

EXPROPRIATING HABITAT

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This Article identifies a disturbing trend: wildlife management agencies permitting landowners to shift threatened and endangered species from their native habitat on commercially valuable land to public land, land in foreign countries, and even captive breeding facilities. Surprisingly, this occurs under the auspices of the Endangered Species Act. Certainly, there are many instances of translocation that serve goals of species preservation. But, in practice, political pressures sometimes cause agencies to shift endangered wildlife populations from higher-value lands to lands with less commercial value. Analyzing the political economy of species translocation suggests that the continuous shift of wildlife to public and foreign land appears to be an almost inevitable outcome given the social, economic, ecological, and political context of the Endangered Species Act.

To illustrate this phenomenon, I present a detailed case study of the U.S. Fish and Wildlife Service paying Mexico to provide habitat for the endangered thick-billed parrot rather than re-establishing a population in the United States. This is not an isolated phenomenon; any one of the individual examples that I provide may seem relatively small. In aggregate, however, the long-term effects of shifting wildlife populations to make way for development or industrial activity may prove devastating. Moreover, translocations are a small part of the much broader trend of humans expropriating land from wildlife bit-by-bit, species-by-species. This reality, coupled with the current political climate, suggests that the Endangered Species Act, as applied, is insufficiently protective of wildlife habitat. I analyze the potential of an animal property rights regime—a new, habitat-preservation-focused solution to species preservation—as a new tool for stemming systemic habitat loss and related extinctions.

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INTRODUCTION

Desert tortoises have lived in southern Nevada for 200 million years.¹ When the Las Vegas real estate market was booming in the 2000s, subdivision developers moved the threatened animals from their native habitat to a conservation facility, with government authorization.² Developers converted tortoise habitat into tract homes. When the housing market busted, developers failed to deliver on their promises to provide financial contributions to the tortoise conservation center.³ Many of the tortoises could not be released into their natural landscape.⁴ As a result, biologists euthanized the over seven-hundred tortoises within the facility.⁵

Species preservation depends on habitat preservation. Since the 1970s, Congress has recognized land development as the greatest threat to wildlife. Recent proposals to avoid widespread extinction focus on property-based solutions. Yet, legal provisions of habitat-based conservation measures are inadequate, largely because of the inevitable demands of land development amidst human population growth. The trend toward development, coupled with the legal ability of agencies to move threatened and endangered species to and from

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1. See Hannah Drier, *Desert Tortoise Faces Threat from Its Own Refuge*, DESERET NEWS (Aug. 25, 2013), <https://perma.cc/4HLU-5A3Q>.
 2. See *id.* Government agencies have also relocated desert tortoises for other reasons, including siting of military facilities. See, e.g., Jill S. Heaton et al., *Spatially Explicit Decision Support for Selecting Translocation Areas for Mojave Desert Tortoises*, 17 BIODIVERSITY CONSERVATION 575, 580 (2008) (describing moving threatened desert tortoises to accommodate a military facility).
 3. See Drier, *supra* note 1.
 4. See *id.*
 5. See *id.*

habitats, has unwittingly created the perverse outcome of animals slowly being divested of their native habitats and shifted toward less economically desirable land. This well-intentioned conservation tool is in fact being used to slowly, species-by-species, shift animals from higher-value private lands to lower-value public and foreign lands.

In a race to save wildlife from extinction, species translocations are happening at a rate of several hundred decisions a year.⁶ Conservation biologists predict this number will increase exponentially as habitat loss is fueled by land development and climate change.⁷

Species translocation presents a myriad of legal, ecological, and ethical questions that strike at the heart of the Endangered Species Act.⁸ Science alone cannot dictate prioritization of species for transplantation, recipient habitats, and resource allocation for species maintenance.⁹ In practice, ad hoc decisions

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6. See Jessica Aldred, *More Than 1,000 Species Have Been Moved Due to Human Impact*, GUARDIAN (Apr. 16, 2016), <https://perma.cc/59WW-JM3B>; E.O. WILSON, THE DIVERSITY OF LIFE 280 (1992) (noting that three species are being lost hourly, seventy-four species daily, and 27,000 species annually); Chris D. Thomas et al., *Extinction Risk from Climate Change*, 427 NATURE 145, 145–47 (2008) (predicting that fifteen to thirty-seven percent of the study sample species will be “committed to extinction” due to climate change by 2050).
 7. See Aldred, *supra* note 6 (“[Translocation] will become more common due to human pressures driving species closer to extinction.”); Jedidiah Purdy, *The Politics of Nature: Climate Change, Environmental Law, and Democracy*, 119 YALE L.J. 1122, 1182 (2010) (discussing how traditional environmental values operate in light of climate change).
 8. See, e.g., Karrigan Bork, Note, *Listed Species Reintroductions on Private Land—Limiting Landowner Liability*, 30 STAN. ENVTL. L.J. 177, 178 (2011) (describing importance of reintroductions to create new populations); Federico Cheever, *From Population Segregation to Species Zoning: The Evolution of Reintroduction Law under Section 10(j) of the Endangered Species Act*, 1 WYO. L. REV. 287, 288 (2001) (describing reintroduction of species); Holly Doremus, *Restoring Endangered Species: The Importance of Being Wild*, 23 HARV. ENVTL. L. REV. 1, 2 (1999) (describing ad hoc species reintroductions); Robert L. Glickman, *Ecosystem Resilience to Disruptions Linked to Global Climate Change: An Adaptive Approach to Land Management*, 87 NEB. L. REV. 833, 890 (2009) (describing reintroduction of species); Jessica Kabaz-Gomez, *Rules for Playing God: The Need for Assisted Migration & New Regulation*, 19 ANIMAL L. 111, 117 (2012) (arguing for assisted migration to conserve endangered species); John D. Leshy, *Federal Lands in the Twenty-First Century*, 50 NAT. RESOURCES J. 111, 128 (2010) (noting the difficulty of distinguishing translocation as a “philosophical conundrum” posed by a destabilizing climate); Nicole R. Matthews, Note, *Who is the Predator and Who is the Prey? The Endangered Species Act and the Reintroduction of Predator Species into the Wild*, 6 ENVTL. L. 183, 184 (1999) (providing history of species reintroductions); J.B. Ruhl, *Climate Change and the Endangered Species Act: Building Bridges to the No-Analog Future*, 88 B.U. L. REV. 1, 53 (2008) (describing assisted migration for experimental population of pikas); Daniel Schramm & Akiva Fishman, *Legal Frameworks for Adaptive Natural Resource Management in a Changing Climate*, 22 GEO. INT’L ENVTL. L. REV. 491, 491 (2010) (noting that laws may prohibit species translocations).
 9. Empirical studies in economics literature suggest that politics has more to do with endangered species recovery decisions than scientific considerations. David W. Cash, *Beyond Cute and Fuzzy: Science and Politics in the U.S. Endangered Species Act*, in PROTECTING ENDAN-

reflect political and economic factors that play an enormous, but virtually unexplored, role in driving translocation decisions.¹⁰

This Article outlines the legal and policy rationale that courts, agency officials, and environmental nongovernmental organizations should use to end the practice of outsourcing endangered species to lower-value land. It also engages policy arguments about the normative undesirability of translocation that will generate broader discussions among policymakers and scholars. Despite undertaking careful analysis of potential arguments, I ultimately decide that the Endangered Species Act is likely not the best vehicle for preventing habitat expropriation. Instead, I suggest that an animal property rights regime can better serve goals of ecosystem preservation.¹¹

Part I overviews the legal and scientific literatures that address species translocation. It shows that the difference in economic value between recipient and donative lands presents a key, unexplored area in the literature, one with the potential to dramatically reshape legal approaches to habitat degradation. Part II outlines the legal and historical backdrop of species translocation, including a novel analysis of the political economy underlying translocation decisions. Part III provides a case study of the U.S. Fish and Wildlife Service's decision to cease efforts to restore domestic populations of the thick-billed parrot, choosing instead to fund restoration efforts in Mexico. Part IV argues that the Endangered Species Act is unwittingly allowing human expropriation of wildlife habitat. It suggests that a property-rights-based approach to wildlife conservation focused on preserving valuable ecosystems can better protect biodiversity.

GERED SPECIES IN THE UNITED STATES 106, 130 (Jason F. Shogren & John Tschirhart eds., 2001) (finding the amount of funding designated to endangered species recovery "is correlated less with scientifically based considerations of endangerment and correlated more with a variety of political considerations," including economic conflict, media coverage, and public comments).

10. See Amy Whritenour Ando, *Waiting to Be Protected Under the Endangered Species Act: The Political Economy of Regulatory Delay*, 42 J.L. & ECON. 29, 30 (1999) ("Interest groups have a variety of tools at their disposal with which to affect the administrative process; they can act directly with petitions or comments or work indirectly through the influence of important members of Congress."); Stephen M. Meyer, *Community Politics and Endangered Species Protection*, in PROTECTING ENDANGERED SPECIES IN THE UNITED STATES, *supra* note 9, at 138–39 ("[P]olitics routinely dominates science in ESA policy and decision making.").
11. I outline a legal proposal for an animal property rights regime in another work. See Karen Bradshaw, *Animal Property Rights*, 89 U. CO. L. REV. 809 (2018). I argue that application of the animal property rights regime can address the core issue examined in this Article. See discussion *infra* Part IV.D.

I. SPECIES TRANSLOCATION

Translocation involves moving a species population from its indigenous habitat to another habitat in which it does not naturally occur.¹² For the sake of simplicity this article uses the term “translocation” as an umbrella term for describing the intentional efforts of humans to move animals from where they presently occur to habitats where they do not presently occur.¹³ This is an admittedly imprecise definition; “translocation” can be more precisely defined as moving animals from one part of their historic range to others.

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12. A non-exhaustive list of law review articles discussing species translocation includes Bork, *supra* note 8, at 183–85; Alejandro Camacho, *Assisted Migration: Redefining Nature and Natural Resource Law Under Climate Change*, 27 YALE J. REG. 171 (2010) (discussing the legal and ethical issues of human interference in natural resources through assisted migration); Cheever, *supra* note 8; Doremus, *supra* note 8; Glickman, *supra* note 8, at 888–91 (discussing assisted migration, reintroduction of species, and wildlife highways as adaptive solutions to climate change); Kabaz-Gomez, *supra* note 8, at 125–26 (noting that “international organizations and U.S. government agencies that are involved in species conservation are increasingly recommending assisted migration as a climate change adaptation strategy”); Leshy, *supra* note 8; Matthews, *supra* note 8; Ruhl, *supra* note 8; Schramm & Fishman, *supra* note 8, at 493 (noting that climate change is projected to have a deleterious impact on a significant number of species previously thought to be “immune’ to extinction risk”).

For a database consisting of thousands of interdisciplinary scholarly articles about translocations from 1970–1996, see Brad Griffith, *Annotated Biography of Wildlife Translocations*, INST. OF ARCTIC BIOLOGY, http://www.iab.uaf.edu/people/brad_griffith/translocation.html (last updated Sept. 9, 1998) (listing topics as divided by birds, mammals, reptiles and amphibians, general topics, index, and late 1989 through early 1996). For a database of more recent scholarly articles from a variety of academic disciplines, see *Assisted Migration (Assisted Colonization, Managed Relocation, Translocation) and Rewilding of Plants and Animals in an Era of Rapid Climate Change*, TORREYA GUARDIANS, <http://www.torreyguardians.org/assisted-migration.html#forestry> (last visited Nov. 1, 2018) (listing over one-hundred articles about species relocations).

13. INT’L UNION FOR CONSERVATION OF NATURE, IUCN GUIDELINES FOR RE-INTRODUCTIONS AND OTHER CONSERVATION TRANSLOCATIONS 6 (1998). Other common terms used to describe similar interventions include: assisted migration, assisted colonization, reintroduction, and transplantation. *See, e.g., id.* (defining reintroduction as “an attempt to establish a species . . . in an area which was once part of its historical range, but from which it has been extirpated or become extinct” and translocation as the “deliberate and mediated movement of wild individuals or populations from one part of their range to another”); Malcolm L. Hunter, Jr., *Climate Change and Moving Species: Furthering the Debate on Assisted Colonization*, 21 CONSERVATION BIOLOGY 1356, 1356 (2007) (coining the phrase “assisted colonization” to avoid the temporary nature of the previously used term “assisted migration”); David M. Richardson et al., *Multidimensional Evaluation of Managed Relocation*, 24 PROC. NAT’L ACAD. SCI. 9721, 9721 (2009) (noting that terms to describe moving animals to aid in survival include “managed relocation,” “assisted colonization,” “assisted migration,” and “assisted translocation”).

Conservation biologists¹⁴ consider translocation an important tool for preventing species extinction.¹⁵ Preventing extinctions is a key concern amidst widespread biodiversity loss.¹⁶ It has become increasingly important as some animals struggle to adapt to climate change effects.¹⁷ Yet, translocation presents risks as well. Indeed, it reflects broader concerns about the applicability of the previously widely accepted “precautionary principle” in an era of climate change.

