**Articulation between neoliberal and state-oriented environmental regulation: fisheries privatization and endangered species protection**

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## Abstract

This paper analyzes the relationship between state-oriented and neoliberal approaches to environmental regulation by examining simultaneous efforts to protect the endangered Steller sea lion and privatize of the fishery for Alaska pollock. Because these policies were designed and implemented at the same time and for the same industry, this case offers a unique opportunity to explore in detail not transitions from one type of policy regime to another, but rather how these different policies regimes articulate. Rather than focusing on re-regulation that occurs when neoliberal restructuring shifts away from traditional regulation while simultaneously developing new, market-oriented forms of regulation, this paper focuses on a different kind of re-regulation that occurs when state- and market-oriented approaches must co-exist. Analysis of how regulators themselves write about the conjunction of these policies reveals that the two forms of regulation can be complementary. To the extent that neoliberal restructuring has environmental benefits, these are mediated through traditional environmental protections, and although restructuring is presented as a means of mitigating the negative economic effects of state-oriented regulation, these effects are quite consistent with the goals of restructuring. Further, this analysis also reveals the power of neoliberal discourse. Despite their own statements about the complex articulation of the policies, regulators attribute benefits to privatization and problems to state-oriented regulation. This case highlights the inability of neoliberalism to subsume its outsides—alternatives are already existing—but also highlights that these outsides can themselves come to support what they seem to oppose.

## Introduction

Over the past fifteen years there have been dramatic changes in the fishing industry of the North Pacific Ocean, which is site of the largest fisheries in the United States and includes one of the largest fisheries in the world, that for Alaska pollock. Federal regulators have designed and implemented new environmental and economic policies that completely change how fishing is carried out in this region. On one front—seen as primarily environmental—a chief concern has been the potential impact of fishing, especially for pollock, on the Steller sea lion ('Steller'). To protect this endangered marine mammal, representatives from the US National Marine Fisheries Service (NMFS) have designed a complex suite of spatial and temporal regulations that limit fishing activity around areas inhabited by the Steller. On another front—seen primarily as economic—regulators are concerned about 'overcapitalization,' which exists when the industry as a whole has invested in more than enough vessels and gear to catch fish sustainably. This leads to overfishing or regulatory limits to avoid overfishing, either of which produce industry-wide inefficiency and declining returns on investment. To restructure these fisheries and increase industry-wide profits, regulators have introduced a variety of measures that provide fishers with shares of quota they can then market among themselves. This approach makes access to the fishery a form of private property right.

These policies protecting the Steller and privatizing the pollock fishery represent two different approaches to regulation more generally. The traditional approach to environmental governance has been for states to directly regulate activities that cause environmental problems, e.g. to cap emissions leading to air pollution or to limit fish catch to prevent overfishing. Often known as 'command-and-control' regulation, these state-oriented approaches rely on legally mandated limits as the primary means to achieve environmental goals. The US Endangered

Species Act (ESA), under which the Steller is protected, is a prime example of such state-oriented regulation because it places strict legal limits on activities that might cause harm to endangered species. In the past several decades, state-oriented regulation, and especially the ESA itself, has come under increased attack by proponents of neoliberal, market-based approaches. In contrast to traditional approaches that rely on state-mandated limits, market approaches rely on economic incentives as the primary means to achieve environmental goals. As one proponent put it, they "encourage behavior through market signals rather than through explicit directives" (Stavins, 2003, 358). Proponents argue that because these approaches harness market forces to link firms' and individuals' self-interest to environmental outcomes, they provide flexibility that leads to increased efficiency, more innovation, and greater profits while also achieving environmental goals (Anderson and Leal, 2001; Kosobud and Zimmerman, 1997; Stavins, 2003). Market approaches to environmental regulation have become increasingly widespread in recent years (Stavins, 2003; Jordan et al., 2003), and pollock privatization is part of a wider effort to develop market-oriented regulations for governing US fisheries.

In this paper, I analyze these policies governing the North Pacific pollock fishery as a way to examine the relationship between traditional state-oriented and newer market-oriented approaches to environmental regulation. Proponents of market-oriented approaches argue that the two approaches are basically antithetical, and that because of their benefits markets should and must replace state-oriented regulation (e.g. Smith, 2000). This view is premised on the notion that economic forces can act outside social and political institutions, yet, as Karl Polanyi ([1944] 1957) emphasized over 60 years ago, markets are not self-regulating. Whereas neoliberal proponents treat market-oriented approaches as deregulatory—reducing rules governing economic activity—instead market-oriented approaches entail re-regulation, in which

"the state does not necessarily withdraw, but rather changes the nature of its interaction with citizens and corporations" (Bakker, 2003, 36-37). This paper develops these insights on the role of regulation in market activity by analyzing a different kind of re-regulation that involves combining traditional and market-oriented forms of regulation. Because the US currently uses both approaches to manage the pollock fishery, this case offers a unique opportunity to explore in detail not *transitions* from one type of policy regime to another, but rather how these different policy regimes *articulate* when developed and applied simultaneously and for the same industry. In other words, what happens when traditional and market approaches co-exist?

To analyze co-existence of these two approaches to regulation, the paper analyzes official, regulatory documents regarding both Steller protections and pollock privatization. How is it that Steller protections and pollock privatization—with their very different approaches and logics—were developed simultaneously, by the same regulatory bodies, and to regulate the very same individuals and firms? How do policy makers conceive of and implement such co-existence? And what does this tell us about neoliberalism and regulation? Analysis of what regulators themselves say about the articulation of these two sets of policies reveals two, interrelated things. First, it tell us about the policies themselves: how they work, what they do and do not do, the extent to which they were integrated in practice, and so on. In this regard, this analysis shows there is no necessary shift from traditional to neoliberal approaches, and the two approaches can be compatible in unexpected ways. Second, this analysis also tells us about the power of neoliberal discourse. In this regard, this analysis reveals that neoliberal discourse regarding the power of markets frames how regulators themselves comprehend the relationship between Steller protections and pollock privatization. Even when regulatory practice does not match that of neoliberal discourse, neoliberalism becomes the norm to which everything is compared. That is,

while the ongoing existence of traditional regulation in the form of Steller protections undermines the possibility of "pure" neoliberalism, such protections are used to justify neoliberalism in the form of pollock privatization. Attention to discursive dimensions of the articulation thus reveals ways that traditional regulatory approaches themselves can provide not only material but also ideological support for neoliberalism.

