



## ARTICLES

# Neoliberalism and the Biophysical Environment

## A Synthesis and Evaluation of the Research

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■ **ABSTRACT:** This article both synthesizes and critically evaluates a now large, multi-disciplinary body of published research that examines the neoliberalization of environmental regulation, management, and governance. Since the late 1970s, neoliberal ideas and ideals have gradually made their way into the domain of environmental policy as part of a wider change in the global political economy. While the volume of empirical research is now such that we can draw some conclusions about this policy shift, the fact that the research has evolved piecemeal across so many different disciplines has made identifying points of similarity and difference in the findings more difficult. After clarifying what neoliberalism is and explaining why the term ‘neoliberalization’ is preferable, the article analyzes the principal components and enumerates the social and environmental effects of this multifaceted process. By offering a comprehensive and probing survey of the salient literature, I hope not only to codify the existing research but also to guide future critical inquiries into neoliberal environmental policy.

■ **KEYWORDS:** biophysical world, deregulation, environmental policy, governance, neoliberalism, neoliberalization

In this article I will examine the relationship between neoliberalism and the biophysical world. ‘Neoliberalism’ is very much a critics’ term, an oppositional badge as much as an analytical concept.<sup>1</sup> For those who choose to use it, the word describes a worldview fleshed out over the last 30 years at the sub-national, national, and global scales. Rarely invoked before 2000, it is now part of the *lingua franca* of left-wing social scientists and activists. Researchers in development studies, sociology, area studies, anthropology, labor studies, political science, cultural studies, human geography, philosophy, environmental studies, international relations, education policy studies, and the radical fringes of the economics profession have—over the last decade—sought to define neoliberalism, identify its modes of operation, track its mutations, pinpoint its effects, and describe various modes of opposition to it. Where political activists have often used the term for polemical purposes, academic researchers have attempted to mount a rather cooler challenge to neoliberalism on both evidential and moral-political grounds. There have been



two main camps, theoretically speaking: namely, a political-economic one, which is broadly neo-Marxist, and a Foucauldian one—with some overlap between the two (e.g., Lockwood and Davidson 2009).<sup>2</sup> Together, their members have produced a now sizable literature comprising monographs, co-authored books, edited collections, and peer-reviewed articles like this one. In surveying this literature, I will be focusing on those parts of it where the analytical attention has principally addressed neoliberal environmental use and management. I have selected only those publications in which the term ‘neoliberalism’ is—in my view—central to the arguments and research findings presented.<sup>3</sup>

The original architects of neoliberal thinking, such as Milton Friedman and Friedrich von Hayek, said little about environmental issues or natural resource management. However, since the mid-1980s, many neoliberal values and principles have steadily made their way into the domain of environmental policy,<sup>4</sup> conceived here in the widest possible sense to include situations where any element of the biophysical world is a major focus of policy makers’ attention at any spatio-temporal scale. Accordingly, a previous trickle of research into neoliberal environmental governance has given way to something of a torrent over the last five years or so. As we will see, this research comprises predominantly single-site case studies, presented in rich empirical detail. It also covers the full spectrum of environmental and resource policy domains, from water to fisheries to farming and beyond. Up to the present, this research has grown organically in a rather disparate fashion, with some elements of disciplinary crossover.<sup>5</sup> In order to steer its future development, it is useful to take stock of the insights that the research offers to date, to draw wider lessons about neoliberal environmental governance, and to assess the way that critics have investigated it so far.

To summarize, this article will operate at two levels toward two rather different ends. First, it will parse the insights of numerous studies in order to clarify how neoliberal environmental governance has operated to date and with what effects. Secondly, it will treat the authors of these studies as a loose ‘epistemic community’ whose worldview and research practices do not simply hold a mirror up to a neoliberal world existing ‘out there’. I identify broadly with its members’ value set and normative agendas, but I also believe that this community may want to reflect critically on its own habits of thought and analysis. Having written along these lines for a human geography readership (Castree 2008a, 2008b), this article is directed at a wider and more intellectually mixed audience, spanning several social science disciplines (as befits the remit of this journal).<sup>6</sup> I hope that those who are new to the subject, as well as those familiar with it, will profit similarly from reading this comprehensive review.<sup>7</sup> As ever with review articles, there is the risk that I am imposing a false order on the literature I survey. I will thus try to be scrupulous about justifying my various ‘moves’ as I proceed, and I invite readers to assess these moves critically.

The article is organized as follows. I begin in a rather obvious place by seeking to define and delimit the term ‘neoliberalism’. Here I summarize the insights of critical social scientists who do not themselves study environmental management but whose writings have influenced those who do. Then I introduce the research literature on the neoliberalization of nature in general terms. This done, the next two sections distill the substantive insights of this largely case study-based literature, focusing on the process of reregulation and its socio-ecological outcomes, respectively. I then further refine these insights into a small set of provisional ‘take-home’ lessons. The final main section presents a sympathetic critique of the literature, wherein I raise several key questions about the published research analyzed earlier. While this article is extensive, I believe that its length is justified. Considering the number of publications reviewed, as well as the scope of my ‘take’ on them, a shorter survey would sacrifice much detail and many key points—especially for those new to this literature.

Before I get down to business, I should make one final introductory observation. In light of the recent financial crisis and current global economic recession, some have suggested that the ‘neoliberal era’ has come to an end—or at least the beginning of the end. If true, this would imply no future for the sort of research surveyed here and would make this article very untimely indeed. Needless to say, I reject this suggestion (cf. Brand and Sekler 2009). Periodizing history is notoriously tricky, as is the identification of temporal ‘breaks’. Craig and Cotterell (2007: 510) note that “the various conjunctural factors bundled together [by analysts] to constitute ‘neoliberalism’ (and any plausible period shift in it) are quite diverse in nature, so that first of all comparing the relative weight or importance of any them to an overall periodizing assessment is analytically fraught.” Moreover, even supposing that we *have* been living through a historic period sufficiently homogeneous to be called neoliberal, experience tells us that there are rarely punctual transitions between one putative era and another. The traces of the recent past will inevitably continue to affect both the present and the short- to medium-term future (see Brenner et al. 2010). As *New Left Review* editor Susan Watkins (2010: 14) notes, “The widely proclaimed end of neo-liberalism looks more and more like the continuation of its agenda by other means.” I doubt, in other words, that the term ‘neoliberalism’ will disappear from the vocabulary of social scientists (or political activists) any time soon. If it does, we will probably be employing new words to capture its meanings and to describe many of its real-world objects (Clarke 2010). Therefore, throughout this article I will talk of neoliberalism in the present tense, presuming that the term and the things that it names retain their currency for the time being.<sup>8</sup> The question then becomes not *whether* we should (still) use the term, but rather *how*.

## What Is ‘Neoliberalism’?

### *Conceptual Issues*

The research into neoliberal environmental governance is in one sense parasitic on a wider theoretical and empirical literature in which environmental issues are not strongly thematized. This broader literature mostly predates the research being surveyed in this article, and this antecedence explains why it has proven formative for many who interrogate neoliberal environmental policy. There has, in my view, been a tendency for the latter to borrow definitions and insights from the former rather than to rework and question them. That does not make their work entirely derivative—far from it, in fact. As we will see later, the primarily empirical (rather than theoretical) character of recent research into neoliberal environmental governance is its major strength and contribution. Along with Adam Tickell, Nik Theodore, and Neil Brenner, Jamie Peck has done much to shape social scientific conceptions of neoliberalism. Not long ago, Peck (2006: 731) observed that “there remains a paucity of ‘grounded’ work on the specific and concrete routines, practices, networks, and structures through which the neoliberal project has been constructed and sustained.” This is no longer true, and the recently published research into neoliberalism and the environment can take considerable credit for filling the empirical gap that Peck identified. Even so, in conceptual terms much of this research has tended to work with ‘off the peg’ definitions of neoliberalism developed by others (such as Peck himself). What is more, these definitions have been used selectively and partially, depending on the case.

Note that I use the word ‘definitions’ in the plural. The reason that economic sociologist Stephanie Mudge (2008) so recently felt compelled to ask “What is neoliberalism?” is because of the diversity of meanings and applications in play. Despite the term’s current popularity among a cohort of left-wing social scientists, the more familiar it has become, the less consensus there

appears to be about what it means. James Ferguson (2010: 170) observes that “there is [now] huge variation in the way the word ‘neoliberalism’ is used in contemporary scholarship.” And yet, perhaps curiously, most researchers who employ the term typically proceed as if the meaning is clear and maps onto a definite set of values, ideas, and/or practices that exist in the wider world. Thus far, there has been little sustained discussion about the term’s ambiguities and complexities—a conversation that is now certainly overdue.

So what is going on here? One view is that neoliberalism is an unusually complex word (like ‘globalization’ or ‘nature’) and as such signifies a range of related meanings that can be applied to a plethora of real-world referents. Seen from this perspective, as long as the term’s meaning is clear for each context of application, there is no especial problem with it signifying several things and having myriad objects of empirical reference through strong ‘family ties’. Another view is that we should relieve the term of some of its current denotations, not least because we have other well-established words for them, such as privatization, commodification, the free market, the Washington Consensus, and structural adjustment. By doing so, we would restrict—and so render more precise—the meaning of those situations or things we still prefer to describe as neoliberal (see Boas and Gans-Morse 2009). Still another perspective is that we are now beyond the point of no return: so various and confusing are the meanings of neoliberalism that it has become as ‘chaotic’ a concept as globalization was after a decade of debate and use (circa 1990–2000). For instance, in their recent review, anthropologists Catherine Kingfisher and Jeff Maskovsky (2008: 123) confessed a temptation “to abandon the term altogether”—and they are not alone (see Barnett 2010).

For now, I will adopt the first of these viewpoints (although I will come back to the other two toward the end of this article). In other words, I will presume that while the term ‘neoliberalism’ is polysemic and refers to a plurality of material and discursive things, there are nonetheless a set of fairly stable, circumscribed, but also related meanings in use that are applied in a relatively consistent way by academic analysts. In effect, this is the viewpoint adopted by those social scientists investigating neoliberalism and the biophysical world (as we will see later). Each researcher has defined neoliberalism in a certain recognized manner and then undertaken an empirical investigation of environmental governance with this particular definition in place. The assumption is that there is a meaningful similarity (or even relationship) between otherwise different and separate studies.

### *The Meanings of Neoliberalism*

As some readers will know, the term ‘neoliberalism’ was coined by a group of economists and legal scholars based in Freiburg between World War I and World War II. Subsequently, it was used quite briefly by those now thought to be neoliberalism’s principal intellectuals, that is, the already mentioned Hayek and Friedman, even though neither man entirely accepted the Freiburg (or ‘ordoliberal’) model of a state-managed ‘market society’. As I intimated above, those individuals and institutions that the critics choose to call ‘neoliberals’ did not/do not use the term as a self-descriptor and rarely ever have. After a smattering of appearances during the 1990s (e.g., Barry et al. 1996; Fraser 1993; Gowan 1995; Tickell and Peck 1995), these critics started to invoke the term with increasing frequency from the turn of the millennium. My own reading of the now voluminous academic literature suggests that, for this interdisciplinary epistemic community of social scientists, the term ‘neoliberalism’ describes one or more of the following three related things: first, a worldview (i.e., a body of normative principles, goals, and aspirations amounting to a philosophy of life, or something close to one); second, a policy discourse (i.e., a set of specific values, norms, ambitions, and associated policy proposals professed

by those who control, or realistically seek to control, the formal apparatuses of government); and, third, a set of practical policy measures (i.e., concrete regulations and procedures that make both the worldview and the policy discourse evident in some tangible way). As a shorthand, we can think in terms of ‘three p’s’: philosophy, program, and practice.<sup>9</sup> I will now discuss each of neoliberalism’s three aspects in turn.

1. *Neoliberalism as worldview (philosophy)*. Although Hayek, Friedman, and others of their ilk rarely used the term, their neoliberalism, according to David Harvey (2007: 24), “took the political ideals of individual liberty and freedom as sacrosanct.” However, there are many different ways in which to define and engender liberty and freedom.<sup>10</sup> The neoliberal ideals articulated in books such as *The Road to Serfdom* (Hayek 1944), *The Constitution of Liberty* (Hayek 1960), and *Capitalism and Freedom* (Friedman 1962) accented two things. First, the state’s role was to maximize the independence of both real and institutional-juridical individuals: anything less would be anti-liberal, a travesty of ‘true freedom’. Governments and bureaucracies, it was argued, should refrain from imposing collective agendas and otherwise ‘interfering’ in the lives of people. In this sense, the early neoliberals strongly emphasized not only the rights of individuals but also their responsibility to make their own way in the world. Second, neoliberalism’s founding thinkers saw money-mediated markets as the best mechanism for coordinating among the diverse needs and wants of ostensibly free people. This is because markets were seen as highly ‘intelligent’ and ‘efficient’. Price signals, it was claimed, enable disparate providers and users of goods and service to achieve many of their desires, given whatever restraints of resource availability happen to be in place for those involved. Indeed, market competition was seen as bringing the best out of entrepreneurs, while delivering value for money to intermediate and end consumers. This belief segued into a critique of ‘state failure’, that is, the idea that government bureaucracies are administratively cumbersome and economically wasteful vehicles for service delivery.<sup>11</sup>

The neoliberal worldview, as summarized above, is not—despite appearances—fixated on economic liberty alone, although it is emphasized very strongly indeed. Political and civil liberties are featured as well: electoral democracy was the early neoliberals’ favored political system, and freedom of expression (within or without the market) was also seen as fundamentally important. This wide-ranging doctrine began to take shape during World War II and its immediate aftermath. Fashioned in reaction to the totalitarian impulses of fascism and communism, it was also presented as an alternative to the new Keynesian welfare-state paradigm, which licensed state intervention in the market and in many aspects of citizens’ daily lives. In the former respect, neoliberal thinking was at one with the *zeitgeist*, but this was not so in the latter respect. Commenting on *The Road to Serfdom*, Peck (2008: 5–6) says that “the book may have been a best-seller, but it was practically an act of self-immolation for Hayek-the-economist.” Writing in the same year of its publication, Hayek’s contemporary Karl Polanyi (1944: 142) declared that “our age will be credited with having seen the end of the self-regulating market.” In advocating an alternative to Keynesianism, the neoliberal worldview remained well outside the perimeter of cognitive and moral ‘common sense’ until the economic and political crises of the 1970s.