Scholars have explored the legal framework under which government agencies can engage in translocation¹⁸ and have flagged the concern of unauthorized translocation efforts by private parties.¹⁹ They have also engaged with the ethical issues of human interference with nature through translocation.²⁰ Scholars are divided as to whether translocation should occur. Some advocate for increased use of translocation to mitigate the harmful effects of climate change

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14. See Eric Biber, *Which Science? Whose Science? How Scientific Disciplines Can Shape Environmental Law*, 79 U. CHI. L. REV. 471, 494–95 (2012) (describing conservation biology as a field that addresses how to protect biodiversity).
 15. See, e.g., Douglas A. Kysar, *Climate Change, Cultural Transformation, and Comprehensive Rationality*, 31 B.C. ENVTL. AFF. L. REV. 555, 565 (2004) (questioning “the precautionary principle as an appropriate response to climate change, particularly with respect to its potentially catastrophic but currently inestimable risks”); Holly Doremus, *Adaptive Management as an Information Problem*, 89 N.C. L. REV. 1455, 1462 (2011) (“[N]atural resource management decisions must typically be made in the face of incomplete knowledge about the systems being managed.”); Lisa Heinzerling, *Climate Change, Human Health, and the Post-Cautionary Principle*, 96 GEO. L. J. 445, 452–59 (2008); Schramm & Fishman, *supra* note 8, at 496 (discussing the application of the precautionary principle to risks posed by climate change).
 16. See, e.g., WILSON, *supra* note 6, at 280 (noting that three species are being lost hourly, seventy-four species daily, and 27,000 species annually); Jessica M. Sawyer & Sarah C. Sawyer, Essay, *Lessons from the Mist: What Can International Environmental Law Learn from Gorilla Conservation Efforts*, 23 GEO. INT’L ENVTL. L. REV. 365, 365 (2011) (noting that the world has already lost one third of vertebrate populations); Thomas et al., *supra* note 6, at 145–47 (predicting that fifteen to thirty-seven percent of the study sample species will be “committed to extinction” due to climate change by 2050). See generally ELIZABETH KOLBERT, *THE SIXTH EXTINCTION* (2014) (warning of a human-caused widespread extinction).
 17. See Purdy, *supra* note 7, at 1182 (discussing how traditional environmental values operate in light of climate change); Kabaz-Gomez, *supra* note 8, at 125–26 (“[I]nternational organizations and U.S. government agencies that are involved in species conservation are increasingly recommending assisted migration as a climate change adaptation strategy.”).
 18. See Ruhl, *supra* note 8, at 53 (“Section 10(j) of the ESA allows the FWS to transport and release members of an endangered and threatened species to outside its current range.”).
 19. See Jason S. McLachlan, Jessica J. Hellman & Mike W. Schwartz, *A Framework for Debate of Assisted Migration in an Era of Climate Change*, 21 CONSERVATION BIOLOGY 297, 299 (2007) (“Maverick, unsupervised translocation efforts run the risk of undermining current conservation work and do not reflect a consensus among interested parties.”).
 20. See, e.g., Camacho, *supra* note 12 (discussing the legal and ethical issues of human interference with natural resources through assisted migration).

on wildlife.²¹ Others critique the practice²² or argue for alternative mechanisms for preservation.²³ Despite these concerns, translocation is generally gaining acceptance.²⁴

How to prioritize which species to translocate has become a key issue within scholarship on the topic. To provide one example: At the same time that some government biologists are executing desert tortoises, other biologists are engaged with bi-national recovery efforts of the Kemp's ridley sea turtle, a multi-million dollar effort.²⁵ How can one explain the same government exterminating desert tortoises while simultaneously investing so much to save sea turtles?

Although the language of the Endangered Species Act is ostensibly neutrally applied to wildlife,²⁶ Congress has implicitly tasked government agencies with determining how to prioritize various species²⁷ given fiscal constraints. Thus, a central question in translocation is: Which, among the many species that could benefit from translocation,²⁸ should be saved?²⁹ Charismatic³⁰ mega-

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21. See Glickman, *supra* note 8, at 889–91 (discussing assisted migration, reintroduction of species, and wildlife highways as adaptive solutions to climate change).
 22. See Schramm & Fishman, *supra* note 8, at 515–16 (suggesting that species conservation is not the appropriate goal, but policymakers should instead focus on creating pathways of migration through which new ecosystems will evolve).
 23. See Glickman, *supra* note 8, at 888 (advocating for “creation of habitat corridors for species threatened by species migration”).
 24. See Kabaz-Gomez, *supra* note 8, at 125–28 (“[I]nternational organizations and U.S. government agencies that are involved in species conservation are increasingly recommending assisted migration as a climate change adaptation strategy.”).
 25. See NAT'L MARINE FISHERIES SERV. ET AL., BI-NATIONAL RECOVERY PLAN FOR THE KEMP'S RIDLEY SEA TURTLE (*LEPIDOCHELYS KEMPII*): SECOND REVISION (2011) (providing a bi-national recovery plan between the United States and Mexico for the Kemp's ridley sea turtle); NAT'L MARINE FISHERIES SERV. ET AL., RECOVERY PLAN FOR THE KEMP'S RIDLEY SEA TURTLE (*LEPIDOCHELYS KEMPII*), at vi (1991) (estimating cost of \$60 million).
 26. See Holly Doremus, *Adapting to Climate Change with Law that Bends Without Breaking*, 2 SAN DIEGO J. CLIMATE CHANGE & ENERGY L. 45, 54–55 (2012) (“The Act mandates the listing of all species of animals or plants, no matter how uncharismatic, which are in danger of extinction or likely to become so in the foreseeable future. The only species ineligible for listing are insect pests ‘whose protection . . . would present an overwhelming and overriding risk to man.’”).
 27. See Andrew Metrick & Martin L. Weitzman, *Patterns of Behavior in Endangered Species Preservation*, 72 LAND ECON. 1, 1 (1996) (“[R]elevant government agencies face difficult problems of, first, deciding which species to place on the endangered species list and, second, deciding how much to spend on the recovery of each listed species.”).
 28. See Sandra Zellmer, *Wilderness, Water, and Climate Change*, 42 ENVTL. L. 313, 341 (2012) (describing climate-sensitive species eligible for assisted migration to include the American pika, bighorn sheep, red wolves, San Bernardino flying squirrels, white-tailed ptarmigans, coldwater trout and other fish species, arroyo toads, Quino checkerspot butterflies, and white bark pine).

fauna³¹ are species—typically large mammals³²—that draw financial support and public sympathy for conservation efforts.³³ Pandas, whales, and polar bears are the figureheads of ecosystem protection campaigns.³⁴ Economists suggest that these species receive greater funding for protection and recovery efforts.³⁵

Less frequently discussed is the topic of which animals *not* to save. Political and economic realities also play a role in relative allocation of funds and efforts to save various species. Predator species, such as wolves, that prey upon livestock may face outcry among ranchers. The Fish and Wildlife Service constrained sea otter recovery efforts in response to pressure from fishermen concerned about otters eating their catch.³⁶ Although Congress approved translocation over thirty years ago, there is not as of yet a clear policy delineating how economic, ecological, and political factors should affect the prioritization of which species to conserve. Translocation and reintroduction offer hope to stave off extinction. Yet, society lacks the resources and will to recover all threatened and endangered species. Value judgments are thus embedded in each individual translocation decision.³⁷

The remainder of this Part explores two interrelated facets of translocation decisions which have not been considered collectively within legal scholarship. Examining them together presents a new perspective on the shortcomings of

29. See Doremus, *supra* note 26, at 63 (“Not all species can be saved from extinction in a rapidly-changing world, even with strong regulatory restrictions and expensive restoration measures.”).
30. Scholars have struggled to define “charismatic” species. See, e.g., Metrick & Weltzman, *supra* note 27, at 4 n.10 (declining to attempt to measure charisma while outlining creative suggestions of how to do so, including the size of species’ eyes or the number of times that species appear in children’s books).
31. See *id.* at 8 (noting that a vertebrate species is most likely to be listed if it is large, a mammal, of a monotypic genus, and highly endangered).
32. See Tim Caro et al., *Preliminary Assessment of the Flagship Species Concept at a Small Scale*, 7 ANIMAL CONSERVATION 63, 63–64 (2006).
33. See Sawyer & Sawyer, *supra* note 16, at 378.
34. There are also scientific reasons to prioritize preservation of some species above others, as with apex carnivores, keystone species, and umbrella species. Biologists consider some species to be high-priority because their recovery is indicative of a healthy ecosystem capable of supporting other animals lower in the food chain. See Caro et al., *supra* note 32, at 63–64.
35. See Cash, *supra* note 9, at 107 (noting that 40% of total recovery spending on vertebrate species from 1989 to 1993 was allocated to about 5% of species).
36. See Cheever, *supra* note 8, at 326–29 (describing the Fish and Wildlife Service creating zones in which reintroduced sea otters were allowed to roam to avoid tensions with fishermen).
37. Naturally, these are not the only value judgments inherent in translocation. Another related value judgment surrounding translocation includes defining the range of translocated species, a topic which Holly Doremus and Federico Cheever, among others, have aptly addressed. See Cheever, *supra* note 8, at 291–94 (arguing that the “wholly separate geographically” requirement is frustrating recovery of endangered species by preventing the recovery prospects of a species and burdening humans affected by reintroduction); Doremus, *supra* note 8, at 2–3 (arguing that restricting translocated species’ ranges may inhibit preservation of natural, wild populations).

the statutory design of the Endangered Species Act, namely that it fails to address the very issue it was designed to counteract: species loss due to habitat development. I form this argument by *first* suggesting that species translocation shifts resources and attention away from preventing the *causes* of extinction, namely habitat destruction wrought by land development and climate change. *Second*, I describe how recipient areas are always implicitly seen as less ecologically, politically, and economically valuable than the area from which the species is being translocated. The functional outcome is that agencies are continuously shifting animals from higher-value lands to lower-value lands, which has the pernicious effect of continually divesting animals of prime habitat needed for survival.

A. *Allocating Scarce Conservation Resources*

Species translocation is just one conservation mechanism in a toolkit of strategies designed to recover wildlife.³⁸ Increasingly, biologists, ecologists, and economists are suggesting that protecting individual species one at a time is a flawed approach.³⁹ Yet, translocation does precisely that: shifting resources and attention away from other conservation and preservation strategies to prevent extinction, including habitat preservation through radical climate change mitigation or bans on development.⁴⁰ Although translocations may protect individual species,⁴¹ they divert resources, attention, and urgency from long-term, big-picture efforts to address the issues underlying extinction. Allocating resources toward translocation reflects a value choice that individual species, rather than ecosystem-level change, is appropriate. Is this an accurate calculus?

Habitat loss is the greatest threat facing wildlife.⁴² Habitat loss occurs when portions of the land on which animals live become unsuitable for their

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38. The debate about whether we should protect wildlife has already been decided through enactment of the Endangered Species Act and continued widespread support for doing so. *See* Endangered Species Act, 16 U.S.C. §§ 1531–1544 (2012).
39. *See, e.g.,* Amy Whritenour Ando, *Economies of Scope in Endangered-Species Protection: Evidence from Interest-Group Behavior*, 41 J. ENVTL. ECON. & MGMT. 312, 315 (2001) (“Wildlife law in the U.S. has focused historically on the task of protecting individual species . . . [T]hat approach is under attack.”).
40. *See* Tracy M. Rout et al., *How to Decide Whether to Move Species Threatened by Climate Change*, 8 PLoS ONE 1, 1 (2013) (discussing cost-effectiveness of species relocation).
41. A species-level alternative to translocation is captive breeding programs, in which endangered species are bred in zoos and wildlife parks. Several species that might otherwise be extinct have been kept alive through captive breeding, such as the giant panda. “There already exists an approach to assist the persistence of endangered species: collaborative captive breeding programs of zoos and wildlife parks.” David Owen, *Bears Do It: But Pandas in Captivity Often Won’t*, NEW YORKER (Sept. 2, 2013), <https://perma.cc/7PD3-MZTK>. The promise of captive breeding programs to result in the recovery of wild species is limited.
42. *See* Jamison E. Colburn, *Permits, Property, and Planning in the Twenty-First Century: Habitat as Survival and Beyond*, in REBUILDING THE ARK: NEW PERSPECTIVES ON EN-

survival. Without a place to live, animals die.⁴³ Diminishing habitat produces the inevitable result of species extinction.⁴⁴ When entire habitats are decimated, developed, or rendered unsuitable because of climatic factors, entire species become extinct. Habitat loss is primarily attributable to (1) land development and (2) the effects of climate change.⁴⁵

Land development,⁴⁶ such as a home being built on an empty lot or a fence being erected on a previously open field, is a form of habitat loss that often happens slowly and subtly. Collectively, such changes fragment habitat ranges used by wildlife.⁴⁷ Development is recurrently problematic because of a fundamental tension between private land ownership and the biological reality that animals depend on landscape-level ecosystems without acknowledgment of man-made property boundaries.⁴⁸

DANGERED SPECIES ACT REFORM 81, 82 (Jonathan H. Adler ed., 2011) (noting that habitat destruction is the “most serious and pervasive threat to biodiversity today”); David S. Wilcove et al., *Quantifying Threats to Imperiled Species in the United States*, 48 *BIOSCIENCE* 607, 607 (1998) (noting that “scientists agree that habitat destruction is the primary agent” of wildlife extinction).

43. See Eric Biber, *Climate Change and Backlash*, 17 *N.Y.U. ENVTL. L.J.* 1295, 1304 (2009) (“Some individual animals may be killed when a particular piece of habitat is destroyed (for instance, nesting birds whose tree is cut down in the course of deforestation). Many animals may be able to flee the immediate impacts of habitat destruction, only to be left without adequate locations to shelter, feed, or reproduce in the future.”).
44. See Carrie A. Schloss et al., *Dispersal Will Limit Ability of Mammals to Track Climate Change in the Western Hemisphere*, 109 *PROC. NAT’L ACAD. SCI.* 8606, 8606–07 (2012) (“Projections from three of the climate models indicate that over 50% of the mammals in given locations will be unable to keep pace with climate change” due to loss of “suitable habitats and associated habitats.”).
45. See J.M.J. Travis, *Climate Change and Habitat Destruction: A Deadly Anthropogenic Cocktail*, 270 *PROC. ROYAL SOC’Y LONDON* 467, 467 (2003).
46. See Barton H. Thompson, *The Endangered Species Act: A Case Study in Takings & Incentives*, 49 *STAN. L. REV.* 305, 315 (1997) (“[M]any property owners can and do modify the habitat of listed species each year, unintentionally or intentionally, without detection.”).
47. See Ove Hoegh-Guldberg et al., *Assisted Colonization and Rapid Climate Change*, 321 *SCIENCE* 345, 345–46 (2008) (“Assisted colonization should be considered for species whose ranges have become highly fragmented.”).
48. See, e.g., Jamison E. Colburn, *Habitat Reserve Problem-Solving: Desperately Seeking Sophisticated Intermediaries*, 41 *ENVTL. L.* 619, 621 (2011) (“[S]ome of the problems of cooperative conservation and the obstacles that local and regional actors face today as they strive to achieve broader-scale conservation” of “one of the most impressive expanses of forested space in the urbanized landscapes east of the Mississippi” is that the area “serves multiple functions to resident and migratory wildlife while at the same time being home, if defined broadly, to more than a million and a half people.”).

