

PROPERTY IN WOLVES

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From colonial times until the mid-twentieth century, governments paid bounties to extirpate wolves, mountain lions, and other ecologically important wild animals. Clearing the wild was a sustained legislative project. I argue that these bounty statutes have implications for the history and theory of property. The statutes, in their intent and effect, selected among land uses. For more than three centuries, they encouraged livestock. By removing wild animals, the statutes made raising livestock a more cost-effective use of land than it otherwise would have been for landowners. And by removing ecologically important species, they changed the character of land in ways that diminished the value of wilder uses.

The statutes also had a deeper consequence, encouraging private property in land. Predation on livestock is the kind of “large event” that, on an influential theory, makes collectively owned land valuable. By acting to remove the threat of wild animal predation, public law weighted the scale toward privately owned, fee-simple land regimes. This discovery raises questions for a popular normative justification for private property in land.

The Article finally seeks to develop ideas for why animal eradication was such a pronounced public policy. The phenomenon suggests the influence of cultural preferences on property regimes.

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INTRODUCTION

Before gray wolves became protected near the end of the twentieth century, they were almost extinct in the United States.¹ They had not died off as mere byproducts of westward expansion, nor even from private hunting. Instead, for three centuries, they were extirpated under targeted government policy.² Beginning in colonial America and ending in the middle of the twentieth century, state legislatures set bounties on wolves and other animals they deemed “noxious,” a category which included most large predatory mammals.³ States and the federal government also sometimes hired full-time hunters for the task.⁴

This three-century period has long fascinated environmental scholars.⁵ Historians of wilderness conservation have explored the changes that led from wildlife extirpation to the landmark conservation measures of the second half of the twentieth century.⁶ Conflicting ideas about whether culture, science, or economics best explains the shift from opposing the wild to protecting it has led to fruitful discoveries, as well as new questions.⁷

Property law theorists have not always shared this interest. Theories of property often focus on the function of particular

¹ Holly Doremus, *Restoring Endangered Species: The Importance of Being Wild*, 23 HARV. ENV'T L. REV. 1, 6 n.32 (1999).

² *Id.* at 4 n.17.

³ See, e.g., *State v. Theriault*, 41 A. 1030, 1034 (Vt. 1898) (explaining that Vermont legislators set bounties on “noxious wild animals, wolves, and panthers”); see also Dale D. Goble, *Of Wolves and Welfare Ranching*, 16 HARV. ENV'T L. REV. 101, 104 (1992) (describing the Massachusetts “one penny per wolf” bounty).

⁴ See George Cameron Coggins & Parthenia Blessing Evans, *Predators' Rights and American Wildlife Law*, 24 ARIZ. L. REV. 821, 835–36 (1982); Goble, *supra* note 3, at 104.

⁵ See *infra* Part I.

⁶ See Thomas R. Dunlap, *Values for Varmints: Predator Control and Environmental Ideas, 1920–1939*, 53 PAC. HIST. REV. 141, 142 (1984).

⁷ See *infra* Part I.

kinds of property institutions as developed by bargaining among utility-maximizing agents, or upon property law as a singular doctrinal domain.⁸ Legal scholarship on property more rarely takes as its central subject a particular natural phenomenon, such as wolves or lions, or the ways in which government acts that lie outside of formal property law might influence the theory and history of property institutions.

Using new research on state animal bounty laws, I argue that they have an understudied significance for property in land. Examining the bounty statutes reveals remarkable continuities over their three-century existence. They encouraged specific land uses by eradicating wolves and other animals, targeting in particular those species that legislators believed threatened livestock.⁹ They were blunt instruments. Carelessly swung scythes, some bounty statutes missed their targets. Coyotes were subject to bounties in many states, but they did not disappear, and in fact may have extended their range.¹⁰ Other blows, like those targeting gray wolves, jaguars, and mountain lions, eliminated what they meant to.¹¹

Bounty laws also differed in other ways. Species were valued differently in different states and at different times.¹² Many statutes were concerned with preventing fraud, which could be perpetrated by bringing wolves in from territories not covered by the statute, or by maintaining breeding wolf populations in the hope of collecting bounties into perpetuity.¹³ Some statutes implemented tort damages against people who interfered with the wolf traps of others.¹⁴ At least one statute insti-

⁸ See, e.g., Katrina Miriam Wyman, *From Fur to Fish: Reconsidering the Evolution of Private Property*, 80 N.Y.U. L. REV. 117, 125 (2005) (“Although much evolution of property scholarship is about the allocation of property in organized societies rather than the state of nature, it nonetheless undervalues the political dimension of property rights formation.”) (footnote omitted); see also *infra* Part IV.

⁹ See *infra* Part III.

¹⁰ Sharon Levy, *Rise of the Coyote: The New Top Dog*, 485 NATURE 296, 296 (2012).

¹¹ See *infra* Part III.

¹² See *infra* Part II. Compare *Wolves and Coyotes*, ch. CXVII, § 1, reprinted in GENERAL STATUTES OF THE STATE OF COLORADO, 1883, at 1063 (paying the same bounty for coyotes and wolves), with *Wolves and Other Wild Animals*, Providing for Destruction of, tit. 110a, § 1, reprinted in W.W. HERRON, SUPPLEMENT TO SAYLES’ ANNOTATED CIVIL STATUTES OF THE STATE OF TEXAS, COVERING ALL CIVIL LAWS PASSED BY THE TWENTY-SIXTH, TWENTY-SEVENTH AND TWENTY-EIGHTH LEGISLATURES, REGULAR AND SPECIAL SESSIONS 568 (1903) (paying one-tenth as much per coyote as per wolf).

¹³ THOMAS A. LUND, AMERICAN WILDLIFE LAW 32–33 (1980).

¹⁴ See, e.g., Of the Destruction of Wolves and Panthers, ch. LXIII, § 3, reprinted in LAWS OF THE STATE OF VERMONT, DIGESTED AND COMPILED: INCLUDING THE DECLARATION OF INDEPENDENCE, THE CONSTITUTION OF THE UNITED STATES, AND OF THIS STATE²⁴ (1808) (“That if any person shall take any wolf, panther or whelp, out of

tuted criminal damages for such tampering.¹⁵ Regardless of the particular species they targeted, or the methods they used to ensure their own efficacy, bounty statutes were in effect in overlapping jurisdictions for more than three centuries. Clearing the wild was a sustained legislative project.¹⁶

The bounty statutes offer three discoveries for property theory.

First, the statutes advance a fresh understanding of the forms and purposes of land use policy. The bounties were an enduring state encouragement for livestock. The statutes offered rewards for eradicating animals deemed dangerous to livestock, which generated incentives to extirpate these animals beyond what would have existed through private bargaining. Moreover, the elimination of these species, often apex predators, from traditional ecosystems had knock-on effects, changing the character of land in ways ecologists only began to recognize in the twentieth century. In this way, the bounty statutes were a double subsidy to livestock and related land uses.¹⁷ They made raising livestock cheaper than it would otherwise have been, and they made alternative land uses, which profited from wilder lands, costlier than they would otherwise have been.

From this angle, the laws regulated land use. The double subsidy prescribed livestock and other favored forms of agriculture over alternatives that would, in the absence of such laws, have been more cost-effective for individual landowners. The livestock model intervened on citizens' economic activities. Those who did not share the voting majority's preference for livestock, and who might have developed profitable uses of wilder lands in its absence, were constrained by the statutes. The

any pit made to catch wolves, or out of any trap, thereby to defraud he owner or owners of such pit or trap of his or their premium; he shall pay to the owner or owners of such pit or trap the sum of *thirty dollars* for every wolf, panther, or whelp, taken out"); *see infra* Part III.

¹⁵ An Act for the Protection of Persons Engaged in Destroying Wolves in the County of Hardy, ch. 234, §§ 1–3, 1849 Va. Acts 164, 164; *see infra* Part III.

¹⁶ It was also, as John Sprankling has detailed, a common law judicial project. *See, e.g.,* John G. Sprankling, *The Antiwilderness Bias in American Property Law*, 63 U. CHI. L. REV. 519, 521 (1996). On this account, an "instrumentalist judiciary modified English property law to encourage the agrarian development, and thus destruction, of privately owned American wilderness. Six illustrative doctrines—waste, adverse possession, possession as notice to a bona fide purchaser, good faith improver, trespass, and nuisance—reflect this early antiwilderness retooling." *Id.* The retooling extends to present-day doctrines regarding privately-owned wild lands. *Id.* at 590.

¹⁷ By "subsidy," I mean a state intervention to assist an industry. *See infra* Part III.

model was imposed over the preferences of early Indigenous groups, who protested that their crop-agrarian and hunting livelihoods were in conflict with colonists' livestock.¹⁸ Land use policy histories often begin in the early twentieth century, which was when modern-day municipal zoning was invented.¹⁹ The bounty statutes were another, older method by which legislatures selected among land uses.

Land use scholarship's focus on the twentieth century—and, in fewer instances, on municipal rules in the colonial era²⁰—can allow for a romance of the centuries in-between as a parable of freedom from state intervention. Common law nuisance, it has been said,²¹ was the only significant way in which government regulated land in the eighteenth and nineteenth centuries. But the bounty statutes are an example of one way in which legislatures regulated land in these centuries. Embedded in the statutes' policies were conflicting ideas about land, agriculture, and development that date to the Founding—to Alexander Hamilton's encouragement of bounties to spur industry²² and Thomas Jefferson's strategies to enlarge a polity

¹⁸ See VIRGINIA DEJOHN ANDERSON, CREATURES OF EMPIRE: HOW DOMESTIC ANIMALS TRANSFORMED EARLY AMERICA 5 (2004); see also Samuel Taylor Elswick, Predator Management and Colonial Culture, 1600–1741: A Study in Historical Ecology 91–93 (2005) (M.A. thesis, The College of William & Mary), <https://scholarworks.wm.edu/cgi/viewcontent.cgi?article=6489&context=etd> [<https://perma.cc/6VKG-6HJE>] (discussing the impact of colonial preferences for livestock on Indigenous communities in the Chesapeake).

¹⁹ See, e.g., STUART BANNER, AMERICAN PROPERTY: A HISTORY OF HOW, WHY, AND WHAT WE OWN 182 (2011) (“[T]he nineteenth-century United States was no Hobbesian free-for-all. Land use was regulated, but the most important mode of regulation was judge-created common law, particularly the law of nuisance. A nuisance was simply an unreasonable use of land, considering all the circumstances.”); see also *infra* Part III. Although New York is typically credited with inventing zoning in 1916, Los Angeles had previously used a milder form of zoning that lacked bulk controls. See *Ex parte* Quong Wo, 118 P. 714, 715 (Cal. 1911).

²⁰ See *infra* Part III.

²¹ See, e.g., ROBERT R. WRIGHT & MORTON GITELMAN, LAND USE IN A NUTSHELL 2 (4th ed. 2000) (“In the earlier days when population was diffused and there was always more land over the horizon, it was also easy to indulge the populistic notion that property rights were sacrosanct and were somehow beyond the reach of society except in the most fundamental of situations in which landowners themselves came into conflict. Judge-made controls, such as the law of nuisance, were generally adequate. . . . The early controls on land use in America extend back into the colonial period, but they were limited in nature and dealt with specific problems.”).

²² See ALEXANDER HAMILTON, REPORT ON THE SUBJECT OF MANUFACTURES 28 (William Brown, 6th ed. 1827) (1791); Douglas A. Irwin, *The Aftermath of Hamilton's "Report on Manufactures"*, 64 J. ECON. HIST. 800, 803–04 (2004).

of smallholder farmers.²³ Legislatures have long had plans for the nation's lands and economy.

Second, the bounty statutes may have encouraged the development of private property in land. On the typology developed in Robert Ellickson's canonical article, *Property in Land*, predation on livestock in frontier territories is an example of the kind of "large event" that, all else equal, makes collectively owned property in land valuable.²⁴ Without the state stepping in to eradicate predatory animals, livestock-based communities would have had to deal with the problem of predation themselves. They might have benefitted from pooling resources into open field group property.²⁵ Instead, because governments helped solve the problem, private property in land became more valuable to settlements. Bounty statutes on predatory animals encouraged not just specific uses of land but the development of private property in land itself. Choosing land uses thus encouraged more basic forms of property regimes. The role of the state, as Katrina Wyman has observed, should not be neglected in explaining property institutions.²⁶ Private property in land is, in part, a government project.

The role of such laws in encouraging the expansion of privately owned land raises questions—on a theoretical level—for a popular contemporary justification for private property in land. On this justification, private property is cost-effective, and its cost-effectiveness is evidenced by the fact that close-knit communities have tended to produce private property in land through utilitarian bargaining.²⁷ In short, private prop-

²³ See, e.g., Mark Sturges, *Founding Farmers: Jefferson, Washington, and the Rhetoric of Agricultural Reform*, 50 EARLY AM. LITERATURE 681, 685 (2015) (describing Jefferson's rhetorical support of rural farmers); Claire Priest, *Creating an American Property Law: Alienability and Its Limits in American History*, 120 HARV. L. REV. 385, 396 (2006) ("Thomas Jefferson's writings, in contrast, suggest that he was more closely aligned with conservatives who believed that traditional English protections to real property and inheritance were necessary to the creation of a truly 'independent' population . . ."); A. Whitney Griswold, *The Agrarian Democracy of Thomas Jefferson*, 40 AM. POL. SCI. REV. 657, 660–71 (1946) (discussing the measures Jefferson took to empower small farm communities).

²⁴ Robert C. Ellickson, *Property in Land*, 102 YALE L.J. 1315, 1334–35 (1993). This Article's argument is thus not a strong causal account of private property in land, of the form that absent these statutes, land would have been communally owned. It is a theoretical argument about how public law would have altered the incentives of land ownership distributions on a given, influential theory.

²⁵ For a theoretical discussion of the operation of open field property, see Henry E. Smith, *Semicommon Property Rights and Scattering in the Open Fields*, 29 J. LEGAL STUD. 131, 134–44 (2000).

²⁶ Wyman, *supra* note 8, at 123–24.

²⁷ Ellickson, *supra* note 24, at 1397; Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 348–50 (1967).

erty is the most efficient form of land distribution in the abstract. But if it turns out that private property was subsidized by public law, then the fact that close-knit groups, which operated in the shadow of bounty statutes and other types of laws that might have had similar effects, chose private property regimes does not mean such regimes would have been preferred—or maximally efficient—in the absence of state action. If public law has had a more ubiquitous influence on property regimes than previously understood, then this complicates the diagnosis of the state's relation to property outcomes.²⁸ Private property in land also becomes harder to justify with the idea that history evidences its optimal utility. Property should instead find its justification in the older and deeper values that animate political theory.²⁹

Third, the bounty statutes offer rich possibilities for a renewed scholarly interest in the influence of culture on property regimes.³⁰ A natural question is why so many legislatures thought of wolves and other wild animals as problems in the first place—why there was such a widespread preference for livestock. The policy to expand livestock at the expense of other forms of land use—and ultimately of other forms of property ownership—can be explained as a cultural preference. Originating in nonuniversal practices of animal husbandry, American electorates thought of livestock as foundational to their livelihoods and perhaps saw raising livestock as part of their civilization—part of who they were.³¹

²⁸ Another way to state the question is to ask whether property rights are best understood as “legal-centralist,” which is to say, created by the state, or whether they are best understood as arising “anarchically out of social custom.” Robert C. Ellickson, *A Hypothesis of Wealth-Maximizing Norms: Evidence from the Whaling Industry*, 5 J.L. ECON. & ORG. 83, 83 (1989); see also Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1, 51 (2000) (“Throughout history and across numerous legal systems, the provision of standards for the basic building blocks of the property system has been largely a government affair. The fact that the *numerus clausus* is so widespread and enduring, is so pervasive within each system, and is otherwise quite puzzling from a contractarian point of view, suggests that it has inherent advantages for solving the standardization problem that are not easily replicated by private ordering.”).

²⁹ See generally JOHN LOCKE, *TWO TREATISES OF GOVERNMENT* (Routledge 1884) (1689) (discussing natural rights and the social contract).

³⁰ See, e.g., Taisu Zhang, *Cultural Paradigms in Property Institutions*, 41 YALE J. INT'L L. 347, 356 (2016) (arguing that cultural factors have been overlooked in scholarly analyses of property law); Robert C. Ellickson, *Bringing Culture and Human Frailty to Rational Actors: A Critique of Classical Law and Economics*, 65 CHI.-KENT L. REV. 23, 45–48 (1989) (proposing a model for using culture to incentivize actors to prioritize cooperative outcomes).

³¹ The livestock preference might have had purely functional causes—reflecting property theory's traditional focus—but this explanation requires some com-

Part I of the Article surveys scholarship on animal eradication laws as they relate to the history of conserving wolves and the wild. Part II examines the bounty statutes, the most common form of state wild animal eradication law and analyzes their form and function. Part III considers these statutes as an encouragement for particular forms of land use. Part IV develops a theory as to how the statutes encouraged private property in land. Part V lays out two explanations for the public policy preference for livestock at the expense of wilder lands—one materialist and one cultural. The Article offers reasons to think that culture played a role.

Ever since Gerhard Casper's quip about the "Law of the Horse," which criticized the study of legal rules in narrow contexts,³² laws regarding other animals have sometimes been perceived as a niche subject. Interesting in themselves, maybe, but not relevant to high theory. But whatever help the law of the horse may be in the classroom, there is now a rich tradition of scholarship focused on what laws regarding other animals reveal about the evolution of political³³ and social³⁴ institutions. Wildlife law fits this tradition.³⁵ The law of the wolf is the law of the land.

I

THE FAMILIAR LANDSCAPE

Conservation scholarship has long been interested in the history of American wildlife law. Scholars have considered

plex parameters. See *infra* Part V. A simpler explanation for the widespread preference for subsidizing livestock is that it was cultural. By "cultural," the Article means the "social norms, values, and beliefs that are commonly embraced and internalized without empirical discovery or analytical justification." Zhang, *supra* note 30, at 355.

³² Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207, 207.

³³ See, e.g., Claire Priest, *Enforcing Sympathy: Animal Cruelty Doctrine After the Civil War*, 44 LAW & SOC. INQUIRY 136, 165 (2019) (arguing that post-Civil War laws against cruelty to horses, among other animals, imposed "a new sensibility of preventing animal suffering and punishing cruel conduct, that had radical implications for the areas, such as child welfare, into which it was extended.").

³⁴ See, for example, Thomas Lund's description of class interests and wildlife law in early modern England. LUND, *supra* note 13, at 8 ("[A] goal of wildlife regulation has been to secure unequal distribution of the right to utilize wildlife. In other areas of the law, subtle insight may be required to ferret out legislative techniques used to beggar the powerless, but early English game law requires no such acuity. Class discriminations were openly embraced from the earliest periods until at least the mid-nineteenth century.").

³⁵ See KAREN BRADSHAW, *WILDLIFE AS PROPERTY OWNERS: A NEW CONCEPTION OF ANIMAL RIGHTS* 45–55 (2020); JAMES A. TOBER, *WHO OWNS THE WILDLIFE? THE POLITICAL ECONOMY OF CONSERVATION IN NINETEENTH-CENTURY AMERICA* 119 (1981).

animal eradication laws as part of this history.³⁶ In this Part, I survey the existing scholarship on wild animal eradication laws and their contributions to scholarly debates. While these debates are not focused on the laws' influence on the history and theory of property, they are helpful in shedding light on the statutes' place in environmental history.