2. *Neoliberalism as policy discourse (program)*. For over three decades, neoliberal ideas were incubated within a select group of university economics departments, foundations, and think tanks. As the excellent histories recounted by Peck (2008) and Mirowski and Plehwe (2008) show so well, the neoliberal ‘thought collective’ was transnational, composed of groups in both Europe and the US, with a good deal of interchange between them—not least because of the efforts of the Mont Pelerin Society (formed by Hayek in 1947 and based in Chicago).<sup>12</sup> The collective’s eventual success was hardly predictable during the immediate post-1945 period.



Lacking political influence and much academic credibility, neoliberal thinkers initially produced a combination of general manifestos and fundamental works of theory, only later turning their attention to policy programs in live settings. In the latter respect, Pinochet's Chile was a key opportunity: a group of Friedman-trained economists were invited to remake the country's political and moral economy almost overnight (while being safeguarded by a military dictatorship). It was the first of several opportunities provided by domestic crises of one sort or another; however, without the groundwork laid by the prolonged efforts of the Mont Pelerinians, these opportunities could not have been exploited. As is well known, by the late 1970s, New Zealand, the United Kingdom, and the United States were the other three countries where some version of the neoliberal worldview was taken seriously by political-economic elites. It gained a subsequent hearing in many other countries—especially after the late-1980s 'revolutions' in Eastern Europe—and also in a range of US-dominated global institutions, such as the World Bank and the International Monetary Fund (IMF).

As a policy discourse, the neoliberal worldview is typically understood by critics to include the following seven proposals for significant society-wide change. Note that national governments are the major institutions tasked with delivering these changes. Like all political philosophies and programs, neoliberalism is necessarily a state-led project.

1. *Privatization*: assigning clear, legally enforceable private property rights to hitherto unowned, state-owned, or communally owned aspects of the social, cultural, and/or natural worlds.<sup>13</sup>
2. *Marketization*: rendering alienable and exchangeable things that might not previously have been subject to a market logic expressed through commodity transactions within and between nation-states measured in monetary terms.<sup>14</sup>
3. *State roll-back or deregulation*: withdrawing or diminishing state intervention in certain areas of social, cultural, and environmental life in order to enable firms and consumers to exercise 'freedom of choice'; creating new quasi-state or state-sanctioned 'non-political' actors to take on functions that states themselves could, in theory or in practice, otherwise perform; and contracting private or third sector bodies to deliver some state services through a process of competitive bidding or through partnership agreements.
4. *Market-friendly reregulation*: reconfiguring the state so as to extend the frontiers of privatization and marketization. The state in its various forms becomes more a 'market manager' and less a 'provider' to the citizenry or to 'special interests' therein: it intervenes *for* the market economy, not, as it were, *in* it. This entails fiscal discipline, a focus on supply-side investments, entrepreneur- and consumer-friendly tax policies, firm-friendly labor market policies, and measures to enable 'free' movements of money capital, as well as other less 'fluid' commodities.
5. *Use of market proxies in the residual state sector*: making the remaining state functions and services more market-like in their operation through the use of measures such as internal markets, cost recovery, and budget capping. This amounts to embedding an ethos and the practices of 'commercialization' into state services.<sup>15</sup>
6. *Strong encouragement of 'flanking mechanisms' in civil society*: using state-led measures to promote the growth of (a) robust informal and social economies, and (b) voluntary, charitable, non-profit, and community groups, all preferably well-funded and professionalized. Together, these mechanisms are intended to fill the vacuum created by the absence/diminution of direct state support in the social and environmental domains. They could be interpreted as a 'shadow state' that is emergent organically, once prodded by the state.
7. *Creation of 'free', 'self-sufficient', and self-governing individuals and communities*: cultivating an ethic among persons, other juridical units, and communities that emphasizes less

(and ultimately limited) reliance on public services and state agencies for life's necessities. This ethic extends to those operating within the state apparatus itself. It equates to a 'responsibilization' of all producers, consumers, citizens, families, communities, institutions, and spatial units of governance, as well as their 'autonomization'.<sup>16</sup>

Clearly, there is a dialectical relationship between neoliberalism as a worldview and as a program. To the extent that the program gains traction and exerts influence within any given context, it not only lends legitimacy to the worldview but poses a barrier to its future removal by critics.

3. *Neoliberalism as a set of actionable policy measures (practice)*. For any program to translate into actual policies, its advocates first need to legitimate their worldview. As Clarke (2004: 34) reminds us, "Politics is both a regime of truth (ruling out the irrational, marginal or unworkable ...) and a field in which ... some discourses [are allowed] to contend." Because the neoliberal worldview and policy program are so wide-ranging and ambitious, it is no surprise that they can be—and have been—translated into a plurality of concrete policy measures. The following are some common practices of neoliberalism in action that have been identified by analysts (even if these measures have frequently been more honored in the breach):

- *Macro-economic policies* that place controls on government borrowing, keep inflation low, place constraints on domestic money supply, keep taxation levels low, allow exchange rates to float, and allow interest rates to be determined by the market (or at least not to be determined by the government).
- *Industrial and business policies* that (a) remove selective subsidies, trade barriers, investment barriers, and ownership barriers, and (b) incentivize innovation, competition, and entrepreneurial risk taking. In effect, these policies widen and intensify commercial competition.
- *Labor market policies* that remove collectivist 'obstacles' to competition and reward, such as wage controls and trade union membership.
- *Education and training policies* that focus on the supply side and encourage individuals to build their 'human capital', be adaptable, and commit to 'lifelong learning'.
- *Managing, monitoring, and auditing measures* that—whether in the private, state, or third sector—focus hard on setting targets, establishing benchmarks, measuring performance, penalizing failure, and rewarding success. In the state sector, these measures have been inspired, variously, by approaches known as 'new public management', 'transaction cost theory', and 'principal-agent theory'.
- *Social policies* that are oriented to 'workfare' not 'welfare' and that offer state support only to the very needy or chronically disadvantaged. This entails a remoralization of the poor and the 'excluded', so as to 'responsibilize' them for their livelihoods, their successes, and their 'failures'. They are thus exposed to the various risks of life and to living without much assistance from society or the state.
- *Law and order policies* that take an uncompromising approach to rule breakers, 'trouble-makers', and those who otherwise cause social disruption and infringe upon the rights of others.
- *Civil rights policies* that encourage free speech, freedom of information, lifestyle choice, privacy rights, and freedom of assembly—as long as the rule of law is observed.
- *Governance policies* that, in a range of policy areas, democratize and devolve decision making by empowering a wide range of actors outside the formal sphere of government.<sup>17</sup> Empowerment is about making decisions and dealing with their consequences, for good or ill.

I will deal with environmental and natural resource policies later in the article, but for now, suffice it to say that these policies aim to achieve given ends—such as environmental protection or resource conservation—in efficient and competitive ways by variously privatizing, marketizing, and de-statizing a range of biophysical goods and ecosystem services.

Again, it almost goes without saying that neoliberal policies are linked recursively to program and philosophy. For instance, Peck and Tickell (2002) have argued that the ‘roll-back’ policies of a ‘hard’ neoliberal program have, in countries like Britain and the US, given way to ‘roll-out’ policies that seek to embed core neoliberal principles and values as norms governing everyday life and living. A key point to make here is that a wide range of different concrete policy measures—alone and in combination—will ‘deliver’ various of the seven elements of the neoliberal policy proposals detailed above. There is no universal or perfect ‘one-to-one’ mapping of these elements onto discrete policy measures.

### ***Neoliberalism or Neoliberalizations?***

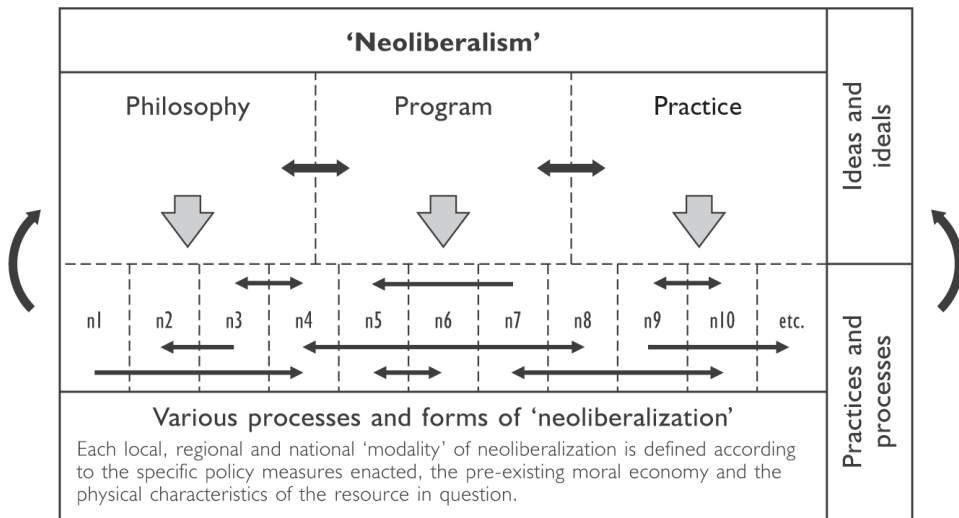
This three-part disaggregation of neoliberalism usefully clarifies the term’s complex meanings and myriad referents. It may help readers to understand better what different researchers are referring to when they describe something as ‘neoliberal’. Clearly, one should not elide philosophy, program, and practice, even though they are necessarily related. Mudge (2008), following sociologist Pierre Bourdieu’s concept of different discursive-institutional ‘fields’, uses a ‘horizontal’ metaphor to understand the ‘three p’s’. For her, the philosophy is located in the ‘intellectual field’ (dominated by university economics departments, think tanks, and foundations), the program in the ‘political field’ (political parties, professional politicians, and elected leaders), and the practice in the ‘bureaucratic field’ (civil servants, administrators, managers appointed by elected politicians, nominated firms, sanctioned NGOs and charities, etc.). Obviously, the fields greatly overlap and mutually condition one another—but how?

Here, one or two commentators have come unstuck. For instance, in an uncharacteristically ill-judged (and much cited) observation, *New Left Review* editor Perry Anderson (2000: 7) once said that “neo-liberalism as a set of principles rules undivided across the globe: the most successful ideology in world history.” Similarly, another observer, otherwise attentive to the uneven development of neoliberalism, has sometimes described it using blanket metaphors: “Neoliberal[ism] has in effect swept across the world like a vast tidal wave of institutional reform and discursive adjustment ... no place can claim total immunity (with the exception of a few states such as North Korea)” (Harvey 2007: 23). Statements like these paint a picture of ‘hegemonic neoliberalism’, thus spatializing at the global scale the notion of a supposedly coherent period or era (with the oft-used term ‘neoliberal globalization’ performing the same function). Such statements imply a one-way, unadulterated relationship between philosophy, program, and practice in which a peculiarly homogeneous geography of neoliberalism (with a capital ‘N’) writ large is imagined—a sort of spreading ink blot that has its origins in the academic field. However, very few empirical analysts of neoliberalism see it in such simplistic terms, which is why the process term ‘neoliberalization’ has been favored since it was coined nearly a decade ago by Peck and Tickell (2002). Neoliberalization describes an ongoing, unfinished process of proposing, revising, testing, applying, and further altering neoliberal ideas and policies. As Neil Brenner and Nik Theodore (2002) have argued, ‘actually existing neoliberalism’ is not the same as the neoliberal philosophy. Indeed, Harvey (2005: 19) regards the latter as utopian, as a rhetorical cloak used to describe and justify the messy pragmatics of programs and policies in practice. It is thus ironic that he inadvertently bolsters the utopian rhetoric by discussing neoliberalism with a capital ‘N’.



These arguments suggest that what is referred to as neoliberalism in the singular is, in reality, a complex historical-geographical formation that is marked by unevenness and variety as much as it is by similarity—that is to say, it is a set of interconnected local, regional, and national neoliberalizations (in the plural). Neoliberal ideas may well have ‘gone global’ from the mid-1980s, courtesy of the US and its influence on the World Bank and the IMF. But this has not resulted in a tidy process of downward and outward diffusion from neoliberalism’s North Atlantic heartlands. Instead, there has been path dependency, contingent couplings, unplanned adaptations, organic mutations, and a good deal of social resistance to ‘new liberal’ policies. Varying combinations of coercion, consent, contestation, and compromise describe the spatio-temporal evolution of neoliberal projects in different parts of the world. In some cases, their reach is wide and deep; in others, it is not. Peck (2006: 732) summarizes well the research agenda that follows from this: “If neoliberalism can only exist in hybrid, in a kind of parasitic relation to the social formations that provide its hosts, then there is ... considerable work to do in mapping varieties and transmutations of the project” (see fig. 1).<sup>18</sup>

**Figure 1:** From neoliberalism to neoliberalization



Note: In order to ensure that ‘philosophy’ and ‘program’ are not perceived by readers to ‘determine’ ‘practice’, the last has been placed in the top part of the figure. However, perhaps somewhat confusingly, the pragmatics of practice are signified in the lower half of the figure. This is confusing only if readers divorce practice from philosophy and program. In actuality, they are inseparable; hence, the dotted lines used in the figure above.

## Neoliberal Environments: Introducing the Topic and the Published Research

As already stated, critical social scientists interested in environmental management, natural resource use, and related issues came late to the discourse of neoliberalism, when compared with most of those whose works I have cited previously. Even so, they had been discussing at least some of the same phenomena by way of other terms, such as ‘free market environmentalism’ (see, e.g., Eckersley 1993). Since roughly 2000, they have linked these terms to the concept of neoliberalism or, for various reasons, have eschewed the former and used the latter as an analytical framing device in their research.

