</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1117.

current and future opportunity costs, in order to use the land in a more profitable way.<sup>253</sup>

Fee simple acquisitions provide several benefits. They have high potential for active management of habitat because the government has ownership and management responsibilities.<sup>254</sup> Similarly, monitoring costs and enforcing use restrictions are low with fee simple acquisitions if a single person or organization owns the land in its entirety.<sup>255</sup> There are low to moderate administrative costs associated with fee simple acquisition resulting from the government's need to manage the land.<sup>256</sup>

Although fee simple acquisitions are often the simplest conservation mechanism, the costs associated with purchasing all the rights in the property can be very high.<sup>257</sup> The acquisition may also result in "conservation overkill" because the conservator may not engage in activities such as farming that are compatible with conservation.<sup>258</sup> Regulators may, however, be able to lease the land under controlled conditions to private entities to engage in these commercial activities. This would allow the land to be used efficiently for conservation and commercial purposes and allow regulators to recover some of the acquisition costs associated with purchasing the fee simple acquisition.

Fee simple acquisitions offer the government a viable option to purchase land with high conservation and low development value. They have successfully been used to create public goods by using the purchased land for parks, wildlife preserves, and nature trails.<sup>259</sup> Although fee simple acquisitions remain an option for regulators and alleviate the fiscal illusion concerns, their overall viability is limited due to the high costs associated with acquiring full property rights. Politically, fee simple acquisitions will never be able to gain bipartisan

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<sup>253</sup> Boyd, et al., *supra* note 76, at 214.

<sup>254</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1134.

<sup>255</sup> Boyd, et al., *supra* note 76, at 214-15.

<sup>256</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1139.

<sup>257</sup> Boyd, et al., *supra* note 76, at 214; *see also* Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1143 (describing the costs for conserving land with fee simple acquisition as very high).

<sup>258</sup> Boyd, et al., *supra* note 76, at 214.

<sup>259</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1117. Land trust and non-profit organizations have used fee simple acquisitions as a way to conserve ecologically sensitive areas threatened by development. *Id.* at 1118.

support to be more than just a minor conservation tool because purchasing large tracks of land or high volumes of land is too costly and, conversely, picking and choosing only certain land to conserve would not satisfy broad conservation needs.

b. Subsidies

Subsidies are a flexible tool that encourages private landowners to take part in conservation efforts by offering financial incentives.<sup>260</sup> Subsidies often take the form of cash, loans, grants, or tax incentives offered by regulators and non-government organizations to the landowner to either maintain their land in its undeveloped state or to mitigate the impact of development on the environment.<sup>261</sup> The programs are voluntary and generally require the private landowner to submit an application, a conservation plan, and receive approval through a final inspection of the land prior to being paid.<sup>262</sup> This process gives the government considerable discretion in choosing which projects satisfy the predesigned conservation goals in the most cost efficient manner.<sup>263</sup>

Subsidy programs may be effective at promoting active habitat management because regulators would have the ability to tailor the conservation efforts to a specific species.<sup>264</sup> The short-term nature of subsidy contracts allows regulators to ensure the landowner has actively managed the land before agreeing to renew the contract.<sup>265</sup> Landowners would also have low incentives to preemptively destroy habitat because the programs are voluntary and the landowner is paid for their conservation efforts.<sup>266</sup>

Subsidies, however, can be expensive because the government incurs high administrative costs to run the application process.<sup>267</sup> Because subsidies are voluntary, the government's ability to target specific habitats is limited by the participation of private landowners.<sup>268</sup> Subsidies also do not perform well in conserving habitat in perpetuity

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<sup>260</sup> *Id.* at 1099-1100.

<sup>261</sup> *Id.* at 1099-1100. Funding from subsidies often comes from tax revenue. *Id.* at 1109.

<sup>262</sup> *Id.* at 1129-30.

<sup>263</sup> *Id.* at 1130.

<sup>264</sup> *Id.* at 1134.

<sup>265</sup> *Id.* at 1134.

<sup>266</sup> *Id.* at 1146.

<sup>267</sup> *Id.* at 1140.

<sup>268</sup> *See id.* at 1129-30.

because the programs stop development but do not require conservation.<sup>269</sup> Furthermore, many subsidies are paid yearly and give the landowner the option to develop free of repercussions if the value of the land developed exceeds the price of the subsidy.<sup>270</sup> Subsidies also encourage private landowners to act strategically in the negotiation process to drive up the price to exceed the opportunity cost by using their superior knowledge of the land and the regulators' conservation goals.<sup>271</sup>

c. Conservation Easements

Conservation easements are a voluntary exchange that appears to provide a solution to the inherent tension of balancing conservation efforts with private land development.<sup>272</sup> Conservation easements are negotiated between the private landowner and the government or non-profit organization on a property-by-property basis and can be a flexible tool for private landowners.<sup>273</sup> The agreement can be tailored by the private landowner to satisfy individual concerns while still serving the conservation goals.<sup>274</sup> The typical conservation easement is negative<sup>275</sup> and in gross<sup>276</sup> because the easement usually requires the private landowner to give up their right to develop the land in the future to achieve the conservation goals.<sup>277</sup> The holder of the

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<sup>269</sup> *Id.* at 1132.