Following long-lasting and widespread legislative preferences for wildlife eradication, the subsequent efforts to preserve wildlife are understood to have come in two waves. The first wave, which crested in the 1930s, focused on bison and other herbivores to the exclusion of large predators like wolves.³⁷ The second wave, which crested no earlier than the 1990s and may not yet have crested, included wolves and other large predatory mammals.³⁸

The history tends to begin at American wildlife's nadir. By the 1970s, gray wolves (*canis lupus*), which had once ranged from the high Arctic to central Mexico,³⁹ were almost extinct in the United States.⁴⁰ Many other species were also severely diminished.⁴¹ The "astonishingly rapid and widely publicized decline aroused public sentiment in favor of wildlife protection."⁴²

The first efforts, or first wave of wildlife conservation, focused on animals that were valued for their meat, fur, or other properties. Thus, these "early wildlife restoration efforts focused on the conservation of natural resources primarily to ensure opportunities for future exploitation."⁴³ The old efforts were embodied in state-sponsored restoration projects of game

³⁶ See Doremus, *supra* note 1, at 4–6.

³⁷ *Id.* at 4–7.

³⁸ *Id.* at 7–10.

³⁹ Julie S. Thrower, *Ranching with Wolves: Reducing Conflicts Between Livestock and Wolves Through Integrated Grazing and Wolf Management Plans*, 29 J. LAND RES. & ENV'T L. 319, 320–21 (2009).

⁴⁰ See, e.g., Marco Musiani & Paul C. Paquet, *The Practices of Wolf Persecution, Protection, and Restoration in Canada and the United States*, 54 BIOSCIENCE 50, 50 (2004) ("In North America, the wolf was extirpated from most of southern Canada and Mexico and from the conterminous 48 US states, except for northern Minnesota, by 1970."); Dunlap, *supra* note 6, at 144 (noting the decline in predator populations due to relentless hunting); WILLIAM CRONON, CHANGES IN THE LAND: INDIANS, COLONISTS, AND THE ECOLOGY OF NEW ENGLAND 20 (1983) (discussing European settlers' manipulation of New England's environment for commercial purposes, including hunting animals to send back to Europe).

⁴¹ Doremus, *supra* note 1, at 5; Alan K. Knapp et al., *The Keystone Role of Bison in North American Tallgrass Prairie*, 49 BIOSCIENCE 39, 39 (1999).

⁴² Doremus, *supra* note 1, at 5.

⁴³ *Id.* at 7.

animals, as well as in the federally funded return of bison to Yellowstone National Park.⁴⁴

The old efforts excluded wolves and other large predators. Predators were obstacles to the raising of farm animals, as well as to exploiting game for hunting, and so governments had long targeted them in two ways. First, as a public-private partnership, states offered bounties to people who killed wolves.⁴⁵ And second, states employed hunters full-time to eliminate wolves as a public government service.⁴⁶ Some scholars have treated these two strategies differently,⁴⁷ but the primary difference consisted in the benefits hunters received. Full-time hunters earned, one may presume, more consistent remuneration than hunters who were paid by the number of pelts returned. But each was equally an agent of the state.

By the early 1970s, however, a new wave of wildlife conservation efforts had begun. The new wildlife conservation efforts, in contrast to the first wave, were intended “to recreate wild nature for its own sake, rather than to permit future exploitation.”⁴⁸ The new wave began with the Endangered Species Act⁴⁹ and the Nixon Administration’s ban on the poisoning of predators.⁵⁰

This second wave did not just include wolves; it prioritized them.⁵¹ As emblems of a kind of deep wilderness, wolves became the new conservationism’s “poster creatures.”⁵² “Wolves,” Holly Doremus writes, “once symbolic of the need to conquer wild nature, came to be seen by more Americans as a charismatic demonstration of the importance of preserving the last remnants of the wild.”⁵³ The new conservationism also highlighted wolves’ ecological role as “a keystone species—the missing link—to a functioning ecosystem.”⁵⁴

The reasons for this transformation are murkier. Many have suggested that the new focus on preserving the wild for its

44 *Id.*

45 Goble, *supra* note 3, at 104.

46 *Id.*

47 *Id.* (“When the government hires a hunter, killing wolves becomes a governmental service like police and fire protection.”).

48 Doremus, *supra* note 1, at 8.

49 16 U.S.C. § 1531.

50 Dunlap, *supra* note 6, at 141–42.

51 Goble, *supra* note 3, at 110–12.

52 Doremus, *supra* note 1, at 8.

53 Holly Doremus, *What People Want from Wolves*, 18 CONSERVATION BIOLOGY 1163, 1163 (2004) (reviewing MARTIN A. NIE, BEYOND WOLVES: THE POLITICS OF WOLF RECOVERY AND MANAGEMENT (2003)).

54 Thrower, *supra* note 39, at 319.

own sake “reflects a growing consciousness of the value of wild nature unsubdued by humankind.”⁵⁵ But value can mean more than one thing. The value of wolves might, for example, be moral⁵⁶—something to revere for their own sake—or it might be economic⁵⁷—a benefit or cost in virtue of something else, like human welfare or wealth.⁵⁸ Explanations for the law’s changing attitude toward wolves use value in these two alternating senses. An influential article by Dale Goble is an example. Economically, Goble wrote, “a consensus that the public benefited from ridding the world of wolves and other predators because increased economic activity redounded to everyone’s benefit” was displaced by a “growing body of data” showing that “predator control programs are an economically inefficient subsidy to the western livestock industry that, at best, produce mixed ecological results.”⁵⁹ And morally, “success in taming wilderness and killing varmints gradually led to different vi-

⁵⁵ Doremus, *supra* note 1, at 8.

⁵⁶ See, e.g., David A. Dana, *Existence Value and Federal Preservation Regulation*, 28 HARV. ENV’T L. REV. 343, 348–49 (2004) (“People may value diverse habitats and diverse wildlife intrinsically because of moral or spiritual/religious convictions about nature and the inherent worth of non-human entities. Alternatively, they may derive psychic satisfaction, a sense of heightened well-being, from the existence of certain natural resources even though they have no conscious moral or spiritual values regarding those resources. For some people the knowledge that 200-year-old groves of trees remain standing and flourishing is a source of joy in and of itself.” (footnotes omitted)); STEPHEN R. KELLERT, *THE VALUE OF LIFE: BIOLOGICAL DIVERSITY AND HUMAN SOCIETY* xix (1997) (“The sum of these affiliations with the living diversity which surrounds me translates into a sense of wholeness, a reminder of an underlying order, perhaps even purpose.”).

⁵⁷ See, e.g., Coggins & Evans, *supra* note 4, at 822 (“Scientists classify species by reproductive capacity and similar biological characteristics, but the rest of us, including legislators, usually think of wildlife species in terms of whether they confer a monetary benefit or cause an economic loss.” (footnotes omitted)); Cass R. Sunstein, *Cost-Benefit Analysis and the Environment*, 115 ETHICS 351, 354 (2005) (“Without some sense of both costs and benefits—both nonmonetized and monetized—regulators will be making a stab in the dark.”). Conversation over whether economic approaches to environmental protection are theoretically justifiable is ongoing. See DOUGLAS A. KYSAR, *REGULATING FROM NOWHERE: ENVIRONMENTAL LAW AND THE SEARCH FOR OBJECTIVITY* 250–54 (2010); Zachary Bray, *The Hidden Rise of ‘Efficient’ (De)Listing*, 73 MD. L. REV. 389, 390 (2014) (“[T]he rise of cost-benefit analysis has attracted the attention of many critics who have weighed in against its expansion and increasing prominence.”); Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. PA. L. REV. 1553, 1583 (2002) (arguing that decisions about environmental protection should not rely on cost-benefit analysis).

⁵⁸ Holly Doremus offers a similar distinction between *utilitarian* bases for preserving biodiversity and *esthetic* or *moral* bases for doing so. Holly Doremus, *Patching the Ark: Improving Legal Protection of Biological Diversity*, 18 ECOLOGY L.Q. 265, 269–70 (1991).

⁵⁹ Goble, *supra* note 3, at 105.

sions of both wilderness and wolves. Wilderness became something to be cherished and preserved.”⁶⁰

The two conceptions of value—moral and economic—track familiar histories of the rise of American environmentalism. On the moral conception, the rise of environmentalism in the 1960s is attributed to a “variety of salient, culture-altering events”—high-profile examples of environmental degradation, as well as visions of the power of advancing technology, made plain to the public for the first time.⁶¹ These events included “the first appearance of an image of the Earth from space, the success of Rachel Carson’s *Silent Spring*, the controversial attempt to dam the Grand Canyon, the pollution-induced burning of the Cuyahoga River, and Senator Gaylord Nelson’s organization of the first Earth Day.”⁶² These events in combination had caused Americans to recognize the costs associated with environmental harms. Images from space, as Richard Lazarus argued, caused the Earth to seem more fragile.⁶³ And on the economic conception, private enterprise began to appreciate the value of productive natural systems.⁶⁴ Thus the environmentalist movement’s strength grew, and with notable bipartisanship the major federal environmental protection statutes were signed into law.⁶⁵ The statutes were accompanied by scholarly doctrinal innovations on the law of the environment and wildlife.⁶⁶

The value shift converged, environmental historians have suggested, with advances in science.⁶⁷ Whereas ecologists in the 1920s had theorized about the interconnectedness of large predators to other animals and plants, it was not until the 1940s that they began producing quantitative data to demonstrate the theory’s truth—“the first scientific justification for allowing predators to multiply unchecked in the National

⁶⁰ *Id.*

⁶¹ KYSAR, *supra* note 57, at 3.

⁶² *Id.*

⁶³ RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 54–60 (2004).

⁶⁴ *Id.* at 162–63.

⁶⁵ *See, e.g.*, KYSAR, *supra* note 57, at 3–4 (discussing the rise of American environmentalism and the bipartisan environmental legislation of the late 1960s and early 1970s); Robert L. Fischman, *Predictions and Prescriptions for the Endangered Species Act*, 34 ENV’T L. 451, 453–54 (2004) (explaining the Endangered Species Act as a reflection of its surrounding legal environment).

⁶⁶ *See, e.g.*, CHRISTOPHER D. STONE, *SHOULD TREES HAVE STANDING? TOWARD LEGAL RIGHTS FOR NATURAL OBJECTS* 9 (1972) (proposing “quite seriously” in 1972 “that we give legal rights to forests, oceans, rivers and other so-called ‘natural objects’ in the environment—indeed, to the natural environment as a whole” (footnotes omitted)).

⁶⁷ Dunlap, *supra* note 6, at 161.

Parks.”⁶⁸ Lessons from such data had become systematized in popular science by the 1960s.⁶⁹

On this value-shift explanation, wolves, which had been in Martin Nie’s description “an object of pathological animosity” as well as “a scapegoat for larger sociocultural and economic hardships,” became instead “our last chance to atone and make amends with wildlife and wilderness.”⁷⁰ Often repeated across disciplines,⁷¹ the value-shift explanation emphasizes that what changed was something in the wolf’s symbolic meaning.⁷²

The desirability of this shift from the eradication of wolves and other wildlife to their conservation—based in turn on shifts in values, symbolic meaning, and scientific knowledge—is contested. To some scholars, the banner of wolf conservation has shone too brightly, drawing attention from less charismatic species. “It is,” on this lament, “much easier to convince people to take action to save whales, wolves, or other specific, eye and imagination-catching creatures, than it is to persuade them that they must act to save nature as a whole, or biodiversity, which is nearly the same thing.”⁷³ But other scholars have argued that federal wolf protection efforts are still unduly deferential to the stated preferences of beef and wool producers.⁷⁴

⁶⁸ *Id.* at 160.

⁶⁹ See, e.g., CHARLES S. ELTON, *THE ECOLOGY OF INVASIONS BY ANIMALS AND PLANTS* 109–24 (2d ed. 2020) (writing originally in 1958 about ecological invasions on remote islands and in the oceans).

⁷⁰ Martin A. Nie, *The Sociopolitical Dimensions of Wolf Management and Restoration in the United States*, 8 *HUM. ECOLOGY REV.* 1, 2 (2001).

⁷¹ See, e.g., MARTIN A. NIE, *BEYOND WOLVES: THE POLITICS OF WOLF RECOVERY AND MANAGEMENT* 32–37 (2003) (discussing a set of potential basic values towards wildlife: utilitarian, naturalistic, ecologistic-scientific, aesthetic, symbolic, dominionistic, humanistic, moralistic, and negativistic); Nie, *supra* note 70, at 2 (collecting sources); Kristina M. Slagle, Robyn S. Wilson, Jeremy T. Bruskotter & Eric Toman, *The Symbolic Wolf: A Construal Level Theory Analysis of the Perceptions of Wolves in the United States*, 32 *SOC’Y & NAT. RES.* 322, 323 (2019) (“[D]ifferent [symbolic] meanings can lead to differences in preferred approaches for management and conservation broadly”); Matthew A. Wilson, *The Wolf in Yellowstone: Science, Symbol, or Politics? Deconstructing the Conflict Between Environmentalism and Wise Use*, 10 *SOC’Y & NAT. RES.* 453, 463 (1997) (examining how different beliefs about the symbolic value of wolves contributed to the conflict over wolf re-introduction to Yellowstone); Michael Burger, *Environmental Law/Environmental Literature*, 40 *ECOLOGY L.Q.* 1, 30–36 (2013) (comparing how wolf conservation measures were shaped by two images of the malevolent and benevolent “Mythic Wolf”).

⁷² See Nie, *supra* note 70, at 2.

⁷³ Holly Doremus, *Biodiversity and the Challenge of Saving the Ordinary*, 38 *IDAHO L. REV.* 325, 334 (2002).

⁷⁴ Goble, *supra* note 3, at 112 (“Economics rather than biology has become the driving force of wolf recovery. The [Wolf Recovery Plan’s] management strategies focus less on the biological needs of the wolf than on the pecuniary desires of

For these critics, Congress intended to protect species on the Endangered Species List “whatever the cost,”⁷⁵ but federal agencies have since made their protection decisions based on a series of economic tradeoffs meant to avoid harm to livestock, which has shifted the costs of livestock production to the public.⁷⁶

When environmental scholars have turned their gaze to the bounty statutes, it has been in service of detailing the history of wildlife law in the United States.⁷⁷ In 1970, twenty states still had laws offering bounties on wolves.⁷⁸ For the previous three centuries, in colony after colony, state after state, and county after county, government policy had been to pay people to kill wolves indiscriminately. By the 1990s, however, government policy forbade the killing of wolves.⁷⁹

Unlike other aspects of environmental policy in this period, government policy did not switch from an attitude of indifference toward wolves to an attitude of protecting them. More dramatically, statutory law switched from animosity to active protection and preservation. As the historian Thomas Dunlap wrote four decades ago, “The wildlife biologist’s notebook and binoculars have replaced the hunter’s traps, guns, and poison; federal grants for wildlife preservation have taken the place of bounty payments; and species which were hated, feared, and hunted are now cherished, studied, and encouraged.”⁸⁰

The answer to why this change happened cannot be easily found in the traditional explanations for the rise of the environ-

the livestock industry. Placating the industry has produced a ‘recovery plan’ in which endangered species will be killed to protect the economic interests of ranchers.”).

⁷⁵ *Tennessee Valley Auth. 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.”).

⁷⁶ Goble, *supra* note 3, at 113–16.

⁷⁷ See, e.g., LUND, *supra* note 13, at 32–34, 74–75 (discussing the history of nuisance animal bounties and predator control programs); ANDREA L. SMALLEY, *WILD BY NATURE: NORTH AMERICAN ANIMALS CONFRONT COLONIZATION* 101–116 (2017) (tracing the colonial history of Chesapeake wolf-eradication bounty laws); Dunlap, *supra* note 6, at 144–45 (noting early American wildlife bounty laws).

⁷⁸ Goble, *supra* note 3, at 106. To be sure, the modern legal regime sometimes permits the destruction of wolves. For example, the U.S. Fish and Wildlife Service delineates a discrete category of “problem wolves” that are “involved in a depredation on lawfully present domestic animals,” habituated to people, or “aggressive when unprovoked.” 50 C.F.R. § 17.84 (2022). Problem wolves, once so designated, can be harassed, translocated, placed into captivity, or killed. *Id.* But this binary categorization simply underscores the change.

⁷⁹ *Id.*

⁸⁰ Dunlap, *supra* note 6, at 141.

mentalist movement. Explanations sometimes focus on high-profile demonstrations of the Earth's fragility and humanity's converse powers,⁸¹ which describe why a disinterested attitude toward the natural world might shift toward a protective one. But popular books about the harms of pesticides and photographs of the Earth from space, and of rivers on fire, do not seem to explain why the law should switch from deliberately extirpating a species to protecting it.⁸²

Most explanations attribute the old statutes to an irrational passion against, and fear of, wolves. Wolves, on this view:

are the beasts of fable and fairytale: the wolf of Aesop, of Little Red Riding Hood, of Peter and the Wolf, the wolf at the door. They are beasts of myth and magic Human beings have long seen something of the wolf in themselves and much of themselves in the wolf⁸³

A modern court once echoed this explanation, citing the Aesop's fable about the wolf in sheep's clothing for the proposition that Europeans "harbored animosity toward wolves, an animosity brought over to North America by the early European settlers."⁸⁴ The history of the law's approach toward wolves is a journey from darkness to enlightenment, in which old superstitions were vanquished by reason. Yet wolves are not unique in having been so characterized, as other animals have served as villains in European folk tales and aphorisms. Nor were wolves portrayed only as dangers in such accounts. A benevolent wolf, for example, was an integral figure in the founding myth of Ancient Rome.⁸⁵

Overall, the picture that emerges from environmental history is a complicated one. Something changed in or just before the 1970s—whether culture, science, or both—that altered something deep in the law's understanding of wolves and other predatory mammals. What, precisely, changed remains subject to continuing interest. But there is more to be said about

⁸¹ See, e.g., LAZARUS, *supra* note 63, at 56–57 (discussing how technological advances highlighted Earth's fragility); KYSAR, *supra* note 57, at 3 (noting the "culture-altering" events that spurred the American environmental movement).

⁸² Thomas Dunlap has described the extent of the puzzle in more detail. Dunlap, *supra* note 6, at 141–42.

⁸³ Goble, *supra* note 3, at 101.

⁸⁴ *Wyoming v. U.S. Dep't of Interior*, 360 F. Supp. 2d 1214, 1218 n.1 (D. Wyo. 2005). This particular fable paints wolves as dangerous in two ways: not only predatory, but cunning also.

⁸⁵ See, e.g., T.P. Wiseman, *The She-Wolf Mirror: An Interpretation*, 61 PAPERS BRIT. SCH. ROME 1, 5–6 (1993). The motif of benevolent wolves raising human children has been repeated in various stories.

the precise effects of the bounty statutes and how they relate to private action and development.

II

LAWS AGAINST THE WILD

For legal scholars, the bounty statutes⁸⁶ raise at least two additional types of questions. First, what was their legal structure—how were they enforced, which animals did they apply to, and which people were eligible to collect the rewards? Did these mechanics change over time? The statutes were enacted in different states in a more or less continuous timespan starting before the Founding and ending in the mid-twentieth century. Did the statutes evolve? Change might have been driven by a response to new technologies, or as people learned more about wolves, or as American society changed.