## Steller protections and pollock privatization as different approaches to regulation

### *North Pacific as ecosystem: protecting the endangered Steller sea lion*

The North Pacific is an extremely productive ecosystem that supports not only economically important fish—species of salmon, crab, pollock, and cod—but also numerous "charismatic megafauna" such as sea otters, killer whales, fur seals, and sea lions. Much environmental policy centers on protecting endangered or threatened species, among which the most controversial has been the Steller sea lion. The range of the Steller extends from Baja California around the North Pacific to Japan, with seventy percent of the total population in the Alaska region. Once highly abundant, the western population has declined by about eighty percent since the 1960s, and is still declining. In 1990 NMFS listed the entire species as threatened under the US Endangered Species Act (ESA) (16 USC 1531-1544 (2003)), and in 1997 re-listed the western population as endangered.

The ability of NMFS to develop measures to protect the Steller is constrained because the cause of decline and lack of recovery is not well understood. While a primary hypothesis has been that fishing is impacting the species, other ecosystem and climatic processes (e.g. predation by killer whales or shifts in prey abundance) are also considered to be viable—and perhaps even better—hypotheses; the current orthodoxy among scientists is that there are likely a number of

different factors that interact to create the problem (National Research Council, 2003). Responsibility for developing analyses and protective regulations rests with the North Pacific Fishery Management Council ('the Council'), which is one of eight regional councils under NMFS charged with regulating fishing in US waters. The Council's primary focus has been on controlling fishing activities by creating protected zones around areas (mainly islands) that Stellers use for foraging and reproduction. At the time NMFS listed the Steller as threatened, they excluded all vessels from areas within three nautical-miles of these areas (NMFS, 1990), and then in 1993, they implemented year-round bans on trawling (i.e. pulling a large, bag-shaped net behind a vessel) within ten nautical-miles of these areas, and extended these no-trawling zones to twenty nautical-miles during the reproductive season (NMFS, 1992).

The adequacy—and necessity—of these protective regulations has been the subject of intense controversy, as both the fishing industry and environmental groups object to the approach that the Council and NMFS have taken (Mansfield and Haas, 2006). In the early and late 1990s, Greenpeace, American Oceans Campaign, and the Sierra Club filed lawsuits in federal court charging that NMFS was not doing enough to protect the Steller. Although these groups lost their early case, they were largely successful in the second case, which lasted from 1998 until 2003, as the courts forced NMFS and the Council to continually revisit their analyses and protective regulations, with details becoming more and more complex over time. While protected areas and seasons are still the primary tools, there are numerous variations in how they are used. Some closed areas are seasonal (with different seasons depending on the area), others are year-round. Some areas are closed to entry, others to all fishing, and others just to specific types of fishing. Some are closed to fishing for one species but not another. There are broad distinctions based on the species fished (i.e. pollock, cod, or mackerel) and general area (i.e. Gulf of Alaska,

Bering Sea, or Aleutian Islands), but even within these categories there are variations and even exemptions (e.g. for small boats or native fishers). These details reveal a complex, detailed, and highly specific state-oriented regulatory framework for protecting this endangered species.

### *The North Pacific as economic resource: neoliberal privatization of the fishing industry*

At the same time that NMFS and the Council were regulating the pollock industry to protect the Steller, they also put enormous energy into restructuring the fishery, using privatization as a means to reduce capacity and 'rationalize' the industry. Reflecting the high productivity of the North Pacific, the fishing industry of the US North Pacific is among the largest in the world, with Alaska pollock as a dominant species. Eaten by people in the form of fish sticks, fast-food fish sandwiches, and as the main ingredient in *surimi* products such as imitation crab, catch of pollock consistently ranks as largest in the US (2002 catch was over 1.5 million metric tons (NMFS, 2003)) and when US catches are combined with those from other countries, in particular Russia, pollock ranks as the largest food fishery in the world (FAO Fisheries Department, 2002). In 2002, the US catch had a value of over $200 million; as a result of these landings, the small and isolated port of Dutch Harbor, in the Aleutian Islands, is the top fishing port in the nation by volume and second by value (NMFS, 2003).

The US fishery for pollock only started in the late 1970s, when the US government extended jurisdiction over the ocean to 200 nautical miles and provided development assistance to fishers and processors. By the late 1980s, this development effort was so successful that regulators began to consider the fishery to be overcapitalized. Therefore, after spending less than a decade encouraging fishers and processors to enter the industry, regulators shifted their focus to encourage them to leave the industry. Building on several decades of academic support for 'rights-based' (i.e. market-based) approaches to fisheries, regulators took an increasingly

neoliberal approach to capacity reduction. In the pollock fishery, neoliberal restructuring started in earnest when the federal government passed the 1998 American Fisheries Act (AFA) (Public Law 105-277, division C, title II), the main provisions of which were targeted specifically at the pollock fishery (for discussion of the politics of writing the AFA, see Matulich et al. (2001) and Criddle and Macinko (2000)). The AFA closed the fishery to all new participants—only vessels active in the mid-1990s are now allowed to participate in the industry. This essentially gave what was a public resource to a group of private individuals and firms. The AFA then organized remaining fishers and processors into fishing 'co-operatives.' The twenty-one catcher-processor vessels (also known as 'factory trawlers') are in one co-op. About one hundred individual fishing vessels are divided among seven co-ops that correspond to an individual onshore processor. An additional co-op is composed of three 'motherships' (vessels with processing facilities that do not catch their own fish) and the twenty vessels that deliver fish to them. Under the AFA, each of these nine co-ops then receives a set percentage of the annual catch; co-ops then further allocate this quota among their members. Finally, the AFA allowed these individual co-op members to lease their quota to other qualified fishers.