The majority of endangered species live on private land.⁴⁹ Habitat and ecosystems span the property boundaries⁵⁰ upon which development decisions are based.⁵¹ The irreversibility of development⁵² couples with notions of individual rights to allow development of private property irrespective of the consequences on the public good⁵³ of ecosystems and biodiversity.⁵⁴ Even “green” forms of development, such as wind projects and solar energy, negatively affect wildlife.⁵⁵

Public lands, such as national parks, play a vital role in providing habitat for animals in the face of development,⁵⁶ but alone are insufficient to provide homes for robust populations of endangered and threatened species. Because habitat loss lacks the drama of previous forms of decimation, such as unregu-

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49. See Thompson, *supra* note 46, at 310 (“[A]lmost 80 percent of all ESA protected species had some or all of their habitat on privately owned land. More than a third of the protected species did not inhabit any federal land, making it impossible to ensure their recovery through federal land management, and less than a quarter had habitats located primarily on federal land.”).
50. See Robert B. Keiter, *Beyond the Boundary Line: Constructing a Law of Ecosystem Management*, 65 U. COLO. L. REV. 293, 294 (1994) (“[The] scientific complexity of ecosystems is rivaled by the legal complexities involved in breaching jurisdictional boundaries and overcoming often outdated laws to facilitate management at an appropriate scale.”).
51. Cf. Matthew McKinney, *The Realities of Regional Stewardship: From Urban Issues to Natural Landscapes*, 29 PUB. LAND & RESOURCES L. REV. 123, 123 (2008) (describing the problem that the geography of the problems of land use is fundamentally mismatched from the geography of institutions and there is no governance mechanism to address transboundary problems); Jamie McCallum & Michael Schoon, *Ecological Benefits and Costs of Transboundary Conservation Areas (TBCA)*, GLOBAL TRANSBOUNDARY CONSERVATION NETWORK, <https://perma.cc/DM4B-ZXKK> (discussing benefits of transboundary cooperation for habitats); Jeremy Waldron, *Property and Ownership*, STAN. ENCYCLOPEDIA PHIL. (Sept. 6, 2004), <https://perma.cc/RDC8-A3K8> (discussing decisional authority of private landowners).
52. See Christine A. Klein, *Preserving Monumental Landscapes Under the Antiquities Act*, 87 CORNELL L. REV. 1333, 1395 (2002) (“Decisions to develop land are irreversible . . .”).
53. See David Farrier, *Conserving Biodiversity on Private Land: Incentives for Management or Compensation for Lost Expectations?*, 19 HARV. ENVTL. L. REV. 303, 305–06 (1995) (arguing that biodiversity is a public good).
54. See Anthony B. Schutz, *Toward a More Multi-Functional Rural Landscape: Community Approaches to Rural Land Stewardship*, 22 FORDHAM ENVTL. L. REV. 633, 650–51 (2010) (noting that although the legal construct of property has benefits, it also has negative consequences for wildlife diversity and economies of scale).
55. See John Copeland Nagle, *Green Harms of Green Projects*, 27 NOTRE DAME J.L. ETHICS & PUB. POL’Y 59, 63–68 (2013) (citing the harmful effects of wind and solar energy development on black-footed ferrets, desert tortoise, and bighorn sheep).
56. See John Copeland Nagle, *How National Parks Law Really Works*, 86 U. CO. L. REV. 861, 896 (2015) (discussing the importance of national parks for preserving species, such as bear populations, that have suffered from diminished habitat); *Defending Habitat*, DEFENDERS OF WILDLIFE (2018), <https://perma.cc/VM4L-LZPS> (discussing public lands’ importance as habitat).

lated hunting or widespread disease, it has been easy to ignore, even while occurring at a shocking pace.⁵⁷

Climate change causes subtle⁵⁸ yet deadly impacts on habitat loss, which is exponentially increasing because of the complex and multifaceted effects of climate change.⁵⁹ The effects of climate change on wildlife⁶⁰ vary across species.⁶¹ For example, birds with habitat on atolls may be affected by sea level rise. Forest-dwelling creatures will be affected by the increased incidence and intensity of wildfire. Increased surface temperatures will require many species to migrate further north or to higher altitudes in order to maintain their habitat conditions.⁶²

Some species have already begun to adapt to climate change by shifting their ranges and altering their phenology.⁶³ Other species⁶⁴ are unable to migrate on their own.⁶⁵ These species, even if not currently threatened or endangered, might later become extinct because of climate change.⁶⁶ Underlying these predictions is the uncertainty⁶⁷ of whether, when, and how climate change will affect individual species.

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57. See Amy N. Hagen & Karen E. Hodges, *Resolving Critical Habitat Designation Failures: Reconciling Law, Policy, and Biology*, 20 CONSERVATION BIOLOGY 399, 400 (2006) (noting that threats to habitat affect over 85% of endangered species, and is the leading source of species endangerment in North America).
58. Ruhl, *supra* note 8, at 6 (noting that the impacts of climate change on species are “gradual and largely invisible to human perception”).
59. See Thomas et al., *supra* note 6, at 145–47 (claiming that climate change will be a major source of future species extinction).
60. The Fish and Wildlife Service has observed that climate change effects “may be positive, neutral, or negative, and they may change over time.” U.S. FISH & WILDLIFE SERV., U.S. DEP’T OF THE INTERIOR, THICK-BILLED PARROT (RHYNCHOPSITTA PACHYRHYNCHA) RECOVERY PLAN ADDENDUM 36 (2013) [hereinafter PARROT RECOVERY PLAN].
61. Ruhl, *supra* note 8, at 6–17 (noting that climate change impacts each species in individual ways that are difficult to predict and exceedingly difficult to generalize).
62. See, e.g., *id.* at 2–4 (noting that the pika will remain “scattered on mountaintop islands” because “as global climate change causes surface temperatures to rise, the altitude above which pikas can find suitable conditions for survival also is rising”).
63. Glickman, *supra* note 8, at 844–46.
64. J.B. Ruhl provides the example of the American pika as a rabbit-like animal that will be forced to migrate further north or to higher altitude in order to maintain the habitat conditions necessary for its survival. Ruhl, *supra* note 8, at 2–4.
65. Kabaz-Gomez, *supra* note 8, at 114 (“Species that are not ‘vagile’ . . . or highly ‘philopatric’ . . . may be unable to migrate.”).
66. Schramm & Fishman, *supra* note 8, at 493 (noting that climate change is projected to have a deleterious impact on a significant number of species previously thought to be “‘immune’ to extinction risk”).
67. *Id.* at 495 (noting the “inherent uncertainty” of the effects of climate change on biodiversity and ecological systems over long time horizons).

B. Prioritization of Recipient Areas

Translocation involves an uncomfortable but largely unaddressed tension about valuing the species being preserved as greater than the recipient area, or the area to which the species is transplanted. Recipient regions are unlikely to benefit from introduced species, which may carry disease that could cause irreversible harm.⁶⁸ In other words, translocations risk harming the land, plants, and animals that already exist in the recipient area. Thus, a recipient area is *per se* being evaluated as lower in value than the species being translocated into the recipient area.⁶⁹

Moreover, there is a distributive effect of translocation decisions, which impose costs on some while benefiting others.⁷⁰ Landowners in recipient areas believe that they are burdened by the translocation.⁷¹ Recipient areas are likely to be low-value along political and economic dimensions.⁷² A body of scholarly work recounting anecdotal accounts of translocation decisions illustrates that politically powerful regions are less likely to suffer the imposition of costs inherent in endangered species decisions.⁷³

Conservation biologists acknowledge the difficulty in weighing the value of recipient areas. Legal experts and policymakers have been silent on the topic. There is no empirical literature establishing how agencies decide which among several potential recipient areas is selected. Theoretical assessments of that decision-making process are similarly absent. Scholars have written virtually nothing about the policies guiding agency prioritization of recipient areas; indeed, policies weighing the relative values of donor and recipient areas may not exist. Yet, the ways in which recipient areas are selected are crucial to the survival of the translocated species, the effect of species preservation on stakeholders, and the contribution of individual species preservation to broader goals, such as forestalling habitat destruction generally. Thus, the remainder of this Article is

68. See Hoegh-Guldberg, *supra* note 47, at 345–46 (noting that the resilience of a target region experiencing climate-induced stress will unlikely be improved by introducing organisms because of the serious risk that they carry diseases and parasites).

69. See *id.* at 345.

70. Translocation's redistributive effects are not unique; virtually all environmental laws are redistributive in nature. See Richard J. Lazarus, *A Different Kind of "Republican Moment" in Environmental Law*, 87 MINN. L. REV. 999, 1000 (2003).

71. Bork, *supra* note 8, at 183–84 (describing translocations as burdensome for landowners in the recipient area, into which the endangered species is placed).

72. See R. Patrick Rawls & David N. Laband, *A Public Choice Analysis of Endangered Species Listings*, 121 PUB. CHOICE 263 (2004) (finding that endangered species are less likely to be listed from regions with a member of the House of Representatives budget subcommittee, which oversees funding for the Fish and Wildlife Service).

73. Cheever, *supra* note 8, at 329 (describing "politics" as important in defining the zones in which reintroduced sea otters were allowed to roam).

devoted to exploring the factors that influence the selection of recipient areas for translocated animals.

II. LEGAL AND HISTORICAL BACKDROP

Humans have been moving wildlife from where it naturally occurs to new places for thousands of years—perhaps for the entirety of human existence. The Spanish reintroduced⁷⁴ horses to the Americas in 1492.⁷⁵ Christopher Columbus introduced domestic pets and farm animals during his 1493 trips to Española and the Antilles.⁷⁶ Later Europeans introduced smaller mammals and honeybees to the Americas.⁷⁷ Although these early translocations brought disease and invasive species that harmed indigenous ecosystems,⁷⁸ they also served to establish legal authority for, and a historical tradition of, species translocations in America.⁷⁹

Later translocations were designed to counter the decimation of native animal populations caused by overhunting.⁸⁰ In 1904, the New York Legislature allocated five hundred dollars to translocate beaver into state waterways

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74. See ALFRED W. CROSBY, *GERMS, SEEDS & ANIMALS* 185 (1994) (“[H]orses originated in the New World and died out there, but, before they did, they migrated to the Old World via a land connection between Alaska and Siberia.”).
75. See *id.* (“Columbus brought horses back from the old to the new not via a land bridge, but on shipboard, and they have propagated in the New World by the tens of millions.”).
76. See Alfred W. Crosby, *An Ecobistory of the Canary Islands: A Precursor of European Colonialization in the New World and Australasia*, 21 ENVTL. REV. 214, 228 (1984) (“The Canaries became the first stop on the way to the New World, the place to make last minute repairs, enlist crewmen, and take on supplies, especially livestock. It is probable that the first horses, cattle, sheep, goats, pigs, chickens and honey bees to arrive in America came from the Islands, as well as the first wheat, bananas and many other crop plants—and, unintentionally, the first Old World weeds.”).
77. See *id.*; Anita Collins et al., *Colony Defense by Africanized and European Honey Bees*, 218 SCIENCE 72, 72 (1982) (“Honey bees (*Apis mellifera*) are not native to the Western Hemisphere, but were introduced to the Americas through importations of European stocks (*A. m. mellifera* and *A. m. ligastica*) since 1621.”).
78. See ALFRED W. CROSBY JR., *THE COLUMBIAN EXCHANGE: BIOLOGICAL AND CULTURAL CONSEQUENCES OF 1492*, at 64 (2003); Noble David Cook, *Sickness, Starvation, and Death in Early Hispaniola*, 32 J. INTERDISC. HIST. 349, 358 (2002) (suggesting that “one might accept that the first case of typhus exanthematicus in America was the Admiral Christopher Columbus himself”).
79. See *Barrett v. State*, 116 N.E. 99, 100 (N.Y. 1917) (citing discovery-era species translocations as establishing a legal and historical basis for the practice in America); CROSBY, *supra* note 74, at 181 (“Columbian paradigm of purposeful discovery engendering new and healthy societies provided a setting that was satisfactory to most scholars, as well as to the general public.”).
80. See, e.g., *Barrett*, 116 N.E. at 100; *Greater Yellowstone Coal. v. Servheen*, 665 F.3d 1015, 1019 (9th Cir. 2011) (“During the nineteenth and early twentieth centuries, widespread hunting, trapping, poisoning, and habitat destruction associated with American expansion decimated the grizzly population in the West . . .”).

where the species lived prior to a near extinction caused by hunting.⁸¹ When a citizen brought suit to seek recovery for property damage caused by the translocated beaver, a state court denied recovery.⁸² It noted that states had considerable authority under both historical practice and police powers to regulate animal populations, including through translocation.⁸³

Later, under the auspices of the Endangered Species Act, the Fish and Wildlife Service moved several species.⁸⁴ In 1982, Congress amended the Act to explicitly authorize such translocations.⁸⁵

Notably, translocation is just one conservation mechanism in a toolkit of strategies designed to recover wildlife.⁸⁶ Although translocations may protect individual species, they divert resources, attention, and urgency from long-term, big-picture efforts to address the issues underlying extinction.⁸⁷ Ecological concerns also abound, with translocation providing unknowable risks to recipient habitats and the species incumbent there. Transplanted species respond to translocation in surprising and unexpected ways, such as whooping crane popu-

81. *Barrett*, 116 N.E. at 100.

82. *Id.* at 99–100.

83. *Id.* at 100.

84. *See* Cheever, *supra* note 8, at 305 (noting that the Fish and Wildlife Service engaged in several reintroductions prior to the 1982 amendments).

85. 16 U.S.C. § 1539(j)(2)(A) (“The Secretary may authorize release (and the related transportation) of any population (including eggs, propagules, or individuals) of an endangered species or a threatened species outside the current range of such species if the Secretary determines that such release will further the conservation of such species.”); *see also* Wyo. Farm Bureau Fed’n v. Babbitt, 199 F.3d 1224, 1231 (10th Cir. 2000) (“Congress added section 10(j) to the Endangered Species Act in 1982 to address the Fish and Wildlife Service’s and other affected agencies’ frustration over political opposition to reintroduction efforts perceived to conflict with human activity.”); Defenders of Wildlife et al., Comments to the United States Fish and Wildlife Service Draft Supplemental Environmental Impact Statement for the Translocation of Southern Sea Otters 52 (2012), <https://perma.cc/5PAW-ZA4X> (“Under section 10(j), Congress created a procedure to authorize the [Fish and Wildlife Service] to translocate members of a species listed under the ESA from their existing range to other locations for the purpose of addressing the threats to their continued existence and promoting recovery.”).

86. Increasingly, biologists, ecologists, and economists are suggesting that protecting individual species one at a time is a flawed approach. *See* Ando, *supra* note 39, at 312 (“Wildlife law in the U.S. has focused historically on the task of protecting individual species [T]hat approach is under attack.”).

87. One species-level alternative to translocation is captive breeding programs, in which endangered species are bred in zoos and wildlife parks. Several species that might otherwise be extinct have been kept alive through captive breeding, such as the giant panda. “There already exists an approach to assist the persistence of endangered species: collaborative captive breeding programs of zoos and wildlife parks.” Ian Davidson & Christina Simkanin, Letter to the Editor, *Skeptical of Assisted Colonization*, 322 SCI. MAG. 1048, 1048 (2008); *see also* Owen, *supra* note 41. The promise of captive breeding programs to result in the recovery of wild species is limited. Allocating resources toward translocation implicitly reflects a values choice that individual species, rather than ecosystem-level change, is appropriate.

lations that adopted the migratory patterns of their sand hill crane “foster parents”⁸⁸ and bighorn sheep that mingled with domestic sheep populations and caught their diseases, to which they lacked immunity.⁸⁹ Beyond ecological concerns, a mix of social, legal, and political factors circumscribe translocation efforts.