### *Neoliberal Environmental Policy: History and Declared Benefits*

Environmental and natural resource policies that deliver one or more elements of the seven neoliberal policy proposals have been implemented in a wide range of contexts and locations. The question arises: given that neoliberal ideas originally made little or no reference to natural resources or environmental issues, why did they find expression in water, forestry, and fisheries management (to take just three examples) in many places, regions, and countries? The published research literature suggests that there are five answers to this question, even though the complete history has yet to be detailed.

First, Steven Bernstein (2002) points to the entirely contingent coupling of environmentalism and neoliberalism during the 1980s—what David Driesen (2008) refers to as a ‘shotgun wedding’. The global rise of environmental concern through the 1960s and 1970s, Bernstein argues, coincided with the success of neoliberalism in the Anglo-American world and, via the World Bank, the IMF, and the World Trade Organization, at the global level through the 1990s (see also Hartwick and Peet 2003). Yet the post-war origins of environmentalism can, of course, be traced back to the Fordist-Keynesian, pre-neoliberal period, one that ended with widespread talk of an ‘environmental crisis’. Second, environmentalism aside, the idea of ‘green’ development took hold in several global institutions from the late 1980s. The idea was that in the global South there were many ‘unpriced’ and often unowned biophysical ‘assets’ that could, if inserted into global markets, create revenue streams that would be able to support much-needed socio-economic development. These assets to be traded overseas included everything from rare and beautiful animal species to plantation trees and mineral resources. Third, in some (but by no means all) domains of environmental management and natural resource policy, neoliberal ideas had already been aired quite separately from the broad manifestos authored by the likes of Friedman and Hayek. For instance, during the 1950s, economist H. Scott Gordon (1954) had suggested a proto-neoliberal solution to overfishing in which private property and markets played a major role, while the famous essays authored by Garrett Hardin (1968, 1974) more than a decade later popularized similar ideas for all ‘open access’ resources. The term ‘neoliberal’ was not used by Gordon or Hardin, but their arguments were consistent with the neoliberal philosophy. Fourth, because many natural resources (e.g., water and forests) had been managed by state bodies as public services or national assets following World War II, it was inevitable that neoliberal politicians, such as Margaret Thatcher, would seek to manage these resources using the same political-economic rationality utilized in all other areas of economic and social policy. Fifth, in the US a small group of think tanks and foundations worked very hard from the late 1970s to popularize ‘green neoliberalism’ (Goldman 2005) as a way of responding to the concerns of the green movement without capitulating to ‘command and control’ solutions. This later had effects on American environmental policy arguments on the world stage. In short, there was no single reason why neoliberal ideas seeped into the arena of environmental policy. It was an uneven process, both temporally and spatially, and the three fields identified by Mudge (i.e., intellectual, political, and bureaucratic) were all involved in various ways and to varying degrees.

With the benefit of hindsight, it is clear that the growth of environmental and resource economics as an applied field of academic research was very important in codifying an environmental version of neoliberalism as, variously, a worldview, a policy discourse, and a set of practical policy measures. This sub-discipline’s prodigious growth in universities from the early 1980s was a reflection of and response to the five developments recounted above and, in turn, gave neoliberal ideas further impetus in the environmental domain. What is also clear in hindsight is that the international policy networks and epistemic communities, which ensured that neoliberal ideas ‘traveled’ in areas such as social and labor market policy, were also effective in

disseminating green neoliberalism and green developmentalism far and wide. The first United Nations Conference on Environment and Development (informally, the Earth Summit), held in 1992, was a key event in this regard because the now famous Framework Convention on Climate Change and the Convention on Biological Diversity both embodied neoliberal principles—and they did so at a global level. However, this is not to say that these principles infused environmental policy everywhere and equally.<sup>19</sup>

The neoliberalization of environmental management and resource use necessarily occurs against the background of pre-existing political and moral economies. It must also grapple with the biophysical specificities and peculiarities of particular resources, ecosystems, and environmental assets. In short, the world is never a *tabula rasa*, waiting to be freshly inscribed by omniscient elites. Seen in this light, neoliberalization must overcome, or at least adapt to, challenges and barriers residing in both the human and non-human domains. In any given case, neoliberal ideas, policies, and practices must hybridize—more or less successfully—with what is already there.

The socio-economic and cultural obstacles to the neoliberalization of nature are, in theory at least, more tractable than the biophysical ones. Although ‘nature’—in the sense of the environment in general and natural resources in particular—is undoubtedly a social construction at one level, it also possesses material properties that any governance regime or policy measure must work with (or around).<sup>20</sup> By contrast, those stakeholders who stand to lose or gain from the neoliberalization of nature in any given case can, in principle, be persuaded about its merits or otherwise be obliged to live with it. The various arguments in favor of neoliberal environmental policies, made by their various supporters, include the following:

- open access resources can be protected, once private property rights and prices are assigned to them, with the result that the ‘tragedy of the commons’ (Hardin 1968) can be avoided;
- currently unowned or unpriced portions of the biophysical world can yield a profit for existing or aspiring entrepreneurs, either through conservation/protection/remediation or through productive use;
- environmental goods that are not currently valued economically, or are not in some way subsidized by the state, equate to ‘lost income’, ‘unrealized value’, or ‘mispriced/underpriced assets’ for nature and people;
- the private sector can manage natural resources and environmental services so as to deliver value for money for consumers or citizens relative to state bodies and other non-market actors;
- the introduction of competition and pricing into the management of the biophysical world can boost both management standards and environmental outcomes;
- instilling commercial principles into state bodies can make them more efficient managers and deliverers of resources and environmental amenities and/or services;
- the off-loading of some state responsibility for the quantity and quality of environmental goods and services to civil society actors not only empowers those actors but also allows for tailored, creative, and non-bureaucratic approaches to resource governance; and
- empowering consumers, citizens, firms, and other juridical units to take responsibility for their environmental impact respects the rights of the individual (real, communal, or corporate).

We might synthesize these various arguments as follows. Depending on the case, neoliberal environmental policy can (so its advocates claim) deliver benefits summarized in the acronym GEDDS (growth/efficiency/development/democracy/sustainability). In more detail,

this acronym stands for economic growth (through privatizing and marketizing biophysical resources, goods, and services); economic efficiency (the best environmental outcome per unit cost, where outcomes are described in various management standards and codes); economic and social development for marginal or low-income communities (as new revenue streams kick in, underpinned by secure property rights in land and other resources); democracy (by destatizing responsibility for, and the benefits of, environmental management); and environmental sustainability (by making conservation, preservation, restoration, and renewable use into profitable activities). I am aware that this is something of a contrivance on my part because I am grouping arguments made by different advocates who operate in different fields of environmental thinking and policy. In any given case, all five criteria would not be relevant. However, to the extent that these arguments are advanced selectively to support the policies analyzed by the critics whose work I turn to in the next main section, I think GEDDS is a useful heuristic when seeking to map the diverse effects of these various policies, as detailed later in this article.

### ***Researching Neoliberal Environmental Policy***

Most analysts of ‘neoliberal nature’ are not so sanguine about the purported benefits of market-led environmental governance. The first purposeful and collective use of the idea of neoliberalism to investigate environmental questions occurred in 2004 and 2005, when the journals *Geoforum* and *Capitalism, Nature, Socialism* both devoted whole issues to the subject.<sup>21</sup> This led to the edited book *Neoliberal Environments* (Heynen et al. 2007), inspired special issues of the journals *Antipode* (Mansfield 2008) and *Conservation and Society* (Igoe and Brockington 2007), prompted a special section of *Geoforum* (Guthman 2008a), and triggered a steady stream of empirical studies in several disciplines that use neoliberalism as a framing concept or analytical lens. These studies focus on the full spectrum of environmental and natural resource uses, from extraction (e.g., mining or agriculture) to conservation, and from green policies to those in which nature is simply something to be exploited for profit. Neoliberal environmental policies are neither intrinsically ‘anti-ecological’ nor always hard-wired to the sustainability agenda: it very much depends.

As I said earlier, the signature feature of this recent literature is its commitment to case study research. Although some of it is synoptic and general (see, e.g., Buscher et al., forthcoming; Guthman 2007; Roberts 2008), for the most part it comprises in-depth analyses of neoliberal environmental policies in specific places, regions, and countries. To recall Peck and Tickell’s term, this literature is thus interested in various neoliberalizations. What is more, and broadly speaking, it takes a political-economic perspective on neoliberalization rather than a Foucauldian one.<sup>22</sup> The latter, sometimes called a ‘governmentality’ approach to neoliberalization, has inquired into the ‘technologies of government’ or the ‘rationalities of rule’, not just administrative ones, but also those rhetorical and discursive technologies that have generated new subject positions and identities in the wider society. The key point has been that neoliberalism, despite its principles, has involved more (or as much) government, not less—especially outside the formal apparatuses of the state. It is ‘rule at a distance’ or by ‘remote control’ because of the way it reformats social norms so as to create—rather than simply activate—the supposedly latent and intrinsic capacities of individuals (be they mortals or corporations).<sup>23</sup>

Inspired by neo-Marxist, Polanyian, and Gramscian ideas, some political-economic perspectives differ from Foucauldian ones in that they see neoliberal statecraft as, variously, (1) a project of class domination hidden behind, or expressed in terms of, the rhetorical worldview; (2) a means to create new social inequalities and injustices or to intensify existing ones; and (3) a far-from-smooth process that is often generative of social resistance framed in class, community, gender, or other terms (which power elites within or without the state then have to manage in

some way—what Polanyi termed ‘the double movement’). I might add that some of this Marxian-Polanyian-Gramscian literature has analyzed neoliberalism in light of recent theoretical studies on capitalism-ecology relations in general, including the works of ‘eco-Marxists’ such as James O’Connor. A motif of these eco-Marxists, unsurprisingly, is contradiction—not just the classic first contradiction internal to capitalism as identified by Marx, that is, between the forces and relations of production, but also the second contradiction between a growth-oriented capitalism and the finite biophysical world upon which that growth depends. In this light, three questions arise. First, does the neoliberalization of nature constitute a widening or deepening of class-based social power?<sup>24</sup> Second, does neoliberalism simply perpetuate, mitigate, or possibly even overcome the ‘ecological contradictions’ that are characteristic of capitalism to date?<sup>25</sup> Third, how successful have neoliberals been in framing their policies discursively in order to gain the support of various affected constituencies? When combined, the answers to these questions speak to the organic relationship between issues of social justice and of environmental justice.

These theoretical-political commonalities in the research literature notwithstanding, the empirical inquiries are far from easy to parse and synthesize so that a broader understanding of ‘neoliberal nature’ can be achieved. Why is this so? Five reasons help to explain this difficulty. First, the published studies are now relatively numerous and are scattered across a wide range of journals in a variety of academic fields (e.g., human geography, rural studies, planning, anthropology, agrarian studies). Second, these studies together cover a wide range of environmental policy areas (e.g., water resources, forestry, mining, fisheries). Third, while some studies are on a local scale, others examine national or international policy measures. Fourth, the geographical cases that have been selected are highly diverse and span the developing and developed worlds. Fifth, specific studies have focused on different aspects of neoliberalization. For instance, geographer Julie Guthman’s (2007) excellent research on voluntary food labels combines a focus on one specific policy instrument (devised in the policy field) with a wider discussion of how ‘neoliberal consumers’ are created (an aim of the neoliberal worldview writ large). Due to the scope of what neoliberalism is (or is understood to be), few studies would be able to consider all of its elements in one go. For these five reasons, a major effort is required on the part of readers of this literature to detect the proverbial signals in the noise. The empirical studies into ‘neoliberal nature’ have emerged bit by bit and, in many cases, have not been cross-referenced by their authors to all the relevant published literature. Additionally, these studies have recently increased in number in a short space of time.<sup>26</sup>

In what follows, I will attempt to locate the findings of these separate studies on a broader cognitive map without, I hope, imposing a false sense of order or unity on them. The value of this exercise is, I trust, obvious. If neoliberalism is as widespread and influential as its critics have claimed, we need to examine it holistically and comprehensively, rather than fixating on one or a few cases and examples, as if they could tell us the whole story. Because the published studies have proceeded according to no common template or method, it is timely to create a greater sense of analytical order when deciphering their potentially disparate results and insights. Inevitably, some of the empirical (and conceptual) richness of the research I describe will be sacrificed in the process of presenting my synopsis.<sup>27</sup>

## **Neoliberalizing Nature 1: Processes of Reregulation**

Above I summarized the purported benefits of neoliberal environment policies with reference to the acronym GEDDS. In toto, the arguments made by advocates here can be said to constitute the neoliberal worldview in the environmental domain. In what real life situations



have they been translated into practice? I will address this question systematically, according to the seven neoliberal policy proposals presented earlier. Note that no one author's study speaks to all of these points, yet when taken together, different studies do speak to these points as a whole. I will then, in the next section, describe the outcomes of the neoliberalization of nature, organizing these according to social and environmental impacts and then the GEDDS template. This, it seems to me, is far more incisive than discussing policy change on a sector-by-sector basis (e.g., agriculture, fisheries, forestry, etc.). It also allows us to see how sector-specific reforms are part of a broader transformation of economy, society, and environment. Together, specific neoliberalizations of environmental and natural resource use amount to the neoliberalization of nature as a whole.

1. *Privatizing and propertizing nature.* Assigning rights of ownership in, or use of, the biophysical world can occur in three situations: (1) where state bodies relinquish or 'loan' their sovereign rights, (2) where a recognized or established rights regime outside the state realm is fundamentally altered by policy makers, and (3) where no recognized (or enforceable) rights currently exist.