The changes required in the AFA are a complex form of neoliberal restructuring in that they use markets as the central means for managing the fishery. By closing the fishery to new entrants, organizing the remaining fishers into coops, allocating the annual catch among the coops, and allowing individuals to lease their shares, the AFA created a new, marketable property right. Despite the deregulatory emphasis of such approaches, my previous research on this restructuring effort revealed that restructuring required massive and ongoing regulation (Mansfield, 2004). The whole premise of this form of privatization is that NMFS continues to define a yearly total allowable catch from which co-op shares can be calculated. In this basic

sense, there is no transfer from public regulation to private markets. Additionally, both the AFA itself and subsequent modifications written and implemented by the Council contain highly detailed rules that govern the activities of pollock firms, for example limiting pollock fishers and processors participation in other fisheries such as crab or cod. These complex rules show quite vividly that neoliberal practice contains a basic contradiction, in that while it claims to involve deregulation, instead it involves re-regulation. However, to stop here, with analysis of re-regulation within the pollock restructuring program, begs the question of the larger relationship between restructuring and regulation. It is also necessary to analyze the relationship between pollock privatization, characterized as it is by re-regulation, and Steller protections, which are characterized by more traditional, state-oriented forms of regulation.

## Re-regulation and the power of neoliberal discourse

Although free markets and deregulation are proposed as ways of avoiding, or at least minimizing, state involvement in all things economic, analysis of actual neoliberal practices shows that the distinction between markets and state action is overdrawn. As the pollock privatization example itself shows, in practice markets are in many ways dependent on state action (Mansfield, 2004; Peck, 2004). In this sense, market-based reform should not be conceived as an "abrupt conversion from monolithic 'public' to 'private' control" but instead as a "shift along a continuum… toward the market and … away from the state" (Bakker, 2002, 769). When such neoliberal shifts occur, they have "entailed, *not* the rolling back of state intervention, but rather its political, institutional, and geographical reorganization" (Brenner and Theodore, 2002b, 345, italics in original; Peck and Tickell, 2002). In this reorganization—or re-regulation—states take on new roles that involve managing and facilitating markets and market behavior, for example by negotiating free trade agreements or replacing emissions limits with

marketable permits. Because markets cannot survive without 'external' intervention, deregulation is simultaneously re-regulation, and is necessary to keep the market running (Vogel, 1996; Peck and Tickell, 2002; Brenner and Theodore, 2002a).

This attention to processes of re-regulation acts as an important counter to simplistic notions about neoliberalism and the power of markets, but at the same time, an emphasis on re-regulation has the effect of emphasizing the changes wrought by neoliberalism. The bulk of research in this area focuses on shifts from state-oriented to neoliberal forms of regulation that prioritize markets and market functioning. The centrality of shifts is evident both in Bakker's insight about shifts along a continuum toward markets, and in Brenner and Theodore's insight about ways that neoliberal approaches involve the reorganization of the state. It is also evident in my own work, discussed above, in which I analyzed the role of state action in making pollock privatization work. In these analyses, neoliberalism does not annihilate the state and state-oriented regulation, but it does involve changing the state and its role in regulation, in particular shifting this role to be one of managing markets. With a focus on neoliberal regulation, "attention is brought to bear on the ways in which the state engages in institutional learning and accordingly enacts change in regulatory frameworks" (Bakker, 2003, 36). Although not a complete turn away from the state, neoliberalism reworks state-economy relations. In this sense, to focus on shifts is to imply that that while there is no necessary incompatibility between neoliberalism and regulation in the general sense, there remains an incompatibility between newer neoliberal re-regulation and older state-oriented regulation. Neoliberalism is a "form of regulation of sorts," but is not "commensurate" with state-oriented forms of regulation (Peck and Tickell, 2002, 387). One replaces the other and they cannot really co-exist.

In contrast, the aim of this paper is not to examine shifts, per se, but to examine the co-existence of these two, seemingly opposed, approaches to environmental regulation. Must market-oriented approaches, however incomplete, replace traditional, state-oriented approaches, or can these seemingly opposed approaches to regulation instead co-exist, and what happens when they do? In asking this question, this paper focuses on a different kind of re-regulation. To the extent that co-existence implies articulation of different kinds of policies, it is itself an example of re-regulation—it is something new—yet it is not the same as re-regulation that follows directly and logically from attempts (however unsuccessful) to create a deregulatory, free market approach to environmental protection. Re-regulation is not just about retooling the state to be a better market manager, but is also about negotiating different forms of regulation being used to achieve different but overlapping environmental and economic goals.

That this case is about environmental regulation, rather than regulation in general, is significant. Even though neoliberalism survives in part by creating new opportunities for accumulation by enclosing various environmental commons (McCarthy and Prudham, 2004; Harvey, 2003), a purely private, deregulatory approach is especially elusive in environmental contexts. Nature is "uncooperative" and often does not play by the rules of the market, thus creating both barriers and opportunities for market accumulation, in the form of "ecological fixes" (Bakker, 2003). Natural resources (such as fish) are "fictitious commodities" that must be manipulated and managed to bring them successfully into a market system (Polanyi, [1944] 1957, 72). Some of this manipulation can be done by firms themselves, as particular biophysical constraints (such as fish location and biochemistry) become opportunities for economic investment and accumulation; the outcome is that the structure of particular resource-based industries is influenced at least in part by characteristics of the resource itself (Bakker, 2003;

Boyd et al., 2001; Mansfield, 2003; Prudham, 2005). The public sector also takes on some of this work. Government regulators and scientists make new environmental resources available for economic investment (e.g. "improved" varieties of trees or wetland banking, see Prudham, 2005; Robertson, 2004). Governments also provide environmental protection and clean up as a means to contain crises (understood as economic and environmental crises simultaneously); to the extent crisis cannot be contained—like when animals such as the Steller become endangered and do not recover—environmental problems can trigger "institutional experimentation" in ways of "governing nature" (Bridge and Jonas, 2002, 765; see also O'Connor, 1998, chapter 8). Attention to such environmental dimensions of regulation is what makes the analysis in this paper possible, as it is only through attending to pollock privatization *in environmental context* that the fact of Steller protections becomes visible and important (i.e. it is quite possible to analyze pollock privatization without giving any attention to the Steller issue, as I have done elsewhere (Mansfield, 2004)). The analysis in this paper then focuses on the outcomes of institutional experimentation that occurs as the dynamics of endangered species and fish populations are negotiated by firms and state regulators alike. Regulation is not just about governing human behavior, but human-environment relations as well.