The second set of questions regards how wolves were characterized in the statutes. This inquiry stems from the idea, drawn from law and literature theory, that “narratives of nature and culture common to the American environmental imagination play a more significant role in environmental law and litigation than previously acknowledged.”⁸⁷ How wolves are characterized in the old statutes might offer clues as to the reasons for the statutes’ enactment. Characterizations might be found in the statutes’ preambles, which would state the distinctive problem the statutes were trying to solve. If the statutes were motivated by the kinds of animosity Goble posited, in which wolves were conceived of as “beasts of myth and magic,”⁸⁸ then evidence of such animosity might be evident in the statutory language. In particular, if there is a mismatch

⁸⁶ The statutes are indexed in the HeinOnline Session Laws Library. HeinOnline describes this library as “the only complete online source of laws from all 50 states, beginning with territorial, colonial, and early statehood laws and continuing through to today.” *Sessions Laws Library*, HEINONLINE, <https://home.heinonline.org/content/session-laws-library/> [https://perma.cc/T4ZC-T7GZ] (last visited Dec. 16, 2022). Not all states in the HeinOnline Library have been indexed to the chapter or act level from inception to current, but searches regarding wolves returned bounty statutes or evidence thereof from nearly every state.

⁸⁷ Burger, *supra* note 71, at 3; see also Robert R.M. Verchick, *Steinbeck’s Holism: Science, Literature, and Environmental Law*, 22 *STAN. ENV’T L.J.* 3, 53 (2003) (averring that “laws that ignore science are not sustainable physically; laws that ignore compassion are not sustainable morally, nor, as a result, politically”); cf. Robin West, *Jurisprudence as Narrative: An Aesthetic Analysis of Modern Legal Theory*, 60 *N.Y.U. L. REV.* 145, 210 (1985) (“[T]he methodological component of legal theory, read as narrative, reveals a moral choice that a purely analytical reading will often obscure.”).

⁸⁸ Goble, *supra* note 3, at 101.

between the statute's given justification and the policy it enacts, this could be evidence of irrational fears.

The most common animal eradication statutes from the seventeenth through twentieth centuries were bounty statutes. These statutes set in place a fixed sum to be paid to those who could produce evidence of having killed a specified animal species. Although wolves were some of the most frequently targeted species, they were not the only species targeted. Other large predators, like bears, cougars, and coyotes, were also frequently targeted, as well as a variety of smaller animals. Bounty statutes also included provisions intended to deter fraud on the state, such as requiring oaths to be sworn by bounty collectors. Some statutes went further, imposing early forms of statutory tort damages and even criminal fines upon people who interfered with the wolf traps of others.⁸⁹ And while motivations for the statutes were likely various, rhetorically, the statutes do not evidence obvious visions of wolves as supernatural dangers. Where preambles to the statutes existed, they emphasized the goal of encouraging the livestock industry.⁹⁰

A. Bounties as Economic Development Projects

Well into the nineteenth century, states used bounties to encourage nascent industries.⁹¹ Like more familiar modern methods, such as tax subsidies, industry-promoting bounties guarantee that a government will pay a predetermined price to people who come forward with particular physical objects, like

⁸⁹ See *infra* subpart II.D; see, e.g., Of the Destruction of Wolves and Panthers, ch. LXIII, § 3, *reprinted in* LAWS OF THE STATE OF VERMONT, DIGESTED AND COMPILED: INCLUDING THE DECLARATION OF INDEPENDENCE, THE CONSTITUTION OF THE UNITED STATES, AND OF THIS STATE 24, 24 (1808) (“That if any person shall take any wolf, panther or whelp, out of any pit made to catch wolves, or out of any trap, thereby to defraud the owner or owners of such pit or trap of his or their premium; he shall pay to the owner or owners of such pit or trap the sum of *thirty dollars* for every wolf, panther, or whelp, taken out”); An Act for the Protection of Persons Engaged in Destroying Wolves in the County of Hardy, ch. 234, §§ 1–3, 1849 Va. Acts 164, 164 (“That, if any person shall interfere so as to prevent, or with the intention of preventing or hindering, any person so engaged in destroying wolves, by breaking or removing the traps, decoys, or other thing so used or employed, or by removing or destroying the bait or baits of meat and other substances so used or employed, the person or persons so interfering, shall . . . be subject to payment of the penalty, not exceeding twelve dollars for each and every such offence . . .”).

⁹⁰ See *infra* Part III.

⁹¹ See Fred Wilbur Powell, *Industrial Bounties and Rewards by American States*, 28 Q.J. ECON. 191, 192 (1913). For a comprehensive treatment of the historical transformation from bounty payments to salaries for government officials in the United States, see NICHOLAS R. PARRILLO, *AGAINST THE PROFIT MOTIVE: THE SALARY REVOLUTION IN AMERICAN GOVERNMENT, 1780-1940*, at 1–48 (2013).

crops, products, or animal skins.⁹² There were, for example, repeated efforts to develop the silk industry in different states. An early twentieth century economic historian, Fred Wilbur Powell, traced these schemes.⁹³ Virginia, as early as 1623, offered a bounty on reeled silk; Connecticut followed suit more than a century later with a bounty offering ten shillings for proof of every hundred mulberry trees planted and three pence per raw ounce of silk.⁹⁴ By the 1830s Massachusetts was offering fifty cents a pound on silk cocoons, and similar laws were soon passed in Vermont, Maine, Delaware, New Jersey, Georgia, Pennsylvania, Illinois, Ohio, and New York.⁹⁵ Powell concluded that these laws arose out of “vigorous efforts on the part of promoters,” that they were ineffective, and that they typically expired within a few years.⁹⁶

Bounty laws on native wild animals, however, lasted far longer. The first laws setting bounties to encourage the extirpation of wild animals in colonial America were passed in the early 1630s in Massachusetts and Virginia.⁹⁷ After the Founding, such statutes made their way from British colonial law-making procedures to new American states. As the Vermont Supreme Court once observed,

The framers of the state constitution early began to regulate the right to kill deer and take fish and muskrats, for their protection and preservation[,] for the common benefit of the people, and to destroy noxious wild animals, wolves and panthers, by the payment of bounties with money raised by enforced taxation.⁹⁸

Bounty statutes were enacted in overlapping states and territories as settlers moved westward. The federal government also became involved, such as when Congress passed the Animal Damage Control Act of 1931.⁹⁹ For the previous three hundred years, legislatures in every region of the contiguous

⁹² See David S. Lucas, Caleb S. Fuller & Ennio E. Piano, *Roosting the State*, 55 INT'L REV. L. & ECON. 12, 13 (2018).

⁹³ Powell, *supra* note 91, at 193–97.

⁹⁴ *Id.* at 193.

⁹⁵ *Id.* at 194–95.

⁹⁶ *Id.* at 195–97.

⁹⁷ T.S. Palmer, *Extirmination of Noxious Animals by Bounties*, in YEARBOOK OF THE U.S. DEPARTMENT OF AGRICULTURE 55, 57 (1897); see also SMALLEY, *supra* note 77, at 101–02 (comparing early wolf bounty statutes in the Chesapeake with wolf bounty laws in New England).

⁹⁸ *State v. Theriault*, 41 A. 1030, 1034 (Vt. 1898).

⁹⁹ 7 U.S.C. § 426 (1988); see Goble, *supra* note 3, at 106 n.30.

United States—from New Hampshire¹⁰⁰ to Alabama,¹⁰¹ California¹⁰² to Mississippi,¹⁰³ Delaware¹⁰⁴ to South Dakota¹⁰⁵—had set aside public money to extirpate wild animals.¹⁰⁶

B. Rhetoric and Rationale

Depending on when they were enacted, the bounty statutes reveal two rationales for their existence. First, bounty laws have existed to support livestock raising. Early in the period, the statutes' rationales were for livestock exclusively. But by the early-to-mid-twentieth century, a second rationale began to accompany livestock encouragement. The later statutes charged wolves and other large predators with depleting stocks of wild game.

Before the twentieth century, preambles describing the purposes of bounty laws were not common, but when they existed, they gave livestock, and particularly sheep, as their rationale. Colonial Virginia noted that wolves, "in many Parts of this His Majesty's Colony and Dominion, very much obstruct the Raising and Increase of Cattle, Sheep, and Hogs."¹⁰⁷ Colonial South Carolina raised bounties on the grounds that "the encouragement heretofore allowed by the public was not sufficient to induce people industriously to endeavour to destroy such beasts of prey as very much discourage the inhabitants to go upon stock."¹⁰⁸ It was the same in Maryland in 1797, where the statute's preamble asserted that wolves "are very numerous and mischievous in the county aforesaid, and that they destroy

¹⁰⁰ An Act to Ascertain the Value of the Premiums to be Given for Killing Wolves, ch. CXLIII, *reprinted in* ACTS AND LAWS OF HIS MAJESTY'S PROVINCE OF NEW-HAMPSHIRE: IN NEW-ENGLAND 261, 261 (1771).

¹⁰¹ An Act to Repeal an Act of the Last General Assembly of the State of Alabama, Entitled an Act, for the Encouragement of Killing and Destroying Wolves and Panthers, § 1, 1820 Ala. Laws 95, 95.

¹⁰² Making Appropriations for the Department of Agriculture for the Fiscal Year Ending June Thirtieth, Nineteen Hundred and Nineteen, Pub. L. No. 65-219, 40 Stat. 973, 995 (1918).

¹⁰³ An Act Granting Premiums to Persons Killing Wolves in Tishemingo and Other Counties Therein Named, § 1, 1838 Miss. Laws 108, 108.

¹⁰⁴ An Act to Encourage the Killing of Wolves Within This Government, ch. CI, 1 Del. Laws 256, 256-57 (1797).

¹⁰⁵ An Act to Provide a Revised Political Code for the State of South Dakota, *reprinted in* COMPILED LAWS, 1909, STATE OF SOUTH DAKOTA 1, 2 (1909).

¹⁰⁶ Dunlap, *supra* note 6, at 144.

¹⁰⁷ An Act Giving a Reward for Killing of Wolves; and Repealing all Other Acts Relating Thereto, ch. VI, § 1, *reprinted in* VIRGINIA - SESSION LAWS 1720 -1740, at 312, 312 (1720).

¹⁰⁸ An Act to Encourage the Destroying of Beasts of Prey, No. 550, *reprinted in* THE STATUTES AT LARGE OF SOUTH CAROLINA 351, 351 (Thomas Cooper ed., 1838).

a great number of sheep.”¹⁰⁹ Likewise in the Territory North-west of the River Ohio in 1799, which sought to encourage “the raising of sheep . . . by every possible means.”¹¹⁰ Wisconsin enacted its statute in 1865 to protect “wool-growing interest[s] in this state.”¹¹¹

The rationale to protect livestock interests continued more or less unchanged until the twentieth century, when states began to include hunting interests. Within a span of about twenty years, Michigan, Arkansas, and Texas enacted bounty statutes with preambles emphasizing the need to protect wild game in addition to livestock. Michigan authorized special bounties on wolves and coyotes in 1937 due to their “damage and destruction to wild game and livestock.”¹¹² Arkansas enacted a bounty in 1941 on the grounds that “[B]ob cats, commonly [sic] known as wild cats, Gophers and or wolves are destroying game birds and small live stock in many sections of the State.”¹¹³ And Texas instituted bounties for the destruction of wolves and predatory animals “[b]ecause of the fact that [they] are doing much harm to the livestock and wild game” of several counties.¹¹⁴

Two conclusions may be drawn from these rationales. First, the general rhetoric against wolf attacks in some of the

¹⁰⁹ An Act to Encourage the Destruction of Wolves in Baltimore County, ch. VI, § I, 1797 Md. Laws ii, ii.

¹¹⁰ An Act to Encourage the Killing of Wolves, ch. XXXVIII, *reprinted in* LAWS OF THE TERRITORY OF THE UNITED STATES, NORTH-WEST OF THE RIVER OHIO 226, 226 (1799) (“Whereas the raising of sheep ought to be encouraged in this territory by every possible means, and as the destruction of wolves would greatly tend to the accomplishment of so desirable an object . . .”).

¹¹¹ An Act for the Encouragement and Protection of the Wool-Growing Interest in this State, ch. 364, 1865 Wis. Sess. Laws 482, 482. In colonial Virginia, there was another connection between agriculture and bounties. Rather than money, people were to “receive the Reward of Two Hundred Pounds of Tobacco for every Wolf so . . . killed or destroyed [sic].” An Act Giving a Reward for Killing of Wolves; and Repealing all Other Acts Relating Thereto, ch. VI, § 1, *reprinted in* VIRGINIA – SESSION LAWS 1720–1740, at 312, 312 (1720).

¹¹² An Act to Provide for the Establishment of a System of State Trapper Instructors; to Authorize State Trapper Instructors and Conservation Officers to Enter Upon Private Property to Capture Coyotes and Wolves; to Preserve and Encourage the Raising of Livestock; to Provide for the control of Coyotes and Wolves by the Payment of Bounties; to Establish a Rate of Bounties Thereon to Prescribe Penalties for the Violation of the Provisions of this Act; and to Make an Appropriation to Carry Out the Provisions of This Act, Pub. Act No. 52, § 1, 1937 Mich. Pub. Acts 65, 65.

¹¹³ An Act to Provide for the Extermination of Bob Cats, Commonly Known as Wild Cats, Gophers and or Wolves, Act 81, § 5, 1941 Ark. Acts 166, 168.

¹¹⁴ An Act Granting the Commissioners Court of Henderson, Angelina and Trinity Counties Permission to Pay out of the General Fund of Said Counties Bounties for the Destruction of Wolves and Predatory Animals, ch. 332, 1957 Tex. Gen. Laws 797, 797.

old myths¹¹⁵ was not present in the old statutes. Insofar as wolves were the objects of unrealistic or superstitious animosity,¹¹⁶ the statutes did not describe them in such terms. Bounty statutes were meant to encourage livestock development. This, of course, does not mean that irrational fears of wolves were not a motivating factor. It might have been that the legislatures enacting bounty statutes overrated how likely wolves were to target livestock. Thus, large-scale public incentives to extirpate wild animals could have been unnecessary, and thus unnecessarily costly, ways to deal with livestock depredations. Conversely, the legislatures might have underrated the efficacy of private security measures against wolves that would have emerged in the absence of bounty statutes. Either way, the reasons for such factual misjudgments could have derived from longstanding enmities toward the wolf. But it is nonetheless instructive that in colonial America, a world in which wolves and anti-wolf laws were widespread, fears of wolf attacks on humans did not make their way into the statutory language.¹¹⁷

It is also instructive that preserving wild game only became a rationale for such statutes later in the period.¹¹⁸ People have always hunted game in North America, and so the most plausi-

¹¹⁵ See Goble, *supra* note 3, at 101. These myths have also been reported as factual accounts, such as the story of the “Beast of the Gévaudan” in eighteenth-century France. See JAY M. SMITH, *MONSTERS OF THE GÉVAUDAN: THE MAKING OF A BEAST* 1–2 (2011).

¹¹⁶ See Goble, *supra* note 3, at 101.

¹¹⁷ This may be contrasted with more recent statutes, which have voiced fears of wolf attacks on people as a reason to oppose wolf reintroduction. See, e.g., IDAHO CODE § 67-5805(2) (2011) (“The Idaho legislature finds and declares that the state’s citizens, businesses, hunting, tourism and agricultural industries, private property and wildlife, are immediately and continuously threatened and harmed by the sustained presence and growing population of Canadian gray wolves in the state of Idaho.”). Attacks on people by wild wolves are exceptionally rare. See, e.g., Erik R. Olson, Timothy R. Van Deelen, Adrian P. Wydeven, Stephen J. Ventura & David M. MacFarland, *Characterizing Wolf-Human Conflicts in Wisconsin, USA*, 39 WILDLIFE SOC’Y BULL. 676, 683 (2015) (noting the lack of wolf-human conflict despite the close proximity between wolves and people in Wisconsin); Meghna Agarwala, Satish Kumar, Adrian Treves & Lisa Naughton-Treves, *Paying for Wolves in Solapur, India and Wisconsin, USA: Comparing Compensation Rules and Practice to Understand the Goals and Politics of Wolf Conservation*, 143 BIOLOGICAL CONSERVATION 2945, 2949 (2010) (finding that in both India and Wisconsin, wolves were responsible for less damage than other wildlife species despite their more negative reputations); Jens Karlsson & Magnus Sjöström, *Human Attitudes Towards Wolves, a Matter of Distance*, 137 BIOLOGICAL CONSERVATION 610, 614–15 (2007) (explaining that few people, even those living inside or in close proximity to wolf territories, have had direct contact with wolves).

¹¹⁸ For a detailed discussion of the influence of sport hunting and market hunting on nineteenth-century wildlife policy, see TOBER, *supra* note 35, at 69–117.

ble explanation for why hunting interests were included later and not earlier is that wild game used to be more plentiful.¹¹⁹ The land was wilder then. Wolves, of course, hunt wild game,¹²⁰ but the fact that the hunting rationale was not included in the bounty statutes until American westward expansion had already occurred suggests that it was the clearing of lands for agriculture—and not wolves' traditional, millennia-old role in the wild ecosystem—that depleted the game herds. Wolves became trapped in a policy cycle. States first eliminated wolves to expand livestock, and they succeeded. Livestock's resultant expansion diminished the wild game, which gave states, who now wanted to placate hunters who had lost game herds, a new reason to remove the remaining wolves. In this sense, Nie's view seems to be right that wolves had become scapegoats for larger socio-cultural phenomena.¹²¹

From the statutes' language, it is evident that bounty statutes targeted a variety of species to develop land for particular kinds of agricultural uses. In the case of large predators, which were targeted most frequently, the developments to be favored were livestock. In the twentieth century, protecting game herds for hunting uses became an additional, secondary consideration.

The next subpart will consider the statutes' legal structures.

C. Structure

The statutory structures have continuities over the three-century period. Bounty statutes established unilateral government contracts. Any person who fell within the statute's purview could kill a wolf and collect a fixed reward from the state.

¹¹⁹ See LUND, *supra* note 13, at 20–25. As Lund describes, in contrast to England, taking game animals in early America was not restricted to the aristocracy. “Any policy that restricted hunting to an elite group would have impeded the harvest [of game] and allowed a substantial natural resource to remain unused in the wilderness.” *Id.* at 20.

¹²⁰ See, e.g., Anders Skonhoft, *The Costs and Benefits of Animal Predation: An Analysis of Scandinavian Wolf Re-colonization*, 58 *ECOLOGICAL ECON.* 830, 839 (2006) (describing how all else equal, wolf predation reduces moose stock in Scandinavia). *But see* Dunlap, *supra* note 6, at 160 (describing ecological research showing that “[u]nder normal conditions . . . wolves and coyotes were not a serious hazard to their prey. Old, young, or ill individuals were susceptible, but the population as a whole was not. The evidence suggested, in fact, that predators played a positive role, culling the herds of the weak, sick, and injured.”).

¹²¹ Nie, *supra* note 70, at 2; *cf.* Doremus, *supra* note 53, at 1163 (“Because wolf controversies are so clearly about things other than the science of wolf recovery, they provide a vivid and accessible introduction to the sociopolitical dimensions of conservation challenges.”).

The laws generated profit motives for extirpating certain animals where there had been none. Statutes also required bounty collectors to swear oaths confirming that they had killed the animal within the proper geographic region.¹²²

Other aspects of the statutes differed. Statutes varied as to the species they targeted, the relative valuations they placed on each species, the applicable scale of geographic area (statewide or county-specific), and the provisions enacted to deter fraud. Some statutes specified tort damages or criminal fines on people who interfered with the traps of others and also gave indicia of when a trapper's property rights went into effect.