<sup>270</sup> *See id.* at 1132.

<sup>271</sup> *Id.* at 1144-45.

<sup>272</sup> Jessica Owley Lippmann, *The Emergence of Exacted Conservation Easements*, 84 NEB. L. REV. 1043, 1072 (2006) [hereinafter Lippmann, *The Emergence of Exacted Conservation Easements*].

<sup>273</sup> *Id.* at 1073.

<sup>274</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1121.

<sup>275</sup> Negative easements prohibit a landowner from doing something on or to their land that they would otherwise be allowed to do. Lippmann, *The Emergence of Exacted Conservation Easements*, *supra* note 272, at 1075. The holder of the negative easement enforces the restriction. *Id.* Alternatively, affirmative easements allow the easement holder to perform an affirmative act on the private landowner's property. *Id.*

<sup>276</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1121. In gross means the easement holder does not have to be an adjacent landowner. *Id.* A traditional easement that is not in gross is an appurtenant. Lippmann, *The Emergence of Exacted Conservation Easements*, *supra* note 272, at 1075.

<sup>277</sup> Boyd, et al., *supra* note 76, at 215; *see also* Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 298; Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1121.

conservation easement is responsible for enforcing the development restrictions.<sup>278</sup>

Private landowners have the option to donate or sell the easement.<sup>279</sup> A private landowner donating a conservation easement will experience market costs associated with reducing the fair market value of the land as a result of the restricted use and out-of-pocket transaction costs like legal and appraisal costs.<sup>280</sup> In exchange for donating the conservation easement, the landowner has the potential to receive tax breaks.<sup>281</sup> The landowner may receive federal charitable income tax deductions, gift deductions, and estate tax deductions,<sup>282</sup> as well as state and local tax benefits for the easement.<sup>283</sup> Conversely, a landowner who sells the conservation easement may receive the value of the opportunity costs of conservation.<sup>284</sup> Although financial

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<sup>278</sup> See Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 298 (describing conservation easements as “rights of enforcement”). The landowner maintains the right to manage the land but must do so according to the easement’s terms. PROGRESS ON THE BACK FORTY, *supra* note 66, at 14.

<sup>279</sup> Lippmann, *The Emergence of Exacted Conservation Easements*, *supra* note 272, at 1088. The easement may also be taken through eminent domain or exacted through regulation. *Id.* For more discussion on exaction easements, see *id.* at 1094-1111 and Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 330-53.

<sup>280</sup> Nancy A. McLaughlin, *Increasing the Tax Incentives for Conservation Easement Donations – A Responsible Approach*, 32 *ECOLOGY L.Q.* 1, 24 (2004). Market costs represent the forgone opportunity to develop the land and can be determined by measuring the difference between the fair market value of the unencumbered land and the fair market value of the encumbered land. *Id.* at 24-25. Transaction costs include “obtaining legal and tax advice, making any necessary surveys of the property, and obtaining a qualified appraisal to substantiate the value of the donation . . . .” *Id.* at 26.

<sup>281</sup> Lippmann, *The Emergence of Exacted Conservation Easements*, *supra* note 272, at 1090-91. The tax breaks can come in the form of federal or state tax breaks. *Id.* The IRS requires the conservation easement to be in perpetuity, for public use and the protection of a rare habitat or ecosystem. Stern, *supra* note 16, at 555. Certain qualified easements might allow the landowner to benefit in estate tax breaks from the reduction in fair market value. Lippmann, *The Emergence of Exacted Conservation Easements*, *supra* note 272, at 1090-91. One potential problem is that landowners may not earn enough income to qualify for the all tax breaks. PROGRESS ON THE BACK FORTY, *supra* note 66, at 14. For more discussion of tax breaks, see McLaughlin, *supra* note 280; see also Nash, *Mark to Ecosystem Service Market*, *supra* note 69, at 5-7; Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1123-25 (discussing tax breaks associated with conservation easements).

<sup>282</sup> McLaughlin, *supra* note 280, at 28-29.

<sup>283</sup> *Id.* at 39.