Environmental dimensions become important not only directly through biophysical processes, but also more indirectly, through environmental politics. Some of the central achievements of recent environmental social movements have been environmental laws that use traditional, state-oriented regulation to govern the environmental effects of private, and especially corporate, activity. McCarthy and Prudham (2004) argue that state-oriented regulation has been one of the central targets of neoliberalism in recent decades, and that such attacks have been less successful than those in other areas. This inability to dismantle state-

oriented environmental regulation, they argue, is because environmental protection remains important for so many people. Certainly not all environmental social movements are oppositional—much environmentalism is quite consistent with neoliberalism (Bernstein, 2001; Mansfield, forthcoming)—but many such movements have successfully mobilized opposition to modify, if not stop, particular neoliberal reforms and their impacts on resource use, livelihoods, and bio-physical environments. The ongoing significance of state-oriented policy is confirmed by recent analysis of market-oriented policy across Europe, which found that traditional regulatory approaches are still significant, and in many cases dominant (Jordan et al., 2003). As such, market-oriented regulation is not supplanting but rather supplementing an existing regulatory structure. In the US, the Endangered Species Act seems to bear this out, as it has been under constant attack—particularly for seeming to abrogate the rights of private property owners—yet remains very much intact and in force (at least as of this writing). Steller protections, then, are not just a random example of state-oriented regulation, but are embedded in one of the key pieces of legislation articulating such approaches to environmental protection.

This attention to how politics of the environment has limited expansion of market-oriented regulation suggests that re-regulation can be explained not only by reference to contradictions internal to neoliberalism. It can also be explained by reference to relations that are 'external' to neoliberalism, in the sense that not everything has been fully colonized by neoliberal rationality and practice. In this sense, environmental governance has not become entirely neoliberal, but instead is shaped within political struggle among multiple actors with different relations to neoliberalism, some proponents and some opponents, and these struggles over governance are also about ideology and discourse (McCarthy and Prudham, 2004). As Perreault (2005, 266) puts it, "environmental governance is reshaped in the context of, though not necessarily

according to, neoliberal ideologies." This attention to neoliberal ideology and discourse is important, and suggests a different way of analyzing the power of neoliberalism and its relationship with other forms of governance. The literature discussed above on neoliberalism, the state, and re-regulation has the explicit aim of challenging neoliberal ideology. In this sense, the complex reality of "actually existing neoliberalism" is used to counteract the simple notions advanced within neoliberal discourse (Brenner and Theodore, 2002a). Discussion of ideology in environmental governance shifts the focus somewhat. Rather than emphasizing ways that reality does not match discourse, the point raised by Perreault and by McCarthy and Prudham is that much environmental politics must respond to neoliberal discourse (as a form of knowledge shaped within practices of power). Therefore, while not necessarily being neoliberal itself, environmental governance is very much shaped by neoliberalism. This is particularly true because neoliberal discourse attempts to "renaturalize" market relations as "one very obvious way of placing the economic beyond political reach" (Peck, 2004, 394). Picking up on this point, this paper examines how state regulators themselves conceive of and produce the relationship between market-oriented pollock privatization and state-oriented Steller protections. To the extent that neoliberal, market-oriented approaches are naturalized, they become the reference point for developing and evaluating policy regimes and their outcomes. Examining ways that market- and state-oriented regulation articulate, and how this articulation is managed by those who write and implement policy, is a way to analyze the power of neoliberal discourse without treating neoliberalism as an enclosed system or encompassing everything within it.

## Articulations between regulation and restructuring

Steller protections and pollock privatization were developed and implemented at the same time and by the same people. To what extent did the Council and NMFS treat these policies as

inherently intertwined or as basically separate? Did regulators treat them as aspects of a single policy regarding the Alaska pollock fishery, or did they treat them as separate policies that just happened to relate to the same fishery? If they are treated as a single policy, how are the multiple dimensions of the single policy integrated? If they are treated as separate policies, in what ways did regulators take into account changes related to one set of policies when developing the other? These questions address the extent to which state-oriented environmental regulation is either challenged by neoliberal change, or is able to proceed relatively unimpeded. If the two approaches are truly incompatible, such that neoliberalism really undermines or replaces traditional regulation, then we would expect to see either that neoliberal approaches subsume state-oriented regulatory approaches, or somehow hinder the design and implementation of such regulation. If neoliberalism does not necessarily lead to the decline of traditional regulation, then we would expect such regulatory approaches to continue, and we might see more complicated relationships between the policies.

The results presented here are based on analysis of key policy documents regarding both Steller protections and AFA pollock privatization. The main documents are environmental impact statements, biological opinions and a report to Congress. Because both policies were subject to numerous rounds of revision, these documents provide evidence not only of the initial rationale and course of action, but also of how the policies changed in response to criticism and infusion of new information. Analysis of these documents proceeded in two main steps. The first was to conduct keyword searches of major policy documents regarding each issue. These searches were designed to find mention of each policy within documents specifically pertaining to the other (i.e., to find mention of the AFA within the Steller documents and vice versa). In the second step, these passages (with the paragraph as the minimum unit) were then gathered and

imported into a qualitative analysis program (*NVivo*) for coding and analysis. Coding and analysis involved identifying ways that regulators themselves wrote about these policies. Themes were developed around recurring words (e.g. flexibility, mitigation) used by regulators themselves. The analysis identified the different ways these terms were used and what these uses reveal about how regulators themselves understand the two policies and their articulation. Focusing on what regulators actually say is revealing of both the material and ideological articulation of these policies.

### *Coexistence: separate yet entangled*

Analysis reveals that regulators treated these policies largely as separate issues of different types. The Steller issue was mainly an environmental one, with a focus on endangered species protection. Analyses of the Steller situation presented large amounts of information on the biology of the Steller and on various fish species and other marine mammals. Steller analyses assessed the biological effect of different suites of regulatory options, with a central focus on how regulations affected concentration/dispersion of fishing effort, both spatially and temporally, and thus how changes might affect prey availability for Stellers. These analyses did contain economic sections, but these were secondary to the larger biological issues at hand. In contrast, privatization was mainly an economic issue, with a focus on overcapitalization and the 'race for fish.' Analyses of privatization presented information on the economy of the pollock fishery and other related fisheries and communities that rely on fishing for economic opportunities. Privatization analyses assessed the economic effect of different regulatory options, with a central focus on how regulations for implementing privatization affected competition and advantage, and thus how changes would affect the structure of the fishing industry. These analyses did

address the environmental impact of restructuring, but even in formal Environmental Impact Statements the main issues were political and economic.