The laws targeted a range of native species. In addition to wolves, bounties were laid on coyotes¹²³ (which were also often called prairie wolves),¹²⁴ bears,¹²⁵ tigers,¹²⁶ panthers,¹²⁷ Mexi-

¹²² See, e.g., An Act to Encourage the Killing of Wolves, ch. 123, § 2, *reprinted in* STATUTES OF THE STATE OF OHIO, OF A GENERAL NATURE, IN FORCE AUGUST, 1854, at 1036, 1036–37 (Joseph R. Swan ed., 1854) (“clerk shall administer to the person producing such scalps or scalp as aforesaid, the following oath or affirmation . . . which oath shall be by the clerk, taken in writing, and subscribed by the person presenting the scalp or scalps.”); An Act to Encourage the Destruction of Wolves, ch. 118, § 1, 1852 Ind. Acts 515, 515 (“to any person who shall exhibit to them a wolf scalp, and take and subscribe an oath, that the wolf to which such scalp belonged was killed in the county, and that no reward therefor has been paid him out of such treasury”); Wolves and Wild Cats, ch. 108, § II, *reprinted in* 2 THE REVISED STATUTES OF KENTUCKY 474, 474 (1867) (“Before the amount allowed for killing a wolf or wild cat shall be paid, the person killing the same shall produce the head thereof before a justice of the peace of the county in which the same was killed, who shall administer to him the following oath or affirmation.”).

¹²³ E.g., Wolves and Coyotes, ch. CXVII, § 1, *reprinted in* GENERAL STATUTES OF THE STATE OF COLORADO, 1883, at 1063.

¹²⁴ E.g., Wolves, ch. 110, § 1, *reprinted in* THE STATUTES OF ILLINOIS: AN ANALYTICAL DIGEST OF ALL THE GENERAL LAWS OF THE STATE IN FORCE AT THE PRESENT TIME; 1818 to 1868, at 828, 828 (Eugene L. Gross ed., 1868); An Act Relating to the Bounty on Bobcats, Lynxes, Timber Wolves and Prairie Wolves, ch. 226:1, 1963 N.H. Laws 407, 407.

¹²⁵ E.g., Wolves, ch. 199, § 1, *reprinted in* DIGEST OF THE LAWS OF THE STATE OF FLORIDA, FROM THE YEAR ONE THOUSAND EIGHT HUNDRED AND TWENTY-TWO, TO THE ELEVENTH DAY OF MARCH, ONE THOUSAND EIGHT HUNDRED AND EIGHTY-ONE, INCLUSIVE 984, 984–85 (James F. McClellan ed., 1881).

¹²⁶ *Id.*

¹²⁷ *Id.*; An Act to Encourage the Destroying of Wolves and Panthers, ch. 45, 1790 N.Y. Laws 174, 174; An Act to Authorize the Board of Supervisors of the County of Steuben, to Raise the Bounty for the More Effectual Destruction of Panthers, Wolves and Foxes, ch. 106, § 1, 1836 N.Y. Laws 145, 145; An Act to Encourage the Killing of Wolves and Panthers, ch. LI, § 2, *reprinted in* THE ACTS OF THE GENERAL ASSEMBLY OF THE PROVINCE OF NEW-JERSEY, FROM THE TIME OF THE SURRENDER OF THE GOVERNMENT IN THE SECOND YEAR OF THE REIGN OF QUEEN ANNE, TO THIS PRESENT TIME 196, 197 (Samuel Nevill ed., 1752); Of the Destruction of Wolves and Panthers, ch. LXIII, § 1, *reprinted in* LAWS OF THE STATE OF VERMONT, DIGESTED AND COMPILED: INCLUDING THE DECLARATION OF INDEPENDENCE, THE CONSTITUTION OF THE UNITED STATES, AND OF THIS STATE 23 (1808); An Act to Repeal so Much of the Act, Entitled “An Act Repealing the Act Allowing Premium on Foxes and Wild Cats, in

can lions,¹²⁸ leopards,¹²⁹ catamounts,¹³⁰ wild cats,¹³¹ bobcats,¹³² mountain lions,¹³³ cougars,¹³⁴ lynx,¹³⁵ foxes,¹³⁶ skunks,¹³⁷ polecats,¹³⁸ weasels,¹³⁹ minks,¹⁴⁰ muskrats,¹⁴¹ crows,¹⁴² squirrels,¹⁴³ gophers,¹⁴⁴ groundhogs,¹⁴⁵ jackrab-

the Within Named Counties, and for Other Purposes," Approved the Twenty-Fourth of April, One Thousand Eight Hundred and Thirty-Three, as Relates to Armstrong County, and for Other Purposes, No. 172, § 5, 1845 Pa. Laws 242, 242.

¹²⁸ Wolves and Other Wild Animals, Providing for Destruction of, tit. 110a, § 1, *reprinted in* W.W. HERRON, SUPPLEMENT TO SAYLES' ANNOTATED CIVIL STATUTES OF THE STATE OF TEXAS, COVERING ALL CIVIL LAWS PASSED BY THE TWENTY-SIXTH, TWENTY-SEVENTH AND TWENTY-EIGHTH LEGISLATURES, REGULAR AND SPECIAL SESSIONS 568 (1903).

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *E.g.*, Wolves and Wild Cats, ch. 108, § II, *reprinted in* 2 THE REVISED STATUTES OF KENTUCKY 474, 474 (1867).

¹³² An Act Relating to the Bounty on Bobcats, Lynxes, Timber Wolves and Prairie Wolves, ch. 226:1, 1963 N.H. Laws 407, 407.

¹³³ *E.g.*, Bounties on Wolves, Coyotes, Mountain Lions, ch. 298, § 3417.4, *reprinted in* 2 THE REVISED CODES OF MONTANA OF 1935, at 459, 460-61; Relating to Bounties for Wild Animals, ch. 47, § 1, 1941 Neb. Laws 233, 233.

¹³⁴ Amending Act of 1905 Relative to Extermination of Coyotes and Wolves, ch. 63, § 1, 1905 Wash. Sess. Laws 121, 121-22.

¹³⁵ An Act Relating to the Bounty on Bobcats, Lynxes, Timber Wolves and Prairie Wolves, ch. 226:1, 1963 N.H. Laws 407, 407.

¹³⁶ An Act to Repeal so Much of the Act, Entitled "An Act Repealing the Act Allowing Premium on Foxes and Wild Cats, in the Within Named Counties, and for Other Purposes," Approved the Twenty-Fourth of April, One Thousand Eight Hundred and Thirty-Three, as Relates to Armstrong County, and for Other Purposes, No. 172, § 5, 1845 Pa. Laws 242, 242.

¹³⁷ *E.g.*, Wolves and Coyotes, ch. CXVII, § 1, *reprinted in* GENERAL STATUTES OF THE STATE OF COLORADO, 1883, at 1063; An Act to Amend Chapter 247 of the Acts of Assembly of 1930, Approved March 24, 1930, Cited as "The Game, Inland Fish and Dog Code of Virginia", by Adding a New Section Numbered 48-a, Relating to Bounties on Certain Animals, ch. 116, § 48-a, 1946 Va. Acts. 165, 165.

¹³⁸ *E.g.*, Wolves and Coyotes, ch. CXVII, § 1, *reprinted in* GENERAL STATUTES OF THE STATE OF COLORADO, 1883, at 1063.

¹³⁹ Destruction of Certain Wild Animals, ch. XIX, § 2114, s. 1, 1890 Utah Laws 15, 15.

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² An Act for the Destruction of Crows and Squirrels in Queen-Anne's County, ch. V, 1797 Md. Laws ii, ii; Bounties on Wild Animals, ch. 18, § 3369-a2, *reprinted in* SUPPLEMENT TO THE COMPILED CODE OF IOWA, 1923: CONTAINING ALL LAWS OF A GENERAL AND PERMANENT NATURE 384, 385.

¹⁴³ An Act for the Destruction of Crows and Squirrels in Queen-Anne's County, ch. V, 1797 Md. Laws ii, ii.

¹⁴⁴ An Act to Provide for the Extermination of Bob Cats, Commonly Known as Wild Cats, Gophers and or Wolves, Act 81, § 5, 1941 Ark. Acts 166, 168.

¹⁴⁵ An Act to Amend Sections 1 and 2 of an Act Passed March 13, 1888, Entitled an Act to Encourage the Destruction of the Woodchuck or Ground-Hog, No. 853, 1889 Ohio Laws 158, 158-59; An Act to Amend Chapter 247 of the Acts of Assembly of 1930, Approved March 24, 1930, Cited as "The Game, Inland Fish and Dog Code of Virginia", by Adding a New Section Numbered 48-a, Relating to Bounties on Certain Animals, ch. 116, § 48-a, 1946 Va. Acts. 165, 165; Bounties

bits,¹⁴⁶ hair seals,¹⁴⁷ and rattlesnakes,¹⁴⁸ as well as “other noxious animals” to be designated by local officials.¹⁴⁹ Bounties have also been laid on species recognized as non-native, including English sparrows¹⁵⁰ and European starlings.¹⁵¹

One point of interest involves the historical differences between species categories. “Tigers,” as we understand the species today, did not live in North America.¹⁵² When Florida offered a bounty for “any wolf, bear, tiger or panther in this State,”¹⁵³ tiger might have meant puma, bobcat, mountain lion or some other sub-species as understood by the law’s drafters. Statutes used many names for North America’s large cats.

Whatever the animals’ categorization, we may draw two conclusions about the animals targeted. First, although the statutes focused on large carnivores, they also sought to diminish many other species of different sizes and behaviors. This

on Wild Animals, ch. 18, § 3369-a2, *reprinted in* SUPPLEMENT TO THE COMPILED CODE OF IOWA, 1923: CONTAINING ALL LAWS OF A GENERAL AND PERMANENT NATURE 384, 385.

¹⁴⁶ Wild Animals, Destruction of, tit. LXV, § 1, 1887 Ariz. Sess. Laws 566, 566.

¹⁴⁷ ALASKA STAT. § 33-3-131 (1943).

¹⁴⁸ Bounties on Wild Animals, ch. 18, § 3369-a2, *reprinted in* SUPPLEMENT TO THE COMPILED CODE OF IOWA, 1923: CONTAINING ALL LAWS OF A GENERAL AND PERMANENT NATURE 384, 385.

¹⁴⁹ An Act to Amend Chapter Fifty-One of the Compiled Laws, Relating to the Destruction of Wolves, and Other Noxious Animals, by Adding a New Section Thereto, to Stand as Section Thirteen of Said Chapter, No. 129, 1869 Mich. Pub. Acts 226, 226 (“The township boards of the several townships of this State shall have power, at the expense of their respective townships, to award and allow such other bounties for the destruction of wolves, wolf-whelps, and such bounties for the destruction of panthers, and other noxious animals within their respective township”); *see also* Bounties on Wild Animals, ch. 18, § 3369-a3, *reprinted in* SUPPLEMENT TO THE COMPILED CODE OF IOWA, 1923: CONTAINING ALL LAWS OF A GENERAL AND PERMANENT NATURE 384, 385–86 (“The board may determine what bounties, in addition to those named in the two preceding sections, if any, shall be offered and paid by the county on the scalps of such wild animals taken and killed within the county as it may deem it expedient to exterminate”).

¹⁵⁰ OHIO REV. CODE ANN. § 957.11 (West 1953) (offering twenty cents per dozen English sparrows).

¹⁵¹ IOWA CODE § 5414 (1939) (offering five cents per European starling). Such laws were precursors to the contemporary laws that control the population of invasive species. Kauai County in Hawaii, for example, pays hunters to control the population of an invasive species of parakeet. Denby Fawcett, *These Beautiful Birds Spreading on Oahu Are Loud, Fruit-Stealing, Pooping Menaces*, HONOLULU CIV. BEAT (Oct. 5, 2021), <https://www.civilbeat.org/2021/10/denby-fawcett-these-beautiful-birds-spreading-on-oahu-are-loud-fruit-stealing-pooping-menaces/> [https://perma.cc/9HWX-CCL8].

¹⁵² *See* Eric Dinerstein et al., *The Fate of Wild Tigers*, 57 *BIOSCIENCE* 508, 508–09 (2007) (noting that tigers’ historical range was confined to the Asian continent).

¹⁵³ Wolves, ch. 199, § 1, *reprinted in* DIGEST OF THE LAWS OF THE STATE OF FLORIDA, FROM THE YEAR ONE THOUSAND EIGHT HUNDRED AND TWENTY-TWO, TO THE ELEVENTH DAY OF MARCH, ONE THOUSAND EIGHT HUNDRED AND EIGHTY-ONE, INCLUSIVE 984, 984 (James F. McClellan ed., 1881).

was true even of those statutes whose announced aim was the extirpation of wolves alone. For example, an 1879 Colorado statute listed under a chapter heading entitled “Wolves and Coyotes” also offered a bounty for skunks and polecats.¹⁵⁴

The second conclusion we may draw is that the rewards governments were offering would have exceeded the price for the animal in a private market. Beavers, for example, which were prized for their fur, were not subject to bounties.¹⁵⁵ Independent market considerations caused people to hunt beavers, and, insofar as these animals posed harm to particular farming techniques, the incentives to hunt them for their fur were strong enough to obviate the need for states to institute beaver destruction campaigns.¹⁵⁶ By contrast, the market value of wolf fur was an insufficient incentive to provide the encouragements to livestock that the legislatures wanted.

Different statutes targeted different species at different times. Some statutes included coyotes, while others left them out. Indiana in 1827 enacted a law that stated, “every person who shall take and kill any wolf or wolves within this state, (prarie [sic] wolves excepted,) and within eight miles of any of the settlements thereof, shall receive [a reward].”¹⁵⁷ Other

¹⁵⁴ *Wolves and Coyotes*, ch. CXVII, § 1, reprinted in *GENERAL STATUTES OF THE STATE OF COLORADO*, 1883, at 1063. The pricing structure of the statute favored wolves and coyotes, which might account for the title’s emphasis on those species. The bounties paid were \$1.50 “for each wolf or coyote so killed” and twenty-five cents—one-sixth as much—“for each skunk or polecat so killed.” *Id.* Skunks and polecats were not threats to large livestock like cattle or sheep in the way wolves were, but they impeded particular kinds of development in other respects, perhaps by targeting smaller livestock or farm produce. Another reason for the title might be that wolves were seen as representative of the wild. Wolves were also categorized alongside other bounty animals, including coyotes, bobcats, and rats, in popular news articles. See Marshall Andrews, *War Declared on Wolves, Coyotes, Bobcats, and Rats*, *POPULAR SCI. MONTHLY*, Sept. 1931, at 36.

¹⁵⁵ *But see* *Destruction of Certain Wild Animals*, ch. XIX, § 2114, s. 1, 1890 *Utah Laws* 15, 15 (offering a bounty of ten cents on minks, a species whose fur has also been prized in private transactions).

¹⁵⁶ *Cf.* Demsetz, *supra* note 27, at 351–52 (discussing the fur trades and the property rights system).

¹⁵⁷ *An Act to Encourage the Killing of Wolves*, ch. CIII, § 1, 1827 *Ind. Acts* 101, 101.

states, including Arizona in 1887,¹⁵⁸ Kansas in 1907,¹⁵⁹ and Montana in 1935,¹⁶⁰ targeted coyotes as well as wolves.

The states' valuations of species also varied. Colorado in 1879 priced wolves and coyotes equally.¹⁶¹ Texas, twenty years later, paid just one-tenth as much per coyote as per wolf: five dollars per wolf (as well as per Mexican lion, tiger, leopard, or panther), and fifty cents per coyote (as well as per wild cat or catamount).¹⁶² Many states fell in between. Kansas in 1907 priced coyotes at one-fifth of a wolf;¹⁶³ Montana in 1935 at two-fifteenths;¹⁶⁴ Alaska in 1949 at five-sixths.¹⁶⁵ The reward amounts, which varied as to other animals also,¹⁶⁶ might have two causes. Different geographies and time periods might have changed the cost/benefit calculation of eliminating different species. Or other kinds of facts, such as lack of information about different species' behavior or the relative political influence of different interest groups, might have caused bounty valuations to vary in different times and places.

¹⁵⁸ Wild Animals, Destruction of, tit. LXV, § 1, 1887 Ariz. Sess. Laws 566, 566 (offering "two dollars on lynxes, one dollar on coyotes, two dollars on wild cats, one dollar on small wolves, two dollars on lova's or timber wolves, eight dollars on bears, fifteen dollars on panthers and mountain lions, and five cents on jackrabbits").

¹⁵⁹ KAN. STAT. ANN. § 1937 (1907) (paying "a bounty of one dollar on each coyote scalp and five dollars on each lobo wolf scalp").

¹⁶⁰ Bounties on Wolves, Coyotes, Mountain Lions, ch. 298, § 3417.4, *reprinted in* 2 THE REVISED CODES OF MONTANA OF 1935, at 459, 460–61 (paying "for each grown wolf, fifteen dollars; for each grown coyote or for each coyote pup or wolf pup, two dollars; for each mountain lion, twenty dollars.").

¹⁶¹ Wolves and Coyotes, ch. CXVII, § 1, *reprinted in* GENERAL STATUTES OF THE STATE OF COLORADO, 1883, at 1063 (offering "a premium of one dollar and fifty cents for each wolf or coyote so killed").

¹⁶² Wolves and Other Wild Animals, Providing for Destruction of, tit. 110a, § 1, *reprinted in* W.W. HERRON, SUPPLEMENT TO SAYLES' ANNOTATED CIVIL STATUTES OF THE STATE OF TEXAS, COVERING ALL CIVIL LAWS PASSED BY THE TWENTY-SIXTH, TWENTY-SEVENTH AND TWENTY-EIGHTH LEGISLATURES, REGULAR AND SPECIAL SESSIONS 568 (1903).

¹⁶³ KAN. STAT. ANN. § 1937 (1907).

¹⁶⁴ Bounties on Wolves, Coyotes, Mountain Lions, ch. 298, § 3417.4, *reprinted in* 2 THE REVISED CODES OF MONTANA OF 1935, at 459, 460–61 (1935).

¹⁶⁵ ALASKA STAT. § 33-3-111 (1949) ("There is hereby placed upon every wild lobo or timber wolf and every wild coyote or prairie wolf, legally taken within the Territory bounties of Thirty Dollars on wolves and Twenty-five Dollars on coyotes . . .").

¹⁶⁶ *Compare* Relating to Bounties for Wild Animals, ch. 47, § 1, 1941 Neb. Laws 233, 233 (offering the same reward—one dollar—for wolves and mountain lions), *with* Wild Animals, Destruction of, tit. LXV, § 1, 1887 Ariz. Sess. Laws 566, 566 (offering two dollars per wolf and fifteen dollars per mountain lion), *and* Bounties on Wolves, Coyotes, Mountain Lions, ch. 298, § 3417.4, *reprinted in* 2 THE REVISED CODES OF MONTANA OF 1935, at 459, 460–61 (1935) (offering fifteen dollars per wolf and twenty dollars per mountain lion).

Intended geographies were different. Sometimes laws applied statewide,¹⁶⁷ but others drew granular distinctions between counties.¹⁶⁸ Often, the offered rewards were fixed at the state level,¹⁶⁹ but some jurisdictions, like the Iowa Territory, allowed county commissioners to set bounty values between a legislatively mandated floor and ceiling.¹⁷⁰ Still others, like the New Mexico Territory, provided that bounties on wolves and mountain lions would only go into effect at the county level whenever a hundred taxpayers in that county signed a petition asking for them.¹⁷¹ Even in decentralizing jurisdictions like the New Mexico territory, however, once a hundred taxpayers asked for bounties, there was no obvious mechanism whereby other taxpayers in the county could ask for the bounties to be removed.¹⁷² The law was a one-way ratchet toward removing the wild.