Karen Bakker (2003, 2005) and Loftus and McDonald (2001) provide examples of the first situation. Bakker's detailed studies of water and sewerage services in post-1989 England and Wales show how a few large private sector firms took direct control of the hydrological infrastructure. Similarly, Loftus and McDonald describe Argentine President Carlos Menem's 1989 Administrative Reform Law and focus on the privatization of water delivery and sewerage services in Buenos Aires through the 1990s. This reform concentrated water management rights in the hands of one large company, Aguas Argentinas, an entity established by a consortium of private European water companies with the assistance of the World Bank.

Studies of the second situation identified above include those by Thomas Perreault, Diana Davis, Gavin Bridge, and Becky Mansfield. Perreault (2005) focuses on the legal enclosure of Bolivia's water resources in the 1990s and its gas resources too (Perreault 2006). In the former case, central state control of the resource was relatively weak prior to privatization. Davis (2006) describes the several laws passed in Morocco in the 1990s pertaining to unfenced, rural farmland and to dryland agriculture. These laws have involved enclosing the environmental commons or communal lands and creating large parcels of agricultural land, with ownership being concentrated in a new set of well-capitalized farmer-operators. Bridge (2002) charts the enclosure of land in Guyana by small and medium domestic investors and by large overseas investors, who together have purchased prospecting and extraction gold mining rights from the national state. After the 1989 liberalization of mining laws, this poor and indebted country saw a 15-fold increase in the area given over to mining permits or claims by 1994. Gold mining in the country has historically been dominated by small and medium domestic operators. An early 1990s amendment to national mining legislation was designed to encourage large overseas investors to enter the Guyanese gold industry. But the amendment was designed so that overseas interests had to have domestic partners—a way of trying to make external investment pay dividends for certain Guyanese nationals. In contrast to Bridge's land-based study, Mansfield's (2004a, 2004b, 2007b) excellent essays examine the enclosure during the 1990s of the US portion of an open access fishery in the North Pacific Ocean.<sup>28</sup> This enclosure has excluded new fishery entrants and, indeed, reduced the number of existing ones.

With respect to the third situation identified above, geographer Scott Prudham (2007) analyzes a 2004 Canadian Supreme Court decision to reject a Monsanto patent claim covering genetically modified canola. Prudham focuses on the legal complications involved in trying to abstract discursively parts of nature from their social and environmental integument in order to be presented, by companies such as Monsanto, as putatively 'autonomous inventions.' This

case is linked to ongoing attempts by many other pharmaceutical, biotech, and agro-foods companies to privatize previously unowned (and unownable) elements of the biophysical world. Relatedly, there are Morgan Robertson's (2004, 2006, 2007) fascinating studies of the wetland banking and water quality credit markets in the US during the 1990s and the 2000s. His essays examine how the right to destroy and create wetlands was invented and institutionalized, along with the right to produce dirty and clean water. In both cases the rights were new, creating a property regime where one had not actually existed before. The same applies to the Californian conservation easements investigated by Amy Morris (2008).

2. *Marketizing biophysical resources, goods, and services.* Rights of ownership and the use of nature do not necessitate the marketization of biophysical resources, services, or assets (Bakker 2005). However, for neoliberal policy makers the two are umbilically connected. Once property rights are assigned and legally 'real', the assets owned or accessed should, neoliberals argue, generate a stream of revenue. Therefore, each of the studies cited in the previous three paragraphs necessarily includes mention of marketization. For instance, Mansfield's research explores how a transferable quota system was introduced—one that allowed fishermen and other stakeholders (e.g., coastal indigenous peoples in Alaska) to establish a price for the annual right to harvest a given amount of fish. Additional studies in which marketization is a central theme include the following. Fraser Sugden (2009) reports on the Nepal government's Agriculture Perspective Plan, which was initiated in 1995. This plan aimed to get subsistence farmers in rural areas to commercialize their operations so as to earn exchange values from food sales to domestic and overseas markets. In other words, the plan sought to replace a long-standing peasant way of life with a capitalist one, characterized by numerous agrarian entrepreneurs vying for market share. Likewise, Cristobal Kay's (2002) superb analysis of Chile's neoliberal agrarian transformation in the 1990s includes a discussion of attempts to bring peasant farmers into the country's capitalist economy by trading their produce overseas or domestically. This 'second modernization' of Chilean agriculture is also the focus of Warwick Murray's (2002) wide-ranging study of rural 'reconversion'.

A striking case of marketization is presented by James McCarthy (2004) in his analysis of how large firms within the North American Free Trade Agreement (NAFTA) region use the investor protections written into this compact. Whereas Robertson (2004, 2006, 2007) and Morris (2008) both show marketization to be an attempt to mitigate environmental harm, McCarthy tells a different story. In 1993, Metaclad, a US waste disposal company, bought and subsequently developed an inactive toxic waste dump in the Mexican state of San Luis Potosí. The local government halted Metaclad's activities in 1995 on health and safety grounds. Metaclad subsequently began a proceeding against the Mexican government under Chapter 11 of NAFTA, citing the 'regulatory takings' concept, which presumes that investors are entitled to earnings lost through the actions of others. In 2000, a NAFTA tribunal found in favor of Metaclad, ordering Mexico to pay \$16.7 million for outlays and lost revenue. McCarthy calls this the 'primitive accumulation' of the conditions of production, because revenues are earned from the biophysical world through compensation for *not* undertaking extractive activities. In this case, the right of firms to make money regardless of the human or environmental cost is taken as sacrosanct, in McCarthy's view.

3. *State roll-back or deregulation.* Clearly, the withdrawal (or decrease) of state control over environmental goods, ecological services, and natural resources has not been universal during the last 30 years. In many countries, the level of state involvement has been minimal from the beginning (e.g., in developing countries), while in others it has been considerable (notably in Western capitalist democracies, former communist states, and former 'developmental states' in the global South). Only in these latter cases is roll-back a significant and tangible process,

often driven by a perceived need of state bodies to save money and reduce public borrowing or taxation. For instance, Harold Perkins (2009) reports on a sharp reduction in local government expenditure on environmental amenities in the famously ‘green city’ of Milwaukee through the 1990s and 2000s (see also Heynen and Perkins 2005). Also in the US, Paul Robbins and April Luginbuhl (2005) show that in California, Colorado, Nevada, New Mexico, Oklahoma, Oregon, Utah, and Washington there has been a transfer of fiscal and management responsibility for wild game from states to (mostly) private landowners, such as farmers, according to their land acreage and the habitats involved. As already mentioned, Bakker (2003, 2005) relates how the post-1989 central government off-loaded responsibility for water supply and sewerage infrastructure in England and Wales. Also in the Anglophone world, Brad Coombes (2003) reports on New Zealand’s 1991 Resource Management Act and its effects on habitat husbandry in the Auckland region. After the act was passed, central government devolved many of its strategic planning powers, in the process weakening the influence of professional planners on land use decision making. In turn, this left the protection of rare or otherwise valuable habitats on privately owned land parcels to a combination of voluntary agreements and market-based instruments. More dramatically, Prudham’s (2004) study of a serious water poisoning incident in Walkerton, Ontario, describes the context as being a contracting out of provincial government responsibility for water testing as part of Ontario Premier Mike Harris’s ‘common sense’ agenda in the 1990s.

Western capitalist democracies aside, Maria Rodrigues (2003) recounts how one of Brazil’s post-1945 parastatals, Companhia Vale do Rio Doce (a conglomerate of 50 firms operating in the mining, transportation, and forestry sectors), was sold off to private investors in 1997. This involved a massive withdrawal of national state authority, although it generated an equally massive infusion of funds into the public purse. Also in South America, Jessica Budds (2004) focuses on the Pinochet government’s reversal of previous government policy on water rights and water delivery so that the hydrosocial cycle was de-statized.

4. *Market-friendly reregulation.* The processes of privatization, marketization, and deregulation do not, of course, mean that national governments somehow play a minor role in neoliberalization. On the contrary, their active involvement is imperative, both as lawmakers and as direct (or indirect) regulators of actors inhabiting the private and civil society domains. This involvement can redefine market relations across the board and affect all market participants, not least by creating new markets altogether or by significantly altering existing ones. Typically, the regulatory environment has shifted from formal, state-centered government to more dispersed, extra-state forms of governance.

Studies of market-friendly reregulation by national governments abound. Once again, I need to mention Bakker (2003), whose book *An Uncooperative Commodity* details the extraordinary lengths to which technocrats operating under British Conservative governments went to create a market in the water supply. Bill Pritchard (2005a, 2005b) and Cocklin et al. (2006) relate how post-1980s Australian governments lent their full support to free trade policies in the agricultural arena, creating a ‘hyper-competitive’ farming sector oriented to global export markets. This contrasts with the EU, which used the idea of multi-functionality to protect certain of its farmers and rural communities from the negative effects of *laissez-faire* (see Dibden et al. 2009). Relatedly, Clive Potter (2006) reports on how a globally powerful discourse of free trade in the agricultural sector, which cast a long ‘discursive shadow’, has heavily conditioned national attempts to exempt some rural spaces from competitive, productivist agriculture.

Budds’s (2004) already cited study of Chile’s 1981 Water Code shows how it created an expanded market in water rights and thus in water itself. Focusing on nearby Peru, Jeffrey Bury

(2004, 2005) explains how successive governments opened up their country's mineral resources to overseas investors through the 1990s, echoing Bridge's (2002) study. Arielle Levine (2007) describes how Zanzibar's Environmental Management for Sustainable Development Act of 1996 devolved responsibility for protected areas to private parties. These parties can include local communities, as detailed by Igoe and Croucher (2007) for Tanzania and by McCarthy (2006) for British Columbia. In her account of Madagascar's turn to ecotourism as a major source of overseas income and a way of protecting special or biodiverse sites, Rosaleen Duffy (2008) places emphasis on the wide array of actors who have been invited to neoliberalize access to the island's flora and fauna. These actors cross-cut both geographical scales and the public, private, and third sectors. Together they show how a national government has been influenced by, or has actively enrolled, quasi-state institutions (such as the World Bank), well-funded environmental NGOs, and many others besides. This theme of the state-sanctioned turn away from government to governance is emphasized by Perreault (2005, 2006) in his already mentioned accounts of the privatization of rights to water and gas resources in 1990s Bolivia. This privatization entailed a radically altered access regime and a newly centralized regulatory system dominated by national 'quangos'.<sup>29</sup> Relatedly, Buscher and Dressler (2007) show that national states in the global South have, since the early 1990s, designated more cross-border areas in order to encourage the emergence of privately (or communally) managed conservation spaces.

Prudham and Morris (2006) also look at a quango, this one in Canada. They scrutinize a national review of genetically modified (GM) foods regulation by the Canadian Biotechnology Advisory Committee (CBAC) between 1999 and 2004. GM foods have, of course, been heavily criticized on environmental and health grounds by organizations such as Greenpeace and the UK's Soil Association. Prudham and Morris show that, from the start, the CBAC—a supposedly impartial expert body advising the Canadian government—was already committed to creating a market for GM foods and spent a good deal of its resources trying to persuade the Canadian public that this was a good thing. Finally, there is Julie Guthman's (2007) study of voluntary food labels that purport to connect farmers and shoppers. These schemes, she argues, create an ethical market in socio-environmental 'goods' and 'bads' in place of direct national state regulation of farming and food prices. They thus put a monetary value on morality in competitive markets, making exchange values a vehicle for expressing consumers' environmental and social values.

5. *Use of market proxies in the residual state sector.* In relation to the non-human world or society, the use of market proxies entails making the remaining state-run activities as economically efficient as possible. 'Efficiency' here means that, whether delivering goods and services to citizens or acting as a regulator, state institutions operate as if they were private sector firms subject to a competitive environment. Where 'artificial' competition cannot be created among state institutions for practical reasons, other measures can be used, such as rules insisting on full cost recovery, balanced budgets, and high standards of service provision.

In the biophysical domain, one service area where even many neoliberal states find it difficult to 'let go' relates to basic natural resources, such as water and oil. These resources are either universally required by all citizens or have strategic importance for a given country. Laila Smith's (2004) study of water provision in Cape Town is a case in point. In an empirically rich essay, Smith shows how the Cape Town government introduced water demand management through metering and pricing, the outsourcing of some water services as a cost recovery strategy, and water cutoffs for non-paying citizens. This, she concludes, was done in the name of economic efficiency and a market-defined notion of citizens' rights and privileges. Relatedly, Priya Sangameswaran's (2008) study of water resource governance in the Indian state of Maharashtra suggests that attempts to commercialize a parastatal service provider—Maharashtra

Jeevan Pradhikaran—are radically altering its *modus operandi*. However, aside from Smith's and Sangameswaran's studies, there are currently few others that interrogate the neoliberalization of nature in the residual state sector.

6. *Strong encouragement of 'flanking mechanisms' in civil society.* The gaps left in environmental provision by state bodies can be plugged by various civil society actors, operating either outside or within the market. The Milwaukee research conducted by Perkins (2009) provides an example of the former, as does Ryan Holifield's study (2004). Perkins recounts how three volunteer organizations stepped into the vacuum created by the Milwaukee municipal government's partial withdrawal from maintenance of public parks and trees. Holifield examines how so-called environmental justice communities (EJCs) were, during the Clinton presidency, brought into the regulatory practices of the US's Environmental Protection Agency (EPA). In neoliberal terms, EJCs are those communities suffering the ecological 'externalities' of economic activity—that is, they are victims of 'market failure', including the inability to gain financial compensation for toxic waste being dumped nearby or to ensure that the offending firm(s) will pay the clean-up costs. Holifield shows how, under Clinton, EJCs—whose politics over the last 30 years have typically been radical left, linked as they are with the civil rights movement of the 1960s—were given much more visibility within the EPA's remit to remediate toxic sites. Although EJCs are not, Holifield argues, products of neoliberalism, they have been brought within its logics of property and payment by the EPA. This contrasts with the previous situation in which EJCs were typically ignored by state officials unless they fought hard and loud enough to get their grievances heard. In a recent study of agricultural biosafety in Costa Rica, Thomas Pearson (2009) recounts the appearance of 'informal' auditors in civil society who are called on to check the work of state-sanctioned private auditors. In contrast to Holifield's study, Pearson shows that these auditors were not, in fact, brought forth intentionally through state encouragement. They appeared because of a lack of trust in the private sector auditors.