<sup>284</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 13. The opportunity cost is the difference between the value of the land at its most profitable use and the value as

incentives motivate most private landowners, still others may donate or sell conservation easements out of altruistic reasons.<sup>285</sup>

Today every state has a conservation easement statute.<sup>286</sup> These statutes have become the most popular conservation tool in the private sector, drawing praise from landowners, government agencies, and conservation organizations.<sup>287</sup> Conservation easements enjoy two major advantages over typical command and control regulation. First, conservation easements do not cause the political and private opposition that regulation does because they are voluntary.<sup>288</sup> Second, easements are efficient in meeting conservation goals because the government or non-profit organization only has to purchase the rights required for conservation.<sup>289</sup> This allows the conservator to target habitat-rich lands suitable for conservation at market price.<sup>290</sup>

Conservation easements offer a relatively inexpensive solution to conserving large tracts of habitat because the conservator only has to purchase the specific rights needed for conservation.<sup>291</sup> Government agencies like conservation easements because they require few new administrative burdens.<sup>292</sup> In practice, however, conservation easements pose problems associated with complex contract issues and difficulty in monitoring and enforcing the easement's terms.<sup>293</sup> They may also suffer from poor management techniques or change in property ownership that may make it difficult to conserve the land in

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species' habitat. *See id.* Because no markets exist for easements, finding the correct fair market value can be difficult. Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1122.

<sup>285</sup> Lippmann, *The Emergence of Exacted Conservation Easements*, *supra* note 272, at 1090.

<sup>286</sup> *Id.* at 1085.

<sup>287</sup> Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 310.

<sup>288</sup> Boyd, et al., *supra* note 76, at 212; *see also* McLaughlin, *supra* note 280, at 4 (stating that federal tax incentives for conservation easements have "garnered significant bipartisan support").

<sup>289</sup> Boyd, et al., *supra* note 76, at 212.

<sup>290</sup> *Id.*

<sup>291</sup> *See* Lippmann, *The Emergence of Exacted Conservation Easements*, *supra* note 272, at 1093.

<sup>292</sup> *Id.*

<sup>293</sup> Boyd, et al., *supra* note 76, at 215; *see also* Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 315 (describing enforcement as the greatest difficulty associated with conservation easements).



perpetuity.<sup>294</sup> Other problems may include changes in science, land development patterns, and future needs in the area.<sup>295</sup> Proper valuation of the property right interests might be challenging because of the difficulty associated with predicting which properties will be developed in the future.<sup>296</sup>

Conservation easements provide regulators with a better option to conserve large habitat-rich tracks of land than fee simple acquisition or subsidies because the conservator only needs to purchase the easement to restrict development. Private landowners with high habitat and low development potential will be attracted to the program because the compensation for the easement will alleviate the temptation to engage in inefficient development in order to receive some economic benefit rather than face regulatory restrictions.

Conservation easements also offer an exciting tool for high-wealth individuals with large real estate holdings. High-wealth individuals can cover the high market and transaction costs associated with donating easements<sup>297</sup> and have estates large enough to take advantage of the charitable income tax deductions<sup>298</sup> and gift and estate tax deductions for conserving habitat-rich land.<sup>299</sup> Individuals with the majority of their wealth tied up in land might be attracted to the estate tax benefits of conservation easements because reducing estate taxes through conservation easement donations will help diminish the hassle and costs for beneficiaries who might otherwise be forced to liquidate assets in order to pay taxes above the exclusion amount within nine

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<sup>294</sup> Boyd, et al., *supra* note 76, at 215; *see also* Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1131 (discussing the difficulties of conserving in perpetuity). Some of these concerns are alleviated by state statutes and federal tax codes that require conservation easements to be held by the government or a conservation oriented non-profit organization. Lippmann, *The Hard Case of Endangered Species Protection*, *supra* note 21, at 308.

<sup>295</sup> Stern, *supra* note 16, at 555.

<sup>296</sup> Boyd, et al., *supra* note 76, at 215; *see also* Stern, *supra* note 16, at 557-58 (describing the potential problem of paying too much for a conservation easement because the private landowner has an incentive to exaggerate the value of the property for an increased tax benefit); Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1122 (describing the challenges of determining the fair market value without a market and the free rider problem of buyers).

<sup>297</sup> McLaughlin, *supra* note 280, at 27.

<sup>298</sup> *See id.* at 30-33.

<sup>299</sup> *See id.* at 36-39.

months of the decedent's death.<sup>300</sup> The tax savings alone, however, may not cover the full costs associated with donating conservation easements and motivating factors such as stewardship goals might also need to be present to prompt a donation.<sup>301</sup>

## 2. *Market Based Approaches*

An alternative to a government compensation program is creating markets where private landowners are rewarded for their conservation efforts. Markets offer a promising tool for conservation efforts because they “replace bureaucratic decision-making with basic economic incentives to coordinate more efficient decisions by private actors.”<sup>302</sup> Empirical evidence shows that incorporating market solutions that exchange property rights will better meet ecological concerns than a purely government run system.<sup>303</sup> Conservation banking and tradable development rights combine regulation with market forces to promote conservation.