III. THE POLITICAL ECONOMY OF SPECIES TRANSLOCATION

Science alone does not dictate which species should be translocated or which areas should receive translocated species.⁹⁰ Each translocation decision is subject to normative judgments about which species to save and which human populations will bear the burden of saving them.⁹¹ This Part provides a public choice account of species translocation.⁹²

Species translocation provides the public good⁹³ of potentially recovering endangered species. Yet, landowners and users in recipient areas believe themselves to be disproportionately burdened⁹⁴ by translocations, which are per-

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88. Cheever, *supra* note 8, at 310–16 (describing conservationists placing the eggs of captive whooping cranes in the nests of sandhill cranes, which raised the offspring as their own).
89. Kate Yoshida, *A Symbol of the Range Returns Home*, N.Y. TIMES (Jan. 6, 2014), <https://perma.cc/D6NH-V3E9> (noting bighorn sheep caught diseases from domestic sheep with which they intermingled after being translocated to Utah).
90. Empirical studies in economics literature suggest that politics plays a greater role in endangered species recovery decisions than do scientific considerations. See Cash, *supra* note 9, at 130 (finding the amount of funding designated to endangered species recovery “is correlated less with scientifically based considerations of endangerment and correlated more with a variety of political considerations” including economic conflict, media coverage, and public comments).
91. *Id.*; see also, e.g., Todd S. Aagaard, *Environmental Harms, Use Conflicts, and Neutral Baselines in Environmental Law*, 60 DUKE L.J. 1505, 1516 (2011) (“By characterizing only some human activities as environmentally harmful—even though all human activities affect the environment in some way—people implicitly make a judgment, often on the basis of unspoken criteria, that some human impacts are normatively inferior to others.”); Rout et al., *supra* note 40, at 1 (“[W]e will never have enough money to translocate every species under threat . . .”).
92. Saul Levmore, *The Public Choice Threat*, 67 U. CHI. L. REV. 941 (2000) (reviewing ROBERT D. COOTER, *THE STRATEGIC CONSTITUTION* (2000) & DENNIS C. MUELLER, *CONSTITUTIONAL DEMOCRACY* (1996)).
93. Amy Whitenour Ando, *Interest Group Behavior and Endangered Species Protection*, in PROTECTING ENDANGERED SPECIES IN THE UNITED STATES, *supra* note 9, at 91, 93 (noting that when a policy to protect endangered species is implemented, “much of the gains accrue to an extremely large population” and “the benefits are extremely diffuse”).
94. See James Salzman, *Evolution and Application of Critical Habitat Under the Endangered Species Act*, 14 HARV. ENVTL. L. REV. 311, 341 (1990) (noting that communities and landowners near areas designated as critical habitat believe they disproportionately carry the costs of species preservation).

ceived as imposing localized costs, including loss of control over private land,⁹⁵ increased scrutiny of multiple-use landscapes,⁹⁶ liability for unintentionally taking endangered species,⁹⁷ and diminished property values.⁹⁸ Landowner opposition may be especially strong when predatory species, such as wolves, are translocated near their land.⁹⁹

To avoid perceived harms, landowners often organize to exert political influence on federal agencies.¹⁰⁰ The small size of landowner groups coupled with the large burden that they stand to suffer cause them to invest heavily in exerting political pressure to avoid translocations.¹⁰¹ Entire communities¹⁰² may mobilize against translocations.¹⁰³ Landowners who oppose translocation may undertake extreme measures, including killing translocated species¹⁰⁴ and preemptively destroying habitat¹⁰⁵ to undermine translocation efforts.

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95. See Doremus, *supra* note 8, at 32–38 (“Reintroduced animals, just like their wild-born counterparts, can cause a variety of economic harms.”).
 96. For example, the translocation of endangered species to an area might threaten commercial interests in the area, even for those who are not landowners. When bighorn sheep were reintroduced to Utah, several died from disease caught from intermingling with domestic sheep populations grazing in the area. To minimize the risk of domestic-to-wild disease transfer, the Utah chapter of the Wild Sheep Foundation spent more than \$4 million to purchase grazing rights from ranchers on publicly owned land. In exchange for cash buyouts, ranchers could either graze cattle instead of sheep or retire grazing rights entirely. See Yoshida, *supra* note 89.
 97. See Bork, *supra* note 8, at 187 (noting that landowners may face liability for unintentionally taking an endangered species).
 98. See Martin B. Main et al., *Evaluating Costs of Conservation*, 13 CONSERVATION BIOLOGY 1262, 1265 (1999) (noting that “[l]andowners fear a decline in the value of their properties because the ESA restricts future land-use options” in designating critical habitat).
 99. See *Gibbs v. Babbitt*, 214 F.3d 483 (4th Cir. 2000) (landowners sued for the right to exterminate re-introduced wolves that wandered onto private land).
 100. See Gary S. Becker, *A Theory of Competition Among Pressure Groups for Political Influence*, 98 QJ. ECON. 371, 396 (1983).
 101. See Robert Innes, Stephen Polasky & John Tschirhart, *Takings, Compensation and Endangered Species Protection on Private Lands*, 12 J. ECON. PERSP. 35, 41 (1998) (discussing landowners’ incentives to lobby for Endangered Species Act limitations).
 102. Meyer, *supra* note 10, at 143 (describing “grass-roots mobilization of entire communities against the ESA”).
 103. Five factors influence mobilization: (1) economic impact; (2) community identity; (3) community political autonomy; (4) local culture of property rights; and (5) community attitude toward wildlife. *Id.* For an outstanding, detailed discussion of each of these factors, see *id.* at 143–52.
 104. See, e.g., *United States v. McKittrick*, 142 F.3d 1170 (9th Cir. 1998) (considering the case of a person who killed, skinned, and decapitated a translocated wolf in Yellowstone National Park and wore a shirt claiming “wild wolf reduction”); Jonathan H. Adler, *Money or Nothing: The Adverse Environmental Consequences of Uncompensated Land-Use Controls*, 49 B.C. L. REV. 301, 320–25 (2008) (describing several actions to kill endangered species or destroy their habitat to avoid regulation).
 105. See, e.g., Jonathan H. Adler, *The Leaky Ark: The Failure of Endangered Species Regulation on Private Land*, in REBUILDING THE ARK: NEW PERSPECTIVES ON ENDANGERED SPECIES

State agency officials often align with local communities to oppose federal wildlife protection measures.¹⁰⁶ State officials may be reluctant to accept federal authority over land which traditionally falls within state control.¹⁰⁷ State agencies may also fear loss of revenue from fishing and hunting activities.¹⁰⁸

Interest group opposition renders translocations costly to undertake¹⁰⁹ and fraught with political constraints. The Fish and Wildlife Service faces pressure to undertake recovery efforts.¹¹⁰ Society lacks the resources and will to recover

ACT REFORM 1, 16 (Johnathan H. Adler ed., 2011) (“There are numerous accounts of landowners engaging in preemptive habitat destruction—that is, perfectly legal measures to make their land less hospitable to current or potential listed species before it is subject to regulation.”); Katrina Miriam Wyman, *Rethinking the ESA to Reflect Human Dominion Over Nature*, 17 N.Y.U. ENVTL. L.J. 490, 506 (2008) (“There is considerable anecdotal and empirical evidence that private landowners preemptively destroy the habitat of imperiled species to avoid land use restrictions pursuant to sections 7 and 9.”).

106. See, e.g., *Endangered Species Act: Hearing on Endangered Species Act Reauthorization and Oversight Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the H. Comm. on Merchant Marine and Fisheries*, 97th Cong. 547 (1982) (Department of the Interior issue papers of Dr. Eugene Hester) (“States fear that stringent interpretation[s] of the Act would alter or eliminate wildlife and land management options available in an area subsequent to reintroduction and are thus reluctant to give approval.”); Meyer, *supra* note 10, at 158 (noting that state agencies “lend professional and scientific credibility to arguments against federal action”).
107. *Endangered Species Act Oversight: Hearing before the Subcomm. on Envtl. Pollution of the S. Comm. on Envt & Pub. Works*, 97th Cong. 4 (1981) (statement of Robert Jantzen, Director, U.S. Fish and Wildlife Service) (“Several States expressed concern that . . . State wildlife and land management options available in an area where reintroduction has occurred would be altered or eliminated [and] . . . that the Service may use reintroduction to declare critical habitat and remove State management prerogatives.”).
108. See, e.g., *id.* at 43 (statement of William S. Huey, Chairman, Legislative Committee, International Association of Fish and Wildlife Agencies) (“We are not going to permit [threatened or endangered fish] species to be released into our streams if they are going to have an adverse effect on sport fishing.”).
109. See Kabaz-Gomez, *supra* note 8, at 122 (discussing criticisms of assisted migration because of its high cost and political pressures); Patrick D. Shirey & Gary A. Lamberti, *Assisted Colonization Under the U.S. Endangered Species Act*, 3 CONSERVATION LETTERS 45, 50 (2010) (noting that political opposition to translocation “can include concern over costs of managing populations, resistance of landowners and local governments to introducing endangered species, and concern over species invasiveness”).
110. For example, hunters might encourage translocations of large prey, such as bighorn sheep or foxes, with the goal of population recovery for future hunting. In *Gibbs v. Babbit*, 214 F.3d 483 (4th Cir. 2000), the court held that one reason that endangered, translocated red wolves were related to interstate commerce was their potential to recover to the point that they could be hunted and their pelts traded or sold. *Id.* at 495. There are also legal pressures, like suits brought by environmental nongovernmental organizations to force agency action to undertake recovery efforts. For a detailed example of the legal pressures that can be exerted, see the account of WildEarth Guardians with regard to the thick-billed parrot, *infra* note 155 and accompanying text (discussing lawsuit and settlement to force the Fish and Wildlife Service to act on a recovery plan for birds after over two years of delay).

all threatened and endangered species, thereby embedding value judgments regarding the qualities of species in each individual translocation decision.¹¹¹ Thus, the ecological necessity of translocating a species to aid in its recovery may collide with the costs and political constraints of undertaking a translocation.

To balance the costs of translocation against the pressure to protect species, the Fish and Wildlife Service may halt planned translocations. In doing so, the agency portends to satisfy the requirement to include all ecologically necessary components of recovery when initially planning how to avoid extinction for threatened and endangered species. However, after the initial planning, the agency may fail to deliver on that promise with limited rationale for doing so. This tracks evidence that the Fish and Wildlife Service may hide behind scientific uncertainty to avoid controversy.¹¹² Courts are generally deferential to scientific rationale,¹¹³ and thus unlikely to question agencies' decisions about species recovery.¹¹⁴

Thus, consideration of the legal, political, and economic factors underlying species translocation indicates that species will be translocated to areas in which strong, well-organized public opposition is unlikely.¹¹⁵ This conclusion suggests that species will be translocated onto public lands,¹¹⁶ rural areas with sparse population bases,¹¹⁷ and lower-valued foreign lands.¹¹⁸

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111. Naturally, these are not the only value judgments inherent in translocation. Another related value judgment involved in translocation requires defining the range of translocated species, a topic which Federico Cheever and others have aptly addressed. *See* Cheever, *supra* note 8, at 291–94 (arguing that the “wholly separate geographically” requirement may frustrate the recovery prospects of endangered species and burden humans affected by reintroduction).
112. *See, e.g.*, Doremus, *supra* note 15, at 1462–63 (noting that scientific uncertainty gives managers an excuse to mask their interpretive judgments or to be passive at the risk of systemically under-protecting environmental values and bowing to political and economic pressures).
113. *See id.* at 1463.
114. *See* Holly Doremus, *The Purposes, Effects, and Future of the Endangered Species Act's Best Available Science Mandate*, 34 ENVTL. L. 397, 429–33 (2004) (noting that few courts have rejected agencies' scientific determinations, although courts do overturn the agency almost 80% of the time when they reach the merits of a listing decision).
115. *See supra* Part I.B.
116. Some agencies that manage public lands, such as the National Park Service, have goals that align with the presence of endangered species and benefit from the ability of charismatic and rare species to attract visitors. *See* 16 U.S.C. § 1 (2012) (directing the National Park Service to “conserve the scenery and the natural and historical objects and the wild life therein and to provide for the enjoyment of the same”). For a discussion of the ways in which these goals might conflict, see Eric Biber, *Too Many Things to Do: How to Deal with the Dysfunctions of Multiple-Goal Agencies*, 33 HARV. ENVTL. L. REV. 1, 5–8 (2009). *But see* Peter Fish, *Howl: Wolves Have Come Back to Yellowstone, and Winter, with its Bright White Canvas, is the Ideal Time to See*, 231 SUNSET, Dec. 2013 (noting that the reintroduction of wolves to Yellowstone National Park increased visitorship, particularly during winter months).
117. Rural, non-industrial lands may also serve as recipient areas for translocated species. Some localities view the presence of endangered species as beneficial. Residents may enjoy viewing

Importantly, the basic prediction outlined above is subject to at least one exception. The public may occasionally overcome traditional collective action problems to facilitate protection of public goods despite interest group pressures.¹¹⁹

Among the many species that could benefit from translocation,¹²⁰ which should be saved?¹²¹ Translocation is carried out by resource-constrained¹²² government agencies that must decide which species' survival to prioritize.¹²³ With regard to species translocation, one would predict that charismatic species¹²⁴ that are especially attractive to the public are likely to generate interest group support.¹²⁵ Charismatic megafauna are species that draw financial support and

the species or enjoy that it protects open land. *See* Ando, *supra* note 93, at 138–39 (“[T]here is sometimes a local component to the benefits of a listing, since those who live near a protected species may take pleasure in seeing it, gain from its contribution to the ecosystem . . . or derive recreational enjoyment from the open land that is preserved as an ancillary outcome of the listing.”).

