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The Commons as a Model for Ecological Governance

In this chapter, we outline the potential of the Commons as a model or template for ecological governance favorable to the rights of both Nature and human beings.[1] We do so, first, by describing the near-forgotten history of commons, its rediscovery by social scientists over the past thirty years, and the burgeoning global commons movement that is now emerging. We do so also by clarifying how the worldwide commons movement is demonstrating a range of innovative, effective models for assuring diverse expressions of the right to a clean and healthy environment

Both the past and contemporary history of commons are important because they show the feasibility of commons governance in a wide variety of circumstances over centuries. In the past thirty years, contemporary scholarship has rediscovered commons, illuminating their cooperative management principles as a counterpoint to conventional economics and particularly its growth imperatives, artificially created scarcities, and fealty to consumption as a preeminent goal. A key lesson we shall learn is that commons have a natural vitality conducive to environmental (and social) well-being.

The overriding challenge for our time, as several times emphasized, is to devise an architecture of law and public policy that can legally recognize and support this vitality. Commoners (sometimes the general public, other times

[1] Hereinafter, as here, we use the phrase "the Commons" or more precisely "the ecological Commons" (capitalizing "Commons") as convenient shorthand for a distinct paradigm of ecological resource governance and management (as when commoners manage one or more ecosystems or natural resources directly themselves) or governance according to commons principles (as when commoners delegate their managerial authority conditionally). We refer to "commons" (lowercase) in all other, more generic instances. For more on our use of the term "commons" generally, *see supra* Prologue note 21; *see also supra* Ch. 4 note 117 and accompanying text on the definition of "commoning" by historian Peter Linebaugh.

a distinct community) must be empowered to prevent market enclosure of their shared natural resources and directly advance and defend their human and ecological rights – and the State must at least sanction, if not affirmatively support, such activity. Either way, it is clear that the State cannot play this role without first understanding the value proposition of commons and then adopting suitable legal principles and policies to support them.

Let us be clear. The challenge is not to establish a separate and "pure" ecological Commons governance system, untouched by either the State or the Market. This is arguably impossible in any case. Commons tend to be inscribed within larger systems of power, and are intertwined with the State and Market in complicated ways. It is important, however, that State Law and public policy empower the ecological Commons and broader Commons Sector on their own terms so that they can preserve their essential integrity and value proposition. This chapter seeks to advance this perspective by examining the history, scholarship, and contemporary emergence of the Commons paradigm.

A. THE CHARACTERISTICS OF COMMONS

We have argued so far that the Commons as an ecological governance paradigm may be understood less as an ideology than as an intellectual scaffolding that can be used to develop innovative legal and policy norms, institutions, and procedures relative to a given resource or set of resources. These new structures, however, do not evolve of themselves, nor are they State-directed. Instead, they are animated by commoners who have the authority to act as stewards in the management of the given resource. A commons constitutes a kind of social and moral economy. It is also a matrix of perception and discourse – a worldview – that can loosely unify diverse fields of action now seen as largely isolated from one another.

But what is a commons *exactly*?

In its broadest sense, a commons is a governance system for using and protecting "all the creations of nature and society that we inherit jointly and freely, and hold in trust for future generations."[2] Typically, a commons consists of non-State resources controlled and managed by a defined community of commoners, directly or by delegation of authority. Where appropriate or needed, the State may act as a trustee for a commons or formally facilitate specific commons, much as the State chartering of corporations facilitates Market activity. A commons, however, generally operates independent of State control and need not be State sanctioned to be effective or functional.

[2] *The State of the Commons: A Report to Owners from Tomales Bay Institute* 3 (2003).

Although commons and particularly ecological commons often are associated with physical resources (land, air, water) or, more precisely, pools of shared physical resources, they are equally – indeed, most importantly – sociocultural phenomena. A commons is primarily about the self-determined norms, practices, and traditions that commoners themselves devise for nurturing and protecting their shared resources. In this acute sense, it is to be distinguished from a *common-pool resource* (CPR), a term often used to describe a good (often depletable) that is usually expensive to prevent others from using, though not impossible. Economists would say that a CPR is "subtractible" – it can be used up or become congested so that one person's use may limit another's use.

To distinguish a CPR from a commons is important because there are many possible economic, political, and social arrangements for protecting and maintaining a CPR. One can imagine *a private owner* managing a forest CPR, for example, exercising exclusive control of the right to sell access and use rights. Or one can imagine *government* taking charge of a river irrigation system and deciding who may have what quantities of water, and under what terms. Or, as so often happens, a CPR could be treated as an *open-access regime* in which there are no preexisting property rights or rules for managing the resource; everyone would treat the water, fish, or timber as free for the taking.

A commons, however, is a quite a different thing. It is a regime for managing a CPR that eschews individual property rights and State control. It relies instead on common property arrangements that tend to be self-organized and enforced in complicated, idiosyncratic social ways, and it generally is governed by what we call *Vernacular Law*, the unofficial norms, institutions, and procedures that a peer community devises to manage community resources on its own. State Law and action may set the parameters within which Vernacular Law operates, but it does not directly control how a given commons is organized and managed.[3]

In this way, commons operate in a quasi-sovereign manner, largely escaping the centralized mandates of the State and the structures of Market exchange while mobilizing decentralized participation on the ground. A commons enacts new forms of governance without becoming government. In a sense, it mediates the tensions that normally exist between conventional politics and society, and between Nature and community. Drawing on its self-created Vernacular Law, a commons asserts its own form of moral and social sovereignty,

[3] An analogy might be State chartering and oversight of corporations: general policy principles and accountability are required, but much leeway is granted to how basic responsibilities are implemented.

developing new norms for defining legitimate social action and new rule sets for community governance.

As we shall see later in this chapter, commons governance and resource management can take many forms. Among the more salient are *subsistence commons* such as forests, fisheries, wild game, arable land, pastures, and irrigation and drinking water; *social and civic commons* such as public schools and libraries, parks, community festivals, civic associations, and affinity groups; and *global commons* such as the planetary atmosphere, oceans, the polar regions, biodiversity, and the human genome. This last class of commons tends to be more aspirational than juridical at this point in history, and thus might best be thought of as CPRs in need of governance structure, preferably commons and rights based. In addition, there are *digital commons* on the Internet, such as free and open-source software, wikis like Wikipedia,[4] open-access publishing, collaborative Web archives, and content pools tagged with Creative Commons licenses.

Studying commons requires that we transcend the limitations of conventional economics by taking into account the larger individual, social and ecological context of economic activity – and, indeed, the *particularity* of a given resource and governance system. We must scrutinize the actual costs and benefits of economic activity in their entirety and see them holistically, in context, and not just as they affect individuals. We must evaluate a community's values, norms, and social practices. The theater of relevant inquiry extends well beyond the financial and quantitative factors that a for-profit business enterprise regards as germane. To study commons is to venture into anthropology, environmental science, political science, and social psychology, as well as culture, the empirical study of specific stewardship practices, and the law. There is no universal template of a commons for the simple reason that each is grounded in particular, historically rooted, local circumstances.

The study of economics remains essential, however, if only because commons are chronically vulnerable to "Market enclosures," which occur when private business enterprises, often with the overt or tacit support of government and State Law, privatize and commodify ecological resources in ways that may destroy a commons and damage its CPR. Enclosure is about dispossession. It privatizes and commodifies resources that may be legally owned or used by a distinct community (a rainforest, a lake, an aquifer) or that morally belongs to everyone (the human genome, the atmosphere, wilderness).

4 Wikis are simple web pages that many different people can edit sequentially, enabling the knowledge and perspectives of groups to be synthesized.

Enclosure typically aims to reap private market gains from a common asset without taking account of its full, long-term market and nonmarket value. It also seeks to dismantle the commons-based culture (egalitarian co-production and co-governance) and supplant it with a market order (money-based producer/consumer relationships and hierarchies). Markets tend to have thin commitments to localities, cultures, and ways of life because such commitments may "interfere" with market exchange and thereby diminish (monetary) wealth creation. For most commons, however, socially rooted commitments to a particular place, resource, and community are essential.

This power to enclose a commons stems in large part from the metaphors and rhetorical terms that valorize private property rights. In this regard, John Locke's writings continue to provide the prevailing moral logic and legal justifications for private property rights – and, not incidentally, for the dispossession and slaughter of indigenous peoples and other victims of colonial economic and political expansion. Locke starts by asserting that lands lying outside the legal jurisdiction of the State and international agreements amount to *terra nullius*, or empty land (sometimes referred to as *res nullius*, or a nullity).[5] He declares that such resources belong to no one and are therefore free for the taking.

By this reckoning, a resource considered *res nullius* becomes valuable only as individuals apply their labor and ingenuity (by extracting it from the land, improving it, making it marketable, etc.), which is said to confer a moral justification for private ownership. To victimized commoners who may have used a resource in a collective fashion for nonmarket, subsistence purposes, however, such acts of appropriation, or enclosures, are experienced as profound violations. For them, naming a commons as a commons is the first step toward protecting and reclaiming collective resources. It is a way of reclaiming what they once enjoyed as a matter of right; in a larger sense, it is about reclaiming their identities, traditions, and culture. The commons is seen as a way of asserting a different set of cultural and productive relationships with natural resources.