### a. Conservation Banking

“Conservation banks represent a new approach to endangered species management that has the potential to dramatically improve the plight of endangered species while radically reducing the cost of doing so.”<sup>304</sup> Conservation banking provides an incentive for private landowners to actively manage their land to improve the quality and quantity of habitat for listed species.<sup>305</sup> The landowner will be allotted credits for their conservation bank depending on the habitat and number of species found on their land.<sup>306</sup>

Developers are often required to mitigate the adverse effects of their projects through either onsite mitigation or the purchase of

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<sup>300</sup> See IRS.gov, *Estate Tax*, <http://www.irs.gov/businesses/small/article/0,,id=164871,00.html> (last visited June 20, 2010); see also American Law Institute, *Estate Planning for Entrepreneurs*, SR032 ALI-ABA 413 (2009).

<sup>301</sup> McLaughlin, *supra* note 280, at 49-50.

<sup>302</sup> Ruhl, *Adaptive Management*, *supra* note 187, at 27.

<sup>303</sup> Adler, *Free & Green*, *supra* note 78, at 671.

<sup>304</sup> Mills, *supra* note 178, at 535.

<sup>305</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1113. Rather than being a liability, the presence of an endangered species actually becomes an opportunity for a private landowner to make money. Mills, *supra* note 178, at 536.

<sup>306</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1113. Conservation banks are also referred to as mitigation banks. *Id.*

mitigation credits offsite.<sup>307</sup> This creates a market for the private landowner who conserves their land to sell the development credits to developers subject to command and control regulation.<sup>308</sup> The developers will purchase credits from these private landowners if it is more economically feasible than engaging in onsite mitigation.<sup>309</sup> Developers like conservation banking because it saves time and money, increases options, and simplifies the regulatory process with the purchase of negotiated credits.<sup>310</sup>

If profits are being made by bank owners, more private landowners will be attracted to utilizing their land for conservation efforts.<sup>311</sup> Thus, a private landowner with land that has a high potential to serve as habitat for listed species is more likely to conserve their land and profit from selling mitigation credits than to engage in a perverse incentive to destroy habitat in order to avoid regulation or prematurely develop land in order to get some value. Increased participation by private landowners also has the positive effect of increasing conservation efforts and will lower the price for credits because of the new market competition.<sup>312</sup>

Of critical importance to successful conservation banking is the initial planning stage.<sup>313</sup> Conservation banks are voluntary and the private landowner will negotiate with the regulator on a case-by-case basis.<sup>314</sup> As discussed, the number of credits a bank owner will be

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<sup>307</sup> *Id.* at 1112. For example, developers that prepare HCPs are required to mitigate the adverse effect from their take and conservation banking has been used to effectively meet the mitigation requirement. *See Wilkins, supra* note 132, at 7.

<sup>308</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms, supra* note 121, at 1113. In essence, the regulatory programs of the ESA will create a business opportunity for other private landowners. PROGRESS ON THE BACK FORTY, *supra* note 66, at 39.

<sup>309</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms, supra* note 121, at 1113; *see also* J.B. Ruhl, et al., *A Practical Guide to Habitat Conservation Banking and Policy*, 20-SUM NAT. RESOURCES & ENV'T 26, 26 (2005) [hereinafter Ruhl, et al., *Conservation Banking*] (stating that the rationale is that purchasing credits is a less expensive way to satisfy the mitigation requirement than "dedicating project lands or purchasing and managing conservation lands directly").

<sup>310</sup> Ruhl, et al., *Conservation Banking, supra* note 309, at 28.

<sup>311</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms, supra* note 121, at 1113.

<sup>312</sup> *Id.* at 1113. Conservation banking allows the market to determine the price of the credits. *Id.* at 1116.

<sup>313</sup> Ruhl, et al., *Conservation Banking, supra* note 309, at 31.

<sup>314</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms, supra* note 121, at 1134.

allotted is largely dependant on the quality and quantity of the habitat.<sup>315</sup> Prior to being able to sell credits, the bank owners must receive approval by the regulator.<sup>316</sup> A downside to conservation banking is the high administrative costs associated with establishing the market and providing the necessary oversight.<sup>317</sup> The bank owners are required to preserve the habitat in perpetuity and often must designate a conservator for the bank and set aside necessary funds to pay for the management of the habitat.<sup>318</sup> Fortunately, the actual monitoring costs for conservation banking are not high because private landowners' incentives align with the conservation efforts.<sup>319</sup> Regulatory agencies like conservation banking and believe it is beneficial for species because it promotes an orderly system to conserve land in perpetuity and attracts individuals with expertise to create and manage the habitats.<sup>320</sup>

Conservation banking also has high potential for private landowners to create and preserve large habitat reserves with species-specific habitats.<sup>321</sup> This is imperative for species conservation because most species require large continuous tracks of land with very specific habitat needs.<sup>322</sup> The current command and control regulation completely misses the boat with providing this type of habitat and often results in fragmented habitat reserves on private land that can

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<sup>315</sup> *Id.* at 1134.

<sup>316</sup> *Id.* at 1131.

<sup>317</sup> *Id.* at 1140.