118. When the Fish and Wildlife Service must balance the pressure of landowners not to translocate a species against the pressure of environmental nongovernmental organizations to recover species, it can satisfy both interest groups by developing a recovery plan that focuses on recovery in foreign lands. Although legally questionable, outsourcing responsibility for species recovery to a foreign country allows the federal environmental agencies to avoid the costly and time-consuming controversies surrounding recovery decisions. It thus seems likely that, unless specifically prohibited, agencies will shift species to lower-value lands rather than translocating them to high-value lands. *See* PARROT RECOVERY PLAN, *supra* note 60, at 45.
119. *See supra* Part II.
120. *See, e.g.,* Zellmer, *supra* note 28, at 341 (describing climate-sensitive species eligible for assisted migration to include the American pika, bighorn sheep, red wolves, San Bernardino flying squirrels, white-tailed ptarmigans, coldwater trout and other fish species, arroyo toads, Quino checkerspot butterflies, and white bark pine).
121. *See* Doremus, *supra* note 26, at 63 (“Not all species can be saved from extinction in a rapidly-changing world, even with strong regulatory restrictions and expensive restoration measures.”).
122. Doremus, *supra* note 15, at 1491 (noting that natural resource managers are “typically resource-limited, understaffed, and overcommitted”).
123. *See* Metrick & Weitzman, *supra* note 27, at 2 (“[R]elevant government agencies face difficult problems of, first, deciding which species to place on the endangered species list and, second, deciding how much to spend on the recovery of each listed species.”).
124. Species that typify America might be particularly apt to be translocated to high-value lands. Such animals, like wild mustangs and burros, have generated significant public support, prompting congressional legislation to protect them. *See* Wild and Free-Roaming Horses and Burros Act of 1971, 16 U.S.C. §§ 1331–1340 (2012).
125. If, for example, the species being translocated were non-predatory megafauna, even diffuse public support might be sufficient to overcome the collective action problem and override interest group opposition toward translocation to a high value area. *See* Metrick & Weitzman, *supra* note 27, at 14. Or, interest groups might favor translocation of certain animals, such as hunting organizations that advocate for translocation of the bighorn sheep. *See, e.g.,* Yoshida, *supra* note 89.

public sympathy for conservation efforts.¹²⁶ Although the language of the Endangered Species Act facially declines to privilege some endangered species over others, recovery efforts inherently do so in practice by favoring charismatic megafauna.

In sum, the Fish and Wildlife Service's ability to satisfy its statutory mandate under the Endangered Species Act is circumscribed by interest group politics in the ways outlined above. In light of this, two predictions emerge: *First*, that the agency will outsource recovery efforts to ideologically aligned external actors, such as conservation-minded environmental nongovernmental organizations. I explore this hypothesis in another paper, using empirical review of recovery plans to assess the involvement by external actors in translocation efforts.¹²⁷

Second, I predict that the Fish and Wildlife Service will disproportionately re-locate species to lands with lower economic value, including public lands and foreign lands, to avoid the controversy associated with translocations. The case study below explores this argument in detail, exploring the dynamics underlying such decisions through a case study that links the broad political economy of species translocation outlined above to a specific, real-world example. In practice, this case study represents hundreds of such examples, which, in aggregate, support the overarching concern of this paper: the statutory design of the Endangered Species Act, coupled with implementation challenges, leads to a slow but certain human expropriation of wildlife habitat loss.

IV. CASE STUDY: THE THICK-BILLED PARROT

In August 2013, the Fish and Wildlife Service took the then-unprecedented action of adopting Mexico's recovery plan for the endangered thick-billed parrot.¹²⁸ In doing so, the United States provided funding for Mexican recovery efforts rather than committing to domestic efforts to reintroduce or translocate the domestically extirpated thick-billed parrot.¹²⁹ Outsourcing responsibility for endangered species raises a host of questions about the ecological, economic, and political realities of species preservation and translocation.

126. See Caro et al., *supra* note 32, at 63–64 (describing charismatic species that receive financial support). For examples of charismatic megafauna, see *supra* notes 34–35.

127. See Karen Bradshaw, *Agency Coordination of Private Action: The Role of Relational Contracting*, 6 TEX. A&M L. REV. (forthcoming 2018) (manuscript at 6–7) (symposium paper exploring the role of non-agency actors in species translocations).

128. In 1978, Congress amended the Endangered Species Act to require the Secretary of the Interior to develop recovery plans for some listed species, unless it would not benefit the species. See Endangered Species Act Amendments of 1978, Pub. L. 95-632, § 11 (codified as amended at 16 U.S.C. § 1533(f) (2012)).

129. See PARROT RECOVERY PLAN, *supra* note 60, at iii, 42 (“The USFWS is grateful to Mexico’s National Commission of Protected Areas (CONANP) for the opportunity to adopt the Mexican recovery plan for the thick-billed parrot . . .”).

The rationale advanced by the Fish and Wildlife Service focused efforts and funding toward existing Mexican populations of the parrot. Critiques of the process suggest that politically connected industrial interest groups could pressure Fish and Wildlife Service employees to essentially transfer U.S. responsibility for recovery of the thick-billed parrot to Mexico, in exchange for financial support. The Thick-Billed Parrot Recovery Plan's reliance on foreign land is emblematic of the debate surrounding species reintroductions and translocations, and will likely serve as a model for Fish and Wildlife Service efforts to outsource the burden of protecting endangered species to other countries and low-value domestic lands.

A. *The Thick-Billed Parrot*

Thick-billed parrots, one of two¹³⁰ parrots indigenous to the United States, have a striking physical appearance.¹³¹ They are approximately fifteen inches long and bright green, with yellow and red accents.¹³² Thick-billed parrots are garrulous, inquisitive, and relatively tame.¹³³ They are monogamous and highly social, with well-developed group behaviors.¹³⁴ They nest in tree cavities created by other creatures and eat the seeds of pine trees.¹³⁵ Thick-billed parrots can live for more than thirty years.¹³⁶

Native Americans may have traded live thick-billed parrots, indicating the centuries-old importance of the endangered species, the remains of which were buried with human remains and artifacts.¹³⁷ Historical evidence suggests that the thick-billed parrot and their "feathers were likely of ceremonial importance in some Mimbres communities by [about] A.D. 1000."¹³⁸ Early Spanish explorers recorded Puebloan groups trading thick-billed parrot feathers and keeping the animals.¹³⁹ In 1583, Spanish explorers led by Antonio de Espejo reported seeing parrots in Arizona.¹⁴⁰

130. The other indigenous parrot species, the Carolina parakeet, is now extinct. PARROT RECOVERY PLAN, *supra* note 60, at 18.

131. See Alan Lurie & Noel Snyder, *Thick-billed Parrots: Field Observations and History*, 13 PSITTA SCENE 1, 1 (2001).

132. *Id.*

133. *Id.*

134. See PARROT RECOVERY PLAN, *supra* note 60, at 17.

135. See *id.*

136. WILDEARTH GUARDIANS, FIGHTING FOR SURVIVAL: THE THICK-BILLED PARROT, <https://perma.cc/5BN5-2DF5>.

137. See PARROT RECOVERY PLAN, *supra* note 60, at 21.

138. See *id.* at 22

139. See *id.*

140. See *id.* at 21.

Thick-billed parrots continued to be seen in Arizona throughout the early 1900s¹⁴¹ but were decimated by hunting and largely gone by the 1920s.¹⁴² Rare but confirmed parrot sightings were reported in Arizona in 1938, and an unconfirmed sighting was reported in New Mexico in 1964.¹⁴³

There are also 95 parrots held captive in United States Association of Zoos and Aquarium facilities today.¹⁴⁴ Thick-billed parrots continue to live in the Sierra Madre Occidental of Mexico,¹⁴⁵ with an estimated population of approximately 2,000 parrots.¹⁴⁶ Habitat fragmentation, deforestation, and climate change are the primary challenges to parrot survival.¹⁴⁷

B. *Endangered Species Act Protection*

On June 3, 1970, the thick-billed parrot was listed as an endangered species under the Endangered Species Conservation Act.¹⁴⁸ Domestic efforts to satisfy the objective of recovery of the parrot included reintroduction, which is to release birds into the wild. In the 1980s and 1990s, the Fish and Wildlife Service released captive-bred and wild populations.

The reason for the lack of effectiveness of these efforts is the source of considerable controversy. The Fish and Wildlife Service described the efforts largely as a failure, possibly due to undetectable diseases among captive-bred

141. *Id.* at 17.

142. Lurie & Snyder, *supra* note 131, at 2 (noting that the birds' physical features and inquisitive behavior made them easy targets and the birds' dwindling U.S. numbers); *see also* Austin Paul Smith, *The Thick-Billed Parrot in Arizona*, 9 CONDOR 104, 104 (1907) (recording the sighting of a group of parrots in Arizona in 1904).

143. Lurie & Snyder, *supra* note 131, at 2 ("Thick billed Parrots . . . were essentially gone from U.S. territory by 1920."). According to at least one source, thick-billed parrots reintroduced into Arizona continued to live there into 2004. IUCN, THE WORLD CONSERVATION UNION, PARROTS: STATUS SURVEY AND CONSERVATION ACTION PLAN 2000–2004, at 141 (2000) [hereinafter "IUCN PLAN"] (observing that "a number" of thick-billed parrots persist in Arizona after initial experiments to establish a viable wild population).

144. PARROT RECOVERY PLAN, *supra* note 60, at 41.

145. *See id.* at 1.

146. *See id.* at 27 (noting that various surveys estimate the population at between 1,000 and 4,000 birds).

147. *See id.* at 2. Climate change is likely exacerbating the threats from wildfire and reduced food availability. *Id.*

148. Due to an oversight, the parrot was not listed as an endangered species when the Endangered Species Act replaced the Endangered Species Conservation Act. *See id.* at 34. On July 25, 1980, the parrot was listed pursuant to the Endangered Species Act, which was always the intention of the Fish and Wildlife Service. *Id.* The parrot is also protected as an endangered species through the IUCN Red List of Threatened Species, an Appendix I species under CITES, and endangered in Mexico. *Thick-billed Parrot* *Rhynchopsitta pachyrhyncha*, CORNELL LAB OF ORNITHOLOGY NEOTROPICAL BIRDS, CONSERVATION STATUS (2011), <https://perma.cc/ZUJ8-DYEG>.

parrots and predation by raptors.¹⁴⁹ Conservation groups have suggested that wild-caught birds will stay in the area into which they are reintroduced “with reasonable levels of survival.”¹⁵⁰ Although reintroduction efforts were ultimately unsuccessful,¹⁵¹ they did attract attention to the plight of the parrots.¹⁵²

The fate of the thick-billed parrot within the United States seemed stalled after the reintroduction attempts. Beginning in 2006, a group of nongovernmental organizations and agency officials from Mexico and the United States¹⁵³ conducted a series of meetings focused on recovery of the parrot.¹⁵⁴

In 2009, the WildEarth Guardians sued the Fish and Wildlife Service, seeking an injunction because the Fish and Wildlife Service had failed to create a recovery plan for the thick-billed parrot within two-and-one-half years of its listing, as is the stated policy of the Fish and Wildlife Service. In December 2010, the parties settled the suit in an agreement outlining the timeline that the Fish and Wildlife Service had to evaluate the draft addendum to the Mexican recovery plan, including requirements for a recovery plan in the United States, by June 30, 2013.¹⁵⁵

On June 19, 2012, the Fish and Wildlife Service published a draft recovery plan addendum¹⁵⁶ with notice-and-comment rulemaking running through August 20, 2012.¹⁵⁷ The plan was co-authored by the Arizona Game and Fish Department.¹⁵⁸

149. PARROT RECOVERY PLAN, *supra* note 60, at 31–32.

150. IUCN PLAN, *supra* note 143, at 142.

151. See Craig R. Enochs, *Gone Today, Here Tomorrow: Policies and Issues Surrounding Wildlife Reintroduction*, 4 HASTINGS WEST-NORTHWEST J. ENVTL. L. & POL'Y 91, 94 nn.43–48 (1997) (describing unsuccessful efforts to reintroduce captive populations of thick-billed parrots into the wild).

152. Cheever, *supra* note 8, at 288 n.4 (discussing the reintroduction of thick-billed parrots as one of several examples of Endangered Species Act recovery programs).

153. Tim Wright, Associate Professor, Department of Biology, New Mexico State University, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y> (noting that the 2006 meeting in Douglas, Arizona, included diverse stakeholders).

154. James D. Gilardi, Executive Director, World Parrot Trust, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y> (“Prior to the meeting that produced the PACE document, NGOs from Mexico and the USA conducted a series of meetings regarding the recovery of the Thick-billed Parrot, with all appropriate agencies and researchers invited and participating.”).

155. Taylor Jones, Endangered Species Advocate, WildEarth Guardians, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y>.

156. See PARROT RECOVERY PLAN, *supra* note 60; Thick-billed Parrot Draft Recovery Plan Addendum, 77 Fed. Reg. 36,569 (June 19, 2012).

157. See PARROT RECOVERY PLAN, *supra* note 60; Recovery Plan Addendum; Thick-Billed Parrot, 78 Fed. Reg. 39,763 (July 2, 2013).

158. *Game and Fish Coauthors Unprecedented International Recovery Plan for Endangered Thick-Billed Parrots*, ARIZ. GAME & FISH DEPT. (July 1, 2013), <https://perma.cc/32XR-QNFU> [hereinafter *Game and Fish Coauthors Plan*].

Notably, the parrot recovery plan addendum was the first recovery plan effort ever produced to adopt, in its entirety, the recovery plan of another nation.¹⁵⁹ The Fish and Wildlife Service adopted Mexico's 2009 recovery plan for the parrot, the *Programa de Accion para la Conservacion de las Especies: Cotorras Serranas (Rhyncopsitta spp.)* ("PACE"), produced by Mexico's National Commission of Protected Areas.¹⁶⁰ The 2013 recovery plan addendum supplements PACE with summarization, reference information, updated information, details about the U.S. historical range, and new partnership information.¹⁶¹ It was prepared by a team of biologists from the United States with Mexican experts providing input into the process.¹⁶²

The key features of the recovery plan include a deferral to Mexican conservation efforts with no committed domestic efforts to reintroduce the parrot.¹⁶³ The plan estimates that the cost of a captive breeding and reintroduction program within the United States would cost \$81 million over the next fifty years.¹⁶⁴ In contrast, the cost of thick-billed parrot translocation within Mexico is estimated to cost \$50,650, with total recovery costs of approximately \$5.1 million.¹⁶⁵

The plan is silent as to the level of financial support that U.S. government entities and nongovernmental organizations have contributed to Mexico to fund recovery efforts for the parrot.

159. See PARROT RECOVERY PLAN, *supra* note 60, at 1.

160. *Id.* (The Fish and Wildlife Service "is adopting Mexico's PACE for Thick-billed Parrot recovery and adding an addendum to meet the statutory requirements of the ESA. Together, the PACE and the USFWS addendum form the U.S. recovery plan for the Thick-billed Parrot.").

161. *Id.* at 2–3.

162. *Id.* at iii.

163. *Id.* at 32 ("The Canada/Mexico/U.S. Trilateral Committee for Wildlife and Ecosystem Conservation and Management has in the past endorsed reintroductions (translocations) of thick-billed parrots within the species' historical range (Mexico and the U.S.) as one of several conservation strategies for the species, but with the adoption of the PACE and this recovery plan addendum, the revised focus is on conserving habitat and thick-billed parrot populations in Mexico.").

The recovery plan notes that translocating parrots from Mexico into the United States is problematic because the breeding population of parrots in Mexico may not be large enough to contribute birds. Also, Mexican law bans the export of parrots. *Id.*; see also Ley General de Vida Silvestre [LGVS], Diario Oficial de la Federación [DOF] 14-10-2008, últimas reformas DOF 19-01-2018 (Mex.).