In a sense, enclosure is invisible to mainstream political culture because the law chooses to enshrine a different "epistemic imaginary," as Kathryn Milun

5 Kathryn Milun notes that Locke's *Two Treatises of Government* (1690) "is the preamble for the justification of the European natural rights theory of property which dispossessed Native Americans of the land." She adds, "Historical references to both *terra nullius* and *res nullius* domains show that global commons and Indigenous peoples are caught in an epistemic imaginary where metaphors of vacant, empty space support a legal rhetoric that legitimates dispossession." Kathryn Milun, *The Political Uncommons: The Cross-Cultural Logic of the Global Commons* 8, 11 (2010).

puts it.[6] The law sees only the virtues that flow from private property rights and market activity, as well as from the associated cultural ramifications: the less attractive aspects of colonial conquest amount to offstage phenomena. Issues of coercion, disenfranchisement, underpayment, or simple trespass do not exist as a matter of law or cultural perception because the law's field of vision has already declared this theater of action *terra nullius*. Quite literally, the law has no way of representing the commons or enclosure within its epistemological framework. As Kathryn Milun notes in her book, *The Political Uncommons*, "International law is like a radar system. It creates a gridded screen where certain peoples and cultures appear and others disappear. They disappear because they fall under the radar: they have no standing in the jurisdictional radar system and therefore cannot be seen on the grid."[7]

The logical failing of Locke's epistemic imaginary is its conceit that any element of Nature can truly exist as *res nullius* – an inert object that can be privately owned without regard for its connections to a given community, humanity as a whole, or larger natural ecosystems. From time immemorial, indigenous peoples and peasants have relied on open-access CPRs for subsistence and cultural survival, without the legal formality of a title or contract as required in western State Law. Surely their customary subsistence use constitutes some form of moral and historical entitlement that should not be regarded as a nullity simply because a commercial enterprise or State took pains to appropriate something that did not belong to it in the first place. Similarly, as inhabitants of the planet, every human being may not have formal legal ownership of the atmosphere or oceans, yet we do have at least a collective ethical entitlement to their preservation as healthy planetary ecosystems – some say even a *legal* entitlement, in fairness to future generations at least.[8]

Usually omitted from Locke's theory of private property rights is his significant added qualification: that any private appropriations are limited to "at least where there is *enough, and as good, left in common for others*."[9] Locke does not develop this idea; he is, after all, intent on establishing the moral and legal justifications for private property. Still, he did raise the issue, doubtless because it simply could not be ignored: the exercise of private property rights can encroach on and even destroy resources that belong to everyone.

Nonetheless, the State/Market even today tries hard to disguise this hidden tripwire in the Lockean theory of private property rights. It has become

6 *Id.* at 2.
7 *Id.* at 49.
8 *See, e.g.*, Brown Weiss, *supra* Ch. 2 note 6; *see also* Weston (2012), *supra* Ch. 3 note 1; and Weston (2008), *supra* Ch. 3 note 4.
9 John Locke, *Two Treatises of Government* 329 (1965) (emphasis added).

accustomed to talking about oceans, outer space, biodiversity, and the Internet as resources that belong to no one, or as *res nullius*, therefore justifying unchecked private exploitation in the Lockean tradition, while simultaneously calling such resources "global commons" that belong to everyone, or are *res communes*.[10] This rhetorical feint allows the State/Market to have it both ways: it can plunder planetary CPRs in an imperialistic, free-market tradition (ignoring the sovereign needs of Nature and extraterritorial human beings) and yet imply that these planetary resources are being managed as a commons for the benefit of everyone and nonmarket purposes when, in fact, they are not.[11] This rhetorical strategy continues to this day – an issue that we revisit in Chapter 7, Section C.

Beyond such excursions into legal philosophy, contemporary enclosures are typically justified in fairly mundane terms – that they are a necessary means to increase production of material wealth. This rationale has made enclosure a pervasive dynamic. Multinational bottling companies are laying claim to groundwater supplies and freshwater basins that once sustained local ecosystems and communities.[12] Agriculture-biotech companies are actively

10 *See, e.g.* David Bollier, "Global Enclosures in the Service of Empire," in *The Wealth of the Commons: A World Beyond Market and State* 213 (David Bollier & Silke Helfrich eds., 2012), which describes how NATO is actively setting policies for the "global commons" of oceans, outer space, and the Internet. It essentially regards these resources as *res nullius* whose governance can be unilaterally imposed on them (by NATO countries) without regard to other considerations.

11 Kathryn Milun summarizes helpfully: "*Res nullius* . . . is the doctrine through when the cultural logic of empty space works in international law. Once a space is declared legally 'empty' of the social relations of belonging, [it] can achieve the status of *res communis* (things [sic] which belong to everyone) if states can agree on the proper conventions. Without such conventions, these commons remain *res nullius* and legally open access to a seemingly limitless exploitation, privatization and a variety of unrelated practices. Much of the global commons today endures in this latter state. Here, it tends to be framed in a rhetoric of *res communis*, space that belongs to everybody, even as in practice it is treated as *res nullius*, space that belongs to nobody. Understanding the paradoxical and dynamic relation between *res nullius* and *res communis*, I argue, allows us to better understand the rhetorical strategies that keep the global commons malingering in its present dispossessive state." MILUN, *supra* note 5, at 6. Some of the confusion between *res communis* and *res nullius* must be traced to the academic custom of talking about the atmosphere, biodiversity, and telecommunications as "global commons" even though none has been legally recognized or actually managed as commons. In a technical sense, as we observe in our text immediately preceding note 4, *supra*, such planetary resources remain common-pool resources, not commons, until they are subject to a viable governance regime that benefits all relevant commoners and draws upon their participatory "commoning" practices.

12 *See, e.g.*, Maude Barlow, *Blue Covenant: The Global Water Crisis and the Coming Battle for the Right to Water* (2007); Elizabeth Royte, *Bottlemania: Big Business, Local Springs and the Battle over America's Drinking Water* (2008); Alan Snitow & Deborah Kaufman with Michael Fox, *Thirst: Fighting the Corporate Theft of Our Water* (2007).

supplanting conventional crops with proprietary, genetically modified crops whose seeds are sterile or may not be shared.[13] High-tech industrial trawlers are eclipsing coastal fishing fleets and overexploiting ocean fisheries to the point of exhaustion.[14] Biotech companies and universities have now patented approximately one-fifth of the human genome.[15] Many companies enjoy free or cut-rate access to minerals, grazing areas, and timber on public lands.[16]

Enclosures are often tolerated and even welcomed by some because one person's enclosure is another person's idea of freedom, progress and prosperity. The private economic gains generated by converting natural resources into marketable products are enormous. Enclosures also tend to produce secondary, spillover benefits for society, such as jobs, products, and economic growth. Yet these gains can be illusory or unsustainable. When the scope of property rights and Market activity compromises the integrity of ecosystems, "economic development" is but another name for cannibalizing Nature's capital. In such circumstances, Market activity becomes ecologically destructive and antisocial, and does not provide a net gain for society. As economist Herman Daly pointed out in his 1996 book, *Beyond Growth*,[17] the core problem with modern-day economic theory is that it fails to differentiate between mere growth in the volume of Market activity (e.g., Gross Domestic Product) and healthy, socially beneficial development that can be ecologically sustained over time.

Commons offer a vocabulary for talking about the proper limits of Market activity – and enforcing those limits. Commons discourse helps force a conversation about the Market externalities that often are shunted to the periphery of economic theory, politics, and policy-making (as discussed in Chapter 1). It asks questions such as the following: How can appropriate limits be set on the Market exploitation of Nature? What legal principles, institutions, and procedures can help manage a shared resource fairly and sustainably over time, sensitive to the ecological rights of future as well as present generations?

There is a rich body of academic literature that explores many of these questions, and much of it is focused on the use of natural resources in the

[13] *See, e.g.*, Keith Aoki, *Seed Wars: Controversies and Cases on Plant Genetic Resources and Intellectual Property* (2008).
[14] *See, e.g.*, Charles Clover, *The End of the Line: How Overfishing Is Changing the World and What We Eat* (2008); Daniel Pauly & Jay Maclean, *In a Perfect Ocean: The State of Fisheries and Ecosystems in the North Atlantic Ocean* (2003).
[15] Kyle Jensen & Fiona Murray, "Intellectual Property Landscape of the Human Genome," 310 Science 239, 239 (2005).
[16] *See, e.g.*, David Bollier, "The Abuse of the Public's Natural Resources," in Bollier, *supra* Prologue note 2, at 85–97.
[17] Herman E. Daly, *Beyond Growth: The Economics of Sustainable Development* (1996).

so-called developing world. There has been far less examination of how modern, industrialized countries might balance Market activity and the environment more prudently. This is due in part to the intellectual premises and worldview of neoliberal economics, which, since the collapse of the Soviet Union in 1991 especially, has become the dominant framework for political culture and public policy in industrialized societies worldwide.

In this political and cultural context, the idea and practice of commons as a system of management and culture has been largely marginalized and ignored over the past generation – doubtless a reason why the right to environment has surfaced in recent years as a serious if struggling claim against the dominant order. Mainstream economists presume that individual property rights and Market exchange are the most efficient, responsible means for allocating access to, and use of, natural resources and for generating material wealth and progress. Political scientist and political economist Francis Fukayama famously proclaimed "the end of history" in 1991 to celebrate the triumph of neoliberal markets and liberal democracy.[18] It is no surprise that in respectable circles commons are generally seen as failed management systems, inefficient, quaint vestiges of premodern life, or all three. Yet, the history of the Commons tells a different story.