Ensuring that bounty collectors followed the jurisdictional rules was another matter.

D. Anti-Fraud Provisions

Sovereigns recognized from the beginning that fraud was a possibility. Indeed, an interesting feature of the statutes is that they presented several obvious opportunities for fraud. When governments guarantee payments for every wolf pelt into perpetuity, they encourage repeat players to ensure that a breeding population of wolves continues to exist. There is evi-

¹⁶⁷ See, e.g., An Act Providing for the Payment of Bounties for the Destruction of Wolves, ch. XXVIII, § 1, 1866 Minn. Laws 69, 70 (“That any person who shall kill any wolf or wolves within this State . . .”).

¹⁶⁸ See, e.g., An Act to Repeal so Much of the Act, Entitled “An Act Repealing the Act Allowing Premium on Foxes and Wild Cats, in the Within Named Counties, and for Other Purposes,” Approved the Twenty-Fourth of April, One Thousand Eight Hundred and Thirty-Three, as Relates to Armstrong County, and for Other Purposes, No. 172, § 5, 1845 Pa. Laws 242, 242 (“That hereafter in the county of Monroe, the bounty on full grown wolf scalps, killed in said county . . .”).

¹⁶⁹ See, e.g., An Act to Amend Section One of an Act Entitled “An Act to Amend Section One of an Act Entitled ‘An Act to Provide for the Destruction of Noxious Animals and to Repeal an Act Relating Thereto,’ Approved February 3, 1887,” Approved March 24, 1911, ch. 23, 1913 Nev. Stat. 18, 18–19 (“If any person shall take and kill within this state any of the following noxious animals, he shall be entitled to receive out of the treasury of the county within which such animals shall have been take, the following bounties . . .”).

¹⁷⁰ See, e.g., Wolves, ch. 159, § 1, reprinted in REVISED STATUTES OF THE TERRITORY OF IOWA 459, 459–60 (1843) (“That the board of commissioners of the several counties in this territory, he and they are hereby authorized and empowered, at their discretion, to offer a reward of not less than twenty-five cents nor over one dollar . . .”).

¹⁷¹ An Act to Encourage the Destruction of Wolves and Lions, ch. XXXVIII, § 1, 1891 N.M. Laws 85, 86.

¹⁷² *Id.*

dence that this did in fact occur.¹⁷³ And when different jurisdictions offered different prices for wolf pelts, they encouraged people to falsify the jurisdictions in which wolves were taken. Statutes generally required bounty collectors to swear oaths regarding the provenance of the carcasses.¹⁷⁴ Sometimes it was left to the discretion of the local administrator what form the oath would take. In 1797 Vermont, county court judges were charged to “strictly examine such person or persons, on oath, or otherwise, when, where and how he or they obtained such head, and whether the wolf, panther or whelp to which it belonged was taken or killed within this state.”¹⁷⁵ When the county court judge was satisfied that the animal was taken within the state, he would issue a certificate, which was redeemable at the state treasury.¹⁷⁶ Other jurisdictions specified the precise oath bounty collectors would have to make.¹⁷⁷ In 1866 Minnesota, clerks of the district court were charged to “administer to the person producing such head or heads as aforesaid, the following oath or affirmation: ‘You do solemnly swear or affirm (as the case may be) that the head (or heads) now produced by you, is the head (or heads) of a wolf (or wolves) as the case may be, taken in the county of, (naming the county,) by you within twenty days last past.’”¹⁷⁸

Statutes also required county officials to dispose of the pelts presented to them. This was to prevent corruption, so

¹⁷³ See Coggins & Evans, *supra* note 4, at 827 (“Various problems always plagued administration of bounty laws. From an early time, those bounty hunters who realized that complete success would leave them jobless practiced a primitive form of conservation. They were quick to calculate that, by sparing female and a few mature male predators, target populations would replenish themselves, ensuring good bounty harvests in the future.”).

¹⁷⁴ *E.g.*, An Act to Encourage the Killing of Wolves, ch. 123, § 2, *reprinted in* STATUTES OF THE STATE OF OHIO, OF A GENERAL NATURE, IN FORCE AUGUST, 1854, at 1036, 1036–37 (Joseph R. Swan ed., 1854); An Act to Encourage the Destruction of Wolves, ch. 118, § 1, 1852 Ind. Acts 515, 515; Wolves and Wild Cats, ch. 108, § II, *reprinted in* 2 THE REVISED STATUTES OF KENTUCKY 474, 474 (1867).

¹⁷⁵ Of the Destruction of Wolves and Panthers, ch. LXIII, § 2, *reprinted in* LAWS OF THE STATE OF VERMONT, DIGESTED AND COMPILED: INCLUDING THE DECLARATION OF INDEPENDENCE, THE CONSTITUTION OF THE UNITED STATES, AND OF THIS STATE 23 (1808).

¹⁷⁶ *Id.* at 23–24.

¹⁷⁷ See, *e.g.*, Wolves and Wild Cats, ch. 108, § II, *reprinted in* 2 THE REVISED STATUTES OF KENTUCKY 474, 474 (1867) (“You do solemnly swear that the head now produced by you is the head of a wolf (or wild cat, as the case may be), which you have killed in this state; that you did not take said wolf (or wild cat) in any other state, and bring the same into this state; that you did not breed and raise the same, nor was it done by another, to your knowledge or belief, and kill the same for the purpose of obtaining the reward for killing wolves and wild cats; that you will truly state the time and county in which said animal was killed”).

¹⁷⁸ An Act Providing for the Payment of Bounties for the Destruction of Wolves, ch. XXVIII, § 2, 1866 Minn. Laws 69, 70.

that the same pelt could not be used to claim more than one bounty. Pelt destruction provisions often specified that either the whole pelt or the ears of the wolf had to be destroyed by local officials before bounties could issue. This was true in the following examples from the nineteenth century. A clerk in Indiana was required to “cause the ears on all such scalps to be destroyed in his presence.”¹⁷⁹ In Arizona, local boards of supervisors were required to “immediately cause such head or scalp to be destroyed.”¹⁸⁰ In Iowa, justices of the peace were tasked, after being presented with a wolf’s “scalp, with the ears thereon,” to “destroy the scalp upon granting such certificate.”¹⁸¹ In Minnesota, a clerk was only permitted to issue orders to the state treasury to allow bounty disbursements “after causing such head or heads to be destroyed in his presence.”¹⁸² In Connecticut, assistants and justices of the peace could not issue treasury certificates “until such assistant or justice shall have caused the ears to be cut off from the head of every such wolf.”¹⁸³

Oaths, affirmations, and evidence-destruction policies alone were not enough to deter fraud. Statutes also instituted penalties for thieves and saboteurs. At the turn of the nineteenth century, Vermont enacted an early form of tort legislation imposing mandatory damages on people who removed wolves from the traps of others.¹⁸⁴ Under the Vermont statute:

[I]f any person shall take any wolf, panther or whelp, out of any pit made to catch wolves, or out of any trap, thereby to defraud the owner . . . ; he shall pay to the owner . . . the sum of *thirty dollars* for every wolf, panther or whelp, so taken out as aforesaid¹⁸⁵

These specified damages were fifty percent more than the bounty Vermont paid for adult wolves or panthers (twenty dollars), and a full three times what Vermont paid for whelps (ten

¹⁷⁹ An Act to Encourage the Killing of Wolves, ch. CIII, § 2, 1827 Ind. Acts 101, 101.

¹⁸⁰ Wild Animals, Destruction of, tit. LXV, § 2, 1887 Ariz. Sess. Laws 566, 566.

¹⁸¹ Wolves, ch. 159, § 2, *reprinted in* REVISED STATUTES OF THE TERRITORY OF IOWA 459, 460 (1843).

¹⁸² An Act Providing for the Payment of Bounties for the Destruction of Wolves, ch. XXVIII, § 3, 1866 Minn. Laws 69, 70.

¹⁸³ An Act to Encourage the Destroying of Wolves, tit. CLXXV, 1808 Conn. Pub. Stat. Laws 686, 686.

¹⁸⁴ Of the Destruction of Wolves and Panthers, ch. LXIII, § 3, *reprinted in* LAWS OF THE STATE OF VERMONT, DIGESTED AND COMPILED: INCLUDING THE DECLARATION OF INDEPENDENCE, THE CONSTITUTION OF THE UNITED STATES, AND OF THIS STATE 24 (1808).

¹⁸⁵ *Id.*

dollars).¹⁸⁶ Another function of such statutes was to enumerate when the property right in a wild wolf was obtained, which might have minimized fraud as well as, perhaps, first-possession disputes of the kind made famous in *Pierson v. Post*.¹⁸⁷ Once a wolf was trapped, she became property of the trapper.

An 1849 Virginia statute went further than Vermont, imposing criminal fines on anyone who:

[S]hall interfere so as to prevent, or with the intention of preventing or hindering, any person so engaged in destroying wolves, by breaking or removing the traps, decoys or other thing so used or employed, or by removing or destroying the bait or baits of meat and other substances so used or employed¹⁸⁸

Virginia's fines were payable "upon conviction" of a defendant who had been "found guilty of such offence" before a justice of the peace.¹⁸⁹ The Virginia statute includes no requirement that the defendants were motivated by their own profit,¹⁹⁰ and so, on its terms, it would have convicted people who interfered for moral or conscientious reasons, like a wish to protect wolves. It was a clear statement of the legislature's preference for wolf eradication.

Statutes also often distinguished between young and adult wolves, with adults earning a higher bounty than the young. Commentators have concluded that this too was meant to discourage the fraudulent maintenance of wolf populations.¹⁹¹ But there are two puzzling aspects to this explanation. First, raising the bounty on adult wolves, or lowering the bounty on young wolves, would still present opportunities to maintain wolf populations. Hunters could simply allow young wild wolves to go free for longer, waiting until their investments matured. It might require coordination between hunters if wolves were left in the wild, or more sophisticated cages if bounty collectors were raising wolves themselves, but such coordination or wolf-raising technologies might have been cost-justified. The wider the price gap between mature and young

¹⁸⁶ *Id.* at § 1.

¹⁸⁷ 3 Cai. R. 175, 177–78 (N.Y. Sup. Ct. 1805); see also Bethany R. Berger, *It's Not About the Fox: The Untold History of Pierson v. Post*, 55 DUKE L.J. 1089, 1094 (2006) (arguing that this canonical first possession case was actually "about community control of shared resources rather than individual control of private resources").

¹⁸⁸ An Act for the Protection of Persons Engaged in Destroying Wolves in the County of Hardy, ch. 234, § 2, 1849 Va. Acts 164, 164.

¹⁸⁹ *Id.*

¹⁹⁰ See *id.* at §§ 1–3.

¹⁹¹ LUND, *supra* note 13, at 32–33.

wolves, the greater the incentive would be for hunters to wait until wolves matured before collecting the bounty.

A second puzzle is that there is no obvious line of evolution in the statutory structure over time. Were differential pricing between young and adult wolves the most effective eradication strategy, one would think it would have been adopted increasingly widely after it was introduced. Instead, the statutes seem to have gone back and forth. Early jurisdictions, like New Hampshire on the eve of the Revolutionary War, distinguished between grown wolves and whelps, paying twenty shillings for grown wolves and ten for whelps.¹⁹² A hundred years later, Minnesota¹⁹³ and Wisconsin¹⁹⁴ made no distinction, paying fixed sums per wolf without mentioning age. In Arkansas, almost a century after that, the wolf/whelp distinction had returned.¹⁹⁵ It is hard to trace a clear line of evolution. Age distinctions sometimes disappeared and reappeared in the same statute. Montana in 1935 paid fifteen dollars for an adult wolf, two dollars for a wolf pup, and two dollars for "each grown coyote or for each coyote pup."¹⁹⁶ Still other twentieth-century statutes differentially priced on sex rather than age, with Michigan in 1937 paying twenty-five percent more for female than male wolves.¹⁹⁷

It is possible that states were experimenting with different policies, trying to find efficient solutions to wolf depredation without the benefit of comprehensive data. Perhaps the em-

¹⁹² An Act to Ascertain the Value of the Premiums to be Given for Killing Wolves, ch. CXLIII, *reprinted in* ACTS AND LAWS OF HIS MAJESTY'S PROVINCE OF NEW-HAMPSHIRE: IN NEW-ENGLAND; WITH SUNDRY ACTS OF PARLIAMENT 261, 261 (1771).

¹⁹³ An Act Providing for the Payment of Bounties for the Destruction of Wolves, ch. XXVIII, § 1, 1866 Minn. Laws 69, 70; *see also* An Act to Amend Chapter Thirty Six, Section One, of the Session Laws of One Thousand Eight Hundred and Sixty-Seven, Relating to the Payment of Bounties for the Destruction of Wolves, ch. LXXXII, § 1, 1869 Minn. Laws 98, 98 (diminishing by fifty percent—\$3 from \$6—the bounty payment that the state had instituted three years earlier).

¹⁹⁴ An Act for the Encouragement and Protection of the Wool-Growing Interest in this State, ch. 364, § 1, 1865 Wis. Sess. Laws 482, 482.

¹⁹⁵ An Act to Authorize the Counties of This State to Pay Bounties for the Killing of Wolves and to Provide That the State of Arkansas Shall Pay an Equal Sum as a Bounty, and for Other Purposes, Act 183, § 2, 1949 Ark. Acts 565, 565.

¹⁹⁶ Bounties on Wolves, Coyotes, Mountain Lions, ch. 298, § 3417.4, *reprinted in* 2 THE REVISED CODES OF MONTANA OF 1935, at 459, 460–61.

¹⁹⁷ An Act to Provide for the Establishment of a System of State Trapper Instructors; to Authorize State Trapper Instructors and Conservation Officers to Enter Upon Private Property to Capture Coyotes and Wolves; to Preserve and Encourage the Raising of Livestock; to Provide for the control of Coyotes and Wolves by the Payment of Bounties; to Establish a Rate of Bounties Thereon to Prescribe Penalties for the Violation of the Provisions of this Act; and to Make an Appropriation to Carry Out the Provisions of This Act, Pub. Act No. 52, § 5, 1937 Mich. Pub. Acts 65, 66.

phasis on adult wolves reflected a bias toward the present, on the idea that grown wolves did more damage to livestock than cubs. Or perhaps it reflected a factual judgment that many cubs were unlikely to live to adulthood and so were not worth high bounty payments. Another possibility is that the age-differential pricing was meant to reward hunters who had succeeded in the more difficult, or more dangerous, task of bringing down grown wolves. On this justification, which is not primarily aimed at the efficient eradication of wolves, hunters who entered the wild to bring down more dangerous beasts were entitled to more compensation than those who brought back defenseless cubs. Wolf hunters deserved more, on this thought, in virtue of the significance of their accomplishment. The logic would be moral desert rather than consequence.

E. Conclusions

Several conclusions emerge from examining these statutes. Wolves were probably the most frequently targeted species, but many other species were also targeted. The statutes often did not include preambles, and when they did, their self-justifications sounded in economic principles—developing the livestock industry in particular, with some references to game hunting added in the twentieth century. The laws as written probably were not maximally efficient removers of wildlife. They set in place incentives for hunters to maintain breeding populations of the species they targeted into perpetuity.¹⁹⁸ The statutes were conscious of the possibility of these and other frauds, and they made efforts to prevent it, specifying evidence-destruction policies, as well as civil and—at least once—criminal damages against those who interfered in the hunting projects of others. Different prices offered in different jurisdictions also generated incentives for fraud. If the cost of traveling to a higher-paying jurisdiction was less than the difference in bounties paid, then hunters had incentives to cheat the taxpayers of another state by falsifying where a wolf had been killed. Statutes accordingly required bounty collectors to swear oaths that the animal had been taken in the correct jurisdiction.

III

THE LAWS' IMPLICATIONS FOR LAND USE

This Part will describe the bounty statutes' implications for American land use. The bounty statutes, in both their intent

¹⁹⁸ See Coggins & Evans, *supra* note 4, at 827.

and in their application, lowered the costs of raising livestock. They subsidized particular kinds of land uses at the expense of others. It makes sense, therefore, to consider them land use policy.

Comprehensive land use regulation is often understood to have emerged in the early twentieth century.¹⁹⁹ Before New York City invented zoning in 1916, local governments regulated land in piecemeal ways to deal with specific problems one at a time.²⁰⁰ In the colonial period, for example, municipalities would require owners to fence their produce or to drain wetlands, or they would limit dwelling locations to maintain village cohesion.²⁰¹ But other than these and similar ad hoc regulations, the idea goes, disputes among land users were regulated by the common law of nuisance.²⁰² Nuisance, in its most basic description, makes whole landowners who have suffered harm to their property.²⁰³ Outside of judicial, common law harm repairs, government's role was otherwise circumscribed. This legal history has often surfaced in jurisprudential debates over the scope of the Takings Clause of the Fifth Amendment. Thus, one scholar has described the Takings Clause as instantiating the political idea that "the end of the state is to protect liberty and property, as these conceptions are understood independent of and prior to the formation of the state."²⁰⁴

Responding to such views, other scholars have emphasized that from the beginning, municipal governments regulated land in ways that went beyond the prevention of harm to private landowners.²⁰⁵ British colonial regulations in particular

199 See, e.g., BANNER, *supra* note 19, at 183–84 (discussing the early evolution of American zoning ordinances); WRIGHT & GITELMAN, *supra* note 21, at 2 (linking the rise of public controls on land use to the rise of American cities).

200 BANNER, *supra* note 19, at 183–84.

201 *Id.*

202 *Id.* at 182 (“[T]he nineteenth-century United States was no Hobbesian free-for-all. Land use *was* regulated, but the most important mode of regulation was judge-created common law, particularly the law of nuisance.”).

203 *Id.*

204 RICHARD A. EPSTEIN, TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN 5 (1985).

205 See, e.g., John F. Hart, *Colonial Land Use Law and Its Significance for Modern Takings Doctrine*, 109 HARV. L. REV. 1252, 1259–81 (1996) [hereinafter Hart, *Colonial Land*] (discussing public regulation of private land in the early American colonial era); John F. Hart, *Land Use Law in the Early Republic and the Original Meaning of the Takings Clause*, 94 NW. U. L. REV. 1099, 1099 *passim* (2000) [hereinafter Hart, *Early Republic*] (discussing colonial-era public regulation of landowners); William Michael Treanor, *The Original Understanding of the Takings Clause and the Political Process*, 95 COLUM. L. REV. 782, 788–98 (1995) (discussing the Takings Clause in the context of colonial limits on private land use).

were, on this account, more exacting, more widespread, and more burdensome than more recent expansive readings of the Takings Clause suggest. John F. Hart has detailed early municipal regulations.²⁰⁶ For example, several New England colonies instituted laws requiring landowners to destroy barberry bushes on their land to prevent wheat blight.²⁰⁷ While this requirement was helpful to wheat farmers, “the barberry bush was not a mere weed. English settlers themselves had introduced barberry to the area and used its fruit in preparing food and medicine.”²⁰⁸ The regulation thus prioritized wheat farming over alternative uses. This framework—prioritizing certain uses and industries over others—was evident in other regulations before and during the Revolutionary War, including in municipal aesthetic regulations in New Haven and New York,²⁰⁹ laws giving water-powered mill owners the rights to use or condemn adjacent parcels of land for the purpose of building dams,²¹⁰ laws requiring owners of wetlands to cooperate when their neighbors elected to drain their own wetlands,²¹¹ and laws requiring that private lands be used for mining and metal production.²¹² This was in addition to occasional laws that were even more extreme, threatening that private land, if still unimproved by a certain date after purchase, be forfeited to the state.²¹³ Such laws, Hart concluded, “coercively promoted uses of private land that were viewed as conducive to the community’s well-being.”²¹⁴

Both these traditions reflect land use scholarship’s traditional focus on rules for what private owners may do with indi-

206 Hart, *Colonial Land*, *supra* note 205, at 1259–81.

207 *Id.* at 1273.