164. See PARROT RECOVERY PLAN, *supra* note 60, at 41–42. The plan's estimated initial cost of \$25 million over 15 years was determined to be prohibitive with little chance of success. See *id.* at 42.

165. See *id.* at 44; U.S. FISH & WILDLIFE SERV., WILDLIFE WITHOUT BORDERS 25 (2006), <https://perma.cc/95JZ-DEVT>.

C. Opposition to Outsourcing

The Fish and Wildlife Service's abdication of responsibility for parrot recovery created considerable controversy. Critical comments offered during the notice-and-comment period fell into three categories of arguments: (1) That the Fish and Wildlife Service was failing to uphold its statutory obligations under the Endangered Species Act by not focusing on domestic recovery efforts; (2) that Arizona may provide a better habitat for recovery than Mexico for a variety of political, environmental, and societal reasons; and (3) that reintroduction efforts had improved since earlier efforts and should thus be employed to encourage parrot recovery within the United States.

First, comments questioned the legality of the Fish and Wildlife Service relying upon Mexican recovery efforts rather than attempting to recover the species within the United States. WildEarth Guardians, the conservation group that brought suit to force the recovery plan, stated that the plan dodged issues by arguing that the primary focus of recovery should be in Mexico.¹⁶⁶ Defenders of Wildlife advanced a statutory argument that failing to recover the species domestically would be at odds with Section 2(a)(3) of the Endangered Species Act, in which Congress noted that endangered species "are of esthetic, ecological, educational, historical, and scientific value to the Nation and its people."¹⁶⁷

Second, comments raised practical concerns that leaving the fate of the parrot to Mexican recovery efforts was ill-advised because those efforts may fail.¹⁶⁸ And, that designating parrot habitat in the United States was important to species recovery.¹⁶⁹ Several comments compared the challenges of recovery in Mexico with the relative strengths of recovery in the United States. These comments noted that significant portions of Arizona habitat remain in suitable condition while significant portions of Mexican range are already gone.¹⁷⁰ One commentator noted that that the parrot became extinct here because it was shot by hunters and that hunting regulations protecting the bird are already in

166. See Jones, *supra* note 155 ("[The] plan seems to be attempting to dodge several issues by emphasizing that the 'primary focus of recovery conservation for the thick-billed parrot must be within Mexico.'").

167. Eva Lee Sargent, Director, Southwest Program, Defenders of Wildlife, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y> ("[S]pecies which are extirpated can no longer provide these values to the nation.").

168. See Jones, *supra* note 155 ("Despite the best efforts and commitment of the Mexican government, conservation efforts in the parrots' Mexican range may fail.").

169. See John Fitzgerald & Brett Hartl, Policy Director and Senior Policy Fellow, Society for Conservation Biology, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y> ("The ability for Thick-billed Parrots to use habitat within the United States is . . . ecologically and biologically important to the recovery of the species.").

170. See Jones, *supra* note 155. *But see*, Gilardi, *supra* note 154 ("Each one of these [Sky Islands] standing forests is of great cash value, each is prone to serious fire risk (accidental or otherwise), each is used extensively for the production of illegal drugs.").

place.¹⁷¹ Another commentator cited a study showing that while Mexico has a history of “parrot smuggling, bribery, and lax enforcement of parrot conservation laws,” the United States lacks such a history.¹⁷² Commentators suggested that designating Arizona habitat as critical habitat under the Endangered Species Act would be the most effective way to conserve the species.¹⁷³

A representative writing on behalf of impoverished Mexico *enjito* (community-owned land) members mentioned the cooperative agreement through which *enjito* members received payment in exchange for conserving the natural area in his comment.¹⁷⁴ The agreement for this forest, which had already deteriorated considerably, was set to expire in 2013.¹⁷⁵ The representative was not optimistic for continued protection of the forest after expiration of that agreement, noting that schoolchildren hoped to become logging operators when they grew up.¹⁷⁶

Third, comments advocated for species reintroductions¹⁷⁷ and translocations,¹⁷⁸ noting that reintroduction techniques have dramatically improved since the previous attempts to reintroduce thick-billed parrots.¹⁷⁹ Comments specifically argued that the initial reintroduction was flawed.¹⁸⁰ A witness to the 1994 release of thick-billed parrots lamented sensing that the flock was doomed because their wings had to be repaired, they had blood drawn twelve hours before

171. Sartor O. Williams, III, Southwest Natural History Institute, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y> (“Those flocks, which were always considered a great novelty, were shot with great gusto, a testament to the mindset of many Americans of the time toward wildlife.”).

172. Chris Biro, Founder and Executive Director, Bird Recovery International, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y> (“Mexico has a history of parrot smuggling, bribery, and lax enforcement of parrot conservation laws which do not come into play in the United States.”).

173. Jones, *supra* note 155 (noting that most of the thick-billed parrot’s range in Mexico is already gone while significant portions of Arizona habitat remain in suitable condition).

174. Ruben Marroquin Flores, Mexican Counselor in Sustainability Specialist in Ecological Restoration, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y>.

175. *Id.*

176. *Id.*

177. Gilardi, *supra* note 154 (advocating for captive species reintroductions).

178. Luis Fuyo MacDonald, Mexican National Commissioner of Protected Natural Areas, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y> (cautioning that translocation efforts required evaluation of “the success in previous efforts for recovery and translocations, potential habitat at a regional level, connectivity between areas of distribution and [evaluation of] the effectiveness of these measures in terms of cost-benefits for populations”).

179. Fitzgerald & Hartl, *supra* note 169.

180. Biro, *supra* note 172 (noting that the lack of success of the reintroduction was blurred because captive birds were released in close proximity to wild birds).

release, and they wore irritating tracking devices.¹⁸¹ Commentators argued that new translocation techniques, such as the use of nesting boxes, increases the likelihood of success;¹⁸² they also suggested that eggs could be hatched outside breeding facilities to lessen the risk of disease and that volunteers could train young birds to mimic the behaviors of parent-raised hatchlings.¹⁸³

D. *The Political Economy*

The political economy of species translocation suggests that translocation will systematically occur on low-value land to avoid the conflicts inherent with bringing endangered species to high-value land.¹⁸⁴ The case study of the thick-billed parrot supports this account. Arizona landowners—a strong, preexisting interest group with a concentrated harm by endangered species—worked with state and federal officials to abdicate responsibility to restore the parrot to its historical Arizona habitat. The bird was instead maintained in low-value Mexican land populated by rural, poor residents.

Southern Arizona is valuable land used for cattle grazing, a lucrative business that forms an identity for involved parties.¹⁸⁵ Landowners are well-organized, with over twenty existing formal groups to represent cattle grazing interests.¹⁸⁶ Southern Arizona landowners have experience resisting the listing of endangered species¹⁸⁷ and designation of critical habitat.¹⁸⁸ Thus, the interest

181. Elizabeth T. Woodin, President, Board Arizona Heritage Alliance, Comment on Draft Thick-billed Parrot Recovery Plan (2012), <https://perma.cc/GDY5-3J2Y>.

182. Fitzgerald & Hartl, *supra* note 169.

183. Biro, *supra* note 172.

184. *See supra* Part III.

185. Abigail M. York & Michael L. Schoon, *Collective Action on the Western Range: Coping with External and Internal Threats*, 5 INT'L J. COMMONS 388, 389–90 (2011) (describing cattle grazing in southern Arizona).

186. *Id.* at 394 (noting that cattle grazing interests have over twenty formal organizations to represent their interests across a variety of collaborative environmental issues).

187. Stephen M. Nickelsburg, Note, *Mere Volunteers? The Promise and Limits of Community Based Environmental Protection*, 84 VA. L. REV. 1371, 1373 (1998) (noting that ranchers and the state of Arizona attempted to draft a cooperative agreement that would preempt Endangered Species Act listing of the jaguar). The Fish and Wildlife Service listed the jaguar as an endangered species in 1997. *See* Endangered and Threatened Wildlife and Plants: Final Rule to Extend Endangered Status for the Jaguar in the United States, 62 Fed. Reg. 39,147 (Aug. 21, 1997) (to be codified at 50 C.F.R. pt. 17).

188. In 2010, Arizona Cattle Growers brought suit against Secretary Ken Salazar opposing the Fish and Wildlife Service's designation of 8.6 million acres of federal land as critical habitat for the Mexican spotted owl. *Arizona Cattle Growers v. Salazar*, 606 F.3d 1160 (9th Cir. 2010). The controversy surrounding critical habitat designations provides a backdrop for understanding the Fish and Wildlife Service's reluctance to designate the habitat necessary to reintroduce the thick-billed parrot. Widespread general failure to designate critical habitat alone might suggest that, absent a court order to the contrary, the Fish and Wildlife Service would not designate habitat for the thick-billed parrot. Heightening typical reticence is a

group of grazers has effectively signaled to the Fish and Wildlife Service that translocating wildlife into southern Arizona is a contentious, costly, and time-consuming process.

Another facet to understanding the decision of the Fish and Wildlife Service in the thick-billed parrot plan is the role of the Arizona Department of Game and Fish. Although proud of translocation efforts that took place on public lands,¹⁸⁹ Arizona state officials are skeptical of translocations in the southern portion of the state, particularly after controversial wolf translocations.¹⁹⁰ Larry Riley, Assistant Director for Arizona Game and Fish's wildlife management, said "it just makes more sense to recover the birds in Mexico" because Arizona conditions were "less suitable for parrots."¹⁹¹ Arizona Game and Fish officials were supportive of focusing restoration of thick-billed parrot populations in Mexico rather than in Arizona.¹⁹²

Arizona Game and Fish was eager to retain state control over wildlife management; the existence of a federally listed endangered species within the state frustrated this goal.¹⁹³ States have primary authority for regulating species that are not listed as threatened or endangered, but the federal government has long had responsibility for conservation of threatened or endangered species.¹⁹⁴

special reluctance to limit critical habitat proposal and designation to areas actually occupied by endangered species. See Jason M. Patlis, *Paying Tribute to Joseph Heller with the Endangered Species Act: When Critical Habitat Isn't*, 20 STAN. ENVTL. L.J. 133, 137 (2001) ("FWS has chosen not to designate critical habitat in almost all cases unless ordered by [a] court."); Daniel J. Rohlf, *Section 4 of the Endangered Species Act: Top Ten Issues for the Next Thirty Years*, ENVTL. L. 483, 540 (2004) ("In many recent critical habitat proposals or designations, the agency has identified as critical habitat only areas presently occupied by the species").

189. Cheever, *supra* note 8, at 350–54 (describing reintroduction of the California condor to northern Arizona).
190. *Id.* at 340–42 (describing reintroduction of the Mexican wolf to New Mexico, Arizona, and Texas although a wild member of the species had not been present in the area for a generation).
191. *Game and Fish Coauthors Plan*, *supra* note 158.
192. *Id.* This opinion was shared by Arizona Game and Fish Department Director Larry Voyles who said, "After extensive review, it was apparent that we had a better chance of restoring populations of thick-billed parrot in Mexico rather than attempting to reintroduce the species with a cost-prohibitive captive breeding program in the U.S. and where habitat is more limited." *Id.*
193. Some Arizona constituents had previously objected to the designation of privately held land as critical habitat for endangered species. See "Indiana Jones of Wildlife" Joins Ranchers, Mining Executives in Opposing U.S. Jaguar Habitat, EARTH FIRST! (Feb. 18, 2013), <https://perma.cc/89YH-EFGA> (noting designation in 2012 of 838,000 acres of critical habitat for endangered jaguars "caused an uproar from ranchers and mining interests").
194. See Bradford C. Mank, *Protecting Intrastate Threatened Species: Does the Endangered Species Act Encroach on Traditional State Authority and Exceed the Outer Limits of the Commerce Clause?*, 36 GA. L. REV. 723, 773–74 (2002) (discussing early federal wildlife conservation efforts, including the 1900 Lacey Act and 1918 Migratory Bird Treaty Act).

The Fish and Wildlife Service is required to cooperate with states¹⁹⁵ and frequently works with state officials, but there is no option to delegate authority to state officials as there is under some other environmental statutes.¹⁹⁶ State officials' opposition to translocation of the parrot likely strengthened the unwillingness of federal officials to undertake domestic recovery efforts.

1. Outcome

As predicted in the public choice account of species translocation,¹⁹⁷ political and economic pressures dissuaded the Fish and Wildlife Service from undertaking translocation of the thick-billed parrot to its native range of high-value land in southern Arizona. Instead, the Fish and Wildlife Service provided scientific expertise and funding to attempt to recover the parrot in lower-value land in Mexico.

The economically disadvantaged, rural Mexican villagers who received responsibility for managing parrot habitat and recovery efforts did not have a seat at the table in U.S. recovery planning efforts.¹⁹⁸ The chances of habitat destruction seem high, given many villagers' aspirations of becoming foresters and illegal drug cultivation taking place in parrot habitat. If the habitat is diminished, the United States has no formally defined role for stepping in to start the translocations that would be halted. Nor can the United States control Mexican environmental agencies' monitoring or enforcement of habitat protections.

2. Extensions and Implications of the Parrot Recovery Plan

If left unchecked, the recovery efforts for several species will likely be shifted toward lower-valued lands domestically and abroad. The outsourcing of the thick-billed parrot is unlikely to be an isolated incident of cooperation between the United States and Mexico. The Sky Islands region,¹⁹⁹ the habitat for the thick-billed parrot, is a biodiversity hot spot containing more than twenty

195. 16 U.S.C. § 1535(a) (2012) (requiring the Fish and Wildlife Service to "cooperate to the maximum extent practicable with the States").

196. See Robert L. Fischman & Jaelith Hall-Rivera, *A Lesson for Conservation from Pollution Control Law: Cooperative Federalism for Recovery Under the Endangered Species Act*, 27 COLUM. J. ENVTL. L. 45, 81 (2002) ("[T]he Services are accustomed to working with state natural resource and game or fish departments under Section 6."); Mank, *supra* note 194, at 781.