Regulators acknowledged the extent to which these policies overlapped, but mostly did so after the fact, when trying to assess the effectiveness of privatization. They regularly noted that because both policies were implemented at the same time, it was impossible to tell to what extent a particular policy was the cause of observed changes. For example, regulators stated that "the extent to which increased spatial dispersion of fishing effort is due to a slower-paced fishery under the AFA is difficult to estimate because it is difficult to disentangle the effects of the AFA from the effects of Steller sea lion protection measures that were implemented simultaneously" (NMFS, 2002, 4:13). Thus, even the way that regulators talk of 'entangled' effects reveals that they treated the policies themselves as separate issues.

In many ways this compartmentalized approach, in which environmental and economic issues are treated separately, is understandable, because the issues at hand were enormously complex. As the earlier description of these policies emphasized, regulators had to address myriad questions in excruciating detail, so treating the issues separately made them more tractable. More importantly, however, the extent to which regulators were able to treat these policies separately provides some initial insight into the ongoing importance of state-oriented regulation. That Steller protections could be developed independently from pollock privatization indicates that market approaches need not replace traditional approaches. Despite rhetoric that neoliberal approaches offer a market-based alternative to traditional regulation, the existence of neoliberalism in itself did not undermine the ability of regulators to regulate. Ultimately, federal regulators at both NMFS itself and at the Council were able to design and implement these highly complex and detailed regulations protecting the Steller. A significant factor here is that

very different national laws provided the framework within which regulators analyzed the issues and chose particular regulatory approaches. Steller protections are governed primarily by the ESA and the National Environmental Policy Act (42 USC 4321-4370e (2003)), while pollock privatization is governed primarily by the AFA and Magnuson Stevens Fishery Conservation and Management Act (16 USC 1801 (2003)). Each law has very specific things that it requires regulators to address, and particular ways in which it requires regulators to address them. Further, this national legal context provides external pressure, in the form of the courts, to make sure that regulators carry out their legal mandate. Thus, the legal context itself contributed to the compartmentalized approach to Steller protections and pollock privatization. Not only has neoliberal reform not impeded development of state-oriented environmental regulation, but in these ways neoliberalism has to be seen within the context of state-oriented regulation—not the other way around.

### *Complements and contradictions: combined environmental-economic effects*

The paper now turns to interaction between these policies. Asking about how regulators themselves comprehend this interaction and its combined environmental and economic effects deepens analysis of the articulation between market- and state-oriented regulatory practices. This analysis focuses on the overall message that regulators present, as well as some of their caveats and qualifications. Attending to both messages provides a more comprehensive assessment of the effects of the policies and the ways in which they contradict or complement each other.

Even where regulators explicitly examined interactions between Steller protections and pollock privatization, their analyses were quite cursory, mainly based on conjecture about future changes backed by little concrete evidence. For example, in the 2000 Biological Opinion

required under the ESA (and designed to be comprehensive) regulators provide a several paragraph description of American Fisheries Act measures, and then sum up expected effects on the Steller in a few sentences.

> "These allocations have altered the nature of the pollock fishery by eliminating the race for fish, and allowing for better temporal dispersion of catch. The formation of cooperatives may also facilitate spatial dispersion of the catch to the extent that vessels can be more deliberative about where and when they fish to maximize profit…. The AFA should indirectly benefit Steller sea lions by reducing the fishing power of the catcher/processor sector of the [Bering Sea-Aleutian Islands] pollock fleet, reducing the rate at which pollock can be taken, increasing the temporal dispersion of the fishery, and thereby reducing the probability of localized depletion of pollock" (NMFS, 2000).

The Environmental Impact Statement (EIS) for Steller protections provides a somewhat more detailed discussion with more concrete information about fishing practices (although it is still only three pages out of a 900 page document). Although the EIS argues that some features of privatization are good for the Steller and others may not be, the conclusion is that privatization creates several changes that make it easier for fishers to comply with regulations designed to protect the Steller. (These notions are echoed in the EIS for the AFA and a 2001 Report to Congress evaluating the AFA, while other documents on the AFA do not mention the Steller at all.)

> "In summary, the 'rights-based' nature of the AFA pollock fisheries eliminated the race to fish, thereby allowing self-monitoring, helping to ensure

> compliance with the various Steller sea lion regulations, and ensuring that individual spatial and temporal harvest limits (including limits on harvests in Steller sea lion conservation areas) are not exceeded. Without the AFA, compliance with and monitoring and enforcement of Steller sea lion protection measures would be greatly complicated, and possibly inadequate" (NMFS, 2001).

It seems, then, that regulators provide little information about the interaction between Steller protections and pollock privatization, but then, discursively, conclude that on the whole privatization is good for the Steller. Central to this conclusion was the idea that pollock privatization increases flexibility for fishers and processors and this has positive environmental effects. The whole point of privatization is that it frees fishers from competition over access to fish. Before, fishers raced each other to get to the fish before anyone else, but under privatization the race is over because each fisher knows exactly how much fish they can catch—and they can catch it at any time without fear that someone else might catch it first. Once freed from competition, fishers have the flexibility to fish at times and in places that make more sense both economically and environmentally. As the Council put it in their Report to Congress,

> "Implementation of the AFA likely helped the fleet in their effort to comply with the mandates imposed in the [Steller protections] by providing [the Bering Sea-Aleutian Islands] pollock fleet greater flexibility in their fishing operations by eliminating the need to race to harvest [Bering Sea-Aleutian Islands] pollock" (NPFMC, 2001, 7).

Such flexibility, and its perceived economic outcomes, is the entire justification for privatization: by creating a marketable property right, privatization ends the race for fish,

increases efficiency, and provides an incentive for inefficient fishers to sell out to their more efficient competitors, thus reducing overcapitalization. Throughout these documents, regulators specify this general notion by referring to two ways that positive outcomes derive from the flexibility provided by rights-based approaches: the dispersion of fishing effort in time and space, and mitigating negative economic effects of state-oriented regulation. As the analysis here shows, however, regulators assessments of these interactions are much more complicated than their overarching statements imply.