B. A BRIEF HISTORY OF COMMONS LAW AND THE RIGHT TO THE ENVIRONMENT

Commons history extends into the deep mists of prehistory as a set of social practices and, as societies became more organized, into formal law as well. It has flourished as if by spontaneous self-organization in human societies with and without the support of larger systems of power. Formal law is by no means essential to the functioning of a commons, though it can certainly help many types of commons function more effectively, if only by reducing the threat of enclosure. In any case, "commoning" – the social practices by which commoners manage their shared resources – has been a pervasive and durable governance system for assuring judicious and equitable access to and use of Nature.[19]

The instinct to establish commons may be a deeply rooted aspect of humanity. A growing body of scientific evidence suggests that social trust and cooperation may be an evolutionary force hard-wired into the human species.[20]

[18] Francis Fukayama, *The End of History and the Last Man* (1992).
[19] For a definition of "commoning" steeped in history, *see supra* Ch. 4 note 117.
[20] Samuel Bowles & Herbert Gintis, *A Cooperative Species: Human Reciprocity and Its Evolution* (2011).

If true, many eighteenth- and nineteenth-century notions of human beings as autonomous, selfish, rational individuals, on which entire political and economic philosophies and institutional structures are built, deserve to be revisited and rethought. The idea of *homo economicus*, which modern-day economists and political theorists presume to be a universal norm, may in fact have little basis in fact or history.

The more relevant matrix of human behavior, according to many evolutionary scientists, may be social exchange. When geneticists, evolutionary biologists, and mathematical game theorists evaluate the "fitness" of an evolutionary adaptation or mutation, they often look for traits that cannot be displaced by other mutations or phenotypes. These traits are called "evolutionary stable strategies" (ESS) and, as such, are regarded as deep and enduring aspects of human nature. In summarizing some of this literature, Clippinger and Bollier write:

> Recent studies have argued that the notion of "reciprocal altruism" is an ESS. So are many innate "social contracting algorithms" of the human brain. What makes this evidence especially compelling is that the ESS approach can successfully predict what kinds of "strategies" and even special competences will emerge in different social exchange networks. For example, many different species – vampire bats, wolves, ravens, baboons, and chimpanzees – exhibit similar social behaviors and emotions such as sympathy, attachment, embarrassment, dominant pride, and humble submission. Both ravens and vampire bats can detect cheaters and punish them accordingly – a skill needed to thwart free-riders and maintain the integrity of the group.
>
> This indicates that "cooperative strategies" have evolved in different species and, because of the evolutionary advantages that they offer, become encoded in their genome. While much more needs to be learned in this area, evolutionary sciences appear to be identifying some of the basic principles animating the "social physics" of human behavior.[21]

If human beings are neurologically hard-wired to be empathetic and cooperative, as many studies suggest, and if this occurs at the species level and not just at an individual level, then rational-actor models of human behavior – which

[21] John Clippinger & David Bollier, "A Renaissance of the Commons: How the New Sciences and Internet Are Framing a New Global Identity and Order," in Rishab Aiyer Ghosh, *CODE: Collaborative Ownership and the Digital Economy* 266–7 (2005). A fuller treatment of these themes can be found in John Clippinger, *A Crowd of One: The Future of Individual Identity* (2007).

are the basis for so many game theory and "prisoner's dilemma" scenarios – may misrepresent how human beings actually behave "in the field."

In many respects, it makes sense to see social exchange as the framework in which humans and societies develop. Personal identity cannot really exist, after all, without history and culture; people are not really decontextualized, atomistic units. Language is thought to have arisen as a way to serve important social bonding purposes, and evolutionary anthropologists and geneticists have documented the presence of reciprocal altruism in various species.[22] This suggests that principles of natural selection may be manifested in the genes and physiology of *homo sapiens*, and that by the light of twenty-first-century science, cooperative behaviors may constitute a contemporary form of natural law.[23]

Social Darwinism is a cautionary history about presuming more about human nature than scientific evidence can support. Still, it is encouraging that many scientists believe that cooperation is an inborn human capacity that enhances our long-term struggle to survive. This is a more hopeful, socially constructive storyline for political theory and economics than that of the Hobbsean savage that has prevailed for centuries.

Abundant evidence of commoning can be found throughout human history. Hunter–gatherer and foraging societies were often nomadic, following seasonal and migratory changes for subsistence, which makes it unlikely that they allowed private-property rights in land.[24] Cooperation and collective action were certainly factors in the development of prehistoric agriculture. As one scholar argues, territoriality and storage were necessary for agricultural experimentation: neither could have evolved among individuals acting in purely selfish ways. "No family is strong enough to defend its fields or stores of food in

[22] *See, e.g.*, Leda Cosmides & John Tooby, *Evolutionary Psychology: A Primer* (2002); Elliot Sober & David Sloan Wilson, *Unto Others: The Evolution and Psychology of Unselfish Behavior* (1998).

[23] *See, e.g.*, Robert Axelrod, *The Evolution of Cooperation*, Revised Edition (2006); Axelrod, *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration* (1997); Peter Kollock, "Social Dilemmas: The Anatomy of Cooperation," 24 *Ann. Rev. Soc.* 183–214 (1998).

[24] In instances where hunter–gatherers did attach themselves to a fixed piece of land (becoming so-called "central-place foragers"), they developed communal plots of land for shared use. In the Rio Asana valley of the Andean Highlands, for example, residential structures were grouped around a single public structure that was "used as a dance floor, public space or . . . as a probable focus of intensive, restricted worship." Mark Aldenderfer, "Costly Signaling, the Sexual Division of Labor, and Animal Domestication in the Andean Highlands," in *Behavioral Ecology and the Transition to Agriculture* 167, 180 (Douglas J. Kennet & Bruce Winterhalder eds., 2006) [hereinafter "Behavioral Ecology"].

settings where everyone is motivated wholly by self-interest," writes Robert L. Bettinger.[25] Religion also played some role in prehistoric conceptions of land ownership.

Water provides the earliest clear examples of communal resource use and management, perhaps because water is indispensable to life. Most societies have developed systems for sharing water used for navigation, fishing, irrigation, and drinking. Collective management was made easier by the constant flow of water through the hydrological cycle, which made the private capture and enclosure of water difficult (a barrier that modern-day appropriators have overcome through innovative technologies and antisocial laws).

In eastern Africa, early nomadic Somalians who traveled great distances across deserts dug wells by hand at regularly spaced intervals to provide drinking groundwater for their caravans of people and cattle. These wells later served as the foundation for small desert communities and larger cities.[26] Since around 1000 B.C.E.,[27] civilizations in southwest Asia, North Africa, and the Middle East arose as people built *qanats* – water delivery systems consisting of a mother well and long, gently sloping underwater delivery tunnels – to secure reliable water supplies.[28]

In Mesopotamia, where the Euphrates was prone to flood and uncontrolled irrigation led to pollution of the soil, State ownership of riparian lands and irrigation works helped spread risks and prevent the degradation of common goods.[29] The Code of Hammurabi (circa 1750 B.C.E.) provided that "[i]f a man has opened up his channel for irrigation, and has been negligent and allowed the water to wash away a neighbors field, he shall pay grain equivalent to

[25] Robert L. Bettinger, "Agriculture, Archaeology, and Human Behavioral Ecology," in *Behavioral Ecology*, *supra* note 24, at 310–11. Yet, alongside cooperation in agriculture, the idea of exclusive private property also took root. As some scholars have argued, "It is inconceivable that, from the very beginning, the first farmers did not exclude outsiders from sharing the fruits of their labour." D.C. North & R.P. Thomas, "The First Economic Revolution," 30 *Econ. Hist. Rev.* 229, 235 (1977). This does not imply a sense of individual ownership of the land, however. While some enclosure would have been necessary as a practical measure to demarcate fields and contain herds of livestock, "[e]arly societies probably did not conceive of land as an asset, and investment, or a factor of production," according to John P. Powelson, *The Story of Land: A World History of Land Tenure and Agrarian Reform* (1988). Particular tracts of land were often associated with people, such as clans or tribes, who lived upon it and could defend it: "Much land was group-owned if it was owned at all," writes Powelson. *Id.* at 3. In early Mesopotamia, collectively owned land belonged to a god or goddess, not individuals.

[26] Thomas V. Cech, *Principles of Water Resources: History, Development, Management, and Policy* 2 (2d ed., 2005).

[27] "Before the Common Era," a secular alternative to B.C., "Before Christ."

[28] Cech, *supra* note 26, at 2.

[29] Joshua Getzler, *A History of Water Rights at Common Law* 10 (2004).

[the crops of] his neighbors," demonstrating strict social justice regulation of the common irrigation works.[30]

The elaborate aqueducts and civil hydraulic systems of the Roman Empire were indispensable to the development of that civilization. Public rights of access to the water works were protected by the *Lex Quinctia* of 9 B.C.E., which declared: "It is not the intent of this law to revoke the right of persons to take or draw water from these springs, mains, conduits, or arches to whom the curators of the water supply have given or shall give such right, except that it is permitted with wheel, water regulator, or other mechanical contrivance, and provided that they dig no well and bore no aperture into it."[31]

The Ancient Romans were the first society in recorded history to have made explicit laws regarding distinct categories of property, including common property. According to Gaius, writing in approximately 161 C.E., things (*res*) were classified according to whether they should or should not be privately owned. There were several categories of property that could *not* be privately owned.[32] The first of these were *res communes*, or things owned in common to all: "Public things are regarded as no one's property; for they are thought of as belonging to the whole body of the people."[33] Although such things could not be owned, the law recognized a right to enjoy them: "deliberate interference with enjoyment could result in a delictual remedy [a civil wrong allowing compensation or punitive damages] for insulting behavior."[34]

Res communes – a category of law enshrined by Emperor Justinian in 535 C.E. – is of particular importance to us as the first legal recognition of the Commons:

> By the law of nature these things are common to mankind – the air, running water, the sea and consequently the shores of the sea. . . . Also all rivers and ports are public, so that the right of fishing in a port and in rivers is common to all. And by *the law of nations* the use of the shore is also public, and in the same manner, the sea itself. The right of fishing in the sea from the shore *belongs to all men*. . . .[35]

[30] Code of Hammurabi §§ 55–6, *as rendered in* J.N. *Postgate, Early Mesopotamia: Society and Economy at the Dawn of History* (1992).