197. See *supra* Part III.

198. Only one commenter identified as being a representative of the villages. See Flores, *supra* note 174.

199. The Sky Islands region includes lands in southeast Arizona and contains "over half the bird species found in North America and the greatest biological diversity of mammal species north of Mexico." Abigail M. York & Michael L. Schoon, *Collaboration in the Shadow of the Wall: Shifting Power in the Borderlands*, 44 POLY SCI. 345, 350 (2011).

threatened and endangered species.²⁰⁰ Arizona Department of Environmental Quality officials advocate the use of the cooperation between the United States and Mexico vis a vis the thick-billed parrot as a model for other species, including the jaguar.²⁰¹

3. *Broader Trends: Beyond the Thick-Billed Parrot*

Importantly, the thick-billed parrot is one of several species for whom the best chance at preservation is no longer in their current habitat. The desert tortoise is routinely shifted from private lands to captive breeding facilities or on to public lands to make way for development projects.²⁰² The Fish and Wildlife Service has concentrated recovery efforts of certain species, such as wolves, on federal public lands to avoid controversy associated with those species. In one dramatic example, Alaska Department of Fish and Game officials waiting in helicopters shot and killed an entire pack of collared wolves as soon as they crossed the boundary between federal and state public land.²⁰³ These anecdotes provide evidence of a broader trend of not only shifting species to lower-value lands, but sometimes failing to do necessary translocations altogether. A recent empirical overview of species translocations shows that more than half of all translocations simply do not occur.²⁰⁴

Outsourcing and failing to translocate species when it is necessary for their survival threatens not only individual species, but also diminishes protections against habitat destruction and thus exacerbates the problems leading to ecosystem degradation and further extinctions. The next Part argues that divesting species of valuable land is both normatively undesirable and incongruent with the mandate contained in the statutory language of the Endangered Species Act, legislative history, and Supreme Court precedent. Despite this, I do not believe that the solution rests in agency action, judicial review, or statutory fixes by Congress. Instead, I argue, property-based solutions are best suited to address what is, at its core, the property-based issue of habitat expropriation.

200. See Julie Ann Gustanki & John B. Wright, *Exploring Net Benefit Maximization: Conservation Easements and the Public-Private Interface*, 74 LAW & CONTEMP. PROBS. 109, 132 (2011).

201. Joel Bourne, *El Tigre Comes North*, AUDUBON, Sept. 19, 1997, at 88 (describing a wild jaguar living in Arizona); see also ARIZ. DEP'T ENVTL. QUALITY, ARIZONA-SONORA ENVIRONMENTAL STRATEGIC PLAN 2017-2021, at 32 (identifying key jaguar habitat regions in U.S. and Mexico).

202. See *supra*, notes 1-5; see also U.S. FISH & WILDLIFE SERV., GUIDELINES FOR HANDLING DESERT TORTOISES—MOJAVE POPULATION AND THEIR EGGS 7-1 (2009), <https://perma.cc/T4W7-JYA3>.

203. Kurt Repansheck, *Alaska Fish and Game Employees Kill Entire Yukon-Charley Rivers National Preserve Wolf Pack*, NAT'L PARKS TRAVELER (Feb. 28, 2014), <https://perma.cc/2U5B-KTQE>.

204. See Bradshaw, *supra* note 127 (manuscript at 34).

V. EXPROPRIATING HABITAT

This Part argues that shifting endangered species to lower-value lands violates the Endangered Species Act by promoting long-term habitat destruction that will slowly lead to increased species loss. I outline the statutory and doctrinal arguments against agencies treating public lands and international neighbors as repositories for wildlife. Despite these arguments, I reject the notion of a statutory or doctrinal fix to this issue. Ultimately, I argue, the statutory regime cannot be constructed to circumvent the persistent and powerful economic interests to develop land.²⁰⁵ Indeed, if courts seriously enforced a no-expropriation rule, landowners and politicians would push the Fish and Wildlife Service to undertake less protective, less transparent protection measures—a trend that is already occurring through regular use of candidate conservation agreements instead of more protective formal listings and habitat designations.²⁰⁶

Thus, I propose a different solution: Giving animals the legal right to own property, in trust, managed at an ecosystem level. This would disallow the subtle, almost unobservable expropriation of animal habitat and instead put dollar values to the habitat losses occurring—dollar values that could be used to benefit species. I have sketched the basic outline of an animal property rights regime in other recent work.²⁰⁷ Here, I show how that model would address the specific issue of continuous, incremental habitat loss identified and analyzed in this Article. In extending property rights to animals, they can, through proxy, participate in—instead of being victims to—the inevitable changes to landscapes over time.

A. Habitat Expropriation Violates the Endangered Species Act

The statutory language of the Endangered Species Act unambiguously requires responsible federal agencies to undertake appropriate conservation efforts to recover endangered species.²⁰⁸ Congress defined the purpose of the Endangered Species Act as “provid[ing] a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species.”²⁰⁹ Shifting conservation efforts to another country plainly

205. See *supra* Part III.

206. See Bradshaw, *supra* note 127 (manuscript at 15).

207. See generally KAREN BRADSHAW, *THE NEW ANIMAL RIGHTS: SAVING AMERICA'S WILDLIFE BY EXPLORING THE BIOLOGICAL ORIGINS OF PROPERTY* (forthcoming 2019); Karen Bradshaw, *Animal Property Rights*, 89 U. CO. L. REV. 809 (2018).

208. See *TVA v. Hill*, 437 U.S. 153, 184 (1978) (“The plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost. This is reflected not only in the stated policies of the Act, but in literally every section of the statute.”).

209. 16 U.S.C. § 1531(b) (2012).

frustrates this purpose. The requisite conservation of ecosystems on which endangered and threatened species depend is inconsistent with shifting animals to foreign ecosystems. Further, the uncertainty of the preservation of foreign ecosystems²¹⁰ outside the control of U.S. agencies directly contrasts with the conservation required by the Act.

The Act defines “conservation” as including “all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to [the Act] are no longer necessary.”²¹¹ Thus, recovery is a central focus of the Act. In the case of outsourcing, the conservation and recovery mandates are sublimated to economic and political concerns. Taking into account interest group pressures and economic factors by avoiding translocations to high-value lands directly contradicts the “all methods and procedures” mandate.

First, legislative history, which is useful in understanding congressional intent, further indicates that outsourcing endangered species is inconsistent with the purposes of the Endangered Species Act.

The Endangered Species Act was passed in response to habitat destruction caused by land development.²¹² In 1972, congressional debate about the Endangered Species Act identified habitat destruction as the primary cause of declines in wildlife populations. Representative Lehman noted that the “greatest threat to endangered animals has been man’s destruction of their habitat.”²¹³ Land development continues to present a tremendous threat to species survival,²¹⁴ which is exacerbated by climate change effects.²¹⁵

Limiting translocations to low-value land entrenches incentives to develop land without regard to the attendant habitat loss, and is therefore inconsistent with the legislative history and congressional intent underlying the Endangered Species Act.

Second, expropriating habitat is further undermined by the rationales—including biodiversity,²¹⁶ option value,²¹⁷ and existence value²¹⁸—that courts have

210. See *supra* notes 168–176 and accompanying text.

211. 119 CONG. REC. 30,528 (1973); see also *id.* at 30,162 (statement of Rep. Sullivan) (“For the most part, the principal threat to animals stems from the destruction of their habitat.”); *id.* at 25,676 (statement of Sen. Williams) (“One of the major causes of the decline in wildlife populations is the destruction of their habitat.”).

212. See Thomas F. Darin, *Designating Critical Habitat Under the Endangered Species Act: Habitat Protection Versus Agency Discretion*, 24 HARV. ENVTL. L. REV. 209, 213 (2000) (quoting statements of lawmakers describing habitat caused by land destruction as a motivator for passage of the Endangered Species Act).

213. 119 CONG. REC. 30,528 (1973) (statement of Rep. Lehman).

214. See *supra* notes 46–57.

215. See *supra* notes 58–67.

216. See Metrick & Weitzman, *supra* note 27, at 4 (“[I]t is sometimes argued that if we allow biodiversity to deteriorate below (currently unknown) critical levels, then ecosystems may collapse, thus causing significant repercussions in other spheres.”); Holly Doremus, *Biodiver-*

embraced in over forty years of adjudicating Endangered Species Act decisions. More directly, the Ninth Circuit has explicitly ruled against the logic that the Fish and Wildlife Service is exempted from recovering species if those species exist in abundance in an adjacent state.

In *United States v. McKittrick*,²¹⁹ the Ninth Circuit considered whether populations of the gray wolf in Alaska and Canada negated the authority of the Fish and Wildlife Service to reintroduce the gray wolf to Montana. Defendant Chad McKittrick shot and killed a gray wolf, then skinned and decapitated it.²²⁰ A jury convicted McKittrick of taking and possessing a wolf in violation of the Endangered Species Act and transporting an endangered species in violation of the Lacey Act.²²¹ McKittrick challenged his conviction on multiple fronts, including the validity of the regulations of the Endangered Species Act.

McKittrick argued, in part, that the gray wolf experimental population in Yellowstone was not properly classified as an experimental population under the Endangered Species Act because the wolves were drawn from Canadian gray wolves, which are not listed as an endangered species. Although the court noted that gray wolves were plentiful in Canada,²²² it found that wolves became an endangered species as soon as they crossed the border from Canada into the United States.²²³ The court further noted that McKittrick's insistence that ex-

sity and the Challenge of Saving the Ordinary, 38 IDAHO L. REV. 325, 326 (2002) ("Both scientists and policymakers today tout the goal of protecting biodiversity, understood to encompass the range of biotic resources.").

217. The option value rationale provided for preservation of endangered species is that endangered plants and animals may prove vitally important in the future in ways we cannot imagine now. In *National Association of Home Builders v. Babbitt*, 130 F.3d 1041 (D.C. Cir. 1997), the United States Court of Appeals for the District of Columbia Circuit noted:

Plants and animals that are lost through extinction undoubtedly have economic uses that are, in some cases, as yet unknown but which could prove vitally important in the future. A species whose worth is still unmeasured has what economists call an "option value"—the value of the possibility that a future discovery will make useful a species that is currently thought of as useless. To allow even a single species whose value is not currently apparent to become extinct therefore deprives the economy of the option value of that species.

Id. at 1053. *But see* Jim Chen, *Webs of Life: Biodiversity Conservation as a Species of Information Policy*, 89 IOWA L. REV. 495, 527 (2004) ("[P]rofits from biodiversity prospecting are unlikely to justify the conservation of endangered species.").

218. Metrick & Weitzman, *supra* note 27, at 3 ("[E]xistence value represents the pleasure people derive from simply knowing that a species exists in the wild, even if representatives are never actually observed directly.").
219. 142 F.3d 1170 (9th Cir. 1998).
220. *Id.* at 1172.
221. *Id.* at 1172–73.
222. *Id.* at 1172.
223. *Id.* at 1173–74 (noting that wolves are protected by the Endangered Species Act based upon where they are found, not upon where they originated).

perimental populations be drawn from gray wolves originating in the United States frustrated “the statute’s essential purpose, which is the conservation of species.”²²⁴

McKittrick also argued that the Fish and Wildlife Service’s efforts to reintroduce wolves in Yellowstone were a poor allocation of resources “[b]ecause gray wolves are plentiful in Canada and Alaska.”²²⁵ The court found the argument “without merit,” noting that the Secretary has broad discretion to determine what methods to use in species conservation. It further noted that “the presence of healthy wolf populations in Canada and Alaska does not, in any event, make the recovery of U.S. populations any less crucial.”²²⁶

In 2003, however, the Ninth Circuit decided the seemingly similar case of *National Association of Home Builders v. Norton*²²⁷ very differently.²²⁸ The pygmy owl occupies territory from Texas to Arizona, south into Mexico. The Fish and Wildlife Service listed the owl as endangered and designated critical habitat. A land development industry group, the National Association of Home Builders, sued, arguing that the owl was not a distinct population segment separate from the Mexican pygmy owl.

On appeal, the Ninth Circuit sought to determine the significance of the U.S. portion of the pygmy owl population by examining the four factors used by the Fish and Wildlife Service.²²⁹ The court considered the effects of the U.S. population on (1) the genetic diversity of the species; (2) the reduction in current range; (3) the reduction of historic range; and (4) extirpation of the species from the United States.²³⁰ Ultimately, the court found that the pygmy owl was not a significant population, and thus did not qualify as a distinct population segment worth listing. Factors three and four are most relevant to the issue of taking no action to preserve the U.S. portion of the pygmy owl, which implicitly outsourced species preservation to Mexico.

In analyzing the reduction of the owl’s historic range, the court found that the appropriate standard was loss of “major geographical areas in which [the pygmy owl] is no longer viable but once was,” and the court found that the Fish and Wildlife Service had not satisfied this factor because it had not supplied sufficient evidence that Arizona was a major portion of the owl’s geographic range in the listing decision.²³¹

With respect to the concern of extirpation of the species from the United States—which means that the species no longer lives here, although it contin-

224. *Id.* at 1174

225. *Id.* at 1176.

226. *Id.*

227. 340 F.3d 835 (9th Cir. 2003).

228. *Id.* at 839.

229. *See id.* at 846.

230. *See id.*

231. *See id.* at 848–49.

ues to exist elsewhere in the world—the Ninth Circuit made a surprising decision. It found that extirpation alone did not justify listing. That is, if a species lives elsewhere in the world in adequate numbers to sustain the population, losing the entirety of the species living in the United States was not sufficient to justify listing. After *National Association of Home Builders*, the Fish and Wildlife Service has declined to undertake listing or recovery activities for other species extirpated from the United States with populations remaining in Mexico.

As discussed in prior Parts, the statutory language, legislative history, and some cases suggest that courts should enforce agency decisions to maintain U.S.-based populations of species. Clearly, courts *could* exercise this authority. They have jurisdiction over the substantive decisions of agencies operating under the Endangered Species Act,²³² and they can require agencies to employ the best scientific evidence available standard.²³³ This standard is flexible in allowing the Fish and Wildlife Service to decide how aggressively to implement climate change policy, which is increasingly referenced in translocation decisions.²³⁴

Despite this, I doubt that judicial support is the most effective mechanism for achieving the broader goal of habitat preservation. The Endangered Species Act is presently under attack, and the Fish and Wildlife Service has long been underfunded relative to statutory recovery mandates.²³⁵ As a result, the agency is already avoiding critical habitat designation and listing, choosing instead to use candidate conservation agreements that offer lesser protections and no dedicated habitat to species that satisfy the listing criteria.²³⁶ Heightening demands upon a beleaguered agency will likely push expropriation further underground,

232. See *Northern Spotted Owl v. Hodel*, 716 F.Supp. 479, 481–82 (W.D. Wash. 1988) (noting that courts engage in the substance of Endangered Species Act decisions when requiring the Department of the Interior to show that their decision not to list the spotted owl as threatened or endangered was arbitrary and capricious).

233. See Ruhl, *supra* note 8, at 54 (“[W]hen deciding whether to list a species, the FWS . . . must consider factors such as loss of habitat [and the designation of critical habitat directives] using only ‘the best scientific and commercial data available.’”).

234. See *id.* at 57 (noting that the Fish and Wildlife Service has considerable flexibility “to carry out either a passive or aggressive climate change policy”); Schramm & Fishman, *supra* note 8, at 515 (“[O]fficials [should] be given the legal authority to modify the existing network of protected areas as bioclimatic conditions change.”).