<sup>318</sup> *Id.* at 1131, 1134. Importantly, prospective conservation bankers must believe the agency will approve future mitigation areas that justify the up-front costs associated with setting up the bank and obtaining credits. Ruhl, et al., *Conservation Banking*, *supra* note 309, at 29. One critic believes that conservation banking may fail because the government will not be able to provide bankers with enough information and certainty to make the market work within the statutory language of the ESA. Colburn, *supra* note 33, at 37. Furthermore, the government will have a problem with having too little scarcity. *Id.*

<sup>319</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1141.

<sup>320</sup> Ruhl, et al., *Conservation Banking*, *supra* note 309, at 26.

<sup>321</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1129; *see also* Ruhl, et al., *Conservation Banking*, *supra* note 309, at 27 (stating that conservation banking is primarily aimed at improving the conditions for target species by managing the habitat accordingly).

<sup>322</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1127; *see also* Ruhl, et al., *Conservation Banking*, *supra* note 309, at 28 (stating that conservation banking "result[s] in larger preserves and thus better habitat connectivity").

lead to extinction.<sup>323</sup> Conservation banking is also the best incentive mechanism for assuring conservation of habitat in perpetuity.<sup>324</sup>

Critics of conservation banking argue that banking is limited in scope and is not likely to contribute to species recovery.<sup>325</sup> The requirement to keep the bank in perpetuity fails to address the fact that most species' "habitat quality is ephemeral."<sup>326</sup> Similarly, endangered species may only temporarily occupy a given area and may disappear from the land as a result of natural succession, disturbance, or even chance events.<sup>327</sup> However, active management practices associated with conservation banking can help alleviate some of these concerns.<sup>328</sup>

Conservation banking has proven to be the most effective conservation mechanism for areas that have healthy markets with strong development pressures due to of buyers and sellers.<sup>329</sup> The conservation requirements of the area's developers are consolidated to a single landowner or organization who is motivated by profits gained by providing optimal conservation for species and habitat.<sup>330</sup> As a result, conservation goals will be met and the long-term government costs will be reduced.<sup>331</sup>

The landowner's incentive to engage in active management to increase the quality of the habitat on their land<sup>332</sup> is something that is largely missing under the current command and control regime. To thrive, most species need more than simply maintaining the status quo of the land. Promoting conservation banking, where private landowners want to undertake the necessary conservation efforts to increase the profitability of their land, is the type of promising incentive

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<sup>323</sup> See Amy J. Dona, *Crossing the Border: The Potential for Trans-Boundary Endangered Species Conservation Banking*, 16 N.Y.U. ENVTL. L.J. 655, 671 (2008); see also Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1127.

<sup>324</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1131.

<sup>325</sup> Wilkins, *supra* note 132, at 7.

<sup>326</sup> *Id.*

<sup>327</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 42.

<sup>328</sup> *Id.* at 42.

<sup>329</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1147. *But see* Dona, *supra* note 323, at 676 (describing the current markets for credits as thin as a result of "geographic restrictions on trades that reduce the number of banks from which a developer might buy habitat credits").

<sup>330</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1147.

<sup>331</sup> *Id.*

<sup>332</sup> *See id.* at 1113.

mechanisms that can help change the dismal record of the ESA on private land. The incentive to conserve habitat in order to prosper financially makes conservation banking a more effective tool at protecting threatened and endangered species than current incentive mechanisms like HCPs.<sup>333</sup>

b. Tradable Development Rights with Zoning

Tradable Development Rights (TDR) programs create a market for private landowners to sell development rights within an area.<sup>334</sup> Regulators specify a maximum amount of development that will occur in a given region and distribute development rights to the private landowners.<sup>335</sup> Future development within the region must then be done through the use of development rights.<sup>336</sup> TDRs are often combined with zoning to protect environmentally valuable areas within a region.<sup>337</sup> “The TDR system thus attempts to balance the environmental and social costs of development with the economic

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<sup>333</sup> See Mills, *supra* note 178, at 538; see also Hudson, *supra* note 205, at 185. For other advantages of conservation banking compared to HCPs, see Mills, *supra* note 178, at 540-41.

<sup>334</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1109.

<sup>335</sup> *Id.* at 1109. TDRs value all the land in the region as biological equals and distribute the rights accordingly. Avery Emison Carson, *Integrating Conservation Uses into Takings Law: Why Courts Should View Conservation as a Possible Highest and Best Use*, 86 N.C. L. REV. 274, 299 (2007). A similar alternative to TDRs is the Habitat Transaction Method (HTM). *Id.* HTMs value the acres in a region “based on the actual presence of an endangered species on the land.” *Id.* at 299-300. HTMs have fewer restrictions than TDRs on where development in the region can occur. *Id.* at 300. For more in-depth discussion on HTMs, see David Sohn & Madeline Cohen, *From Smokestacks to Species: Extending the Tradable Permit Approach from Air Pollution to Habitat Conservation*, 15 STAN. ENVT. L.J. 405 (1996).