## Dispersing fishing effort: positive *environmental* effects of privatization?

According to these policy documents, flexibility has positive environmental effects because it allows fishers to disperse their fishing efforts across space and over time. This is good for the Steller because it reduces the likelihood that fishers create localized depletions of prey. The primary goal of Steller protections—the closed areas and seasons—was to do exactly this. Therefore, in their analyses regulators suggested that privatization complemented this goal of Steller protections. They argued that concentration in time and space was the result of the former competitive regulatory regime. Competition led to temporal concentration (i.e. short seasons), which contributed to spatial concentration (i.e. individual vessels did not have time to disperse their effort across a large area). Once privatization gave them the flexibility to disperse their effort, fishers would do so, with the unintended effect of benefiting the Steller. As NMFS put it in their EIS for the AFA, alternatives that include privatization "are expected to have conditionally positive effects on Steller sea lions as a result of the expected temporal and spatial dispersion of fishing effort" (NMFS, 2002, 4:255). Thus, just as proponents of market-oriented environmentalism suggest, neoliberal restructuring is presented as being good for the environment.

However, regulators tempered this view in three ways. First, as was already discussed, restructuring and Steller protections were entangled, so it is difficult to tell if privatization really had the effect of dispersing fishing activity. Regulators provide empirical data that indicates that fishers did spread their effort out over time and space, but this may have been the direct effect of Steller protections rather than the indirect effect of pollock privatization. While acknowledging this difficulty, regulators primarily assert that the change is caused by privatization. For example, regulators wrote that, "while this slowing of the overall pace of pollock fishing in the Bering Sea may be due in part to Steller sea lion conservation measures imposed in 1999 that were designed to disperse the fishery over time and space, the elimination of the race for fish is probably the largest contributing factor" (NMFS, 2002, 4:12).

Second, regulators admitted that privatization would not, in itself, be enough to effectively disperse fishing effort because there are still strong, market-based incentives to fish in concentrated areas and seasons.

> "Implementation of the AFA alone would not have created economic incentives for the fleet to meet the mandates required to protect the Steller sea lion population. Without additional regulations such as those contained in the [Steller protections], economic incentives would have still existed for the fleet to fish inside Steller sea lion critical habitat. The primary reason they would continue to want to fish inside sea lion area is to reduce fishing costs (assuming pollock catch rates are the same or greater inside those areas). Sea lion protection areas are closer to the plants in Unalaska and Akutan and therefore less time and fuel would be required when fishing in those areas.

> The fleet would also prefer to harvest more pollock during the roe season when the females bearing prime roe are most valuable" (NPFMC, 2001, 7).

Third, they also admitted that some measures of the restructuring program—particularly increased allocation to the inshore coops—create incentives to concentrate, rather than disperse, fishing effort. As NMFS put it in a 1999 Biological Opinion,

> "the vessels comprising the inshore sector are also subject to greater restrictions due to the smaller sizes of their vessels. In particular, the range of inshore vessels is smaller than the range of catcher/processors. Therefore, the shift in allocation toward the inshore fleet may tend to increase spatial concentration of the catch" (NMFS, 1999, 106).

Thus, despite regulators' emphasis on the positive effects of privatization, their caveats indicate that neoliberalism was not enough to protect the Steller. Restructuring may or may not *complement* regulatory efforts to disperse fishing activity, but it is clear that restructuring could not *replace* regulation as the primary means of environmental protection. Even while restructuring is presented as environmentally good, the evidence is that market-based incentives at times may be environmentally beneficial and at times may contribute to environmental problems. Because market incentives themselves have contradictory effects, state-oriented regulation continues to be essential for environmental protection.

## Mitigating negative *economic* effects of state-oriented regulation?

Regulators also suggest that increased flexibility helped to mitigate negative economic effects of traditional environmental regulation. In this view, the flexibility that individual fishers have under a privatized system allows them to adjust to strict limitations placed on their

activities in the name of environmental protection. For example, in their analysis of the effects of the AFA on fishing communities, NMFS states,

> "one theme that runs through the analysis of individual regions and communities is that perhaps the most significant beneficial effect of the AFA, and one that it was not overtly designed to address, has been to serve as a mitigation measure to allow the Alaskan groundfish fisheries to take place in an economically viable way in the face of subsequently imposed Steller sea lion protection measures" (NPFMC, 2001, 46).

In statements such as this, regulators set up an opposition between state- and market-oriented regulation: Steller protections create hardships while privatization offers broad-based benefits. This follows the standard neoliberal narrative, which is that 'regulation' is bad for economic fortunes and should be replaced with market-based approaches that create economic opportunities. According to regulators, this view is widespread within the industry itself; in their analyses they state that representatives from processing plants, catcher-processors, motherships, and catcher-vessels all agree that privatization has mitigated some of the negative effects of Steller protections. The most negative of these effects accrue to fishers in the catcher-vessel sector who use smaller vessels, because these fishers traditionally fished primarily in the nearshore areas closed by Steller protections. Therefore, in making the case that restructuring mitigates the effects of environmental regulation, regulators point especially to this sector of the industry. As the Council summarized the situation in their Report to Congress,

> "Many small catcher vessel owners have indicated that without the AFA it would have been very difficult to compete with the larger vessels as the

> fishery was pushed farther offshore to avoid critical foraging areas and haulouts used by Steller sea lions" (NPFMC, 2001, 6).

In this view, then, privatization is particularly important for the independent and less capitalized fisher who is trying to compete with much larger operations, and who is most disadvantaged by having to move offshore. What regulators do not mention in this context is that privatization is designed to remove many of these same people from the fishery. What is the *unintended* effect of Steller protections is the explicit *goal* of pollock privatization, which is to reduce overall capacity by getting the least efficient operations to leave the fishery. Of 31 catcher-vessels that delivered to motherships in 1998 (the year the AFA was passed), only 19 did so in 2000, a reduction of almost forty percent. Of 107 catcher-vessels that delivered to onshore processing plants in 1998, only 91 did so in 2000, a reduction of fifteen percent (NMFS, 2002, 4:11). In addition, NMFS expected further reductions as a result of changes the Council made to rules regarding coop membership, which is a central part of the privatization program. NMFS explained that "the catcher boats that are expected to retire as a result of this change are the smaller vessels with smaller horsepower and hold size and less capacity to fish offshore in adverse winter weather" (NMFS, 2002, 4:10).