235. See *supra* Part II.B.

236. Candidate conservation species are those which have been proposed for listing and meet the substantive criteria to support a listing but are precluded from listing by higher priority listing actions. See, e.g., Notice of Review, Endangered and Threatened Wildlife and Plants, 79 Fed. Reg. 72,449, 72,450–51 (Dec. 5, 2014) (noting that the Fish and Wildlife Service “offer[s] technical and financial assistance to facilitate [conservation] efforts [for candidate species]”); Notice of Final Decision, Endangered and Threatened Wildlife and Plants, 61 Fed. Reg. 64,481, 64,484 (Dec. 5, 1996) (describing allocation of 80% of candidate conservation appropriations to candidate conservation agreements and arguing “such a policy achieves the stated goal of focusing funding on those species thought to be in gravest peril”).

leading to non-transparent agreements instead of formal listings. For these reasons, a new approach is needed to preserve wildlife habitat.

B. Advocating for an Animal Property Rights Regime

A bipartisan Congress and the Supreme Court aligned in the 1970s to agree that wildlife preservation is a national priority, regardless of the economic harms incurred in doing so.²³⁷ Since then, animal law, like many things, has polarized. On one hand, the American public is demanding heightened protection of animals.²³⁸ Vegetarianism and ethical treatment of farm animals were once considered fringe positions; today, they have become mainstream.²³⁹ On the other hand, Senators Orrin Hatch and Mike Lee sponsored a bill to remove Endangered Species Act protections on animals that exist only within one state.²⁴⁰ This would remove federal protections from over 1,000 of the nearly 1,500 endangered species.²⁴¹

The current political climate, coupled with the lived history of the Endangered Species Act, suggests that a statutory approach to animal habitat preservation will not work. Instead, this property problem can and should be solved with a property-rights solution. Importantly, I envision this solution working in tandem with existing law—not as a replacement for it. But, in parallel with Endangered Species Act protections, I propose an additional form of protection for wildlife: an animal property rights regime.

In a recent article, I introduced the idea of affording animals property rights.²⁴² Here, I briefly summarize that work to show its relation to the specific

237. See Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2012); *TVA v. Hill*, 437 U.S. 153 (1978) (blocking the construction of a dam that threatened to drive the snail darter to extinction by destroying critical habitat).

238. See Rebecca Riffkin, *In U.S., More Say Animals Should Have Same Rights as People*, GALLUP NEWS (May 18, 2015), <https://perma.cc/7553-S3QR> (noting that one third of Americans believe animals should “have the same rights as people,” and nearly two thirds believe animals “deserve some protection”); Justin F. Marceau, *Killing for Your Dog*, 83 GEO. WASH. L. REV. 943, 947 (2015) (noting a trend among judges and juries toward protecting people who commit criminal acts to protect or vindicate their pets).

239. For example, Peter Singer’s *ANIMAL LIBERATION* (2015) has been reprinted in multiple editions since 1975.

240. Native Species Protection Act, S. 1863, 115th Cong. (2017). The bill’s stated purpose is

To clarify that noncommercial species found entirely within the borders of a single State are not in interstate commerce or subject to regulation under the Endangered Species Act of 1973 or any other provision of law enacted as an exercise of the power of Congress to regulate interstate commerce.

Id.

241. Press Release, Center for Biological Diversity, Senate Bill Aims to Strip Protections from Nearly 1,100 Endangered Species (Sept. 28, 2017), <https://perma.cc/6SV4-U36X>.

242. See Karen Bradshaw, *Animal Property Rights*, 89 U. CO. L. REV. 809, 813 (2018).

problem identified in this Article, which is the continuous shifting of wildlife to lower-valued land. Under an animal property rights regime, human trustees would manage land at an ecosystem level for the collective benefit of animal trustees, operating under a fiduciary duty.²⁴³ To ensure consistently sound practices, each trustee would operate under the guidance of a private governance committee, which would regularly update standards requiring best practices.²⁴⁴ Trustees selection could be determined on a trust-by-trust basis, so long as it is accorded with the general principles established by the overarching governance committee and common law trust principles.

Trustees would manage animal-owned lands for the health of the overall ecosystem. As with any policy decision, trustees would weigh the interests of competing constituencies—here, animals—and make difficult decisions about the winners and losers. Given the presently early and theoretical nature of this proposal, I cannot claim to have worked out the details of how such decisions would be made. Frankly, a single legal scholar is poorly positioned to unilaterally answer such complex questions; I believe determinations would be highly localized and best determined by interdisciplinary teams familiar with the social-ecological context. Accordingly, I focus on the institutional structures likely to maximize sound decision making. In this regard, I believe the parallel successes of small groups of interested stakeholders in reaching decisions about managing land and resources may provide a template for trustee boards.²⁴⁵ As with stakeholder collaborations, trustee boards could be backstopped by a mix of private and public oversight.

With respect to feasibility of implementation, I believe that there is sufficient precedent to assert that there is already common law recognition of animals' rights to own property.²⁴⁶ Congress could, however, explicitly authorize animals as property owners.²⁴⁷ Indeed, most states have passed similar legislation with respect to pets inheriting property from their human owners within the past twenty years, indicating potential political viability of such a proposal.²⁴⁸

The key contribution is the long-term preservation of habitat. Animals presently have no bargaining power with respect to land. This proposal gives them access to the market and places a dollar value on where they live. The fiduciary duties of trustees and standards of the private governing body would work in tandem to ensure that animals could not be stripped of their habitat. Although I am sensitive to commodification arguments generally, they do not

243. *See id.* at 830–35.

244. *See id.* at 831.

245. *See generally* Karen Bradshaw, *Stakeholder Collaborations*, 51 ARIZ. ST. L.J. (forthcoming 2019).

246. Bradshaw, *supra* note 242, at 845–48.

247. *Id.* at 831–44.

248. *Id.* at 828 n.118.

apply here: It is the habitat, not the animals, that would be assigned dollar values, and all terrestrial habitat is already quantified, including public lands. Ultimately, this move would serve to assign value to animal habitat and entrust that habitat for animal protection. It would remove the well-being of species from the political whims of Congress and empower individual wildlife enthusiasts to preserve habitat directly in a more permanent way. Further, this would allow more accurate quantitative national assessments of the amount, value, and locations of animal habitats, which in turn could lead to better preservation and management decisions.

C. *Considering Counterarguments*

Of course, some may argue that shifting endangered species to public and foreign lands is a necessary, even desirable, action to fuel economic progress and land development. Below, I outline these counterarguments to my proposal, but ultimately argue that diminishing wildlife habitat frustrates economic, ethical, distributional, and ecological aims.

1. *Economic Considerations*

One can imagine an economic argument that agencies moving endangered species from high-value lands is a rational response to resource constraints. Certainly, it is not possible for the agency to fully fund every species recovery plan amidst current constraints. Therefore, agency officials must prioritize which species to save. From this view, giving Mexico responsibility for recovery of the thick-billed parrot makes sense. The parrot lives in Mexico today. It would be costly and time consuming to move the parrot, and the outcome of translocations is at best uncertain. Resources would be better allocated toward species more reflective of American national identity or appealing toward conservation ideas.²⁴⁹

This line of reasoning holds that it is sound policy to shift animals toward lower-value lands; it might even argue for creating zoo-like sanctuaries for animals that live in high-value areas so that land could be exploited for higher-value uses. This is not a hypothetical; wildlife farming is practiced in several African countries and American wildlife is increasingly pushed toward constrained habitats. Indeed, some economists have recently made a widespread public push to popularize wildlife farming in Africa and canned hunting in Texas, arguing that privatizing endangered species leads to conservation goals.²⁵⁰ Some argue that conserving wildlife should take a backseat to more

249. For a discussion of the tendency to focus conservation on large, charismatic mammals, see *supra* notes 30–35.

250. See, e.g., Terry L. Anderson & Hannah Downey, Opinion, *Hunting Can be Good for Lions and Elephants: A Government Report Makes the Case for Easing the Ban on Importation of Big-*

compelling concerns, such as healthcare or education. The Endangered Species Act, they argue, is a product of the time in which it was passed and no longer relevant amidst the national concerns we face today.

Economics-is-all-that-matters arguments fail for a variety of reasons. *First*, Congress, courts, and the American public have expressly and repeatedly prioritized the conservation, preservation, and recovery of endangered species. That commitment remains firm, with amendments, opinions, and polls demonstrating a sustained commitment to species preservation over other, even economic, priorities.²⁵¹

2. *Ecological Values*

Second, accepting the premise that species can be restricted to land that is less valuable diminishes the intrinsic value of species and undermines ecological values embedded in the Endangered Species Act. This reasoning commodifies the value of animal habitat rather than capturing the full value of a landscape or ecosystem. Private lands can and do provide important ecological functions. Discounting the extent to which private property serves as wildlife habitat is clearly detrimental to wildlife.

Shifting wildlife to lesser-valued lands also inflicts harm on the human population.²⁵² Environmental law scholar Martin Krieger once famously asked: Why we don't replace our forests with plastic trees?²⁵³ Krieger was making the point that natural resources have values extending beyond mere economic

game Trophies, WALL STREET J. (Nov. 28, 2017), <https://perma.cc/ZB28-RCA8>; Manny Fernandez, *Blood and Beauty on a Texas Exotic-Game Ranch*, N.Y. TIMES (Oct. 19, 2017), <https://perma.cc/F4LX-Q857>. For a different perspective on the relationship between trophy hunting and conservation, see Stephen Leahy, *Trophy Hunting May Drive Extinctions, Due to Climate Change*, NAT'L GEOGRAPHIC (Nov. 28, 2017), <https://news.nationalgeographic.com/2017/11/wildlife-watch-trophy-hunting-extinctions-evolution/> (last visited Dec. 21, 2018) (suggesting that trophy animals are the most evolutionarily fit, and therefore hunting trophy animals threatens the ability of species to adapt to climate change).

251. Plants and animals enjoy widespread public support expressed through the expenditure of great costs for their protection. *See, e.g.*, *TVA v. Hill*, 437 U.S. 153 (1978) (holding that endangered species must be preserved, even if the costs of preservation are high).
252. I acknowledge the active debate between human-centric reasons for maintaining wildlife and zoo-centric reasons for maintaining wildlife. *See, e.g.*, Joshua Rottman, Opinion, *Breaking Down Biocentrism: Two Distinct Forms of Moral Concern for Nature*, 5 FRONTIERS PSYCHOL., Aug. 2014, at 1 (describing frameworks of environmental ethics). Here, I simply acknowledge that habitat preservation appeals to people in both camps.
253. *See generally* Martin H. Krieger, *What's Wrong with Plastic Trees? Rationales for Preserving Rare Natural Environments Involve Economic, Societal, and Political Factors*, 179 SCIENCE 446 (1973).

calculus—a principle with which even the most strident cost-benefit advocates agree.²⁵⁴

Moreover, land development encourages subsequent polluting uses. It tends to diminish the existence of raw natural beauty in a landscape. Certainly, this is not to be read as anti-development, but instead as a thumb on the scale of pragmatism. Although our society rightfully values property rights, there exists tension between the fullest extension of those rights (i.e., do whatever you want on your own land) and the broader societal interests in clean air, clean water, and reduced emissions. For these reasons—and others—rights to individual development have historically been subject to at least some bar for reasons of broader societal interests. Thus, a mixture of legal and moral arguments rejects that commodification of endangered species is necessary to restrict their recovery due to land value.

3. *Distributional Considerations*

Third, shifting the burden of protecting species to lower-value lands is not costless. Like most forms of outsourcing, it shifts a burden to a third party less able to advance their interests. In the example of the thick-billed parrot, impoverished Mexican citizens were faced with restricted use of land and natural resources to house a creature that more politically powerful forces in the United States did not care to house. If—as was suggested in a public comment—the compensation was finite and limited, this might suggest an unjust enrichment on those who traded the long-term burden of habitat preservation for a short-term payment.

4. *Ecological Considerations*

Fourth, there are also well-reasoned, thoughtful arguments against translocation for ecological reasons.²⁵⁵ Conservation biologists are in a heated debate about these arguments.²⁵⁶ The primary concern is that of unintended consequences, such as translocated species transferring diseases to species in recipient areas.²⁵⁷ For example, consider the effects of early translocation of plants to the United States by European settlers:

254. See Cass R. Sunstein, *Incommensurability and Valuation in Law*, 92 MICH. L. REV. 779, 786 (1994) (noting that there are limitations to what quantitative measures can capture, including things such as wonder and awe).

255. See *supra* Part I.B.

256. *Id.*

257. The concern of transplanted species dislocating existing species is not outlandish; indeed, it has happened before. See, e.g., CROSBY, *supra* note 78, at 294 (describing transplanted plants and animals decimating indigenous plants in North America).

[A]s they intentionally sowed Old World crop seeds, the European settlers were unintentionally contaminating American fields with weed seed. More importantly, they were stripping and burning forests, exposing the native minor flora to direct sunlight and to the hooves and teeth of Old World livestock. The native flora could not tolerate the stress.

The effects of the initial introduction of species to the United States should serve as a warning to at least attempt to evaluate the potential effects of a translocated species to a host area.

To be clear, this Article does not weigh in on this debate of *whether* translocation should happen. It does, however, argue that because translocation is happening, it should happen in such a manner as to promote ecological goals of conservation, preservation, and recovery. This means that translocations should be used without respect to underlying land values, and private interests should not drive wildlife to lower-valued lands. But, in the second-best world where this is not likely, animal property rights produce a viable mechanism to reduce the harmful effects of habitat expropriation.

CONCLUSION

This Article moves past the normative debate about whether species translocation should occur and focuses upon how it is occurring in practice. With an eye to the political, social, ecological, and economic realities in which the Endangered Species Act operates, this Article highlights legal and habitat concerns underlying species translocation. Considering the political economy of translocation decision-making makes explicit the otherwise hidden political and economic aspects of translocation decisions. This analysis suggests that current dynamics will produce the normatively undesirable outcome of species being transplanted to lower-value lands domestically and abroad.

Expropriating wildlife habitat is not permitted by the Endangered Species Act, as evidenced through the statutory language, legislative history, and judicial precedent regarding translocation. Further, a mix of economic, ecological, and ethical considerations suggest that outsourcing endangered species is normatively undesirable in that it exacerbates the very habitat loss and extinction that it was designed to stem. One way to prevent these undesirable outcomes would be for courts to hold that agency actions with the effect of expropriating habitat from endangered species to shift them to lower-value land is inconsistent with Congress' statutory mandate. This, I argue, is likely not the most effective approach given the political economy of implementing the Act. Instead, I argue that an animal property rights regime, in which land is held in trust at an ecosystem level for all animals, provides a better alternative to stem the trend toward widespread habitat expropriation.