<sup>336</sup> Clark & Downes, *supra* note 116, at 51.

<sup>337</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1109-10. Regulators determine which properties, or zones, should be protected because of their environmental value and restrict the development on these properties. *Id.* Receiving zones are the areas designated for development. Carson, *supra* note 335, at 299. Sending zones are the areas regulators want to limit development in favor of conservation. *Id.* The landowner is compensated for their economic loss because of use restrictions with development rights. Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1110. Without zoning, TDRs might not lead to the desired amount of conservation because if properties with the most conservation potential also have the most development value, the landowner will purchase credits and develop rather than sell to conserve. See Boyd, et al., *supra* note 76, at 216-17.

value of the land and is particularly useful in areas that are environmentally desirable or sensitive, such as vacation destinations.”<sup>338</sup>

The limited amount of development rights in a given area creates scarcity and value in the development rights.<sup>339</sup> A landowner who does not use all of their allotted development rights has the option to either sell the development rights to other landowners or to use the excess rights to mitigate development on their other properties.<sup>340</sup> Market forces determine the price of TDRs and help ensure that the development rights will be purchased by the developers who value the rights the most, resulting in an economically efficient outcome.<sup>341</sup> Regulators help facilitate the market by establishing TDR banks or exchanges that lower transaction costs and bring together potential buyers and sellers.<sup>342</sup>

TDR programs are effective at targeting species-specific habitats and promoting conservation on large tracks of land because regulators can restrict development on land with specific attributes favorable for conservation.<sup>343</sup> Compensation in the form of selling credits for the restrictions imposed on the private landowner help reduce the perverse incentives of habitat destruction found in a purely command and control regulatory scheme.<sup>344</sup> This, however, can still be a problem because a private landowner may try to destroy habitat to avoid zoning restrictions if more money can be made using the land for other purposes than can be made from selling TDR credits.

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<sup>338</sup> Francesca Ortiz, *Biodiversity, The City, and Sprawl*, 82 B.U. L. REV. 145, 180 (2002); see also Clark & Downes, *supra* note 116, at 52 (describing TDRs as an option for skiing resort towns to “control[ ] the social and environmental impact of development while maintaining the economic value of land within the community”).

<sup>339</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1109.

<sup>340</sup> *Id.*

<sup>341</sup> Nash, *Trading Species*, *supra* note 71, at 13; see also Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1109-10. Allowing market forces to distribute the rights is a more efficient result than a system where the government directs the distribution. Nash, *Trading Species*, *supra* note 71, at 13. Restrictions on the market, however, may reduce its potential efficiency. Boyd, et al., *supra* note 76, at 217.

<sup>342</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1110.

<sup>343</sup> *Id.* at 1129.

<sup>344</sup> *Id.* at 1146.

A downside to TDR programs is that they are complex and administratively difficult.<sup>345</sup> There are “technical, financial, and legal dimensions” with TDRs that a regulator must address prior to establishing a market that can facilitate trades.<sup>346</sup> These dimensions often make it difficult for regulators to establish efficient trading markets that fully protect habitats and ecosystems.<sup>347</sup> There is also a learning curve for private landowners to understand the nuances of the market which may delay initial trading.<sup>348</sup>

TDRs may also be susceptible to political pressure to change the land’s uses within the area if the zoning is all that is preventing development in a given sending zone.<sup>349</sup> Because private landowners are involuntarily required to conserve their land, the program does not offer much potential for encouraging active habitat management.<sup>350</sup> Compensation for selling TDRs is independent of the landowners’ opportunity cost and any active habitat management techniques will

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<sup>345</sup> *Id.* at 1110.

<sup>346</sup> *Id.* The dimensions of the market that must be addressed include: (1) TDR programs should be established with a “clear legal authority” . . . ; (2) ensuring that the program meets its goals requires the employment of expert land planners, lawyers, economists, and scientist to perform biological assessments, determine the total number and distribution of TDRs, establish a method by which development rights are transferred, record such transfers, set the initial zoned development density and maximum allowable density after TDRs are purchased, and monitor and enforce all transaction; (3) the TDR program has more effective control over land uses if authority rests with on agency, and all other methods for obtaining increases in development density are eliminated-the developer has to purchase TDRs to increase his or her development density; (4) the objectives of the land-planning agency should be clear, concise, and rooted in sound scientific knowledge; (5) the demand for development within the region should be significant and impose a significant threat to the region’s biodiversity; (6) the regulator should set the supply of TDRs below the demand to insure that TDRs are seen as a valuable asset; (7) TDRs should be distributed to landowners in a method as fair and administratively simple as possible; and (8) the regulatory agency should establish a TDR exchange to reduce the friction within the market, which lowers the barriers of bringing together buyers and sellers and increases the efficiency and effectiveness of the program.