As I intimated above when discussing Guthman's (2007) research into voluntary food labels, civil society actors have been increasingly enjoined to take on a regulatory role outside the state apparatus through the moralization of certain commodity markets. Paige West (2010) and Lovell et al. (2009) examine similar cases where commodity exchange becomes a substitute for state management of environmental and labor conditions. West looks at how Papua New Guinean specialty coffee is marketed to US consumers, whose dollars purport to deliver decent wages and to improve environmental conditions on the other side of the world. She shows how the subject effects of marketing—to the extent that they exist—individualize consumers and systematically misrepresent coffee producers' lives in neo-colonial, romanticized narratives of peasants and family farmers. The equally contrived ethical narratives-cum-discourses thrown at purchasers of voluntary carbon offsets by offset retailers is described by Lovell et al.

Consumers are, of course, positioned at the end of 'commodity chains'. But these commodities are often produced and marketed according to standards that are prescribed by non-state actors and are adhered to voluntarily by certain firms and commercial outfits. Dan Klooster (2010) details the globally widespread adoption of Forest Stewardship Council (FSC) certification standards for wood product emanating from plantation forests. These voluntary schemes have the value—so argue their advocates—of creating global standards without the need for complicated, cross-jurisdictional administration by national regulators.

7. *Creation of 'free', 'self-sufficient', self-governing, and entrepreneurial individuals and communities.* Most markets involve a wide array of actors who are often separated in space and time and whose relations are scrutinized by commodity chain analysts. Because all markets are



‘embedded’, their operation affects other diverse constituencies. We can thus imagine neoliberal discourse having to work in several different arenas so as suitably to ‘interpellate’ commodity producers, sales, and marketing intermediaries, commodity consumers, regulatory actors, and other stakeholders affected by the neoliberalization of nature. These various actors may inhabit the same national space. But then again, they may not.

The already mentioned studies by Sugden, Murray, Kay, and St. Martin focus squarely on those who derive a livelihood directly from natural resources (e.g., land or fish). Sugden (2009) points to the failure of neoliberal agrarian reform in the Nepali lowlands: existing social identities and relations have not been dislodged discursively or practically. By contrast, although identities and subject positions are not examined, Murray’s (2002) research into agrarian transformation under Chile’s center-left Concertación coalition governments demonstrates how small, medium, and larger farmers embraced neoliberal policy, if not always willingly. This, too, is the message of Kay (2002) in a similar study of Chilean agriculture. St. Martin (2007) examines how a neoliberal fisheries discourse promoted by policy makers articulates with a non-capitalist political and moral economy specific to New England fisheries. It does not, in his view, erase this existing economy, but it does threaten to unsettle it considerably, even as fishermen seek to maintain their traditions (see also St. Martin 2006).

Other key research that focuses on commodity production includes works by Peter Wilshusen, Wendy Wolford, Becky Mansfield, and Gabriela Valdivia. Wilshusen’s (2010) field research in southeastern Mexico in the state of Quintana Roo relates how rural communities have creatively worked with, and around, neoliberal discourses and policies emanating from the national state. These communities, he shows, have accommodated neoliberalization by blending its favored subject positions and rationalities with those of a moral economy based on collectivist ideas of sharing and mutual aid. Wolford’s (2007) investigations of land reform in northeastern Brazil demonstrate how neoliberal discourse has been adopted enthusiastically by members of the populist Movement for Landless Workers. However, the price for their support, she argues, is that many now feel obliged to participate in a competitive food economy (based on exchange values), rather than a peasant one. In an essay on indigenous Alaskan peoples’ involvement in a transferable quota fisheries scheme, Mansfield (2007b) reports a similar enthusiasm for neoliberalism among an otherwise excluded social group. The rights and revenues enjoyed by First Nations Alaskans, she shows, are consistent with their sense of themselves as a distinct community with historical and cultural claims to a share of the fishery and with a need for money to address poverty and to underpin socio-economic development. Relatedly, Valdivia (2005) examines the way that neoliberal reform measures in the Ecuadorian Amazon have affected indigenous peoples’ discourse with respect to land and other resources. She reports a creative, complex engagement with neoliberal principles and ideas that allows indigenous peoples to adapt their claims and agendas to changing political-economic circumstances. Of course, in many cases involving the neoliberalization of nature, there is little or no need to ‘cultivate’ suitable producer identities—notably, in situations where large private corporations are invited to invest in land, water, forests, and fisheries in order to make money.

Perreault’s studies of Bolivia’s water and gas wars cross-cut people’s identities as citizens and commodity consumers. Although the reasons are very different from those recounted in Sugden’s (2009) Nepal study, Perreault (2005, 2006) shows how neoliberal rhetoric failed to prevent serious public protests over the reform of water and sewerage services and the management of natural gas reserves. By contrast, and as earlier mentioned, in her more consumer-oriented study, West (2010) suggests that neoliberal subjectivity ‘works’ for specialty coffee sellers in the US, but not because consumers really understand (or even care about) the ethical issues or the salient facts. Meanwhile, Guthman (2008b) maintains that voluntary labeling schemes for organic products

have taken hold among food activists and many left-wing consumers because these measures appear to deliver some sort of genuine socio-ecological justice at the production end of the commodity chain. As she explains elsewhere (Guthman 2008c), this appearance is made possible in part by the active interpellation of individuals into the policy norms and moral goals of neoliberal discourse—norms and goals that are, as it were, the only ‘realistic’ ones on offer.

## Neoliberalizing Nature 2: Social and Environmental Effects

In the previous section I focused on the multifaceted process of neoliberalizing human engagements with the non-human world. Depending on the study cited, more than one facet of the process has been the focus of analytical attention. Although the precise details vary, I have described these facets under one or more of the seven neoliberal policy proposals. This reveals the sheer breadth of projects that are intended to neoliberalize environmental use and resource management. These undertakings range from the reform of ownership rights to engendering new forms of subjectivity among resource users. So far so good. But what have been the effects of the neoliberalization of nature in various times and places, according to the research published to date? In posing this question, the answer to which I have only hinted at in the previous section, I am well aware that separating process from outcome is, ontologically speaking, artificial, since arguably the latter is part of the former and not some sort of stable endpoint. Even so, the distinction has a heuristic value in that it describes the (albeit eventually changeable) outcomes of process at a given moment in time. Indeed, several published studies have focused specifically on these outcomes, as we will see below. I will further distinguish between the social and environmental effects of policy measures, although, again, in reality they are intertwined. Needless to say, the precise socio-environmental effects of neoliberal policies vary in their details according to their particular type and the spatio-temporal scale we are interested in. It almost goes without saying too that all effects are relative with regard to who (or what) is affected, in what way, and to what degree.<sup>30</sup>

Rather than summarize the findings of all the relevant studies, I will discuss some of the indicative ones and simply tabulate the many others that I could mention if I had more space (see table 1). Several contributions highlight problems of ordinary people’s exclusion from, or reduced access to, environments and resources upon which their livelihoods or well-being depends. For instance, consider Davis’s already mentioned research in Morocco and Sugden’s research in Nepal. Davis (2006) shows how peasant pastoralists were alienated from grazing territory in the name of large-scale, irrigated dryland farming by private landholders. Sugden (2009), meanwhile, confirms that agricultural reform has done little to release the very poorest farmers from disadvantageous feudal and rentier relationships. Budd’s (2004) research in Chile reveals that, subsequent to neoliberal water reform, large-scale farmers have gained greater access to rural water compared with peasant cultivators. In her study of conservation policies in the Virgin Islands, Crystal Fortwangler (2007) points to the increase in real estate prices outside the conservation zone, which makes land ownership more difficult for local people. Lisa Grandia (2007) reports on the exclusion of Guatemalan peasants from land given over to new commercial tree farms, while Igoe and Croucher (2007) make a similar observation about rural Tanzanians who live adjacent to a new wildlife management zone. Finally, Smith’s (2004) Cape Town research shows the socially regressive effects of water pricing under a new cost recovery regime in the late 1990s—an arrangement that prioritized economic equity over social equity.

By contrast, a minority of other studies are more equivocal than those just mentioned. In his detailed examination of how several rural households in the Cajamarca region of Peru have

**Table 1:** Social and environmental outcomes of the neoliberalization of nature, as specified by the authors named

Location	Biophysical Resource	Issue	Socio-economic Outcomes	Environmental Outcomes	Author/s
British Columbia	Forests	Forest management	Democratization of management for small percentage of forest area and new income streams	N/A*	McCarthy (2006)
North America	Forests	Forest management	Co-optation of community groups to neoliberal ideas plus new income streams	N/A	McCarthy (2006)
England and Wales	Water	Water and sewage management	Increase socio-spatial inequity in relative water costs and cutoffs	Improved national water quality; regional water shortages	Bakker (2001, 2003)
Cajamarca, Peru	Gold	Gold mining	Less access to produced and human capital resources, and greater access to social capital and natural resources among rural households; reworking of land tenure to favor private owners	Intensified land use by householders in areas adjacent to mining	Bury (2004, 2005)
Southeastern Mexico	Forests	Forest management	Community adaptation to neoliberal norms	N/A	Wilshusen (2010)
Bolivia	Water	Urban water management	Serious public protest	N/A	Nickson and Vargas (2002)
Morocco	Land	Land ownership	Enclosure of the grazing commons and exclusion of many pastoralists	N/A	Davis (2006)
Nepal lowlands	Land	Agricultural production and trade	Failure of agrarian plan to improve the livelihoods of many peasant farmers	N/A	Sugden (2009)
Northeastern Brazil	Land	Agricultural livelihoods	Land given to the landless, but on condition that they now 'work' the land and conform to the norms of the agrarian elite	N/A	Wolford (2005, 2007)
Brazil's Amazonia	Forest ecosystem	Environmental protection from the externalities of private mining and metals production	Indigenous communities offered less support under the post-public regime	Environmental improvements locally, but wider environmental externalities	Rodrigues (2003)
Ecuador	Land and oil	Rescripting of indigenous identities	Complex reworking of identities to both accommodate and challenge neoliberal reform	N/A	Valdivia (2005)
Cochabamba, Bolivia	Water	Dam project	Regional resistance to damming	N/A	Laurie and Marvin (1999)

*(Continued)*

**Table 1:** Social and environmental outcomes of the neoliberalization of nature, as specified by the authors named (*cont.*)

Location	Biophysical Resource	Issue	Socio-economic Outcomes	Environmental Outcomes	Author/s
US	Hazardous waste	Environmental justice procedures	Attempted co-optation of community activism by federal state and depoliticization of community claims about environmental injustice	N/A	Holifield (2004)
Walkerton, Ontario	Water	Water quality testing	Poisoning of public	Drinking water pollution	Prudham (2004)
NAFTA	Pollutants	Right of corporations to pollute the commons	Taxpayers having to pay firms for 'regulatory takings'	Actual or potential point pollution of the commons	McCarthy (2004)
Chicago area	Wetlands	Wetland mitigation scheme	Creation of new profit opportunities for firms; partial subsumption of ecological science to abstractions imposed by monetary valuation	Loss of wetlands and creation of 'equivalents' elsewhere	Robertson (2004, 2006, 2007)
Cape Town	Water	Water service delivery	Attempted depoliticization of water distribution issues; increased socio-spatial inequity in customer charges and service delivery	N/A	Smith (2004)
Milwaukie and global atmosphere	Trees	Management of urban forests	Decline of public forest area; concentration of urban trees on private land; increased urban energy use	Increased city level of hydrological and temperature ranges; minor loss of CO <sub>2</sub> absorption globally	Heynen and Perkins (2005)
Chile	Land	Land ownership and agricultural production	Increased rural income inequality and poverty among farmers and farm workers	N/A	Murray (2002)
Chile	Land	Land ownership and agricultural production	Proletarianization of peasants, land ownership concentration, and economic success for relatively few farmers	N/A	Kay (2002)
Buenos Aires	Water	Water service delivery	Increased water network coverage; price increases for consumers; layoffs of water sector workers	Inadequate sewage treatment capacity	Loftus and McDonald (2001)
Rural Guatemala	Forests	Carbon offset tree farm projects	Displacement of rural peasants	Reduction in forest biodiversity	Grandia (2007)
Rural Tanzania	Land	Conservation easements	Inadequate compensation to local residents for loss of access to land; exclusions from land use	N/A	Igoe and Croucher (2007)

Location	Biophysical Resource	Issue	Socio-economic Outcomes	Environmental Outcomes	Author/s
California	Land	Food certification and labeling schemes	Reduced farm worker representation in decisions about farm labor practices	N/A	Brown and Getz (2008)
California	Land	Pesticides on farmland	Visible and effective forms of activism against pesticide drift	Off-farm pesticide drift	Harrison (2008)
California	Land	Food politics	Co-optation of normative goals of a sustainable production project to neoliberal norms	N/A	Guthman (2008c)
Bolivia	Rural water resources	Water management	Popular protests against water reform based on an existing moral economy	N/A	Perreault (2008)
Mexico	Rural water resources	Water management	Democratization of water governance but no gains in the efficiency, equity, or sustainability of water use	N/A	Wilder and Lankao (2006)
Southern Africa	Land-based ecosystems	Transfrontier conservation	Neoliberal discourse depoliticizes conservation issues, attenuates existing community-based conservation discourse, and as yet has delivered few tangible development gains	Little evidence of improved levels or geographical spread of environmental conservation	Buscher (2010a, 2010b)
Botswana and Thailand	Elephants	Ecotourism	Income streams and jobs from elephant tourism	Productive use for elephants that might otherwise be neglected or culled	Duffy and Moore (2010)
Various locations	Plantation forests	Environmental and social standards	Attenuation of some, but not all, elements of FSC standards	Attenuation of some, but not all, elements of FSC standards	Klooster (2010)
Southern Africa	Land-based ecosystems	Transfrontier conservation	Private sector benefits while communities benefit less than previously	N/A	Buscher and Dressler (2007)
California	Commercial farmland for crop production	Management of permissible seed and nursery stock	Corporate attempts to remove local ordinances banning genetically modified crops failed	N/A	Roff (2008)
South Island, New Zealand	Commercial sheep farming	Farming practices: intensive-productivist or organic?	Changing consumer demands for meat may produce post-productivist sheep farming but do not guarantee it	Some moves toward a more organic style of farming, with beneficial effects for sheep and farmers	Haggerty et al. (2009)

\*N/A (not applicable) means that environmental outcomes were not a focus of the research.