[31] Lex Quinctia de Aquaeductibus, art. 9 (P. Birks trans.), *cited in* Getzler, *supra* note 29, at 11.

[32] Gaius, Institutes of Gaius 2.1, *cited in* Andrew Borkowski & Paul du Plessis, *Textbook on Roman Law* 154 (2005).

[33] *Id.*

[34] Borkowski & du Plessis, *supra* note 32, at 154.

[35] J. Inst. 2.1 (Thomas C. Sandars trans., 1876), available at http://www.fordham.edu/halsall/basis/535 institutes.html#I.%20Divisions%20of%20things (accessed Aug. 7, 2001) (follow link for Book Two, Title 1) [hereinafter Institutes].

Through this codification, neither the State nor ordinary citizens could make proprietary claims on resources that belong to everyone. This concept is arguably the earliest manifestation of what in American law is known as the "public trust doctrine," a concept that has analogues in most legal systems of the world and indeed in many of the world's major religions.[36] We return to the public trust doctrine in Chapter 8.

Another category of property that private individuals could not own was *res publicae*, or public things, which belong to the State.[37] This category included public roads, harbors, ports, certain rivers, bridges, and conquered enemy territory.[38] Provincial land was further subdivided into senatorial and imperial provinces – the former belonged to the Roman people, but the latter belonged to the Emperor.[39] There were other categories of property enumerated as well.[40]

It is worth pausing to note an early instance of a political tension that recurs throughout history: the State's assertion of power to act as a trustee for the public interest versus the inherent rights of the people to manage *res communes* as self-organized commons. The State and commoners often have different ideas about how best to manage *res communes* for the common good.

For example, when the Roman Empire claimed rights to manage water through a centralized, formal body-of-water law, a unitary legal regime displaced the plural systems of customary water rights that had prevailed in conquered territories. Although the centralization of Roman law in theory made water management more rational, uniform, and fair, it also gave political elites special opportunities to assert their own privileged access to water and

[36] As noted by Mary Christina Wood, "[l]eaders of the world's major religions have declared a spiritual duty to protect Nature." *See* Carrie McGourty, *Prayer To End Climate Change*, ABC World News (Sept. 7, 2007), available at http://abcnews.go.com/WN/GlobalWarming/Story?id=3572327&page=1 (accessed Aug. 7, 2001), *in Advancing the Sovereign Trust of Government To Safeguard the Environment for Present and Future Generations (Part I): Ecological Realism and the Need for a Paradigm Shift*, 39 Envtl. L. 65 n.112 (2009); *see also* Weston (2008), *supra* Ch. 3 note 4, at notes 154–7 and accompanying text.

[37] Borkowski & du Plessis, *supra* note 32, at 154.

[38] *Id.*

[39] *Id.*

[40] Things that were intended for the use of a public corporate body – such as a municipality or colony – were termed *res universitatis*: public streets and buildings, theaters, parks, racecourses, and stadia. Finally, *res nullius* described things belonging to no one, including wild animals, abandoned property, and "divine" things; the last of which were further divided into *res sanctae*, or things considered to be protected by the gods such as city walls and gates; *res religiosae*, or tombs, sepulchers, mausoleums, cenotaphs, and some land used for burial; and *res sacrae*, or things formally consecrated and dedicated to the gods like temples or shrines. *Id.* at 154–55.

to dispossess less favored parties in the provinces.[41] Petty and grand corruption of the formal legal system also opened the door for the legal privatization and overexploitation of scarce water supplies – in other words, State-sanctioned enclosures.

This pattern was replicated in the sixteenth to nineteenth centuries when the European colonial powers imposed Roman water law on their new colonies.[42] The State effectively dispossessed small-scale, traditional, local users of water – a process that returned in the late twentieth century, when states instituted compulsory permit systems for water usage, and in our times, as international investors buy rights to land and water traditionally used by commoners. In each case, national governments claimed to act as public trustees, but their permit systems and investment policies served to displace and delegitimize local, traditional commons management, which was likely more ecologically benign. State-based permitting of water use appears to be "finishing the unfinished business of colonial dispossession."[43]

This tension between dominant systems of power and commons continued after the fall of the Roman Empire and the beginning of the Dark Ages. Kings and feudal lords throughout Europe started claiming the right of access to "public resources" previously protected as *res communes* under Roman law.[44] In thirteenth-century England, following the Norman Conquest, a series of monarchs claimed increasingly large swaths of forest for their own recreation and profit at the expense of barons and commoners. Rather than viewing the forests as a commonly owned asset of the people, the Normans proclaimed all such land to be the exclusive property of the king: "It was the supreme status symbol of the king, a place of sport."[45] Kings "bypassed the customs of the forests that had prevailed since Anglo-Saxon times."[46]

These royal encroachments on commons had a devastating impact on medieval English life, which was highly dependent on forests to meet basic needs. As historian Peter Linebaugh notes, whole towns were timber-framed, the tools and implements of the commoner were all wood-wrought, and wood was the primary source of light and heat.[47] Noted the English naturalists

[41] As skillfully documented and described in B. van Koppen et al., Roman Water Law in Rural Africa: Dispossession, Discrimination and Weakening State Regulation? (paper presented at the International Association for the Study of the Commons conference, Hyderabad, India, January 2011) (on file with authors).

[42] *Id.*

[43] *Id.*

[44] *See Geoffrey Hindley, A Brief History of the Magna Carta* (2008).

[45] *Id.*

[46] Linebaugh, *supra* Ch. 4 note 111, at 34.

[47] *Id.* at 33–4.

Garrett Jones and Richard Mabey: "More than any other kind of landscape they [forests] are communal places, with generations of shared natural and human history inscribed in their structures."[48] Thus, when the king expanded his claims over the forest, he drastically reduced commoners' access to food, firewood, and building materials, while his sheriffs meted out brutal punishments to anyone trying to reclaim commons resources.[49] In everyday terms, this meant that commoners were denied access to common pastures for their cattle. Livestock were not allowed to roam the forests. Pigs, a major source of food, could not eat acorns from the forest. Commoners could not take wood, timber, bark, or charcoal from the forest to fix their homes and build fires for meals. Private causeways and dams often made it impossible to navigate rivers. Women, especially widows, depended on commons to gather food and fuel, and disproportionately suffered, particularly as targets of witch hunts, as commons were enclosed.[50]

As described in Chapter 4, a long series of armed conflicts culminated in the signing of the Magna Carta in 1215 and the Charter of the Forest in 1217.[51] The latter formally recognized and protected certain rights of commoners, such as stipulated rights of pasturage (grazing for their cattle), piscary (fishing in streams), turbary (cutting of turf to burn for heat), estovers (forest wood for one's house), and gleaning (scavenging for what's left in the fields after harvest).[52] The Charter remained the law governing the English commons for almost 800 years, making it one of the longest-standing laws of England until it was superseded, as previously noted, by the Wild Creatures and Forest Laws Act in 1971.[53] As such, the Charter continues to have a special influence as the legal basis for managing commons in England.[54] In the years after its

[48] Gareth Lovett Jones & Richard Mabey, *The Wildwood: In Search of Britain's Ancient Forests* (1993).

[49] *Id.* (quoting J.R. Maddicott, *Magna Carta and the Local Community*, 102 Past & Present 37, 72 (1984)).

[50] *See*, especially, Silvia Federici, *Caliban and the Witch: Women, the Body and Primitive Accumulation* (2004). Peter Linebaugh writes: "Wherever the subject is studied, a direct relationship is found between women and the commons. The feminization of poverty in our own day has become widespread precisely as the world's commons have been enclosed." LINEBAUGH, *supra* Ch. 4 note 111, at 40.

[51] *See supra* text accompanying Ch. 4 notes 113–16.

[52] A compelling account of this history may be found in William F. Swindler, *Magna Carta: Legend and Legacy* 44–103 (1966); *see also* Linebaugh, *supra* Ch. 4 note 111, at 102, 223.

[53] *Supra* note 116.

[54] George Shaw-Lefevre Eversley, *Commons, Forests and Footpaths* (1910), available at http://books.google.com/books/about/Commons_forests_and_footpaths.html?id=dORCAAAAIAAJ, remains a standard, influential text on the law governing the 1.3 million acres of common land in England and Wales. The Open Spaces Society (U.K.), is the nation's leading citizens' advocate and defender of such commons. Open Spaces Soc'y, available at http://www.oss.org.uk (accessed Aug. 7, 2011).

ratification, the Magna Carta was regularly invoked by commoners, barons, and kings alike to affirm their mutual commitment to its principles.

What formal State Law officially guarantees, however, often requires enforcement by a commons itself, through complicated forms of community self-policing, as we find today, for example, in certain Amish communities in the United States. In eighteenth-century England, a community often staged an annual "beating of the bounds" perambulation around the perimeter of a commons to identify – and knock down – any enclosures of it, such as a fence or hedge.[55] This was a community's way of monitoring its shared resources and assuring collective access to them. Beating the bounds assured the long-term integrity of a commons. Similarly, to ensure that the CPR would not be overused and ruined, commoners insisted on certain "stints," both simple and elaborate, that set strict limits on commoners' use rights. As Lewis Hyde writes, "The commons were not open; they were stinted. If, for example, you were a seventeenth-century English common farmer, you might have the right to cut rushes on the common, but only between Christmas and Candlemas (February 2). Or you might have the right to cut branches of trees, but only up to a certain height and only after the tenth of November."[56]

Here, then, is a general lesson to be drawn from the history of English commons: although State Law is vital, so is the vernacular practice of commoners. The two must be aligned and supportive of each other. That, arguably, is why the Magna Carta was necessary in the first place, to affirm in writing that traditional values and practice would be honored. Commons have been and remain a critical governance system for assuring that "ordinary" people will have clear rights to access and use natural resources for their household and subsistence needs (as distinguished from commercial purposes).