That smaller vessels are more likely to leave is shown in my analysis of data on leasing behavior of vessels of different sizes. Recent economic analyses discuss the differential effects of pollock privatization on individual sectors, including inshore vessels and processors and offshore catcher-processors, but none have disaggregated effects within the inshore sector between small and large vessels (e.g. Anderson, 2002; Felthoven, 2002; Matulich et al., 2001). Each coop is required to file with the Council an annual report that includes information on the amount of fish that each vessel was allocated and that which it actually caught. Using coop

reports from 2001-2003, I calculated an index of leasing behavior by dividing actual catch by allocation for each vessel in each year (n=289 vessels: 96 vessels in 2001 and 2002, 97 vessels in 2003). All vessels that caught less than they were allocated have resulting values of less then 1.0, and were classified as lessors (i.e. sellers); the rest are either holders or lessees (i.e. buyers). A State of Alaska online database provides length of each vessel, which ranges from 73 to 184 feet (State of Alaska, 2004). The average length of lessors is 115.4 feet (n=72), while that of the holders and lessees combined is 123.4 feet (n=217). Results of a t-test indicate that there is a significant difference in average length of these two populations (p=0.0256). This shows that, as NMFS and the Council expected, those vessel owners who lease out their quota—either catching a reduced amount of pollock or not fishing for pollock at all—are, on average, smaller than those who catch their allocated amount or more. In other words, consolidation is one result of pollock privatization as smaller vessels exit the fishery or reduce their catch and larger vessels maintain or expand their catch.

Thus, in their effects, Steller protections and pollock privatization are quite consistent with each other. With either, the result is consolidation within the inshore fishery as independent, smaller boat fishers leave and the remaining owners expand their operations accordingly. From a neoliberal perspective that emphasizes economic efficiency over issues such as equity, Steller protections could actually be reconceived as positive, in that they could reduce capacity and increase consolidation, particularly among catcher-vessels. Further, Steller protections and pollock privatization are mutually reinforcing, in that Steller protections could be the extra push needed to get some owners to take advantage of privatization by leasing their shares and leaving the fishery: privatization is the carrot (those who leave get some compensation for doing so), while Steller protections are the stick (increasing economic hardship for the smallest vessels).

Again, consolidation through getting fishers to leave the fishery is the central goal of the pollock privatization program. When regulators use the term 'mitigation,' however, they make it seem that all negative effects are the fault of traditional environmental regulation while neoliberal restructuring is the humane alternative that allows independent fishers to survive.

Regulators present market-oriented restructuring as good *both* environmentally and economically, but present state-oriented regulation as good environmentally but *bad* economically. However, this overall assessment simplifies regulators' own statements and qualifications about the situation, as well as the stated goals of both policies. The point is not that regulators say one thing while something else is actually happening, but rather that regulators say many things but emphasize just one. A more comprehensive assessment shows that there are complex and often complementary relationships between state- and market-oriented regulation. Privatization seems to have some environmental benefits, but these are not complete or absolute, as regulators themselves admit. Steller protections seem to create some economic hardships, but these are consistent with the goals and outcomes of privatization, and so from a neoliberal perspective could be reclassified as benefits. To do so, however, would be to admit that privatization, too, creates hardships, and so these instead are treated as the fault of state-oriented regulation alone. Thus, despite their own, more complex statements, regulators largely credit environmental benefits to pollock privatization, while they blame Steller protections for economic hardships.

## Discussion

This paper is about the relationship between state- and market-oriented regulation, examining how market reforms articulate with external processes that are driven by different logics and imperatives. My previous research has shown that pollock privatization itself produces re-

regulation, in that market reforms were accompanied by rules and regulations to make markets work. But in articulating with state-oriented regulation designed to protect the endangered Steller sea lion, this paper shows that privatization also contributes to a different kind of re-regulation. Close attention to how NMFS and the Council treated the interaction between privatization of the fishery and traditional regulatory approaches to protect the Steller reveals complex articulations between these policies. The state has not been retooled as market manager so much as regulators must simultaneously develop, implement, and evaluate very different kinds of regulations. Not only did regulators develop and implement Steller protections and pollock privatization in parallel without neoliberal approaches superceding or undermining state-oriented environmental regulation, but they did so in ways that made state- and market-oriented regulation complementary.

First, regulation and restructuring seem to have complementary environmental benefits, but these benefits do not support the neoliberal notion that economically rational behavior will in itself lead to greater environmental good. While the rhetoric was that privatization was good for the environment because it dispersed fishing activity, what regulators actually said was that privatization helped facilitate implementation of Steller protections, and that there are still many market-based incentives to conduct fishing in ways that are thought harmful to the Steller. Further, to the extent the policies are entangled, it is difficult to discern whether it is privatization or regulation (or some combination, or neither) that is causing observed changes in fishing activities. Neoliberal restructuring may at times complement the goals of environmental protection—but this does not mean that restructuring can simply replace traditional forms of regulation. In the pollock case, environmental benefits of restructuring are mediated through state-oriented regulation, state-oriented regulation still is required to mitigate contradictory

market-based incentives, and restructuring itself requires state-oriented regulation to make it work.

Second, the policies also have complementary economic effects, though these are not uniform for all people. Steller protections create economic hardships that most strongly impact smaller, independent enterprises, which is quite consistent with the overall goals of neoliberal restructuring. Against the neoliberal premise that state-oriented regulation is bad economically, traditional environmental regulations create economic opportunities at the same time that they create economic challenges. It seems that *together* state- and market-oriented regulation can create opportunities and hardships, and that because of pre-existing inequities the opportunities tend to accrue to those who already have advantages, while hardships tend to accrue to those whose position is more marginal. In this case, it is independent fishers with the smallest boats and least technology who are pressured by both state- and market-oriented regulation to sell out. The cumulative effect of these policies is to increase economic consolidation in the North Pacific fishery. The existence of complementarities between these forms of regulation contradicts the neoliberal notion that restructuring will provide broad-based economic benefits by freeing individuals from the constraints of regulation. These complementarities also contradict the opposing notion that strong state-oriented regulation counteracts the effects of neoliberal restructuring, and thus that support for state-oriented regulation is necessary for resistance. Because even oppositional environmental politics is forged in relation to neoliberalism, the outcomes—i.e. particular forms of governance—can act in unintended ways that may undermine but can also support neoliberal goals.