Note: Only resolutely empirical studies are included in this table, rather than ostensibly conceptual ones or those including empirical 'vignettes'.



been affected by overseas mining investment, Bury (2004, 2005) concludes that many families now enjoy increased access to both produced and human capital, although several have fewer opportunities to acquire both natural and social capital. Somewhat differently, Perkins's (2009) analysis of third sector involvement in the maintenance of Milwaukee's green spaces shows that such involvement has proven personally empowering for many citizens.

Of course, the implementation of neoliberal policy in the environmental domain has resulted in several spectacular and well-publicized reactions within civil society. Andrew Nickson and Claudia Vargas (2002) report on the failure of the Cochabamba water concession in Bolivia: in 2000 the private company Aguas del Tunari had its contract canceled after just six months. Several factors—low rates of economic growth, persistent poverty, and low or stagnant wages among large segments of the population—came into play. The sharp increase in water tariffs in 2000, allied to a loss of water use rights by many stakeholders, contributed to the national unrest that resulted in the cancellation. Similar large-scale dissent was repeated following the privatization of gas resources in 2003 (Perreault 2006). Less dramatically, Jill Harrison (2008) shows that neoliberalized agriculture in California has led to increased pesticide drift, eliciting vocal expressions of agro-food activism in civil society. Still, in other cases neoliberal environmental policy has persisted despite manifest problems. This is (or was) true for water governance in Buenos Aires. Loftus and McDonald (2001) demonstrate that even though consumer prices increased, many workers were laid off in the water sector, and advances in new sewerage connections and treatment were slow, the citizenry tolerated the policy shift—grudgingly or otherwise.

On the environmental side, neoliberal environmental policy seems to have had mixed effects. There was the shocking water poisoning case in Walkerton, Ontario (Prudham 2004). Equally alarming was the attempt of two American firms to seek monetary compensation from state bodies for *not* polluting the commons in Mexico and California (McCarthy 2004). Less dramatically, Robbins and Luginbuhl (2005) examine recent attempts to create 'game farms' in some Midwestern and Western US states. These initiatives, they show, go against a long US history that considers wildlife just that—wild. They also represent attempts to make wildlife pay for the benefit of a select group of ranchers and hunters. Robbins and Luginbuhl find little evidence to support the contention that private wildlife managers are delivering effective animal and habitat husbandry as compared to a previous generation of state officials.

Coombes's (2003) study of bush lot subdivision in New Zealand (conceived as a new way to protect indigenous habitats on private land) suggests that this approach is too ad hoc. In addition, strategic interventions in order to ensure proper levels of ecological protection are proscribed. Nik Heynen and Harold Perkins (2005) find that local government divestment from the maintenance of urban tree cover has led to a noticeable loss of ecological services (e.g., provision of shade) and that private landholders cannot, left to their own devices, compensate adequately for the reduction in tree numbers. A more mixed picture is painted by Rodrigues (2003). Recently, privatized iron ore and manganese operations in the Brazilian Amazon, she shows, are much more effective at protecting the local environment than their state-run predecessor. But, she argues, they remain ineffective at tracking environmental externalities outside the areas immediately adjacent to the mines. Bakker (2003) is more positive about the environmental effects of neoliberal reform. Her study of water privatization in England and Wales shows both a reduction in leakage rates (due to a huge investment in infrastructural renewal) and a notable increase in the quality of drinking water.

Bakker, like Bury, is among the few analysts who has sought to record both social and environmental effects of neoliberal reform in some detail. Although she acknowledges the environmental benefits of the shift away from direct state management of water resources in England and Wales, she also points to new social inequities in water service delivery that were evident in

the early 1990s. Specifically, lower income households were subject to water cutoffs on a scale previously unmatched, leading to a response by concerned regulators (Bakker 2001).

What do these social and environmental effects tell us about the neoliberalization of nature when mapped against the criteria of GEDDS? To start with, it is clear that certain kinds of growth, efficiency, development, democracy, and sustainability have, in fact, been delivered by market-led environmental policies. However, the key—and obvious—point is that each of these terms has a contested meaning. The lack of universal or agreed upon definitions means that analysts of the neoliberalization of nature, as well as the many people directly affected by it on the ground, have good reason to question the ‘success’ of the project. In various situations, economic growth has disproportionately benefited private sector actors; economic efficiency has been achieved at the expense of social equity and justice; a very particular kind of development, one that does not reflect the full range of development thinking, has been achieved; democracy has been neutered; and sustainability has been realized, but only to the extent that it is consistent with the peculiarities of private property rights and market pricing.

### Key Points and Lessons to Be Learned

Important as it is to pay close attention to the insights afforded by each of the empirical studies cited in the last two sections, it would be easy to get bogged down in the details. What, then, are the principal take-home lessons from the literature reviewed above, quite aside from the suggestion that the realization of GEDDS is open to question? In my view, there are six lessons to be learned, and I have identified them on the basis that they are evident in several separately conducted studies (although by no means in all). In each case I present an illustrative example or two. Most of the key points below apply to neoliberal statecraft more generally, regardless of whether or not we are discussing environmental management, regulation, or governance.

1. *Markets in environmental goods, services, and assets typically require considerable state intervention.* One of the shibboleths of the neoliberal worldview is that a reduction of state intervention in economy and society is both desirable and possible. However, as Polanyi (1944: 141) realized over 60 years ago, “Laissez-faire [is] planned; planning [is] not.” In one of her several investigations into the privatization of open access fisheries, Mansfield (2004a) makes the same point with compelling detail. She examines the implementation of the 1998 American Fisheries Act (AFA) as it affected the Alaska pollock population, the world’s largest single-species fishery, which is of great economic and social importance to Alaskans. The AFA led to sweeping changes in the organization of this open access fishery, introducing a catch quota system among a restricted group of relevant parties in order to prevent overharvesting on environmental and economic grounds. Mansfield highlights the remarkable degree of state regulation that was required to privatize and marketize the pollock fishery, as the AFA had to be interpreted and enforced by the North Pacific Fishery Management Council. This involved the development of exceedingly detailed and complex regulations in order to (1) negotiate fair relations between inshore fisherman, offshore fisherman, fish processors, commercial fishers, independent fishers, and indigenous (Native American) communities; (2) sort out the AFA’s relations to endangered species legislation (e.g., pollock are eaten by the Steller sea lion, a threatened species); and (3) determine the impact that pollock fishery rules would have on other Alaskan fisheries, such as crab. In short, Mansfield shows that the neoliberalization of the pollock fishery involved as much (if not more) state regulation than previously. The conclusion appears paradoxical: the market is both created and regulated by the state. It suggests that, in Mansfield’s view, neoliberalization

is not about the state stepping aside. Rather, the state has changed its role to ensure actively that markets work where they might founder, if left to arise spontaneously.<sup>31</sup>

2. *Markets in environmental goods, services, and assets must carefully adapt to biophysical obstacles in order to avoid being inhibited by them.* Throughout the 1990s, many social scientists were wont to say that nature is a social construction. However, research into the neoliberalization of nature shows that policy makers must pay very close attention indeed to the biophysical specificities of their intended targets; otherwise, their best laid plans might come to grief. In short, nature's material properties and affordances matter, and they can complicate the form and functioning of neoliberal policies. The title of Bakker's 2003 monograph, *An Uncooperative Commodity*, indicates as much. Because water is both heavy and bulky, and because the infrastructure needed to both purify and move it is very expensive, it has proven almost impossible for policy makers to create direct competition between private water companies on a regional scale in post-1989 England and Wales. As a result, policy makers and regulators have had to devise solutions that simulate direct competition in order to prevent water companies from abusing the de facto privileges that attach to natural monopolies. The resulting market is, necessarily, highly contrived and a far cry from the textbook model—an act of political will, if you like. This is why most water privatization schemes over the last 30 years have been at the level of one or another locality, city, or region, rather than genuinely national.<sup>32</sup>

3. *Markets in environmental goods, services, and assets must carefully adapt to the prevailing socio-cultural and political-economic context, unless they can reconfigure it.* All plans to neoliberalize environmental goods, services, and assets necessarily occur against the background of existing policies, established conventions, and prevailing economic interests. As I intimated earlier, this context must be either changed or (failing that) negotiated in order for neoliberal measures to realize their self-declared ambitions. In Polanyi's terms, if one wishes to establish a market economy, then one needs to alter the moral, cultural, and political climate—that is, one needs to create a market society in which neoliberal norms become the prevailing common sense of the day. This is why several analysts of the neoliberalization of nature have seen fit to use Antonio Gramsci's ideas when analyzing the way that neoliberal environmental policies have (or have not) taken hold. Consent, after all, must be constructed: it is never suddenly or spontaneously achieved.

An example of neoliberal environmental policies that encountered relatively little communal or public opposition is presented by Wolford (2005, 2007), who analyzes the mid-1990s national land reform program in Brazil. Led by President Fernando Cardoso, this program offered many landless rural workers the possibility of owning and working their own land, in the context of a long history of large landowners controlling a disproportionate amount of rural space. As Wolford explains, even though members of the Movement for Landless Workers had a very different understanding of the role of land and property than did agrarian elites, many supported Cardoso's reform program because it seemed to promise a degree of justice (via the language of 'rights') and the prospect of improved livelihoods. In other words, the language of reform could be made consistent with the moral economy of many landless workers.

In contrast, Perreault (2006, 2008) examines the reasons why neoliberal environmental policy failed the test of popular legitimacy in Bolivia. As indicated earlier, Perreault focuses on the now famous water and gas 'wars' of 2000 and 2003, respectively. In the former case especially, neoliberal reform triggered widespread protests (especially among peasant farmers) in which historic norms and cultural values were crystallized into a powerful anti-neoliberal discourse. Quite aside from the fact that the water reforms were antithetical to these established norms

and values, both water and gas are viewed as basic resources that are crucial to people's well-being. In Bolivia, they are seen as national resources that should be shared fairly, not appropriated privately.

Clearly, in any given case the precise mix of factors determining the relative degree of traction and longevity of neoliberal environmental policies will vary. In cases where a fair bit of policy adaptation has occurred (so to speak, when some rooms have been rebuilt in order to spare the foundation), the gap between the ideals of the neoliberal worldview and the messy specifics of practice becomes manifest (see also Bakker 2005).

4. *Neoliberal environmental policy is often and in large measure constitutively 'impure'.* Earlier in this article, it was argued that neoliberalism is a spatio-temporally differentiated process—following Peck and Tickell (2002), a set of connected neoliberalizations (in the plural)—and not a globally homogeneous thing. Building on the third point above, some have suggested that this insight applies as much to environmental management, regulation, and governance as to anything else. Both Becky Mansfield (e.g., 2007a, 2007b) and James McCarthy (2006) have been especially vocal in this regard. As part of her extensive research into the enclosure of North Pacific fisheries, Mansfield has looked closely at how catch quotas are allocated in practice. As marketable rights to fish, the quotas have commanded considerable economic value since their creation in the late 1990s. They have included a so-called community development quota (CDQ) for the poor, mostly indigenous communities of western Alaska. Within the neoliberal logic of privatization and marketization, the CDQ addresses issues of both social justice, as an anti-poverty measure, and cultural justice, as a recognition of and partial redress for indigenous people's historic exclusion from land and water, following the European occupancy of North America. As Mansfield (2007b: 495) concludes, "What is interesting about the CDQ ... is not that it is incoherent or inconsistent, but that ... privatization [here] manages to bridge seemingly contradictory goals." This is done by enhancing personal (in this case, communal) freedom while redistributing wealth to favor the needy.

The wider significance, when the second and third points above are connected to this one, is that "neoliberalism ... is something created in *practice*, and that through practice, it becomes varied, fractured, and even contradictory. In this sense, 'neoliberalism' is inherently geographical" (Mansfield 2004a: 580; emphasis added). In his analysis of community forestry projects, McCarthy (2006: 87) concurs: "Processes of neoliberalization never occur on blank slates, but rather hybridize with existing institutions, regionally and nationally specific policy ensembles, and so on in ways that always and inevitably produce unique, contingent variants." This explains why empirical research is so important and why blanket descriptions, explanations, and evaluations are likely to founder on the shoals of spatio-temporal difference.

5. *Neoliberal environmental policy frequently tends to disadvantage the poor and the powerless.* As detailed in the previous section, this fifth point is evident in Bakker's (2003) findings, Budd's (2007) research on Chilean peasant irrigators, Prudham's (2004) Walkerton study, McCarthy's (2004) analysis of regulatory takings, Smith's (2004) review of Cape Town water resources, and several other works as well, including Tad Mutersbaugh's (2003, 2005) investigations of Mexican small farmers. Buscher's (2010a, 2010b) research on transfrontier conservation likewise suggests that local communities tend to lose out. And where neoliberal policies appear to offer openings for the socially disadvantaged—as described in Woford's (2005) research on Brazil—there is evidence that these opportunities are more apparent than real. However, as noted earlier, there are exceptions to this very rough rule, depending on how analysts choose to define and measure disadvantage.