The English battles to reclaim and preserve commons of the thirteenth century have cast a long shadow. Their influence on American jurisprudence can be seen in the US Declaration of Independence's bold proclamation, "We the People," which once again cast the interests of commoners against those of the monarch and State. The English Commons as a source of inalienable rights also influenced various constitutional provisions, especially those of the Bill of Rights. When Congress debated the Thirteenth, Fourteenth, and Fifteenth Amendments to the US Constitution, it often invoked the Magna Carta as shorthand for "common rights" that are sufficiently fundamental to warrant constitutional protection.[57]

[55] Lewis Hyde, *Common as Air: Revolution, Art, and Ownership* 32–8 (2010).

[56] *Id.* at 34.

[57] *See* Linebaugh, *supra* Ch. 4 note 111, at 251.

Legal recognition of the ecological Commons, and thus the commoners' right to environment, has come in many other guises over the centuries as well. Following are several of the more significant commons-based legal regimes:

Common Land. Commoners around the world have relied on shared lands for subsistence throughout history and today.[58] There has been a long history of prehistoric agriculture, as noted earlier and today more than 1.6 billion people actively use the world's forests (which comprise approximately 30 percent of the global land mass), often as commons. Another one billion people rely on drylands (which constitute some 40 percent of the global land mass) for their subsistence.[59] In the contemporary world, other commons-based subsistence uses of fisheries, irrigation systems, oceans and lakes, and other natural resources are widespread. But because so many commons are based on traditional usage, and are unrecognized by formal property rights, these lands tend to be highly vulnerable to corporate and State enclosure.[60] At the same time, formal recognition of the Commons is growing, as suggested by a landmark ruling of the Supreme Court of India in 2011 (requiring a real estate developer to vacate a village pond he had unlawfully enclosed)[61] and by growing advocacy on behalf of the Commons.[62] It is precisely the lack of clear legal protection for commons that makes them attractive targets for investor "land grabs," often in collusion with governments.[63]

[58] An important repository of literature of this history can be found at the Digital Library of the Commons. *Digital Library of the Commons*, Ind. U., available at http://dlc.dlib.indiana.edu (accessed July 26, 2011). Another is the Netherlands-based Institutions for Collective Action, a website with considerable literature about European commons prior to 1900. Institutions for Collective Action, available at http://www.collective-action.info (accessed July 26, 2011).

[59] *See* Ruth Meinzen-Dick et al., *Securing the Commons* 1 (CAPRi Policy Brief No. 4, May 2006), available at http://www.capri.cgiar.org/pdf/polbrief_04.pdf (accessed July 26, 2011).

[60] *See, e.g.*, Liz Alden Wily, Int'l Land Coal., *The Tragedy of Public Lands: The Fate of the Commons Under Global Commercial Pressure* (2011), available at http://www.landcoalition.org/es/publications/tragedy-public-ands-fate-commons-under-global-commercial-pressure (accessed July 26, 2011).

[61] Singh v. Punjab, [2001] 2 S.C.R. 250, available at http://www.elaw.org/system/files/Jagpat+Singh+judgment_details.doc (accessed July 26, 2011).

[62] The Foundation for Ecological Security, a nonprofit organization in India, is a leading example. *See, e.g.*, its book, *Vocabulary of the Commons* (2011) and report on its advocacy in Rajasthan, *Spaces for the Poor: Working with Communities and Commonlands in Central Aravalis, Rajasthan*, available at http://www.boell.de /downloads/20101029_Spaces_for_the_poor.pdf (accessed July 26, 2011).

[63] Hernando de Soto has famously cited this problem in *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Elsewhere* (2002), but his prescription is exclusively for more secure private property rights, not for more secure commons property rights. As a result, even if private property rights to land are established among poor, rural populations, powerful economic and political actors can still in effect enclose commonly held lands by buying up and consolidating smaller units of disaggregated property rights.

Wildlife. Like the oceans and atmosphere, wildlife has enjoyed a unique status outside of private property at least since the Roman Empire.[64] Under Roman law, wild animals could become the property of anyone who captured or killed them (subject to the restriction that private landowners enjoyed the exclusive right to possess wildlife on their land).[65] This restriction, however, was more "a recognition of the right of ownership in land than an exercise by the State of its undoubted authority to control the taking and use of that which belonged to no one in particular, but was common to all."[66] This classification of wildlife as a commons carried into medieval Europe; to maintain a common supply of fish, the Veronese code in the eleventh and twelfth centuries provided that fishnets were to have meshes two fingers wide, multihooked lines were prohibited, and no one was permitted to fish during the month of February.[67]

Endangered Species. In enacting the Endangered Species Act of 1973, the US Congress recognized that "various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation."[68] The law formally recognized the "esthetic, ecological, educational, historical, recreational, and scientific value [of fish, wildlife, and plant species] to the Nation and its people."[69] The U.S. government has also pledged, through various international agreements, to conserve endangered species.[70]

Wilderness Conservation. Even in ancient Persia (now Iran), there were forestry conservation laws in effect as early as 1700 B.C.[71] Pharoah Akhenaten established Nature reserves in Egypt in 1370 B.C. George Perkins Marsh, a diplomat from Vermont, saw barren tracts of Nature in the Mediterranean, and

[64] *See, e.g.*, Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), June 23, 1979, 1651 U.N.T.S. 333 *reprinted in* 19 I.L.M. 15 (1980) *and* V Basic Documents, *supra* Prologue note 13, at V.N.8; *see also* Michael J. Bean & Melanie J. Rowland, *The Evolution of National Wildlife Law* 8 (3d ed. 1997).

[65] Bean & Rowland, *supra* note 64.

[66] Geer v. Connecticut, 161 U.S. 519, 523 (1896).

[67] Ronald E. Zupko & Robert A. Laures, *Straws in the Wind: Medieval Urban Environmental Law – The Case of Northern Italy* 85 (1996).

[68] 16 U.S.C. § 1531(a)(1).

[69] *Id.* § 1531(a)(3).

[70] *Id.* § 1531(a)(4): "[T]he United States has pledged itself as a sovereign state in the international community to conserve to the extent practicable the various species of fish or wildlife and plants facing extinction. . . . " *E.g.*, Convention on International Trade in Endangered Species of Fauna and Flora (CITES), Mar. 3, 1973, 993 U.N.T.S. 243, *reprinted in* 12 I.L.M. 1085 (1973) *and* V Basic Documents, *supra* Prologue note 13, at V.N.7.

[71] *See*, e.g., J. Louise Mastrantonio & John K. Francis, *A Student Guide to Tropical Forest Conservation* (1997), available at http://www.fs.fed.us/global/lzone/student/tropical.htm (accessed July 26, 2011).

theorized that the environmental collapse was caused by reckless deforestation. In his 1864 book, *Man and Nature*, Marsh predicted a similar future for the United States if forests were not protected. The book became a best-seller and the "fountainhead of the conservation movement," in the words of one historian.[72] Partly a result: the State of New York began to regulate the private use of the forests in the Adirondack Mountains, and in 1885 reorganized its holdings in the Adirondacks as a forest preserve under a forest commission.[73] Although New York State protection of the Adirondacks was not without faults,[74] it was the first of many steps toward the robust national and state park programs (including the present Adirondack Park) that the United States enjoys today.

Oceans and Seas. Hugo Grotius, often called the "father of international law," argued in his famous treatise *Mare Liberum* (1609) that the seas must be free for navigation and fishing because the law of Nature prohibits ownership of things that appear "to have been created by nature for commons things."[75] Powerfully motivating Grotius, who at the time was legal counsel to the Dutch East India Company, was the concern of that company to break the hegemony of Portugal and Spain, which were bent on establishing dominion over the seas and lands divided between them along a line close to that assigned by Pope Pius VI. A formidable reply to Grotius's theory of freedom of the seas came in John Seldon's 1635 treatise, *The Closed Sea or Two Books Concerning the Rule Over the Sea*, which relied on historical data and State practice to argue that the seas were not common everywhere and had in fact been appropriated in many cases, especially in waters immediately surrounding nations.[76] Even so, in the age of European colonialism marked by conquest and enclosure, common access to the high seas was protected by international law, and remains so in the modern United Nations Convention on the Law of the Sea,[77] which

[72] Karl Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves and the Hidden History of American Conservation* 15 (2001).

[73] *Id*. at 16. *See also* text immediately following *infra* Ch. 7 note 64.

[74] *Id*. at 17 (noting that state protection of the Adirondacks had dire consequences for the approximately 16,000 people already living there). Mark Dowie chronicles this recurring dynamic – the displacement of indigenous commoners to establish modern-day commons – in his book *Conservation Refugees: The Hundred-Year Conflict Between Global Conservation and Native Peoples* (2009).

[75] Kemal Baslar, *The Concept of the Common Heritage of Mankind in International Law* 30 (1998); *see also* Arthur Nussbaum, *A Concise History of the Law of Nations* 103 (1954 rev. ed.).

[76] Nussbaum, *supra* note 75, at 111; Ram Prakash Anand, *Origin and Development of the Law of the Sea* 105 (1982).