*Id.* at 1110-11.

<sup>347</sup> Nash, *Trading Species*, *supra* note 71, at 39.

<sup>348</sup> See Boyd, et al., *supra* note 76, at 217.

<sup>349</sup> Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1131.

<sup>350</sup> *Id.* at 1135.



only improve the opportunity costs for the landowner without improving their compensation.<sup>351</sup>

#### IV. Analysis and Recommendations for Future Action

Although the ESA has been unable to attain its conservation and recovery goals, a complete abandonment of the system is unnecessary. For all its weaknesses, it is important to have a statute that protects our nation's imperiled species and the ESA provides a strong framework to work with in the future. Regulation can continue to play an important role in conservation efforts<sup>352</sup> but the system must move away from the archaic command and control structure to a more incentive-based system that rewards private landowners' conservation and stewardship efforts.

For any incentive-based program to work, obtaining information from private landowners at the outset is imperative. Without information, regulators will be unable to know the issues that need to be addressed and will not be able to develop strategic plans to target specific species and habitats in need of protection. The current command and control regulation fails to address this problem adequately and has had the effect of discouraging private landowners from disclosing information.<sup>353</sup> Landowners need to be provided assurances that coming forward with vital information will not subject them to greater land use restrictions.<sup>354</sup> In addition to assurances, landowners must also know about the incentive mechanisms and believe that incentives will be used in the future, thus making conservation more economically feasible because the landowner will be rewarded for their conservation efforts rather than punished. Strategic marketing techniques that target private landowners with habitat rich land should be utilized to inform these landowners about the potential incentives and benefits the landowners will receive for their conservation and stewardship efforts.

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<sup>351</sup> *Id.*

<sup>352</sup> See Thompson, Jr., *Takings & Incentives*, *supra* note 17, at 347 (stating that regulation can be critically important to having an efficient compensation program).

<sup>353</sup> See discussion *supra* Part II.C.2.

<sup>354</sup> The current "No Surprises" policy, SHAs, and CCAs are a good start and should be coupled with new incentive mechanisms.

There is no single incentive mechanism that is ideal for all species conservation.<sup>355</sup> Each mechanism has their own strength and weaknesses depending on a number of factors ranging from development pressures, land quality, and funding constraints.<sup>356</sup> Similarly, a landowner's financial status and personal concern for conservation and stewardship might influence the success of certain incentive programs.<sup>357</sup> Thus, to be successful incentives must align private landowners' interest with conservation needs.<sup>358</sup> Regulators must view each incentive mechanism as a tool and use incentives in combination to target the specific conservation needs in the most cost-effective and efficient manner.<sup>359</sup> Strategic plans need to be developed and regulators must be able to adapt and respond to the individual ecological and landowner needs. Regulators should not only target currently imperiled species, but proactively look for ways to conserve habitats that support species prior to listing.

The available incentive mechanisms offer an exciting way to increase conservation and stewardship while eliminating the problems associated with command and control regulation. A full compensation program, while arguable the most fair solution for private landowners, would never gain the necessary political backing—especially considering the current state of our economy and growing federal budget—and might have the effect of adding substantial costs to our system. Furthermore, a complete compensation program would force taxpayers to decide which species they deem worthy of financial support resulting in less protection for species that don't capture the

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<sup>355</sup> Parkhurst & Shogren, ESA AT THIRTY, *supra* note 13, at 258.

<sup>356</sup> *Id.*

<sup>357</sup> See, e.g., McLaughlin, *supra* note 280, at 47-51 (describing the tax incentives associated with conservation easements may only be influential in incentivizing high wealth individuals that can take greater advantage of incentives); see also *id.* at 24-41.

<sup>358</sup> "Private land-use incentives are fully aligned with social benefits and costs when landowners are paid the public conservation value of their land (pigouvian compensation). Public conservation value includes both the market and nonmarket value of all the conservation benefits produced by the undeveloped land that are received by someone other than the landowner." Michael, *supra* note 142, at 33.

<sup>359</sup> See Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1149 ("[T]o succeed at protecting species at risk in a cost-effective manner, incentive mechanisms will have to be used in combination. Combining incentives into a cohesive strategy for species protection can be complex depending on the conservation goal and the desired degree of efficiency.").

public's imagination. Thus, compensation is a start, and an important motivating factor with any conservation plan, but it must be coupled with broader reform of the ESA.

Programs like conservation easements and conservation banking offer a practical solution to many of the current ESA failings and might be the most promising incentive mechanisms. The other incentive mechanisms, while still a viable option, could be used to a lesser extent for specific conservation needs not addressed with conservation easements and banking.