6. *Neoliberal environmental policy produces environmental improvements as much as problems, and problems as much as improvements.* This point, which has been detailed in the previous sections, challenges the argument that applying neoliberal principles to natural resource management and environmental problems is usually an effective way to 'green' capitalism. Quite how fundamental that challenge is remains a subject for discussion. For critics, the question is whether the improvements in environmental quality and protection delivered by certain neoliberal policy measures could have been—or could be—delivered by alternative, non-neoliberal policy devices. Another issue is how consistent such measures are with the achievement of social justice. Regardless, it is clear that neoliberal environmental policies can deliver certain benefits for nature, depending on the circumstances. Bakker's research on water quality shows this, so too Duffy and Moore's (2010) research into elephant tourism.

What light do these six summary observations shed on the questions I posed earlier when discussing neoliberal environments and the research published on this topic? There, you will recall, I contrasted the political-economic approach to the neoliberalization of nature (favored by many of the authors whose work I have reviewed here) with a more Foucauldian approach. The former viewpoint focuses our attention on whether the neoliberalization of nature constitutes (1) a widening or deepening of class-based social power; (2) a perpetuation, mitigation, or even overcoming of the 'ecological contradictions' that are characteristic of capitalism to date; and/or (3) a 'winning over' of the various constituencies with a stake in the reform of resource and environmental regulation and use. These are grand questions, and the findings of the studies reviewed in this article cannot be satisfactorily summed up to provide robust answers to any of them. What we *can* say is that there is now plenty of evidence to suggest that neoliberal environmental policy respects the rights of owner-operators above those of other stakeholders; that it does something, but not nearly enough, to address the ecologically destructive and wasteful patterns of capital accumulation; and that it frequently co-opts (often unwilling) people into its rationalities. The neoliberalization of nature is a project that is far from complete and perhaps precarious.

### **Researching the Neoliberalization of Nature: Problems of Conceptualization, Theory, Method, and Evaluation**

As the previous paragraph has intimated, I believe that a critical examination of the research literature on the neoliberalization of nature is warranted. There are, it seems to me, two forms that such a critique could take. The first would focus on some rather obvious and important limitations of the studies conducted so far. For instance, one might ask for more balance in the number of studies centering on the three fields (i.e., the academic, the political, and the bureaucratic) where neoliberal ideas and practices have environmental and resource content and implications. Alternatively, one might ask for a greater number of studies involving a wider range of locations with a better sectoral balance so that, for example, water resource issues are not favored over investigations of mining. Despite the large number of published studies into the neoliberalization of nature, there are arguably not nearly enough when compared to the sheer number and variety of policy experiments that could be investigated. A second form of critique would focus in more detail on some fundamental cognitive and normative questions when analyzing the way that researchers are conceiving and executing their research projects. It is this second approach that I want to take because I believe that there are several key issues that deserve serious attention, as they speak to the (perhaps unconscious) analytical habits of the loose, multi-disciplinary epistemic community whose research I have been reviewing.



The first key issue relates to how the word ‘neoliberalism’ is defined and conceptualized in any given empirical case. Early on in this article, I noted—but then bracketed—the lack of conceptual consensus among analysts about the meaning of the term. Opening the brackets, it is clear that different investigators have employed the word in a range of ways when examining environmental and resource issues. Some authors (e.g., Kay 2002; Murray 2002) use very generic or highly implicit definitions that are fairly devoid of conceptual substance. Others (e.g., McCarthy 2006) are conceptually precise, yet they define the term in a way that does not quite correspond with the equally precise definitions employed by still others (e.g., Robertson 2004). Throughout, there is no real agreement about which (or how many) of the seven elements of the neoliberal policy program need to be evident or implemented in any given case for us to describe it reasonably as neoliberal in degree or kind. This is unfortunate.<sup>33</sup> For example, should moves toward privatization alone be deemed instances of neoliberalism in action? And is what we call privatization in one place really the same as that in another? Surely, the significance of the seven neoliberal policy proposals listed earlier depends entirely on the context in which they are embedded and operate. In this sense, conceptual abstraction is a fraught process.

This last observation directs our attention to what ‘context’ means in any given case, and to the related question of how we recognize different modalities or variants of neoliberalism—that is to say, related but different neoliberalizations. As I have suggested, the sheer presence of one (or more) of the seven neoliberal policy proposals does not necessarily mean that it is a definitive element of the situation in which it is enacted. Mansfield (2007a, 2007b) rightly points to the constitutive ‘impurity’ of all neoliberal environmental measures (see also Sugden 2009). But the researchers whose work I have surveyed have yet to separate conceptual from empirical impurity. It is not surprising that there are detailed variations in the way that neoliberal environmental policies have been implemented in different times and places. The more exacting task is to identify conceptually the varieties of neoliberalism by abstraction from some of the concrete empirical details. Otherwise, we are left with empirical variation alone, meaning that each and every situation in which neoliberal policy measures are implemented is considered a specific and unique neoliberalization. This then greatly limits the potential for cross-case comparison and the identification of commonalities between different sets of cases. Indeed, it risks falling into the trap of ‘idiography’—that is, the study of spatio-temporal difference for its own sake, at the expense of identifying common processes and outcomes across space and over time (see Castree 2005).<sup>34</sup>

Just as there is currently no uniform definition of neoliberalism among analysts, those researchers whose work I have reviewed here utilize a range of theoretical lenses when examining environmental and resource policy. Although all are critical political economists (in the general sense of the term), attempts to achieve greater theoretical consistency have been rather limited thus far. In discussing this second key issue, I use the word ‘theory’ in a conventional sense to denote a descriptive and explanatory framework that focuses researchers on what they presume to be the most salient processes, relationships, or issues in any given case. For instance, Mansfield has made ample use of Polanyi’s concept of a ‘fictitious commodity’ in her fisheries research, while McCarthy deploys James O’Connor’s Marxist notion of the ‘underproduction of the conditions of production.’ To cite one more case, my colleague Erik Swyngedouw (2005) uses David Harvey’s concept of ‘accumulation by dispossession’ to discuss water resource privatization. The challenge, it seems to me, is to weave some of this otherwise disparate use of political-economic theory together into a more coherent framework, one that can sensitize us to the complex, contradictory, and dialectical dynamics of neoliberal environmental and resource governance in practice. Currently, what seems to happen is that any given researcher employs a theoretical insight or idea drawn from one of his or her favored thinkers. Thus, one rarely finds a research project that integrates critically the ideas of, for example, Gramsci *and* Polanyi, or O’Connor *and* Gramsci.<sup>35</sup>



A third key issue I wish to highlight is methodology. Here, by the word ‘issue,’ I really mean a family of issues. Whether they focus on human-environment relations, or anything else, social scientists must typically deal with ‘open systems’ in which it is virtually impossible to exert ‘experimental control’. Given this, they are faced with a large number of methodological choices and options that relate to the quality and quantity of evidence, the methods of data acquisition and analysis, and the scale (micro-, meso-, or macro-) of methodological resolution. Decisions must be made about what evidence and data to include and exclude, how to code and categorize this information, and which questions will (and will not) be asked. Inevitably, all research projects are tailored to the specific opportunities and constraints operative in any given case, even as analysts aim for rigor and systematicity. In respect of the literature reviewed in this article, what is striking is the multiplicity of ways in which the neoliberalization of nature has been investigated. In many cases, it is not even clear how—methodologically speaking—the research was conducted or why it was carried out in the way that it was. The question arises: does this reflect the specifics of the situations being investigated (i.e., necessary compromises and adjustments), or is it a contingent reflection of investigators’ varied expertise, time availability, level of experience, energy, commitment, etc.? Regardless, the upshot is that it is very difficult indeed for readers of the research to identify methodological consistency between disparate studies. I am not so naive as to expect, or wish for, more researchers to use the same, fairly detailed methodological template. However, it is difficult to combine the insights offered by diverse studies when those studies have been conducted so very differently. It is not simply an issue of having to somehow correlate very different kinds of evidence; there is also the issue of how robust and comprehensive the evidence from different research projects really is.

One specific methodological concern worth highlighting relates to comparative research. Thus far, there has been virtually no attempt made to investigate two or more cases of the neoliberalization of nature simultaneously. This is a pity because, in theory at least, it could help us to determine with some precision what a ‘variety’ or ‘modality’ of ‘actually existing neoliberalism’ looks like (in reference to my earlier point about how analysts have defined neoliberalism). One could look at two or more situations where the same translocal (or transnational) policy measures have been implemented; or one could look at two or more cases of *sui generis* environmental policy that appear to be ostensibly similar—or very different—cases of neoliberal reform. McCarthy (2006) is almost alone in having tried to conduct a cross-case study and, in my view, has set a precedent that ought to inspire others (see also Bailey 2007b; Duffy and Moore 2010). One methodological virtue of comparative research is that it is incumbent upon the investigator to ensure a certain consistency in the questions posed, the methods used, and the evidence garnered.

Finally, with regard to a fourth key issue—evaluation—let me voice some normative concerns about the way that research into the neoliberalization of nature has thus far been conducted. Setting oneself up as a ‘critic’ of anything presumes not only that one has clear criteria against which the item being analyzed is measured, but also that one can flesh out and justify those criteria in a moral-ethical sense. As I have stated, the term ‘neoliberalism’ is very much one that is employed by the academic and activist arms of the political Left, which are typically in opposition to this policy. Those who have researched the neoliberalization of nature are thus in some sense skeptical about, or even opposed to, their objects of analysis. But on what grounds and in what ways? The answers to these questions are surprisingly difficult to decipher because, for the most part, the act of evaluation is left implicit by those whose work I have reviewed in the preceding pages.<sup>36</sup> In my view, they need to be made far more explicit. What is more, the basis on which any evaluation is undertaken needs to be fleshed out in reasonable detail and justified—no simple matter. As Andrew Sayer (1995) noted many years ago, social scientists

typically devote far more of their energy to issues of theory and method than they do to issues of normative reasoning. That is certainly true of the work I have examined here.

The exceptions prove the proverbial rule. Mansfield's (2006) highly normative essay on the success/failure of North Pacific fisheries policy is a form of internal or 'immanent' critique. In other words, she holds the marked-based fisheries policy to its own evaluative criteria in order to provide a systematic assessment of how its performance to date should be judged. This is one example of what could (and arguably should) be a wider effort to evaluate neoliberal environmental policy by focusing on whether GEDDS (i.e., growth/efficiency/development/democracy/sustainability) is a myth or reality. But there is another form of evaluation that has not yet been employed in a formal and explicit way in research on the neoliberalization of nature—namely, 'external' critique. Here the critic evaluates the world using criteria and related moral-ethical arguments that are intentionally different from those contained within the object of analysis. Bakker's (2010b) new book, *Privatizing Water*, hints at this alternative form of evaluation. Her assessment of water resource markets rests, not uncritically, on the idea of water as a human right. Although the concept of 'rights' is central to the neoliberal worldview, Bakker reminds us that it is a far more expansive and complex idea than liberals would have us believe. It can speak to issues of social justice and resource redistribution to the needy and vulnerable, as much as to issues of individual sovereignty.

The utility of explicit and robust forms of normative assessment is clear. They are a potentially powerful weapon to use against the authors and advocates of neoliberal forms of environment management, regulation, and governance. But they also keep critics honest, obliging them to acknowledge those situations where the ostensible object of their animus can be credited with certain successes.

## Conclusions

This article is a multi-disciplinary review of social scientific research into the neoliberalization of nature, possibly the most inclusive to date.<sup>37</sup> Reviews such as this one organize and codify research that is developing organically over time, in this case in more than one academic field. The published research is the raw material out of which the survey is actively fashioned. But the cognitive mapping exercise is by no means easy. In the present case, it is not possible to begin with a uniform understanding of neoliberalism that is evident within the literature (let alone a coherent theoretical approach to it), and then straightforwardly track the operation and effects of neoliberalism in the fields of environmental management and natural resource governance. Instead, the published literature has examined different aspects of the neoliberalization of nature in different times and places and at different scales of analytical resolution. As Diana Liverman and Silvina Vilas (2006: 358) note in their recent attempt to review systematically the research on this topic, "Most studies tend to be case specific and difficult to generalize." They also maintain that there has been a lack of "comparative research ... set within a rigorous *a priori* framework." I have therefore tried to throw a rope around these disparate studies in the hope of making some sense out of them overall. In so doing, I have made an admittedly contrived distinction between the processes and outcomes of neoliberal policy reform in the environmental domain. Inevitably, I have also organized the insights of the studies into other analytical categories that may, in the end, be too neat and tidy to be either useful or plausible.

Let me close with what might seem to be a very self-serving observation, although it is meant sincerely and relates to Liverman and Vilas's candid reflection on their own attempt to author a comprehensive review. In my experience, surveys of established or new fields of

research are sometimes regarded as ‘lesser outputs’, academically speaking, compared to works of original empirical research or fundamental contributions to philosophy, theory, or method. This is unfortunate. As I tried to show in the previous section, surveying a research field is not about piecing together a jigsaw whose parts happen to be scattered hither and thither, so that the bigger picture eventually becomes clear—even though this is often assumed to be the case. The fact that a plethora of researchers use the same keywords and core concepts does not mean that they are, upon close inspection, actually analyzing or evaluating the same thing, let alone in a theoretically or methodologically consistent or commensurable way. In the present case, one can suggest that the nominal commonality of the work I have surveyed belies a set of serious substantive differences that are variously conceptual, theoretical, methodological, and normative in kind. Some might say that these differences are productive—although this is surely not the case if the differences are so significant that they threaten to prevent meaningful advances in research.