[77] Dec. 1, 1982, 1833 U.N.T.S. 3, *reprinted in* 21 I.L.M. 1261 (1982) *and* V Basic Documents, *supra* Prologue note 13, at V.I.22.

recognizes freedom on the high seas as well as the exclusive rights enjoyed by coastal States in waters immediately offshore.

Antarctica. One of the most unusual and durable global commons involves Antarctica, managed as a cooperative regime of research scientists since the entry into force of the 1959 Antarctic Treaty in 1961.[78] As many as seven countries had asserted plausible territorial claims to the Antarctic land mass, but two major research projects – International Polar Years and International Geophysical Years – had demonstrated the feasibility of scientific cooperation. The advantages of continuing this cooperation were seen as a highly attractive alternative to potential political or military strife. Too, the potential economic gains to be had from making territorial claims on Antarctica were minimal, which made it easier to forge acceptable treaties. Antarctica is one of the rare global commons that has been highly stable because it met many important principles of a successful commons: a well-defined user community, clearly delineated and well-recognized boundaries, and moral and political legitimacy for decisions that have constituted the Antarctica commons regime.[79]

Space. Although the iconic photograph of Neil Armstrong and Buzz Aldrin planting an American flag in the lunar Sea of Tranquility in 1969 evokes an image of conquest, colonization, and manifest destiny, the United States never did stake a claim to lunar territory.[80] Indeed, such a claim would have violated the 1967 Outer Space Treaty,[81] which declares outer space, the moon, and other celestial bodies to be the "province of all mankind,"[82] and "not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means."[83] However, both States and private actors are vested with the enjoyment and freedom to share the use of, and exploit, the

[78] Dec. 1, 1959, 402 U.N.T.S. 71, 12 U.S.T. 794, *reprinted in* 19 I.L.M. 860 (1980) *and* V Basic Documents, *supra* Prologue note 13, at V.D.1.

[79] *See, e.g.*, Christopher C. Joyner, *Governing the Frozen Commons: The Effectiveness and Legitimacy of the Antarctic Treaty System* (1998); *see also* Susan J. Buck, *The Global Commons: An Introduction* 45–74 (1998); Juan Barcelo, *The International Legal Regime for Antarctica*, 19 Cornell Int'l L. J. (1986); Martin Holdgate, *Regulated Development and Conservation of Antarctic Resources*, *in* The Antarctic Treaty Regime 128 (Gillian Triggs ed., 1987); Donald R. Rothwell, *The Antarctic Treaty: 1961–1991 and Beyond*, 14 Sydney L. Rev. 62 (1992) Karen N. Scott, *Institutional Developments Within the Antarctic Treaty System*, 52 Int'l & Comp. L. Q. 473 (2003).

[80] Harlan Cleveland, *The Global Commons: Policy for the Planet* 5 (1990).

[81] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205, 18 U.S.T. 2410, *reprinted in* 6 I.L.M. 386 (1967) *and* V Basic Documents, *supra* Prologue note 13, at V.P.21.

[82] *Id*. art. I.

[83] *Id*. art. II.

available resources of space and celestial bodies without discrimination.[84] As a result, the commons of space is largely uncontrolled and unregulated, and runs the risk of inviting self-interested actors to irresponsibly degrade, exploit, and overuse the resources of the space environs – a "tragedy of the unmanaged commons."[85] The accumulation of debris in heavily used orbital regions such as Low Earth Orbit and Geostationary Earth Orbit could cause these regions to become overcrowded. As astronaut Ed Mitchell once noted, "[i]f there were only one gram of debris per cubic kilometer, out to a thousand kilometers from Earth, the average useful life of a satellite orbiting in that space would be no more than seven hours."[86] The answer, as space law scholar Professor Shane Chaddha argues, is to impose and enforce "appropriate mechanisms and disincentives controlling entry to, and the exploitation of, the resource."[87] Such governance is currently lacking.

This brief overview of commons-based legal regimes shows that, despite the inevitable struggles to achieve commons management for large-scale CPRs, commons have been a durable cross-cultural institution for assuring that people can have direct access to, and use of, natural resources, or that government can act as a formal trustee on behalf of the public interest. The regimes have acted as a kind of counterpoint to the dominant systems of power over the centuries (tribes, monarchs, feudalism, republics) because legally recognized commons for a coastal region, forest, or marshland address certain ontological human wants and needs that endure: the need to meet one's subsistence needs through cooperative uses of shared resources; the expectation of basic fairness and respectful treatment; and the right to a clean, healthy

[84] Shane Chaddha, *Hardin Goes to Outer Space – "Space Enclosure"* 2 (Feb. 8, 2011), available at http://ssrn.com/abstract=1757903 (accessed July 26, 2011); *see also* Gyula Gál, Space Law 200 (trans. I. Móra, 1969) ("It results from the *res omnium communis* character that such stuffs of cosmic origin can be appropriated by the exploiting state without acquiring sovereignty over the given celestial body. Exploitation of the fish of the high seas and the minerals of the sea-bottom rests on the same legal ground."); Glenn H. Reynolds & Robert P. Merges, Outer Space: Problems of Law and Policy 80 (2d ed., 1997) ("[T]he conclusion may be drawn that States and other natural and juridical persons have the right of free and equal access to space environment. . . . Moreover, their rights are also extended to exploration, exploitation, and use.").

[85] Shane Chaddha, *A Tragedy of the Space Commons?* (Apr. 8, 2010), available at http://ssrn.com/abstract=1586643 (accessed July 26, 2011).

[86] Cleveland, *supra* note 80, at 3; *see also* H. A. Baker, *Space Debris: Legal and Policy Implications* 10 (1988).

[87] Chaddha (2010), *supra* note 85, at 3; *see also* Mancur Olson, *The Logic of Collective Action* 2 (1971) (asserting that if members of a large community rationally seek to maximize their personal welfare, they will not act to achieve their common or group objectives unless there is either coercion to force them to do so, or some separate incentive distinct from the benefits of the group objective).

environment. In this sense, the various historical fragments of what may be called "commons law" constitute a legal tradition on which we can draw to advance human environmental rights.

The history of commons also reveals a constellation of tensions between power and commons. For example, in modern times, the State/Market duopoly is threatened by the rise of new commons because the latter are capable of exposing the limited competencies of the State and Market and may outcompete one or both of them in meeting people's needs. A commons may siphon consumer demand and moral allegiances away from the State/Market system by enabling new types of political self-determination and non-Market self-provisioning. People may be attracted to participate in commons because they may provide greater everyday flexibility, social satisfactions, and local responsiveness than do existing, concentrated State or Market bureaucracies. The leaders of State and Market are likely to be displeased by citizens and consumers who redirect their energies and allegiances to the Commons or general Commons Sector lest they diminish industry revenues, economic growth, and tax revenues – or more generally call into question the cultural hegemony of the State/Market system.

In a deeper sense, the rise of the Commons Sector may aggravate tensions between two visions of law: (1) the State and its commitment to formally administered law; and (2) the commoners and their reliance on vernacular practices that are informal, situational, and custom-based. As formal law becomes subject to elaborate gaming by giant corporate players (who routinely use lawyers and lobbyists to shape law and its enforcement to serve their purposes), individual citizens are increasingly alienated or excluded from the legal system, making a mockery of the State's nominal commitment to equality, due process, and the common good. The Commons Sector, by contrast, including the Commons proper, may deliver greater actual benefits to citizens in ways that are more accessible, participatory, transparent, and accountable than is State-based governance. Thus, commons governance may serve to expose the collusion and corruption of State/Market management of collective resources and its negative consequences for the citizenry.

This may help explain why, despite its rich history over millennia, the Commons has tended to be subordinate to the prevailing system of political power in any given society. One might venture to say that the Commons resembles a yin to the yang of power, as embodied in a given political system. And yet the Commons often serves such elemental human needs and ecological purposes that even political power must on occasion recognize and concede its existence and value, much as King John did in signing the Magna Carta. Or, sometimes political power affirmatively recognizes the value of *not* allowing

State or Market to enjoy absolute dominion over a natural resource, as in land conservation preserves or Antarctic scientific commons. The perennial question is how far can commoners advance the value-proposition of commons governance within a given system of power? What sorts of structural protections can be secured for commons governance through law, social practice, and technology?

Ultimately, the Commons and the modern State/Market system may clash because each embodies a different set of ontological and epistemological premises.[88] The State/Market alliance has its own implicit vision of people as rational, utility-maximizing citizen-consumers who believe in the benefits of technological progress and ever-rising Gross Domestic Product. Its system of formal law rests on a foundation of positivism, behavioralism, and administrative regularity, and therefore tends to be perplexed by the idea of the Commons as a self-governing, generative, evolving system of management. On the other hand, the State/Market has important roles to play in serving as public trustee of many common assets, in stopping enclosures of commons, and in setting general protocols, boundary conditions, and legal rules that can help new commons arise. We elaborate on this vision and its complications in Chapter 8.

C. SOCIAL SCIENTISTS REDISCOVER THE COMMONS

Despite the long history of the ecological Commons and its manifest significance, modern economics has largely dismissed it as an historical curiosity. Perhaps it was inevitable that as post-World War II Market culture soared to new heights, the Commons would be seen as having little relevance – or, as one scholar put it, as "no more than the institutional debris of societal arrangements that somehow fall outside modernity."[89] Two leading introductory economics textbooks – Samuelson & Nordhaus[90] and Stiglitz & Walsh[91] – ignore the Commons entirely.