Voluntary incentive mechanisms give regulators an effective and flexible tool to target habitat rich, development poor land.<sup>360</sup> Conservation easements offer regulators a better solution than fee simple acquisition or subsidies to target these habitat rich lands because regulators are only required to acquire the easement to restrict development. The tax donations are attractive for high wealth individuals and should be promoted more for estate and gift tax purposes because conservation easements may be a more practical solution than alternatives, like life insurance or liquidating assets, to pay for estate taxes. The current tax benefits, however, have not done enough to encourage donation with individuals without high wealth or strong personal conservation motivations. Congress should look for ways to responsibly reform the current tax incentives to make it more attractive for moderate to low wealth individuals, thus increasing donations and limiting the government's need to purchase the development rights.<sup>361</sup>

Currently, purchasing the easement is a more viable option for lower to middle class landowners who might not have the cash to pay for the transaction costs associated with donation and would not receive the same tax benefits as a high wealth individual.<sup>362</sup> Land rich, cash poor landowners are attracted to easement purchase, but the

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<sup>360</sup> *Id.* at 1146 (voluntary incentive mechanisms include fee simple acquisition, subsidies, conservation easements, and conservation banking).

<sup>361</sup> Reforming tax incentives to increase "donations should not be increased without some assurance that: (i) the increase will be efficient, (ii) the government agencies and land trusts accepting easement donations have the expertise and resources to appropriately screen and steward the easements donated in response to the increase, and (iii) the increase will not encourage exploitation." McLaughlin, *supra* note 280, at 109.

<sup>362</sup> *See generally id.* at 28-41.

inherent costs might limit this option to only select properties that regulators deem absolutely necessary for conservation.<sup>363</sup>

Easements have been a popular tool for landowners and government agencies, but because conservations easements are voluntary, landowners with high development property might not be attracted to selling or donating the easement. If the land is vital for conservation, regulators may need to couple regulation with compensation. Full compensation is expensive and politically dangerous. Providing some compensation, however, would help reduce the private landowners' perverse incentives and increase conservation efforts. For larger tracks of habitat rich land, setting up markets offers an alternative to government compensation.

Conservation banking has the most promise in areas where there are high development pressures because private landowner incentives are more in line with conservation efforts.<sup>364</sup> The landowner is motivated by profits to provide optimal conservation and will engage in active habitat management. Conservation banking is also great at preserving large tracks of land vital for connectivity. Regulators should continue to learn more about conservation banking and consult with business leaders to increase the market's efficiency. If used correctly, conservation banking may offer the most cost effective solution to engage private landowners in conservation efforts. Conservation banking could serve as a baseline for conservation efforts and regulators would then be free to use other tools such as conservation easements, fee simple acquisition, TDRs, HCPs, and regulation coupled with compensation to target specific habitats on a more limited basis.<sup>365</sup>

A complete overhaul of the current system is impractical, but it is imperative to phase in the individual incentive mechanisms and give regulators the necessary information and tools to strategically use the mechanisms in the most efficient manner possible. More resources must be devoted to understanding these mechanisms and for

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<sup>363</sup> See *id.* at 103-05.

<sup>364</sup> See discussion *supra* Part III.B.2.a. TDRs, while a viable option, still suffer from perverse incentives and political opposition if landowners have high development upside. See discussion *supra* Part III.B.2.b.

<sup>365</sup> See Parkhurst & Shogren, *Evaluating Incentive Mechanisms*, *supra* note 121, at 1147-48 (stating conservation banking is the best mechanism "[w]hen markets have many buyers and sellers such that the development pressure in the region is strong," but if markets have a limited number of buyers and sellers, no one incentive mechanism is preferred).

developing new incentives in the future.<sup>366</sup> Gradually phasing in incentives will allow regulators to see results and learn more about each mechanism. This will enable regulators to utilize incentives more effectively and increase conservation efforts with private landowners as a result.

## Conclusion

The ESA's command and control regulation has been largely ineffective at meeting the stated goals of species conservation and recovery. The ESA's greatest problem is its inability to promote conservation on private land. The ESA imposes substantial costs on private landowners, restricting the use and potential to develop their land, but fails to take into consideration the costs of this regulation. This has resulted in private landowners engaging in heated political opposition, perverse incentives, and tactics that prevent information disclosure. If the ESA does not embrace strategies to promote private participation, meaningful conservation will not be achieved in the future.

Incentives offer great potential to alleviate the problems associated with the ESA. Private landowners will be more willing to participate in conservation efforts if they are compensated for use of their land and their stewardship efforts. Importantly, incentives can be utilized to promote active habitat management techniques that are vital to species survival. The proposed incentive mechanisms incorporate ideas of compensation and market based solutions to promote conservation efforts. No one incentive mechanism is perfect for every situation and it is important for the regulators to implement strategies that target conservation efforts with the most efficient and effective incentive mechanism. These incentive mechanisms can be used in harmony with ESA to finally achieve the goal of protecting our nation's ecological treasures.

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<sup>366</sup> PROGRESS ON THE BACK FORTY, *supra* note 66, at 45 ("If they are to reach their full potential, however, these new approaches will require more resources than are currently available.").