208 *Id.*

209 Hart, *Early Republic*, *supra* note 205, at 1109–10.

210 *Id.* at 1116–17.

211 *Id.* at 1117–19.

212 *Id.* at 1119–21.

213 *Id.* at 1123–30.

214 *Id.* at 1107. The interests of both scholarly traditions are not just historical, but doctrinal as well as theoretical. The scholars that deemphasize land use regulation at the Founding tend to support expansive interpretations of the Takings doctrine, out of a particular political theory of the reasons for the state. See EPSTEIN, *supra* note 204, at 5. In response to the first tradition, the converse scholarly tradition, which emphasizes the ways in which land was regulated at the Founding, aims to show that the modern regulatory takings doctrine—under which “if regulation goes too far it will be recognized as a taking,” *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922)—is difficult to square with the municipal regulatory schemes of the founding era. See Hart, *Colonial Land*, *supra* note 205, at 1299–1300; Hart, *Early Republic*, *supra* note 205, at 1156; Treanor, *supra* note 205, at 887.

vidual plots, neighborhoods, and towns.²¹⁵ When scholars consider land use at the national level, the federal government is often the subject.²¹⁶ Regulations by states also influence land development, however,²¹⁷ and when states enact similar kinds of legislation, state action can have national effects. Thus, bounty statutes on wolves, when enacted widely in different states, contributed to the near extinction of wolves in the United States.

The animal bounty statutes were land use policies in this sense. By creating incentives to extirpate particular wild animals in order to spur livestock raising, they subsidized livestock over other uses. Although the statutes were sometimes controlled locally, they were legislated by states and applied broadly—in every region in which wolves existed, and for a long time (more than three centuries). They lasted for much longer than the piecemeal regulations and controls in localized settlements that are widely considered to be modern land use regulation's antecedents. Their influence on land use thus holds rich potential for inquiry. Like the early municipal laws that Hart explored,²¹⁸ the anti-wilderness bounty laws promoted uses of private land that legislators saw as helpful to the community's well-being. The laws came at the expense of people who preferred that wolves exist and of land users who would have preferred to use land for wilder purposes.

The bounty statutes encouraged particular forms of land use. Livestock raising was the reason for targeting large predators;²¹⁹ other kinds of agriculture may have justified the

²¹⁵ See, e.g., Robert C. Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules, and Fines as Land Use Controls*, 40 U. CHI. L. REV. 681, 762–79 (1973) (comparing private nuisance law to zoning, in responding to localized issues); Edward L. Glaeser & Bryce A. Ward, *The Causes and Consequences of Land Use Regulation: Evidence from Greater Boston 2–3* (Nat'l Bureau of Econ. Rsch., Working Paper No. 12601, 2006) (discussing land use regulations and their effects on Boston land value and housing prices); Carol M. Rose, *Planning and Dealing: Piecemeal Land Controls as a Problem of Local Legitimacy*, 71 CALIF. L. REV. 837, 839 (1983) (discussing land use as an expression of local sovereignty).

²¹⁶ See, e.g., George Cameron Coggins, *The Developing Law of Land Use Planning on the Federal Lands*, 61 U. COLO. L. REV. 307, 316–25 (1990) (examining land use planning under the Bureau of Land Management); Robert C. Ellickson, *The False Promise of the Mixed-Income Housing Project*, 57 UCLA L. REV. 983, 985–95 (2010) (examining different approaches to federal housing policy).

²¹⁷ See, e.g., Sara C. Bronin, *The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States*, 93 MINN. L. REV. 231, 266–69 (2008) (emphasizing the potential for states to enact wide-scale land use reforms supporting green building); Rose, *supra* note 215, at 842–43 (noting that state land use statutes monitor the extraterritorial impact of local regulations).

²¹⁸ Hart, *Early Republic*, *supra* note 205, at 1107–31.

²¹⁹ See *supra* subpart II.B.

targeting of smaller animals. The laws thus subsidized favored uses in two ways. First, by redirecting public funds toward extirpating wild animals, the statutes decreased the costs to individuals of raising livestock. It was a security measure paid for by the taxpayer rather than bargained for among ranchers to protect their stock. This first encouragement to livestock was obvious to the law's drafters, who cited it in some of the preambles.

The second subsidy might not have been obvious prior to advances in ecological science.²²⁰ Under the second subsidy, eliminating native animals, particularly apex predators, from the wild has consequences on the land independent of the raising of livestock. Insofar as the bounty statutes succeeded in extirpating their targets, then, they also decreased the value of alternative land uses that profited from the existence of the animals that the statutes sought to remove. Bounty statutes thus doubly subsidized livestock uses.

While attempts to eliminate smaller animals, such as the squirrels and crows of early Maryland, had effects on the land, it will be enough to focus on the extermination of wolves. This is because laws against wolves were so widespread, because wolves went extinct in almost all of the United States, and because ecological research has focused on the value wolves provide to wild ecosystems.

After wolves were reintroduced to Yellowstone National Park, ecologists credited their reintroduction with benefits to the ecosystem.²²¹ These included improved health conditions among elk and other large ungulates,²²² declines in the density

²²⁰ See Dunlap, *supra* note 6, at 142 (arguing that it was only in the twentieth century that scientific ecology began to buttress "vague and sentimental appeals about the 'balance of nature' and 'nature's economy' which since antiquity have marked the larger body of 'ecological thought'"). Various Indigenous traditions have emphasized the connections between different aspects of ecosystems. See ROBIN WALL KIMMERER, BRAIDING SWEETGRASS: INDIGENOUS WISDOM, SCIENTIFIC KNOWLEDGE, AND THE TEACHING OF PLANTS 131–39 (2013).

²²¹ Amaroq E. Weiss, Timm Kroeger, J. Christopher Haney & Nina Fascione, *Social and Ecological Benefits of Restored Wolf Populations*, in TRANSACTIONS OF THE 72ND NORTH AMERICAN WILDLIFE & NATURAL RESOURCES CONFERENCE 297, 300–04 (2007); see also ALSTON CHASE, PLAYING GOD IN YELLOWSTONE: THE DESTRUCTION OF AMERICAN'S FIRST NATIONAL PARK 6 (1986) (arguing in 1986, prior to wolf reintroduction, that "[Yellowstone's] reputation as a great game sanctuary is perhaps the best-sustained myth in American conservation history Several of the original species are no longer there, and many others remain in much-reduced numbers.").

²²² Weiss, Kroeger, Haney & Fascione, *supra* note 221, at 300–01; Daniel R. Stahler, Douglas W. Smith & Debra S. Guernsey, *Foraging and Feeding Ecology of the Gray Wolf (Canis lupus): Lessons from Yellowstone National Park, Wyoming, USA*, 136 J. NUTRITION 1923S, 1925S (2006).

of coyotes,²²³ rising survival rates for pronghorn fawns, which are preyed upon by coyotes,²²⁴ the return of “wild” anti-predatory behaviors among moose populations,²²⁵ and restored plant species, including aspen and willow trees, due to wolves’ lowering the overpopulation of elk.²²⁶ This is a process known as a “trophic cascade.”²²⁷ Such phenomena indicate that the initial eradication of wolves from the wild ecosystems of North America had lasting influences on the land. Under the logic of the trophic cascade, removing wolves and other animals caused the losses of certain plants and trees, increased the range of coyotes, and contributed to the rise of unhealthy game herds. Removing wolves, a keystone species,²²⁸ from their traditional ecosystems disrupted millennia-old patterns for other animals and plants. These disruptions would have changed the relative values of the ways in which land could be used.

How might land with healthy wolf, bear, and mountain lion populations have been used profitably by landowners? In one evocative example, private game parks in which visitors could have observed wolves, bears, and mountain lions might have been established far earlier than their closest real-world equivalent, the National Parks. Their larger and more various populations of species might have attracted tourists and boosted local economies. Contemporary surveys have asked visitors to Yellowstone whether they would have come to the park if wolves were not there.²²⁹ A study based on these surveys estimated that “visitors coming from outside the three-state [Montana, Idaho, and Wyoming] region, who are coming specifically to see or hear wolves in the park, spend \$35.5

²²³ Weiss, Kroeger, Haney & Fascione, *supra* note 221, at 301; Douglas W. Smith, Rolf O. Peterson & Douglas B. Houston, *Yellowstone After Wolves*, 53 *BIOSCIENCE* 330, 335 (2003).

²²⁴ Weiss, Kroeger, Haney & Fascione, *supra* note 221, at 302; Smith, Peterson & Houston, *supra* note 223, at 335.

²²⁵ Weiss, Kroeger, Haney & Fascione, *supra* note 221, at 302–03; Sanjay Pyare & Joel Berger, *Beyond Demography and Delisting: Ecological Recovery for Yellowstone’s Grizzly Bears and Wolves*, 113 *BIOLOGICAL CONSERVATION* 63, 65–66 (2003).

²²⁶ Weiss, Kroeger, Haney & Fascione, *supra* note 221, at 303–04.

²²⁷ *Id.*; William J. Ripple, Robert L. Beschta, Jennifer K. Fortin & Charles T. Robbins, *Trophic Cascades from Wolves to Grizzly Bears in Yellowstone*, 83 *J. ANIMAL ECOLOGY* 223, 225–26 (2014).

²²⁸ Thrower, *supra* note 39, at 319.

²²⁹ See Weiss, Kroeger, Haney & Fascione, *supra* note 221, at 304; John W. Duffield, Chris J. Neher & David A. Patterson, *Wolf Recovery in Yellowstone: Park Visitor Attitudes, Expenditures, and Economic Impacts*, 25 *GEORGE WRIGHT F.* 13, 17 (2008).

million annually.”²³⁰ Since 2005, the animals that visitors express most interest in seeing are all so-called charismatic megafauna: wolves, bears, mountain lions, and moose.²³¹ Had wolves and other charismatic species not been removed, private parties might have found ways to develop profitable wildlife parks before the creation of the National Parks in the late nineteenth century, and certainly before the 1990s, when wolves were reintroduced to Yellowstone.²³²

One might think that people’s desire to see and hear wolves and other large animals is a modern preference, one not shared by earlier Americans and so one that could not have been monetized in past eras. But wolves’ “mythic” aspect, emerging in stories and accounts dating to antiquity, indicates that they have always been interesting, at least to some.²³³ And there were known opponents of wolf destruction policies. By the early 1900s, officials with jurisdiction over Yellowstone National Park considered wolves to be “a decided menace to the herds of elk, deer, mountain sheep, and antelope” there, and so they enacted policies to exterminate wolves.²³⁴ Opposition to these policies by conservationists was noted, but ignored.²³⁵

²³⁰ Duffield, Neher & Patterson, *supra* note 229, at 17.

²³¹ *Id.* at 14–15.

²³² See Smith, Peterson & Houston, *supra* note 223, at 330.

²³³ Burger, *supra* note 71, at 34–35, 34 n.172.

²³⁴ JOHN WEAVER, *THE WOLVES OF YELLOWSTONE* 9 (1978) (quoting Supt. Annual Rept. 1915).

²³⁵ *Id.* (“It is evident that the work of controlling these animals must be vigorously prosecuted by the most effective means available whether or not this meets with the approval of certain game conservationists.” (quoting Supt. Monthly Rept. May 1922)). As Thomas Dunlap has detailed, the value of large predators to the ecosystem was debated among scientists through the 1920s. Dunlap, *supra* note 6, at 145–61. In a lecture at Harvard in 1924, the ecologist Charles Adams wrote that the United States’ “methods of territorial acquisition have given us a Public Domain of great area, which it has been our policy to dispose of as rapidly as possible and, it must be said, often very foolishly indeed.” Charles C. Adams, *The Conservation of Predatory Mammals*, 6 *J. MAMMALOGY* 83, 84 (1925). Adams noted that large predators’ value could be described in scientific, social, and economic terms, and proceeded to sketch a plan for the animals’ conservation. *Id.* at 86–92. A 1931 article in *Science* condemned the predator control policies of the United States Bureau of Biological Survey in strong terms, suggesting the policies were controlled by the livestock interests. H.E. Anthony, *The Control of Predatory Mammals*, 74 *SCIENCE* 288, 289 (1931) (“That the society deplores the propaganda of the survey which is designed to unduly blacken the character of certain species of predatory mammals, giving only part of the facts and withholding the rest, and which propaganda is educating the public to advocate destruction of wild life. . . . That the society asserts the claim of the great nature-loving public to a voice in the administration of our wild life resources, and challenges the right of a federal organization, such as the Biological Survey, to consider only the interests of a very small minority, the live stock interests.”). But others disagreed, and it was not

Beyond the potential value of wolves themselves, wolves and other large carnivores' benefits to the wider wild ecosystem might also have sustained more kinds of produce than livestock alone. Even now, in a world with far fewer wolves than there used to be, there are economic benefits to wilderness on private land, including fee hunting and wildlife husbandry.²³⁶ Just as colonial legislatures in New England prioritized wheat over barberry bushes,²³⁷ bounty statutes prioritized livestock over alternative uses.

Under the laws, any citizen could trap wolves to collect the reward. But a citizen who objected to wolf extermination had no similar path of recourse, other than petitioning the legislature to change the law. There is little evidence of successful democratic action to conserve wolves, mountain lions, and bears until the twentieth century,²³⁸ and it may be presumed that these animals' defenders were not in a voting majority before then. But they existed. Mattagund, the seventeenth-century leader of the Piscataway people, told colonists in Maryland that livestock were causing serious problems. "Your cattle and hogs injure us," he is reported to have said. "[Y]ou come too near us to live and drive us from place to place. . . . [L]et us know where to live and how to be secured for the future from the hogs and cattle."²³⁹ Free-running livestock were threats to crops and hunting, and so to ways of supporting life.²⁴⁰ This

until the 1940s that quantitative evidence bore out the ecologists' claims. Dunlap, *supra* note 6, at 160.

²³⁶ Matthew J. Butler, Andrew P. Teaschner, Warren B. Ballard & Brady K. McGee, *Commentary: Wildlife Ranching in North America—Arguments, Issues, and Perspectives*, 33 WILDLIFE SOC'Y BULL. 381, 387 (2005) ("[E]conomic gains from fee-hunting and wildlife farming and husbandry provide positive incentives to private landowners to conserve and protect wildlife and wildlife habitat. For many ranchers, raising livestock is not enough to make ends meet. Fee-hunting has protected landowners from revenue losses and even land sales.").

²³⁷ Hart, *Colonial Land*, *supra* note 205, at 1273.

²³⁸ See, for example, the enactment of the Endangered Species Act in 1973. 16 U.S.C. § 1531.

²³⁹ JONATHAN LEVY, *AGES OF AMERICAN CAPITALISM: A HISTORY OF THE UNITED STATES* 50 (2021) (citing ANDERSON, *supra* note 18, at 171). There appears little reason to think this sentiment was specific to the Piscataway, as most North American Indigenous populations subsisted through cultivating crops, not livestock. Allan Greer, *Commons and Enclosure in the Colonization of North America*, 117 AM. HIST. REV. 365, 369 (2012); see also Jessica Eisen, *Milked: Nature, Necessity, and American Law*, 34 BERKELEY J. GENDER L. & JUST. 71, 81–82 (2019) (describing a history of livestock-driven displacement in the Chesapeake).

²⁴⁰ ANDERSON, *supra* note 18, at 5; see also Virginia DeJohn Anderson, *King Philip's Herds: Indians, Colonists, and the Problem of Livestock in Early New England*, 51 WM. & MARY Q. 601, 606–07 (1994) ("[L]ivestock husbandry did not fit easily with native practices. Indians could hardly undertake winter hunting expeditions accompanied by herds of cattle that required shelter and fodder to survive

was an intercultural version of Coase's dispute between farmers and ranchers.²⁴¹

As the laws removed wild animals, then, the double subsidy would have encouraged favored uses to develop. People who otherwise would not have chosen to raise livestock would do so. Land that might have been used for other purposes would have become grazing land.

Assessing the bounty statutes' actual effects on land use over three centuries is a speculative effort. It might help first to recover how American land use evolved during the period.

Whether bounty statutes were intended to cause the species they targeted to go extinct, or whether they were meant to be population controls for species that would never be eradicated, is open to interpretation.²⁴² Private agriculture continues to employ pest controls on different species with this latter kind of intent.²⁴³ But whether or not full eradication was the

the cold weather. Swine would compete with their owners for nuts, berries, and roots, and the presence of livestock of any kind tended to drive away deer. Moreover, the Indians, for whom most beasts were literally fair game, struggled with the very notion of property in animals. They assumed that one could own only dead animals, which hunters shared with their families. . . . At least at first, friction between these unlikely neighbors grew less from the very different ideas that informed Indian and English concepts of property than from the behavior of livestock. Let loose to forage in the woods, the animals wandered away from English towns into Indian cornfields, ate their fill, and moved on." (footnotes omitted)).

²⁴¹ See Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623, 624–26 (1986).

²⁴² For example, a 1931 article in *Popular Science Monthly* describing efforts to destroy wild animals made a modern-sounding distinction between problem bears and ordinary bears: "If a sheep is found with its back broken by a mighty blow, the hunter knows a bear has turned outlaw and must be hunted down from among his better natured brothers." Andrews, *supra* note 154, at 36. Even the term "noxious" has a varied meaning. Noxious might simply mean predatory on livestock. See, e.g., SAN JUAN STIVER, NEV. DEP'T OF WILDLIFE, STATUS OF MOUNTAIN LIONS IN NEVADA 26 (1988) ("Noxious animals were bountied from 1873 through 1938 to address depredation or perceived depredation. The mountain lion, termed the 'California Lion', was intermittently included and then removed from the noxious animal list even though sheep herding was very active in the State."). But "noxious animal" has also been used more generally, including in a government publication in the late nineteenth century as a synonym for what we would today call "invasive species." See, e.g., Theodore S. Palmer, *The Danger of Introducing Noxious Animals and Birds*, in YEARBOOK OF THE U.S. DEPARTMENT OF AGRICULTURE 87, 88 (1898) ("Domesticated species may become noxious. Domesticated animals, like cultivated plants, may run wild and become so abundant as to be extremely injurious. Wild horses are said to have become so numerous in some parts of Australia that they consume the feed needed for sheep and other animals, and hunters are employed to shoot them.").

²⁴³ The use of pesticides is an example. See Donald T. Hornstein, *Lessons from Federal Pesticide Regulation on the Paradigms and Politics of Environmental Law Reform*, 10 YALE J. REGUL. 369, 388–404 (1993).

goal, it was what transpired. Extrapolation from incomplete records of bounty collections is imprecise, but Dale Goble concluded that millions of wolves were taken under the bounty statutes.²⁴⁴ In Montana during one 40-year period, for example, the carcasses of more than 80,000 wolves were bountied.²⁴⁵ Gray wolves were virtually extinct in the contiguous United States by the early twentieth century.²⁴⁶ When the federal government appropriated funds to extirpate large predators in 1914, wolf, bear, and mountain lion populations had already been brought so low from their historic levels that the federal hunters focused their efforts on coyotes.²⁴⁷ Were it not for gray wolves' refuges in Canada and Mexico, the species might have died out in North America.²⁴⁸ Other animals were less fortunate. The eastern cougar (*puma concolor cougar*), a subspecies of cougar that once lived throughout the northeast,²⁴⁹ was last seen in 1938 and declared extinct in 2011.²⁵⁰

²⁴⁴ See Goble, *supra* note 3, at 105 n.19 ("While there is no accurate count of the number of wolves killed, this count must have numbered in the millions: between 1883 and 1918 the carcasses of 80,730 wolves were turned in for bounty in Montana alone.").