Much of the dismissive neglect of the Commons can be traced to an influential essay, "The Tragedy of the Commons," a parable about the inevitable collapse of any shared resource that biologist Garrett Hardin published in the

88 *See, e.g.*, Uskali Mäki, *The Economic World View: Studies in the Ontology of Economics* (2001); *see also* James Quilligan, *The Failed Metaphysics Behind Private Property: Sharing Our Commonhood*, Kosmos (May 4, 2011), available at http://www.kosmosjournal.org/kj02/library/kosmos-articles/failed-metaphysics.shtml (accessed July 26, 2011); Maeckelbergh, *supra* Ch. 1 note 38.

89 Arun Agarwal, *Common Resources and Institutional Sustainability*, in *Nat'l Research Council, Comm. on the Human Dimensions of Global Change, The Drama of the Commons* 42 (2002).

90 Paul A. Samuelson & William D. Nordhaus, *Economics* (17th ed. 2001).

91 Joseph E. Stiglitz & Carl E. Walsh, *Economics* (3d ed. 2002).

journal *Science* in 1968.[92] If you have a shared pasture on which many herders can graze their cattle, Hardin wrote, no single herder will have a rational incentive to hold back. And so he will put as many cattle on the physical commons as possible, take as much as he can for himself. The pasture will inevitably be over-exploited and ruined: A "tragedy." The tragedy narrative implied that only a regime of private property rights and markets could solve the tragedy of the Commons. If people had private ownership rights, they would be motivated to protect their grazing lands.

But Hardin was not describing a commons. He described a scenario in which there were no boundaries to the grazing land, no rules for managing it, and no community of users. That is not a commons; it is an open-access regime or free-for-all. A commons has boundaries, rules, social norms, and sanctions against free-riders. A commons requires that there be a community willing to act as a steward of a resource. Yet Hardin's misrepresentation of actual commons stuck in the public mind and became an article of faith thanks to economists and conservative pundits who saw the story as a useful way to affirm their anthropocentric ethics and economic beliefs. So, for the past two generations the Commons has been widely regarded as a failed paradigm.

Happily, contemporary social science scholarship has done much to rescue the Commons from the memory hole to which it was consigned by mainstream economics. The late Nobel laureate Elinor Ostrom of Indiana University was the most prominent academic to rebut Hardin and, over time, rescue the Commons as a governance paradigm of considerable merit. Sometimes working with political scientist Vincent Ostrom, her husband, Elinor Ostrom's work concentrated on the institutional systems for governing CPRs – collective resources over which no one has private property rights or exclusive control, such as fisheries, grazing lands, and groundwater, all of which are certainly vulnerable to a "tragedy of a commons" outcome.

Writing in her path-breaking book, *Governing the Commons*, published in 1990, Ostrom stated the challenge she was addressing:

> The central question in this study is how a group of principals who are in an interdependent situation can organize and govern themselves to obtain continuing joint benefits when all face temptations to free-ride, shirk, or otherwise act opportunistically. Parallel questions have to do with the combinations of variables that will (1) increase the initial likelihood of self-organization, (2) enhance the capabilities of individuals to continue self-organized efforts over time, or (3) exceed the capacity of self-organization to solve CPR problems without eternal assistance of some form.[93]

92 Garrett Hardin, *The Tragedy of the Commons*, 162 Science 1243 (1968).

93 Ostrom, *supra* Prologue note 20, at 42.

Ostrom's achievement has been to describe how many communities of resource-users can and do develop shared understandings and social norms – and even formal legal rules – that enable them to use CPRs sustainably over the long term. Some commons, for example – such as the communities of Swiss villagers who manage high mountain meadows in the Alps, and the Spaniards who developed *huerta* irrigation institutions – have flourished for hundreds of years, even in periods of drought or crisis. The success of such commons can be traced to their social authority and administrative capacities to allocate access and use rights to finite resources, among other factors such as responsible rules for stewardship and effective punishments for rule-breakers. *Governing the Commons* has had a far-reaching impact on the American legal academy, particularly in general property theory, environmental and natural resource law, and, since the mid-1990s, intellectual property.[94]

Scholars of CPRs and common property (who now associate their work under the more general term "commons"[95]) have developed a formidable literature exploring how CPRs can be managed as commons: What property rights in land or water or forests work well in a particular circumstance? What participatory systems and sanctions are needed? What interactions with statutory law and with markets affect the performance of commons? Analyses of these questions have shown how pastoralists in semi-arid regions of Africa, lobstermen in the coastal coves of Maine, communal landholders in Ethiopia, rubber tappers in the Amazon, and fishers in the Philippines, have negotiated cooperative schemes to manage their shared resources in sustainable ways.

In *Governing the Commons*, Ostrom identified seven basic design principles of successful commons that are now regarded as a default framework for discussion, plus an eighth principle applicable to larger, complex commons:

1. ***Clearly defined boundaries.***
   Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.

94 Carol M. Rose, "Ostrom and the Lawyers: The Impact of Governing the Commons on the American Legal Academy" (Ariz. Legal Studies Discussion Paper No. 10–37, Oct. 31, 2010), available at http://papers.ssrn.com/sol3/papers.cfm? abstract_id=1701358 (accessed July 27, 2011).

95 The study of commons was initially characterized as a study of *common-pool resources*; but in 2003, the International Association for the Study of Common Property changed its name to the International Association for the Study of the Commons. "See Time To Change the IASCP Mission Statement?," *CPR Digest* (Dec. 2003), available at http://www.iasc-commons.org/sites/all/Digest/cpr67.pdf (accessed July 27, 2011).

2. ***Congruence between appropriation and provision rules and local conditions.***
   Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.
3. ***Collective-choice arrangements.***
   Most individuals affected by the operational rules can participate in modifying the operational rules.
4. ***Monitoring.***
   Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.
5. ***Graduated sanctions.***
   Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or both.
6. ***Conflict-resolution mechanisms.***
   Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.
7. ***Minimal recognition of rights to organize.***
   The rights of appropriators to devise their own institutions are not challenged by external governmental authorities. ***For CRPs that are parts of larger systems:***
8. ***Nested enterprises.***
   Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

Each commons has evolved its own particular rules tailored to the specific "physical systems, cultural views of the world, and economic and political relationships that exist in the setting," Ostrom has noted.[96] Yet, despite profound differences among commons, she concludes, they tend to exhibit many similarities:

> Extensive norms have evolved in all of these settings that narrowly define "proper" behavior. Many of these norms make it feasible for individuals to live in close interdependence on many fronts without excessive conflict. Further, a reputation for keeping promises, honest dealings, and reliability in

96 Ostrom, *supra* Prologue note 20, at 89.

> one arena is a valuable asset. Prudent, long-term self-interest reinforces the acceptance of the norms of proper behavior. None of these situations [small-scale commons studied in *Governing the Commons*] involves participants who vary greatly in regard to ownership of assets, skills, knowledge, ethnicity, race or other variables that could strongly divide a group of individuals.[97]

"The most notable similarity of all, Ostrom adds, "is the sheer perseverance manifested in these resources systems and institutions."[98] She writes: "The resource systems clearly meet the criterion of sustainability [and] of institutional robustness. . . . They have endured while others have failed."[99]

Ostrom has studied some CPRs in modern, industrialized settings, such as institutional collaboration in providing police and other municipal services in major American cities;[100] an inter-governmental collaboration to protect Los Angeles groundwater basins from overuse and ruin;[101] and "new commons" on the Internet.[102] Two critical fora for much of this work have been the Ostrom-founded Workshop on Political Theory and Policy Analysis at Indiana University and the International Association for the Study of the Commons (IASC). A large body of transdisciplinary fieldwork and theoretical studies of international scope are now housed at the Workshop-associated Digital Library on the Commons at Indiana University.[103] However, while a handful of commons scholars have addressed the challenges posed by global CPRs such as the atmosphere, most of the "Bloomington school" scholarship has focused on small, subsistence-based commons in rural areas.

Ostrom, it must be emphasized, does not regard her eight design principles as a strict blueprint for successful commons because many contingent,

[97] *Id.* at 88–89.
[98] *Id.* at 89.
[99] *Id.*
[100] Elinor Ostrom & G.P. Whitaker, "Does Local Community Control of Police Make a Difference? Some Preliminary Findings," 17 *Am. J. Pol. Sci.* 48 (1973).
[101] Instead of allowing a race to over-pump scarce water supplies, government at multiple levels collaborated to establish a governance system that remained, in Ostrom's words, "largely *in* the public sector without [government] being a central regulator. . . . No one 'owns' the basins themselves. The basins are managed by a *polycentric set* of limited-purpose governmental enterprises whose governance includes active participation by private water companies and voluntary producer associations. This system is neither centrally owned nor centrally regulated." Elinor Ostrom, "Public Entrepreneurship: A Case Study in Ground Water Basin Management" 315–16 (1965) (unpublished dissertation), available at http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/3581/eostr001.pdf?sequence=1 (accessed July 27, 2011).
[102] Charlotte Hess & Elinor Ostrom, "Ideas, Artifacts and Facilities: Information as a Common-Pool Resource," 66 *Law & Contemp. Probs.* 111 (2003).
[103] *See Digital Library*, *supra* note 58.

situational factors affect the performance of commons. Rather, she sees the principles as general guidelines. Other scholars have formulated their own lists for sustainable commons, whose enumerated factors tend to overlap with Ostrom's design principles (implicitly affirming them) while organizing them in different ways. Arun Agarwal writes, "[I]t is reasonable to suppose that the total number of factors that affect successful management of commons is greater than 30, and may be closer to 40."[104] With this caveat, we note the following list of significant factors that condition the management of successful commons:[105]