What is to be done? Many decades ago, Thomas Kuhn, the physicist and historian of science, popularized the term ‘paradigm’ as a way of characterizing the working habits and outputs of a set of like-minded researchers. Perhaps those investigating the neoliberalization of nature have not been paradigmatic enough and need to be much more so in the future. Indeed, this suggestion might apply to a great deal of contemporary social science, which is resolutely post-paradigmatic for the most part (economics being a notable exception). Topics such as neoliberalism bring disparate researchers from various disciplines together to interrogate what is ostensibly the same thing. However, they also make plain the quantitative and qualitative variations in the ways that social scientific research is being conducted. Perhaps it is not possible to change this state of affairs. But, looking ahead, it would surely pay dividends to aim for greater analytical consistency among researchers operating in different academic disciplines. There is hard mental labor to be performed, but it has very practical—and not purely cerebral—implications. The sorts of policy measures that analysts of the neoliberalization of nature have been concerned with are rarely trivial in their effects, for good or ill. A more collaborative and less piecemeal effort by social scientists to examine these and future policy measures could have a positive and very material bearing on the well-being of people and of the non-human world. Ideally, their research would actively shape the thinking of the politicians and policy makers whose decisions significantly affect our lives in so many different ways.

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## ■ ACKNOWLEDGMENTS

I am extremely grateful to Dan Brockington and Paige West for permitting me to write at such length on the neoliberalization of nature. I also wish to thank the four reviewers of this article, who took considerable time and trouble to offer me superb evaluations of the first draft. One of the two anonymous reviewers posed some especially sharp and challenging questions that I dearly wanted to respond to when revising the article. However, for reasons beyond my control, I had very little time to alter the article, and so the published version is—for better or worse—similar to the original one. This being said, I hope that I have now knitted together the article’s various parts so as to address at least one concern expressed by the most critical of the four reviewers. Finally, I am very grateful to Shawn Kendrick for her peerless copyediting. As ever, I take full responsibility for the remaining various flaws.

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## ■ NOTES

1. The term 'neoliberalism' initially gained popularity in left-wing circles in Latin America as a reaction to the market-led reform agenda of General Augusto Pinochet in Chile.
2. Those in the Foucauldian camp are sometimes given to calling neoliberalism 'advanced liberalism'. In the political-economic camp, Karl Polanyi's economic history is used by some in conjunction with Marx's late political-economic writings because of Polanyi's critique of the 'classic liberalism' of the nineteenth and early twentieth centuries. Others call upon Antonio Gramsci's ideas in order to assess whether and how neoliberal values and practices are embedded in everyday life outside the formal spheres of 'state' and 'economy'. Few authors whose work is reviewed here have used all of Marx, Polanyi, and Gramsci together in a substantive way. Typically, one or two of these theorists' ideas are used (usually selectively) in any given study. (I say more about this in the penultimate section of the article.) Although some authors in the political-economic fold have drawn upon other theorists—such as Jean Baudrillard and Jim O'Connor—Marx, Polanyi, and Gramsci currently seem to be the favored ones.
3. In other words—for better or worse—I have not included publications in which environmental use and management have been analyzed in the context of policy changes that some would describe as neoliberal, such as 'structural adjustment policy' in the global South in the 1980s and 1990s. Unless authors discuss neoliberalism explicitly, I have excluded their publications, even when these publications cover related matters such as the privatization of environmental goods and services.
4. In part, the fact that neoliberal values and principles have made their way into the domain of environmental policy reflects the nature of many environmental goods and services: they inevitably impinge upon, or are themselves affected by, ostensibly 'non-environmental' policy domains, such as international trade policy. But it also reflects two other things. First, many environmental goods and services are of great social and economic importance (water and sewerage being prime examples). It is no surprise, therefore, that neoliberal reformers were intent on altering the modes of delivery and governance of these services, for they were hardly marginal to any project of remaking the economy, state, and society *tout court*. Secondly, a set of worrying environmental problems already evident in the 1960s have subsequently grown in number, diversity, and seriousness. Neoliberal policy makers have sought to address these problems in ways consistent with their particular worldview. The terms 'free market environmentalism', 'liberal environmentalism', 'green capitalism', 'ecological modernization', 'green neoliberalism', and 'ecological capitalism' all capture, with rather different cognitive and normative valences, this explicit problem-solving agenda.
5. For instance, researchers in geography, anthropology, and development studies have drawn upon each other's research of late when thinking through new developments in nature conservation. See, for example, the recent special issue, titled "Capitalism and Conservation," of the journal *Antipode* 42 (3) (2010): 469–799.
6. There is also a good review by Himley (2008) in the online journal *Geography Compass*. I have three new student-oriented essays on neoliberalism and nature in the same journal (Castree 2010a, 2010b,

2010c). Because I am presuming little prior knowledge of at least some readers, this article inevitably recapitulates ideas presented in my back-to-back 2008 articles for *Environment and Planning A*. However, knowledgeable readers will, I hope, see the ‘value added’ in the present article compared to the two earlier ones—not least in my attempt to cast a wider net and encompass works published in several disciplines outside my ‘home base’ of geography.

7. Inevitably, despite my attempt to be thorough, I will have missed some things. For instance, a special issue of the journal *Review of Radical Political Economics* (42 [2] [2010]) on the political economy of water service privatization was published as this article went to press. As stated in note 3, absences like this raise the wider question of how far I should have cast my net when researching this article. My rule of thumb was to read only those studies in which the term ‘neoliberalism’ is used in a more-than-passing way. However, this means that numerous works that focus on topics such as markets and privatization without mentioning neoliberalism are not included in this review. Only studies that have gone through peer review and are published are referenced here; working papers and conference papers are excluded.
8. I am in good company. At a three-day conference titled “A Brief Environmental History of Neoliberalism,” which was held on 6–8 May 2010 at Lund University in Sweden, many researchers presented their findings pertaining to this topic. To view the working papers from this conference, see <http://www.worldecologyresearch.org/?p=1>.
9. A leitmotif of all these aspects is more or less far-reaching change, which is why neoliberalism has been commonly described using action terms such as ‘project’, ‘strategy’, ‘roll-back’, ‘roll-out’, and ‘regime change’. It is understood by the critics to pose a definite challenge to what has heretofore constituted ‘common sense’ discourse and practice in the domains of state, economy, and society. This strongly performative element leads Harvey (2007) to regard neoliberalism as a synonym for ‘creative destruction’—that signature element of capitalist modernity in all its geographically and historically varied forms.
10. Modern liberal philosophy is a diverse and complex thing. Not all self-declared liberals could be fairly described as neoliberals in the sense meant by critical social scientists or left-wing political activists. What is more, the neoliberal worldview is rather more radical than that of the Freiburgers, who originally claimed the term as their own. Indeed, some of the latter considered the likes of Hayek to be ‘paleo-liberals’, a pejorative reference to their aspirations for a world of *laissez-faire* writ large.
11. In this latter respect, the neoliberal worldview has frequently been called ‘market triumphalist’, ‘market extremist’, or ‘free market capitalist’. More than any other institution in modern society, the market is seen as the handmaiden of liberty and freedom, by virtue of Adam Smith’s famous ‘hidden hand’. This also dovetailed with a belief that markets should, in many cases, substitute for decisions made currently within the domain of politics. In other words, Friedman and those who shared his views argued that in many Western democracies the political sphere had, in some senses, become ‘bloated’ since World War II. They believed that this was the case not just in the administrative-technical sense (‘the big state’, reliant on too much tax income and borrowing), but in the sense that too many private issues were being made into matters of public concern (‘the nanny state’, intruding into matters that should rightly be decided by individuals, families, and communities).
12. Still in existence, the Mont Pelerin Society is an international organization composed of economists, philosophers, historians, intellectuals, business leaders, and others who champion classical liberalism. The society advocates free market economic policies and the values of an open society, with political freedoms and human rights as its foundation. See <http://www.montpelerin.org>.
13. In spatio-temporal terms, privatization typically amounts to geographical exclusion and denying current and future generations the use and/or benefits of a given portion of the biophysical world. All privatizations are, at one and the same time, acts of inclusion and preclusion, creating both entitlements and proscriptions.
14. It is worth noting that, for many commentators, it is the conjunction of privatization and marketization that defines commodification (i.e., the reshaping of goods and services into commodities). Needless to say, in practice both privatization and marketization take a number of concrete forms, as befits the particular commodities, firms, consumers, and other relevant parties in question.



15. In the West, the term ‘new public management’ has become a familiar descriptor for this process, denoting a management paradigm that emphasizes value for money, budget capping, cost recovery, and the avoidance of deficit spending whenever possible.
16. Three things make this policy discourse ‘neo’ (i.e., new) -liberal when compared with the so-called classical liberalism of Adam Smith. First, from the 1970s it was presented as an explicit critique of post-war ‘managed capitalism’, be it in parts of the former communist bloc, the Western social democracies, or the many ‘developmental states’ of the global South. Secondly, it takes a fairly dim view of the state, public goods, and common resources—except insofar as any of them can aid the cause of individual freedom or liberty. In Colin Crouch’s (2004: 248) words, “Not only is the state seen as having no goals or *modi operandi* different from those of market actors, but it is seen to gain by subordinating its activities as much as possible to those of market actors.” Finally, this discourse has traveled far and wide geographically, courtesy of various institutions and networks in which US neoliberals have played a highly active role (for more, see Peck 2010).
17. Because many of these empowered individuals not only are outside the formal sphere of government but also are unelected, many observers have regarded neoliberal policies as anti-democratic.
18. This research agenda is advocated by several others, including Castree (2005), Clarke (2004), England and Ward (2007), Kingfisher and Maskovsky (2008), Larner (2000, 2003), and Leitner et al. (2007). It amounts to tracking the temporal and geographical circulation, modification, hybridization, implementation, revision, and (in some cases) abandonment of neoliberal ideas. At its most ambitious, it involves determining the reciprocal links between, and conjoint effects of, neoliberalism as philosophy, program, and practice in any given case. This would enable us to identify varieties of neoliberalism and to understand whether, how, and why they have succeeded in their own less-than-homogeneous normative terms. It would also oblige us to acknowledge the fact that, in some cases, the mere presence of elements of philosophy, program, and practice does not, in itself, entitle us to conclude that these are defining elements. They may, in fact, be less than hegemonic in certain situations, since their presence in one or another policy domain does not make them definitive of an entire policy regime, let alone an entire social formation. As things stand, there is no consensus on how one identifies a ‘variety’ of neoliberalism, although several economic sociologists and international relations scholars have scarcely hesitated here—as if the complex ontological, epistemological, and methodological issues just highlighted were of little consequence. For now, I will also put aside these complexities as I move on, at long last, to discuss the neoliberalization of nature.
19. Before proceeding any further, we should make an important distinction between real and analytical consequence (which has only been implicit thus far in this article). When considering the neoliberalization of nature, we can discuss one or both of the following, depending on how thoroughly we wish our examination to be. First, there are those neoliberal policies that are not ostensibly about environmental goods and services (such as free trade policies) yet nonetheless have real biophysical impacts. Secondly, there are those neoliberal policies (such as water resources policies) that take environmental phenomena as the explicit object of attention. In what follows I will be surveying research that focuses on the latter for the most part, meaning that I am—in truth—omitting a key section of literature on the neoliberalization of nature. However, including this other literature would, at the least, double the length (and complexity) of this already long article.
20. These properties are relative rather than absolute, but they are real nonetheless. They can perhaps be ignored in the short term but not in the medium to long term, since inappropriate regulatory measures will eventually lead to visible and possibly harmful environmental problems.
21. The special issues referred to are “Neoliberal Nature and the Nature of Neoliberalism,” *Geoforum* 35 (3) (2004), and “The Commodification of Nature,” *Capitalism, Nature, Socialism* 16 (1) (2005).
22. Higgins and Lockie (2002), Sullivan (2006), and Fletcher (2010) are among the relatively few exceptions to this viewpoint. Some regard the two approaches to neoliberalism as complementary: see, for example, Lockwood and Davidson (2009).
23. I suspect that this Foucault-inspired research into neoliberalism and environmental governance will grow in importance, not least because Foucault’s lectures on biopolitics were recently translated into English.



24. This matter of class-based social power has frequently arisen in respect to enclosures of environmental commons (i.e., community land and resources).
25. The theoretical literature authored by eco-Marxists such as James O'Connor, Ted Benton, Elmar Altwater, and John Bellamy Foster is undecided on this question of ecological contradictions.
26. For example, in 2010 several publications by Bram Buscher appeared in a range of journals, with more to come (see Buscher 2010a, 2010b; Buscher et al., forthcoming).
27. I hope, therefore, that this article will lead readers to a close study of the many publications that have been cited in it.
28. See also St. Martin's (2007) study of recent New England fisheries and Ibarra et al.'s (2000) analysis of Chilean, Mexican, and Peruvian fisheries management.
29. The acronym 'quango', coined and used primarily in the UK, signifies a quasi non-governmental organization that is either financed by the government or formally linked to it but operates at arm's length.
30. The relativity of effects invites complex and differentiated judgments about how they are to be registered and evaluated. It would be facile to suppose that all the effects of the neoliberalization of nature registered in the published research can somehow be added up and included in some sort of aggregate scorecard, although table 1 gives the impression that this is a permissible practice. For more on this, see Castree (2008b: section 4).
31. A similarly convincing case about the state and its involvement in markets is provided by Bakker (2003). See also Bailey (2007a) and Bell and Quiggin (2008).
32. See Mansfield (2004a, 2004b) and Robertson (2004) for similar arguments about the impact of nature's material properties.
33. According to Clive Barnett (2010), this lack of agreement is symptomatic of the role neoliberalism plays as a shibboleth for the Left, its value being more symbolic than analytical.
34. In her most recent article, Bakker (2010a) makes a serious attempt to provide a vocabulary for undertaking such single-site and comparative studies.
35. See Castree (2008a) for a rather abstract attempt to synthesize some of the different theoretical ideas that have been used in the literature, and Bakker (2009) for a constructive critique of it.
36. For instance, Jessica Budd's (2004) article on Chilean water reform makes use of the concept of social equity but nowhere details or defends this normative idea.
37. Leila Harris (2009) has recently published a useful review, focusing specifically on the gender dimensions of neoliberal environmental policy.

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