²⁴⁵ *Id.* For a historical analysis of bounty payments in the colonial Chesapeake region, see Elswick, *supra* note 18, at 39–53 (concluding that bounty payments peaked at the end of, or shortly after, the formation of relevant counties).

²⁴⁶ Goble, *supra* note 3, at 106.

²⁴⁷ Dunlap, *supra* note 6, at 144. Coyotes remain the principal targets of federal predator control programs. Kim Murray Berger, *Carnivore-Livestock Conflicts: Effects of Subsidized Predator Control and Economic Correlates on the Sheep Industry*, 20 CONSERVATION BIOLOGY 751, 752–53 (2006).

²⁴⁸ See Dunlap, *supra* note 6, at 148.

²⁴⁹ See, e.g., Of the Destruction of Wolves and Panthers, ch. LXIII, § 1, reprinted in LAWS OF THE STATE OF VERMONT, DIGESTED AND COMPILED: INCLUDING THE DECLARATION OF INDEPENDENCE, THE CONSTITUTION OF THE UNITED STATES, AND OF THIS STATE 23 (1808) (in Vermont, placing bounties on panthers); An Act to Authorize the Board of Supervisors of the County of Steuben, to Raise the Bounty for the More Effectual Destruction of Panthers, Wolves and Foxes, ch. 106, § 1, 1836 N.Y. Laws 145, 145 (providing for a panther bounty in Steuben County, New York); An Act to Repeal so Much of the Act, Entitled "An Act Repealing the Act Allowing Premium on Foxes and Wild Cats, in the Within Named Counties, and for Other Purposes," Approved the Twenty-Fourth of April, One Thousand Eight Hundred and Thirty-Three, as Relates to Armstrong County, and for Other Purposes, No. 172, § 5, 1845 Pa. Laws 242, 242 (identifying panthers as one of the bountied predators in Pennsylvania); John Platt, *Giving Up on the "Ghost Cat": Eastern Cougar Subspecies Declared Extinct*, SCI. AM. (Mar. 9, 2011), <https://blogs.scientificamerican.com/extinction-countdown/giving-up-on-the-ghost-cat-eastern-cougar-subspecies-declared-extinct/> [<https://perma.cc/N83Q-B2YP>] (noting that "panther" is an alternate name for the eastern cougar); George G. Goodwin, *Big Game Animals in the Northeastern United States*, 17 J. Mammalogy 48, 50 (1936) (describing how the eastern cougar was widespread throughout Northeastern states before being eradicated in the nineteenth century).

²⁵⁰ Platt, *supra* note 249.

The fates of other species were mixed. Comprehensive ecological data is scarce for most of this three-century period,²⁵¹ but we may be sure that it was a time of momentous change for American wildlife populations. Smaller animals, like the squirrels and crows that were bountied in early Maryland,²⁵² did not die out, but their numbers may have diminished in the state.²⁵³ Coyote populations never disappeared,²⁵⁴ and coyotes tended to do well as American settlers advanced westward,²⁵⁵ so the impact of bounties on coyotes is uncertain. Coyotes were able to move into new territories during the three-century period in part because of the loss of wolf populations.²⁵⁶ Thus coyotes may have benefitted more from wolf bounties than they were harmed by coyote bounties.

At the same time as these transformations, the land was immeasurably changed. North America in 1600 was 45% covered by well-formed forests; by 1920, less than one-fifth of these forests remained.²⁵⁷ Woods and prairies were also replaced with cropland.²⁵⁸ Livestock became by many accounts New England's mainstay agriculture during the colonial period,²⁵⁹ and sheep production in the Chesapeake grew considerably in the eighteenth century.²⁶⁰ In the nineteenth century, Ohio, Indiana, Kentucky, and Illinois became the capitals of

251 See CRONON, *supra* note 40, at 6–10 (describing potential evidentiary sources to conduct ecological histories and their potential insufficiencies).

252 See *supra* Part II.

253 J. THOMAS SCHARF, 2 HISTORY OF MARYLAND FROM THE EARLIEST PERIOD TO THE PRESENT DAY 59 n.1 (1879) ("There was a bounty of two pounds of tobacco paid for squirrel scalps and crows head in nearly every county, and so destructive do these little animals, *now so scarce*, appear to have been" (emphasis added)). Elswick concludes that the populations of many wild animal species rose as colonial farms offered more sources of food. Elswick, *supra* note 18, at 27–28. This in turn brought wolves seeking new prey into greater conflict with human settlements and caused wolf populations to rise. *Id.*

254 LUND, *supra* note 13, at 74; see also Wick Corwin, Note, *Predator Control and the Federal Government*, 51 N.D. L. REV. 787, 806 (1974) (describing the Cain Committee's finding that "[c]oyote populations were . . . in a state of almost constant fluctuation").

255 Levy, *supra* note 10, at 296 ("[U]nlike the other predators, coyotes have thrived in the past 150 years.").

256 *Id.*

257 MICHAEL WILLIAMS, AMERICANS AND THEIR FORESTS: A HISTORICAL GEOGRAPHY 3–4 (1989).

258 Gordon B. Bonan, *Frost Followed the Plow: Impacts of Deforestation on the Climate of the United States*, 9 ECOLOGICAL APPLICATIONS 1305, 1305 (1999).

259 GORDON G. WHITNEY, FROM COASTAL WILDERNESS TO FRUITED PLAIN: A HISTORY OF ENVIRONMENTAL CHANGE IN TEMPERATE NORTH AMERICA 1500 TO THE PRESENT 164 (1994); CRONON, *supra* note 40, at 7.

260 Elswick, *supra* note 18, at 55–59.

the free-running pig industry.²⁶¹ Livestock grazing, in turn, altered the kinds of plants that grow in uncultivated areas,²⁶² and cattle grazing in particular damaged forest integrity.²⁶³

Bounties alone were not responsible for these changes. The invention and private use of industrial poisons like strychnine in the late nineteenth century has also been credited with severe losses to animal populations,²⁶⁴ and private animus toward large carnivorous mammals has a long history.²⁶⁵ When dealing with the twists and turns of any centuries-long historical period, causation questions become difficult. Yet the ruralization of settlements in early America²⁶⁶ was aided by public law aimed to extirpate wild animals, and resulting expansion of the livestock industry likely encouraged further eradication efforts.

IV

AN ENCOURAGEMENT FOR PRIVATE PROPERTY

In the previous Part, I suggested that the bounty statutes are best understood as a kind of land use policy. In this Part, I will suggest that the history of the bounty statutes offers evidence for the influence of the state in property regimes. This theory is based on Robert Ellickson's article, *Property in Land*.²⁶⁷

Property scholars have long been interested in the reasons why societies choose particular property regimes. The bundle of rights in various objects that make up property rights are variable and admit of many different possibilities. The economist Harold Demsetz gave a classic explanation for private property. Property rights, he concluded, "develop to internalize externalities when the gains of internalization become larger than the cost of internalization."²⁶⁸ To show how this works in practice, he turned to research by the anthropologist Eleanor

²⁶¹ WHITNEY *supra* note 259, at 164.

²⁶² *Id.* at 171.

²⁶³ *Id.* at 166; *see also* ANDERSON, *supra* note 18, at 4–5 ("By competing with local fauna, clearing away underbrush, and converting native grasses into marketable meat, imported animals assisted in the transformation of forests into farmland."). Sheep were, by some modern ecologists' accounts, harder to establish than other livestock—in part due to their vulnerability to predators. *See* WHITNEY, *supra* note 259, at 165.

²⁶⁴ Dunlap, *supra* note 6, at 144.

²⁶⁵ *See, e.g.*, JON T. COLEMAN, VICIOUS: WOLVES AND MEN IN AMERICA 1–15 (2004) (detailing stories of early American anti-wolf rhetoric).

²⁶⁶ *See* LEVY, *supra* note 239, at 53.

²⁶⁷ Ellickson, *supra* note 24.

²⁶⁸ Demsetz, *supra* note 27, at 350.

Leacock, which told the story of how Indigenous communities in the Labrador Peninsula in Canada privatized previously common hunting grounds upon contact with Europeans and the commercial fur trade.²⁶⁹ As the sale value of beaver pelts rose, private land division was a way to maximize profits over time by discouraging overly intensive hunting that threatened to destroy the resource.²⁷⁰ The thesis has deeply influenced property theory.

In *Property in Land*, Ellickson laid out an influential refinement of Demsetz's idea.²⁷¹ Proceeding in the path of Demsetz, he argued that efficient property regimes are likely to emerge within communities, but only when certain conditions are satisfied. Community bargaining produces efficiency when communities are close-knit. The "central positive thesis" was "that a close-knit group tends to create, through custom and law, a cost-minimizing land regime that adaptively responds to changes in risk, technology, demand, and other economic conditions."²⁷² This differed from Demsetz, who suggested that property arrangements tend to evolve efficiently in response to changes in economic conditions.²⁷³ In the Ellicksonian telling, the efficient evolution takes place only among close-knit groups: communities in which most people know and continuously interact with one another, and in which power is dispersed among the group, rather than concentrated among a few members.²⁷⁴ Thus there are many groups—non-close-knit groups—that transparently do not establish property regimes that minimize costs among their members.²⁷⁵

²⁶⁹ *Id.* at 351–52.

²⁷⁰ *Id.* at 351 ("Because of the lack of control over hunting by others, it is in no person's interest to invest in increasing or maintain[ing] [sic] the stock of game. Overly intensive hunting takes place. Thus a successful hunt is viewed as imposing external costs on subsequent hunters—costs that are not taken into account fully in the determination of the extent of hunting and of animal husbandry.").

²⁷¹ Ellickson, *supra* note 24, at 1320–21.

²⁷² *Id.* at 1397.

²⁷³ *Id.* at 1320; Thomas W. Merrill, *Introduction: The Demsetz Thesis and the Evolution of Property Rights*, 31 J. LEGAL STUD. S331, S331 (2002).

²⁷⁴ Ellickson, *supra* note 24, at 1320. Other scholars have also considered the particular advantages that can attend bargaining among relatively small groups. See, e.g., Lisa Bernstein, *Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115, 116 (1992) (exploring the formation of strong reputational bonds within the diamond industry and their resulting efficiency implications).

²⁷⁵ Ellickson's examples of such regimes included the institution of slavery, as well as the famine-causing land collectivization programs pursued by various twentieth-century autocratic powers. Ellickson, *supra* note 24, at 1318–21 (citing Russia in 1929, China in 1957, Cambodia in 1975, and Ethiopia in 1975).

Close-knit groups, on the other hand, tend to work cooperatively and productively in distributing land entitlements. Through internal cooperation, “the group opportunistically mixes private, group, and open-access lands.”²⁷⁶ Each of these forms of land ownership has advantages and disadvantages. Private property is most valuable when “small events” are at stake.²⁷⁷ A small event might be the cultivation of a tomato garden. Enclosing the garden as private property of the tomato grower equates “the personal product of an individual’s small actions with the social product of those actions.”²⁷⁸ Were a group of people to control tomato growing collectively over a larger commons, it would suffer the transaction costs of “monitoring potential shirkers and grabbers” within the group’s membership.²⁷⁹ Monitoring a single garden by a single person is cheaper than group monitoring of a larger, group-owned garden because monitoring for trespassers is easier than monitoring for *misuse* by people who are otherwise permitted to use the garden and because individual monitors will be more motivated than group monitors if their own garden is at stake.²⁸⁰

Group-owned land, by contrast, is efficient when the returns to larger, non-parceled land exceed what would be available to smallholdings and when landowners must deal with “large events.” A primary example of a large event was the classic economist’s externality:²⁸¹ a fire whose smoke threatens many people but in which “the transaction costs of large-number coordinations might prevent the many affected parcel owners from cooperating to resolve the dispute through some external institution.”²⁸² The most basic case for private ownership of land rested on the idea that “vital agricultural, construction, homemaking, and child-rearing activities entail mostly small and medium events.”²⁸³

This positive thesis had normative implications. If close-knit groups tend to organize property in land in ways that are good for the community, then this is a reason for governments, who operate over large, non-close-knit communities, to avoid top-down, centralized management of property institutions. Ellickson emphasized the “folly” of designing “land institutions

²⁷⁶ *Id.* at 1397–98.

²⁷⁷ *Id.* at 1327.

²⁷⁸ *Id.*

²⁷⁹ *Id.*

²⁸⁰ *Id.* at 1327–28.

²⁸¹ *Id.* at 1334.

²⁸² *Id.*

²⁸³ *Id.* at 1335.

from afar and forcibly impos[ing] them upon indigenous groups.”²⁸⁴ If close-knit groups act in ways that maximize efficiency over the long term, governments should trust their judgment in developing land regimes—assuming efficiency is a desired quality.

A second normative implication of the theory is that private property is desirable for structural reasons. Because vital activity in agricultural societies tends to entail small and medium events, and not large ones, close-knit groups will tend to prefer private property in land.²⁸⁵

To support this theory of property formation—more specific but no less ambitious than Demsetz’s—Ellickson gave historical examples of small settlements drawn from agricultural economies in various time periods. This included various colonial settlements, as well as the settlement of nineteenth-century Utah, and several modern developments.²⁸⁶ Initial collective allocations of land among settlements gave way to private allocations for farmland and housing.²⁸⁷ The hypothesis is that group ownership is a risk-spreading device, which was abandoned as risks, perceived or real, diminished.

With this grounding, a hypothesis emerges regarding the effect of the bounty statutes. The theory suggests that bounty statutes on predatory animals encouraged not just specific uses of land, but the development of private property in land itself. From the perspective of livestock owners, wolves, cougars, and bears would have appeared a large event. They were wild animals that existed over large ranges of the territory into which the settlers sought to expand. Absent government action to eliminate large predators, prospective livestock farmers would have thus had a separate “large-event level” threat on their livelihoods to contend with. Large events make private property in land less likely to minimize costs among close-knit groups that were deciding how to develop property regimes. Thus, when the state stepped in to control the problem of animal predation, private property became more valuable than it otherwise would have been. The property regimes that emerged in the new America were, in that sense, land institutions designed, or at least encouraged, from afar. The bounty statutes did not just subsidize particular land uses; they subsidized private property itself. We might even say that large-

²⁸⁴ *Id.* at 1399.

²⁸⁵ *See id.* at 1335.

²⁸⁶ *Id.* at 1335–48.

²⁸⁷ *Id.* at 1339–40.

scale state action is a precondition for some kinds of private property regimes to emerge. Private property in land is, in part, a government project.

Ellickson's discussion on the role of technology in property regime formation more fully explains this point. Previous work had focused on the ways in which technological change could shift the relative costs and benefits of different land regimes.²⁸⁸ Private land must have borders, and technologies that help landowners control the land's borders like "advances in surveying and fencing techniques[,] may enhance the comparative efficiency of the institution."²⁸⁹ The ability to fence private land cheaply makes the institution of private land more profitable. Thus, the "invention of barbed wire in 1874 . . . stimulated more subdivision of rangeland in the American West."²⁹⁰ Policies instituted by governments have a similar effect to technological development: they are exogenous influences on the relative costs of land regimes for close-knit groups. Close-knit groups choosing among property regimes are subject to influence by public law as much as technological change.

Objections might be raised at this juncture. First, one might propose that other ways of using the land were inimical to the needs of a market economy. On this account, which I will call determinist, livestock-raising was simply the most profitable use of land in the places in North America in which it was adopted, and anti-wilderness bounties were epiphenomenal to American development. The process might have taken more time, and would have required more extensive private contracting, but the same outcome would have been achieved. With or without bounties on wild animals, so the idea goes, the pattern of lands developed for ranching and other forms of agriculture would have been the same.

And this, of course, is possible. But even a delayed process of privatization of land management would have led to a different kind of history. With wilder lands lasting for longer, dissenters and innovators who favored uses of wilder lands might have had more time to develop profitable versions of them. They would also have had the opportunity to freely contract to

²⁸⁸ See Terry L. Anderson & P.J. Hill, *The Evolution of Property Rights: A Study of the American West*, 18 J.L. & ECON. 163, 175 (1975) ("Technological change also decreased the cost of definition and enforcement activity in livestock. . . . [I]n the 1870's homesteaders and ranchers alike began using newly invented barbed wire to define and enforce their rights to land. In addition, cattlemen saw the value of barbed wire for enforcing one's rights to livestock.").

²⁸⁹ Ellickson, *supra* note 24, at 1328.

²⁹⁰ *Id.* at 1330.

maintain wild lands in ways that they could not when governed by the bounty statutes.

It is hard to see how trade in itself, even monetized trade, prescribes agricultural development, enclosure, and livestock-raising above all other uses. Trade, for example, predated European contact with North America.²⁹¹ Intensive livestock raising, however, was not widely practiced.²⁹² Instead, populations in the Americas relied on crops—including maize, beans, squash, and potatoes—as well as hunting, fishing, and foraging.²⁹³ Economies of exchange do not in and of themselves cause people to organize their economies around livestock.

Another objection might acknowledge that the laws had an impact but argue that their impact was itself efficient or helpful to development.²⁹⁴ As this Article will discuss in Part V, this is now a different claim than the functionalist, Demsetzian account of the emergence of property regimes, which emphasizes that private property develops as the product of bargaining among small groups. Close-knit communities did not act among themselves—at least, not on their own—to make wild animals disappear. Close-knit communities were helped in their property regimes by state action. Whether this state action was benevolent or not, it means that close-knit communities within states and territories influenced by bounty statutes were not trading with level scales, but under the influence of various kinds of public laws.²⁹⁵

This positive theory has normative implications. If property regimes in the early republic and its new territories were

²⁹¹ Forms of currency were also used to secure trade among the Indigenous peoples who first encountered European colonists. See K-Sue Park, *Money, Mortgages, and the Conquest of America*, 41 L. & SOC. INQUIRY 1006, 1017 (2016).

²⁹² Greer, *supra* note 239, at 369.

²⁹³ *Id.* at 369–70.

²⁹⁴ Andrea Smalley describes what might be a version of this view in an analysis of early Virginian animal bounty laws. SMALLEY, *supra* note 77, at 116 (“It had already become clear to many observers that without concerted and collective actions to remove predators from their ranges, settlers would have little incentive to engage in the deliberate improving acts that denoted Anglo-American possession.”).

²⁹⁵ Other state and federal laws might have exerted a similar or compounding—or confounding—effect. If the theory developed in this Article as to the effects of public laws like the bounty statutes on the evolution of bargaining among smaller communities is correct, then there are potential further applications. One example might be government-built or subsidized roads, which expand markets. See Carol M. Rose, *Big Roads, Big Rights: Varieties of Public Infrastructure and Their Impact on Environmental Resources*, 50 ARIZ. L. REV. 409, 417 (2008). Such other kinds of public laws might also have exerted the kind of effect that I attribute to the bounty statutes—perhaps in greater degree.

weighted from afar towards particular uses and divisions of land, not just by bounty statutes but by technology and perhaps other government acts not considered here, then state action played a greater role in the emergence of property regimes than previously understood. Ellickson noted some of the ways in which state planning can harm local communities,²⁹⁶ but if state action has had a more ubiquitous influence on property regimes, then the diagnosis of the state's relation to property outcomes may be more mixed. Public law has influenced property regimes, including successful ones.²⁹⁷

The more that public law weights the scale toward a particular property regime, the less such a property regime can be normatively justified just by the fact that close-knit communities tended to adopt it.²⁹⁸ Even if cost-minimization is the primary desideratum for property regimes, it is not enough to conclude that because private property in land emerged among cost-minimizing close-knit groups, that means it was the most cost-minimizing regime that would have emerged in the absence of a state policy. Where close-knit groups chose to subdivide collective land into private parcels when they were influenced by state policies undercuts, even if only subtly, the idea that such communities naturally gravitate towards private property as wealth-maximizing. The normative justification for private property in land should then proceed for other reasons than the fact that it emerged among cost-minimizing close-knit groups.²⁹⁹ Demsetz's original example—the development of

²⁹⁶ Ellickson, *supra* note 24, at 1318.