> *The character of the resource* determines whether it is finite and depletable, such as a forest or the atmosphere, for example; or whether it is self-replenishing to some degree, such as a fishery; or "limitless" in scale, such as language, knowledge traditions, and Internet resources.
>
> *The geographic location and scale* of a resource will dictate a particular type of management. A village well requires different management rules than a regional river or global resource like the oceans.
>
> *The experience and participation of commoners* matters. Indigenous communities that have centuries-old cultural traditions and practices will know far more about their resource than outsiders. Long-time members of free software networks will be more expert at designing programs and fixing bugs than newcomers.
>
> *Historical, cultural, and natural conditions* can affect the workings of a commons. A nation that has a robust civic culture is more likely to have healthy commons institutions than a nation where civil society is barely functional.
>
> *Reliable institutions* that are transparent and accessible to the commoners matter. Some may be State-sanctioned commons institutions that rely upon official law, such as trusts, while others may be informal, self-organized commons (such as subsistence forests or fisheries) that function below the threshold of conventional law.
>
> *The state of technology* affects the state of a commons. New technology such as the Internet can facilitate the formation of new commons. But technology can also be a force for artificially restricting access to a shared resource, as it

[104] Agarwal, *supra* note 89, at 65. Agarwal was comparing Ostrom's studies of the Commons with those by Robert Wade, *Village Republics: Economic Conditions for Collective Action in South India* (1988) and Jean-Marie Baland & Jean-Philippe Platteau, *Halting Degradation of Natural Resources: Is There a Role for Rural Communities?* (1996).
[105] This list is derived from Silke Helfrich et al., *The Commons: Prosperity by Sharing* (2011), available at http://www.boell.de/economysocial/economy/economy-commons-report-10489.html (accessed July 27, 2012).

has done with software encryption and content-controls. Much depends upon whether a technology is accessible to commoners and under what terms.

Despite a profusion of important analyses of commons, we hasten to add, a great deal remains unknown or under-developed, both theoretically and empirically, and thus these factors cannot be considered authoritative and complete. As Agarwal explained when assessing the state of commons scholarship in 2003: "One significant reason for divergent conclusions of empirical studies of commons is that most of them are based on the case study method [which itself exhibits a] multiplicity of research designs, sampling techniques and data collection methods.... It is fair to suggest that existing work has not yet fully developed a theory of what makes for sustainable common-pool resource management."[106] Not surprisingly, there are few generalized conclusions about how to foster what we call the "Commons Sector." Public policy, for its part, barely recognizes the Commons as a governance alternative.

The dream of a unifying theory may indeed be a chimera, precisely because the success of commons seems to reside in their highly particularistic governance rules and circumstances. "The differences in the particular rules take into account specific attributes of the related physical systems, cultural views of the world, and economic and political relationships that exist in the setting," Ostrom writes. "Without different rules, appropriators could not take advantage of the positive features of a local CPR or avoid potential pitfalls that might be encountered in one setting but not others."[107] For mountain commons, the uncertainty may be the timing or location of rainfall. For forest commons, it may be the peculiar habits of wild pigs or the growth cycle of trees. Local commoners are more likely to know such things, and have a greater personal motivation in dealing with them, than remote politicians and bureaucrats.

Even apart from the particularity of commons or the case study method, commons scholarship faces some vexing methodological quandaries. For example, in studying the success of a given commons, it is not necessarily self-evident which factors (such as cultural values, geography, and social practices) are "contextual" and which are primary. Researchers may disagree about which methodologies are most appropriate for gathering and assessing data from the field, and therefore whether comparisons between commons are valid. These sorts of issues make it difficult to formulate broad generalities about commons as they now exist.

Even so, the empirical academic descriptions of commons as they now exist suggest an array of normative attributes that we believe can and should be incorporated into the governance of ecological commons, from local to global.

[106] Agarwal, *supra* note 89, at 45.
[107] Ostrom, *supra* Prologue note 20, at 89.

Implicit in the academic literature on commons is a set of normative values such as inclusive participation, basic fairness, transparent decision-making, and respect for all members of a community. While social scientists may be understandably chary of advocating such principles as a normative template for commons, given the variations in the political economy that enframe most commons, we have no such inhibitions. If the Commons is to serve as a vehicle for improved ecological governance, we must balance the particularities and context of each commons with general principles of ecological sustainability and human rights. In Chapters 7 and 8, we elaborate on those principles.

Ostrom, for her part, recognized that studying commons can be difficult because they tend to be nested within larger systems of economic and political governance, and thus can be affected by many exogenous variables. Her theoretical solution to this problem is *polycentrism*, the idea that nested tiers of governance provide the best way to manage resources. "Each unit [of governance] may exercise considerable independence to make and enforce rules within a circumscribed scope of authority for a specified geographical area," Ostrom notes[108] "In a polycentric system, some units are general-purpose governments, whereas others may be highly specialized. Self-organized resource governance systems, in such a system, may be special districts, private associations, or parts of a local government."[109]

Polycentric governance helps assure that decision-making can occur at the location closest to the resource and commoners themselves, which tends to enhance the quality of decision-making and its legitimacy. This principle is known as *subsidiarity*, which holds that governance should occur at the lowest, most decentralized level possible in order to be locally adaptive; one-size-fits-all governance structures tend to be less effective, less flexible, and more coercive.

While there are inefficiencies and redundancies in polycentric governance systems – chiefly through overlapping authority, resources, and information – there also is a greater robustness because sub-optimal performance at one level of governance can be compensated for by other tiers of governance. Also, polycentric systems tend to share information more easily and therefore have greater access to local knowledge and better feedback loops. This enhances the quality of decision-making, institutional learning, and system resilience.[110]

[108] Interview by Paul Dragos Agilicia with Elinor Ostrom, Rethinking Governance Systems and Challenging Disciplinary Boundaries, at 12 (Nov. 7, 2003) (transcript available at http://mercatus.org/sites/default/files/publication/Rethinking_Institutional_Analysis__Interviews_with_Vincent_and_ Elinor_Ostrom.pdf (accessed July 27, 2011).
[109] *Id.* at 12–13.
[110] Elinor Ostrom, *Understanding Institutional Diversity* 281–86 (2005). For more on resilience, *see* Brian Walker & David Salt, *Resilience Thinking: Sustaining Ecosystems and People in a Changing World* (2006).

As a system that has evolved in response to resource-users themselves, a polycentric system is open to diverse sources of information and innovation, and thus is less dependent on any single, rigid policy approach or ideology. Polycentrism avoids the dysfunctionality of centralized, top-down administration by "rational experts" who impose overly broad solutions on everyone. Rather, trial-and-error experimentation from the "bottom up" allows the development of rule-sets that are tailored to the particular resource, community, and local circumstances, and that can evolve in the future. This is particularly important in devising large-scale commons, as we discuss in Chapter 7.

Commons scholarship pioneered by Ostrom and hundreds of academics has rescued the Commons from the misleading "tragedy" myths while building invaluable analytic models for understanding how commons function. In so doing, scholars have helped validate the Commons as a viable, practical way to manage ecological resources sustainably. Needless to say, the complexity embodied by polycentrism makes it extremely difficult to tease out general principles. In any case, polcycentrism and the academic commons literature have remained largely confined to the academy and a handful of policy professionals; they have not aspired to speak to the lay public or the press, let alone political activists.[111]

But as we will see in Chapter 6, the Commons has become in recent years an organizing template for an eclectic, loosely coordinated new international movement that rejects the prevailing neoliberal premises of State/Market politics and policy. Moving beyond the abstract models of social scientists, the Commons has become a living political vision and set of cultural practices associated with new forms of ecological stewardship, participatory politics, and policy alternatives, often empowered by the Internet. We turn now to this noteworthy phenomenon, which in turn will help us understand, in Chapter 7, the contours of a new architecture of law and policy that could support the ecological Commons.

[111] As an institutional matter, this disinclination to "get political" or to affiliate with the political struggles of commoners may be changing. The 2011 conference of the International Association for the Study of the Commons was co-hosted by an activist-minded group in India, the Foundation for Ecological Security; and Professor Ostrom, since winning her Nobel Prize until her death in 2012, supported a number of efforts seeking political or policy change. Notwithstanding these sympathies, the academic orientation and methodologies of most social scientists remains resolutely apolitical.

6

The Rise of the Commons Movement Globally

Traditional commons scholarship has historically shown little interest in political or economic ideology, or in instigating political change through activist campaigns. It therefore comes as something of a surprise that, in a separate universe beyond the perimeter of scholarship, a diverse global movement of commoners began to emerge in the late 1990s and early 2000s.[1] This commons-based advocacy – for indigenous culture, subsistence commoning, urban spaces, free software, open-access scholarly publishing, shareable videos and music, and much else – has been less interested in academic theories about commons, however potentially apt, than in improvisational innovation in the *building* of practical new models of commoning outside the control of the State/Market.

Some commoners are interested in cheap, nonmarket self-provisioning, period, whereas others see themselves participating in a larger political and cultural struggle to upend market capitalism, or save it from itself. In any case, the scope, energy, and creativity of the global commons movement suggest the appearance of something quite new and likely to be a powerful force in the future, especially now that the commons-friendly Internet is globally pervasive. The power of the movement stems from the fact that its motivations are political, cultural, and economic all at the same time. In addition, it got a fortuitous boost when Elinor Ostrom won the Nobel Prize in 2009 for her analysis of economic governance, especially the commons.

The global commons movement, composed of direct practitioners engaged in political struggle, has developed some ways of understanding commons that are different from those of academics. In a sense, the commons projects of

[1] David Bollier, *A New Politics of the Commons*, 15 Renewal (U.K.), no. 4, 2007, at 10–16, available at http://www.renewal.org.uk/articles/a-new-politics-of-the-commons (accessed July 28, 2011).