²⁹⁷ Katrina Miriam Wyman has offered a similar critique of Demsetz's original theory.

Demsetz's article shares a failing common to functional accounts of institutional change in general: It assumes that demand generates its own supply. . . . [T]hese accounts ultimately do not offer a generalizable, positive explanation for the emergence of private property because they typically are premised on strong assumptions, often assuming away, for example, the fact that private parties typically interact in the presence of a state."

Wyman, *supra* note 8, at 121–22; see also Joseph William Singer, *Original Acquisition of Property: From Conquest & Possession to Democracy & Equal Opportunity*, 86 IND. L.J. 763, 764 (2011) (identifying conquest by legislation—in which the passing of statutes was used to transfer Indian title to a colonial power—as a way in which state action has influenced property regimes).

²⁹⁸ There is a separate criticism that can be made about whether a person's choosing a particular outcome actually demonstrates that outcome's utility. For a variation of this view, see Mark Kelman, *Choice and Utility*, 1979 WIS. L. REV. 769, 771–72. To fix ideas, this Article will assume that policy choices made by close-knit communities offer prima facie evidence of utility.

²⁹⁹ Ellickson's examples were numerous, and some were likely not affected by animal bounty statutes, though they were affected by other forms of public law. The earliest known bounty statutes in North America date from the 1630s. See

private beaver hunting grounds among the Indigenous communities on the Labrador Peninsula—coincided not just with the new connection to European beaver fur markets, but also with the first animal bounty statutes in Canada.³⁰⁰ The process of government-targeted settlement was beginning to alter the costs and benefits of particular land regimes.

If bounty statutes influenced the development of property in land, another question becomes how to explain the reason that governments instituted these laws in the first place. Whether you think of wolves, lions, and bears as a cost or a benefit will depend in part upon how much one values livestock raising as a way of economic life. Why then did so many states implement the laws?

V

TOWARD A CULTURAL PARADIGM OF PROPERTY IN LAND

If a widespread government preference for livestock—and against wilder lands—influenced the history of American property institutions, then the source of the preference is a natural question. In this Part, I suggest that there are two possible explanations for the preference for wolf eradication and livestock expansion. The difference between them hinges upon whether electorates were consciously pursuing a state-material end in their enactment of the bounty statutes.

Culture has many definitions, but perhaps the most influential in property law has been the one derived from law and economics scholarship, on which, in one recent description, culture means “social norms, values, and beliefs that are commonly embraced and internalized without empirical discovery

supra Part II. Plymouth’s land privatization story ends in the 1630s, just as the first animal bounty statute went into effect in Massachusetts. Ellickson, *supra* note 24, at 1339. The early settlement of Jamestown likely predated the existence of animal bounty statutes in North America, as Jamestown was settled in 1607. *Id.* at 1335. The settlement of Utah from 1847 to 1885 predated Utah’s bounty statute, passed in 1890, though it postdated earlier bounty statutes in other states that might have eradicated wide-ranging predator populations—particularly if bounty hunters did not respect jurisdictional boundaries. *See id.* at 1339–41. Enclosures in England were influenced by a variety of state actions, as well as the actions of powerful aristocrats—who were not members of close-knit groups in which power was widely diffuse. *Id.* at 1391–92.

³⁰⁰ Compare Demsetz, *supra* note 27, at 352 (“By the beginning of the eighteenth century, we begin to have clear evidence that territorial hunting and trapping arrangements by individual families were developing in the area around Quebec.” (quoting Eleanor Leacock, *The Montagnais “Hunting Territory” and the Fur Trade*, 56 AM. ANTHROPOLOGIST Memoir No. 78, at 15 (1954))), with D.N. Omand, *The Bounty System in Ontario*, 14 J. WILDLIFE MGMT. 425, 425 (1950) (“[E]arly in the eighteenth century a bounty was placed upon wolves in Canada.”).

or analytical justification.”³⁰¹ A functionalist paradigm in property has left little room, as several scholars have observed, for cultural accounts of property institutions.³⁰² This has led to recent efforts to “reculturalize” property theory, which accept assumptions of utilitarian bargaining, but show that these assumptions fail to account for meaningful historical differences among property regimes.³⁰³ Insofar as bounty statutes influenced property development, they offer promise to this enterprise.

A. A Cultural Preference

The first explanation is that the legislature’s preference came from cultural attitudes. Among the electorates that passed the animal bounty statutes, livestock was a culturally preferred way of organizing economic life. The bounty statutes evidence a preference to expand livestock and to eradicate the wild animals, particularly wolves, that threatened that expansion. This preference was cultural in that it was a commitment better explained by the “widespread social internalization of moral values”³⁰⁴ than by what rational empirical discovery, or self-interested utilitarian bargaining, alone would have produced.

Historians of wolves in the United States have mostly concluded that wolf eradication was driven by cultural attitudes.³⁰⁵ If culture explains the preference for wild animal eradication and its influence on American property regimes, then this is a promising road for recent interest in reculturalizing property theory.³⁰⁶

Legal historians of American wolf decline have often offered cultural explanations for human policies toward wolves. The Article has already discussed several examples from environmental legal scholarship,³⁰⁷ like Dale Goble’s description of

³⁰¹ Zhang, *supra* note 30, at 355.

³⁰² See Ellickson, *supra* note 28, at 44–45; Wyman, *supra* note 8, at 119–27; Zhang, *supra* note 30, at 355–60.

³⁰³ Zhang, *supra* note 30, at 366.

³⁰⁴ *Id.* at 348.

³⁰⁵ See generally TOBER, *supra* note 35, at xviii (“It should be clear from this brief discussion that the particular evolution of property rights in wild animals depended critically on the cultural and institutional setting as well as on the theoretical concerns of resource management.”).

³⁰⁶ See, e.g., Zhang, *supra* note 30, at 366–76 (outlining a cultural theory of how property institutions form and demonstrating how this theory may explain some large-scale institutional differences between property regimes).

³⁰⁷ See *supra* Part I.

wolves as “beasts of myth and magic.”³⁰⁸ For Goble, the rise of wolf protections in the late twentieth century had to do with changing attitudes toward the wilderness.³⁰⁹ After Americans succeeded in taming the wilderness and in ridding the land of certain kinds of animals, they began to reflect on what they had lost, and to cherish the idea of wild places.³¹⁰ Other environmental scholars have drawn similar conclusions. Martin Nie argues that wolves moved in the cultural imagination from scapegoats for hardships into a means of atonement for the destruction of the wild.³¹¹ Holly Doremus focuses on wolves’ status as shifting symbols.³¹² Michael Burger emphasizes wolves’ mythic qualities in the American imagination.³¹³

Outside of legal scholarship, similar explanations predominate for people’s attitudes toward nature and wild places. The historian Virginia DeJohn Anderson, in a study of the influence of livestock on American colonization, concluded that agriculture “has never been exclusively an economic activity, but has always reflected cultural assumptions distinctive to particular groups of farmers.”³¹⁴ The geographer Michael Williams described early European-American views of forests as “dark and horrible”—ideas which went back “into the culture of their ancestors in Europe, but were to be reenacted in a dialogue between the European pioneer’s mind and the American environment.”³¹⁵ The historian Jon T. Coleman attributed American attitudes toward wolves to the influence of European folklore.³¹⁶ Historians of the bounty statutes, in environmental

³⁰⁸ Goble, *supra* note 3, at 101.

³⁰⁹ *Id.* at 105.

³¹⁰ *Id.*

³¹¹ Nie, *supra* note 70, at 2. Striking, and perhaps related, is a contemporary phenomenon in which some people view wolves with more alarm than other wild animals, even those that cause more harm to domesticated animals. A 2010 study concluded that, in Wisconsin:

[W]olves were responsible for less damage than other wildlife species such as . . . bears In Wisconsin, wolves injured or killed only a small fraction of domestic animals, far less than annual losses to other wildlife and feral dogs. For example, the federal agency responding to wildlife complaints received 1458 about bears in the same period that wolves were blamed in 206 complaints.

Agarwala, Kumar, Treves & Naughton-Treves, *supra* note 117, at 2949 (citations omitted). The study nonetheless found that “residents viewed wolves more negatively.” *Id.*

³¹² Doremus, *supra* note 53, at 1163.

³¹³ Burger, *supra* note 71, at 30–36.

³¹⁴ ANDERSON, *supra* note 18, at 6.

³¹⁵ WILLIAMS, *supra* note 257, at 10.

³¹⁶ COLEMAN, *supra* note 265, at 37–51.

law and other fields, have described them as resulting from a cultural disapproval of wolves and the wild.

On this account, electorates that had socialized the moral value of promoting livestock and clearing the wilderness decided to enact bounty statutes on the basis of this wish.

B. A Materialist Policy

That environmental historians emphasize cultural explanations does not resolve the matter. It might be that the scholars who are drawn to the history of wolves and the wild favor methodologies that emphasize cultural explanations.³¹⁷

A materialist account of the preference to eradicate wildlife begins from the perspective of policymakers. Wildlife eradication was carried out under the aegis of the state, rather than out of private contracting. Over and over again, for three centuries, states paid for eradicating the wild. Lawmakers deemed private methods of removing wolves and other large predators insufficient on their own, even after the invention of powerful poisons like strychnine, to carry out states' objectives. Private actors would not have contracted with one another to accomplish the same policy. Those who wanted to eradicate wolves would have been unable to convince others to carry out the task through private contract.³¹⁸ Not everyone shared the preference to eradicate these animals. Still others might have shared the preference, but would have tried to free-ride, hoping for other landowners to pay for bounties in their area. This might have produced a collective action problem that only states could resolve.

On this view, governments recognized that developing livestock would be beneficial to some other value, like security or power, that can be described in materialist, non-cultural terms. This explanation falls back on property theory's traditional interest in materialism and development.³¹⁹ The

³¹⁷ Irrespective of cultural attitudes toward wolves, animal bounty statutes targeted not just wolves, but a wide variety of native animals, including all of the other large predators like cougars and bears, and different smaller animals depending on the location and time period. *See supra* Part II.

³¹⁸ This was true even though the wolf eradicators were presumably in powerful positions within the electorates of many of these jurisdictions, as they managed to get the laws enacted.

³¹⁹ Property theorists can also derive corresponding normative conclusions for policymaking. *See, e.g.*, HERNANDO DE SOTO, *THE MYSTERY OF CAPITAL: WHY CAPITALISM TRIUMPHS IN THE WEST AND FAILS EVERYWHERE ELSE* 5–7 (2000) (contending that formalized property systems are necessary conditions for the generation of represented capital). This is not to say that the consensus is exclusively economic. The behavioral revolution in cognitive science has also influenced the functionalist

lawmakers who enacted the bounty statutes were better informed on the advantages of eradicating the wild than those members of the public who did not share the preference for eradicating the wild. They recognized that the benefits of livestock expansion exceeded the costs of extirpating wild animal species, and so imposed bounty statutes that were socially beneficial, even if not universally wanted.³²⁰ This argument could concede that the bounty statutes were not maximally efficient³²¹ and nevertheless say that, at least for certain species, the bounty statutes succeeded in their eradication goal, and that maximally efficient alternatives were not available, so the statutes were a second-best efficient solution to the problem.³²²

school, offering enhanced models for how people behave in relation to property beyond the rational ideal. Thus, for example, Henry Smith has shown that law and economics can use principles from the cognitive sciences to refine its analysis of “the architecture of property.” Henry E. Smith, *On the Economy of Concepts in Property*, 160 U. PA. L. REV. 2097, 2128 (2012).

³²⁰ See Dean Lueck, *Property Rights and the Economic Logic of Wildlife Institutions*, 35 NAT. RES. J. 625, 670 (1995) (arguing that “[a]lthough it is possible to imagine wildlife institutions superior to those existing, the evidence presented shows that observed evolution and variation in ownership is consistent with wealth maximization. Because most features of Anglo-American wildlife institutions have persisted for two centuries, the likelihood of efficiency seems high compared to the possibility of pervasive inefficiency.”).

³²¹ As discussed in Part II, some species, like wolves, were extirpated, whereas other targeted species, like coyotes, probably expanded their range during the bounty era. And, even for those species that the statutes succeeded in driving to extinction, incentives were in place for private hunters to secretly maintain breeding populations, which happened in at least some instances. Coggins & Evans, *supra* note 4, at 827. It thus appears that eradication was not achieved as cheaply as it might otherwise have been.

³²² Dean Lueck has argued, for example, that

[i]n the absence of coordination between landowners, especially those with small plots, the damage caused by wild stocks may not be effectively curtailed. Acting independently, each landowner has the incentive to hold out in the hope that others will take steps to reduce the losses inflicted by their common enemy. Bounty laws, which provide state payment for the killing of undesirable animals, have been one way to respond to this risk.

Dean Lueck, *The Economic Nature of Wildlife Law*, 18 J. LEGAL STUD. 291, 320 (1989). In this model, the coordination problem explanation is assumed, rather than demonstrated. See *id.* (noting that, “in cases where contracting costs were overcome, private landowners have hired hunters and trappers to reduce the stocks of undesired animals.”). Absent an independent reason to believe that statutes promote wealth maximization over time, these facts might be taken as evidence for an opposing conclusion. That landowners bargained to reduce stocks of undesired animals in some cases and not others suggests that public choice special interests lobbying better explains the statutory results. Livestock owners might think of mountain lions as undesirable; landowners who want to establish a wildlife park might have a different view. Whether wealth maximization or lobbying better explains the statutory results will rest on historical, rather than theoretical, facts.

But to think of animal extermination as a culture-neutral free rider problem still requires that one conceive of wild animals as a harm in the first place.³²³ If bounty statutes were salutary solutions to free rider problems, rather than inefficient public subsidies to the livestock industry, then ridding the land of wolves and other animals must be a benefit in some other capacity.³²⁴ And it is difficult to conceive of this policy as a benefit without reference to cultural ideas.

The difference between the cultural and materialist explanations seems to hinge on where the preference for livestock came from—whether electorates consciously instantiated the livestock policy toward a material end. If it was not a conscious choice toward a material end, then the choices of the electorate and policymakers within the state need something else—culture, or social norms, values, and beliefs that are commonly embraced and internalized without empirical discovery or analytical justification—to help explain their actions.³²⁵ This

³²³ Free rider problems emerge when there is a public benefit to which individuals are motivated to contribute as little as possible. See Oliver Kim & Mark Walker, *The Free Rider Problem: Experimental Evidence*, 43 PUB. CHOICE 3, 3 (1984).

³²⁴ Such possibilities include that livestock-based societies on the European model could support larger populations, greater infrastructure, more powerful armies, or the like. Development in this sense means increased power, population size, or security innovations. If livestock expansion was a path to increased power, then this looks like a benefit that can be described in material, non-cultural terms. But this argument has now departed from the traditional, Demsetzian functionalist idea. Development has a new meaning, on which centralized government authority causes certain kinds of land uses, and perhaps certain kinds of land distributions, to come into effect in order to effectuate policy outcomes. Bottom-up utilitarian bargaining is no longer the focus; again, the state is needed. See Wyman, *supra* note 8, at 122. But once this difference is observed, the materialist argument remains. If governments made a conscious choice toward a particular end, and if the end was material, then this might avoid the need for culture to explain property institutions.

³²⁵ One path for research is the mechanisms by which these cultural preferences could have made themselves law. Legal scholars operating within social science traditions have become interested in the mechanisms by which cultural values might influence behavior. On one view, internalized cultural values institute status distributions within societies, which cause greater or lesser bargaining power depending upon cultural norms. See Zhang, *supra* note 30, at 392–97. Here, *Property in Land* is also instructive. “Most individuals,” Ellickson wrote, “have an ideology—derived from experience, philosophy, religion, or whatever—that identifies important desiderata in the organization of social life.” Ellickson, *supra* note 24, at 1345. Ideology in this sense, which comports with the definition of culture used elsewhere, might be responsible for what Ellickson calls the “Anglo-American exaltation of decentralized ownership of land,” which underlay, among other things, the “Jeffersonian wish for a polity of yeoman farmers.” *Id.* at 1317. This aspect of political economic thought was an offshoot of classical Scottish economics, as well as the French Physiocratic School, a now relatively unknown branch of economic theory that considered agriculture to be the sole

would explain the contrast between the livestock preferences among settlers and the preference for lighter footprint crop farming among certain Indigenous groups.³²⁶

Any causal account of the relationship between culture, law, and market economics over a long time period is probably best described as an interrelated relationship, with causal arrows proceeding both clockwise and counter-clockwise. Culture influences legal rules, which shape market outcomes. Market outcomes also influence legal rules like property, which, over time, likely influence cultural practices. Thus, a set of reinforcing patterns might emerge. These ideas are intended as explorations rather than assertions, but the history of statutory treatment of wild animals thus might offer inquiries throughout legal scholarship.

CONCLUSION

Animal bounty statutes offer insights for the history and theory of property. First, they reveal a method that state and municipal governments have used to regulate land use since long before the invention of municipal zoning restrictions in 1916. A preference for livestock expansion made itself law in many geographic regions. The subsidy lasted for more than three centuries, while vast changes to American economic development were otherwise occurring. Not including these policies in one's analysis of land use history risks undercounting one aspect of state regulation.

Whether they intended to or not, the lawmakers were also subsidizing private property in land. Livestock-based settlements that otherwise would have had to contend with predation, a large event that would have raised the value of collective grazing grounds, found help from government policy. This raised the comparative value of privately owned land. Private property in land was thus encouraged by government acts. This subsidy raises questions about how close-knit communities might have bargained in the absence of government intervention.

Finally, the statutes suggest an avenue for research into the influence of cultural preferences on property institutions. A preference for livestock and against wild lands was common among European-American settlement communities. There

source of surplus value. Marianne Johnson, "More Native Than French": American Physiocrats and Their Political Economy, 10 HIST. ECON. IDEAS 15, 16–19 (2002).

³²⁶ See Greer, *supra* note 239, at 369.

are reasons to think state governments' targeting of wolves were induced by cultural preferences, and that subsequent land use and property regimes were thus influenced by culture. This history can enrich functional conceptions of property regimes.

If wilderness bounties were subsidies for particular forms of land use and property allocations, then this might reveal something about the statutes' demise in the latter part of the twentieth century. The displacement of the widespread policy of extirpating particular species by legal protections for the very same species may be explained through the cultural, scientific, and economic changes noted by environmental historians. But another aspect of the story involves the relationship between collective and private interests. Bounty statutes bolstered the private livestock industry, and in their effect furthered the private division of land. The conservation measures that replaced them were collective, rather than private, recognizing wild animals and other aspects of the environment as part of a common heritage. By choosing to safeguard that heritage by limiting the private destruction of wild lands, public policy shifted in a deeper sense.