This analysis has also shown that re-regulation is as much about the power of neoliberal discourse regarding both markets and states as it is about particular market choices. By

naturalizing markets, neoliberal discourse attributes all improvement to market reforms. This is clear in this case, in that even as regulators acknowledge the inability to disentangle Steller protections and pollock privatization, they claim that benefits are due to privatization and not to mandated protection measures. In this sense, regulators *do* become market managers and supporters, not so much by dismantling state-oriented regulation in favor of markets, or even by using state-oriented regulation to materially support markets, but by interpreting and discussing different regulations always in neoliberal terms. Further, naturalizing markets occurs precisely by contrasting markets with state-oriented approaches, and in this sense neoliberal discourse gains its power in part from the ongoing existence of such approaches. By claiming that these approaches are contradictory—state-mandates bad, free-markets good—neoliberal proponents can use traditional environmental regulation and its negative effects as justification for restructuring. Regulators promoted privatization in part by suggesting that it helped fishers and processors (and especially independent small boat fishers) overcome the negative economic effects of Steller protections, even though both privatization and Steller protections pressure fishers in similar ways. Thus, state-oriented regulation itself can be useful for restructuring by providing a sense of legitimacy. If all state-oriented regulation were to disappear (and scholarship on re-regulation suggests this cannot happen), then ongoing problems could no longer be blamed on faulty regulation and a lack of markets, but would have to be internalized into understandings of the market-system.

In sum, re-regulation in this case is about the inability of neoliberalism to subsume its outsides, and is also about how these outsides can themselves come to support that which they seem to oppose. Traditional state-regulation continues, alternatives do exist—that is, they are already existing, in practice. Because neoliberalism is not imposed complete to supplant state-

oriented regulation but rather supplements and must articulate with it, in practice neoliberalism becomes something that is neither neoliberalism nor its opposite. At the same time, outcomes of traditional state-oriented regulation may be quite consistent with neoliberal goals, and all kinds of regulation are viewed through the lens of neoliberal discourse, indicating the ideological power of neoliberalism. The articulation of state- and market-oriented regulation suggests that while the ongoing existence of state-oriented approaches is not necessarily a form of opposition, there does remain something outside of neoliberalism, something that has not been fully neoliberalized to the extent that there is no alternative.

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References

Anderson L G, 2002, "A microeconomic analysis of formation and potential reorganization of AFA coops" *Marine Resource Economics* **17** 207-224

Anderson T L, and Leal D R, 2001 *Free Market Environmentalism*. Revised ed (Palgrave, New York)

Bakker K, 2002, "From state to market?: water *mercantilización* in Spain" *Environment and Planning A* **34** 767-790

———, 2003 *An Uncooperative Commodity: Privatizing Water in England and Wales* (Oxford University Press, Oxford)

Bernstein S, 2001 *The Compromise of Liberal Environmentalism* (Columbia University Press, New York)

Boyd W, Prudham W S, and Schurman R A, 2001, "Industrial dynamics and the problem of nature" *Society and Natural Resources* **14** 555-570

Brenner N, and Theodore N, 2002a, "Cities and the geographies of "actually existing neoliberalism"" *Antipode* **34** (3) 349-379

———, 2002b, "Preface: From the 'new localism' to the spaces of neoliberalism" *Antipode* **34** (3) 341-347

Bridge G, and Jonas A E, 2002, "Guest editorial: governing nature: the reregulation of resource access, production, and consumption" *Environment and Planning A* **34** 759-766

Criddle K R, and Macinko S, 2000, "A requiem for the IFQ in US fisheries?" *Marine Policy* **24** 461-469

FAO Fisheries Department, 2002 *The State of World Fisheries and Aquaculture 2002* (UN Food and Agriculture Organization, Rome)

Felthoven R G, 2002, "Effects of the American Fisheries Act on capacity, utilization and technical efficiency" *Marine Resource Economics* **17** 181-205

Harvey D, 2003 *The New Imperialism* (Oxford University Press, Oxford)

Jordan A, Wurzel R K, and Zito A R, 2003, "'New' instruments of environmental governance: patterns and pathways of change" *Environmental Politics* **12** (1) 3-24

Kosobud R F, and Zimmerman J M, eds, 1997 *Market-Based Approaches to Environmental Policy: Regulatory Innovations to the Fore* (Van Nostrand Reinhold, New York)

Mansfield B, 2003, "Fish, factory trawlers, and imitation crab: the nature of quality in the seafood industry" *Journal of Rural Studies* **19** (1) 9-21

———, 2004, "Rules of privatization: contradictions in neoliberal regulation of North Pacific fisheries" *Annals of the Association of American Geographers* **94** (3) 565-584

———, forthcoming, "Global Environmental Politics", in *Handbook of Political Geography* Eds K Cox, M Low and J Robinson (Sage, London)

Mansfield B, and Haas J, 2006, "Scale framing of scientific uncertainty in controversy over the endangered Steller sea lion" *Environmental Politics* **forthcoming**

Matulich S C, Sever M, and Inaba F, 2001, "Fishery cooperatives as an alternative to ITQs: implications of the American Fisheries Act" *Marine Resource Economics* **16** 1-16

McCarthy J, and Prudham S, 2004, "Neoliberal nature and the nature of neoliberalism" *Geoforum* **35** 275-283

National Research Council, 2003 *Decline of the Steller Sea Lion in Alaskan Waters* (National Academies Press, Washington DC)

NMFS, 1990, "Listing of Steller Sea Lions as Threatened Under the Endangered Species Act" *Federal Register* **55** 49204

———, 1992, "Groundfish of the Gulf of Alaska, Groundfish Fishery of the Bering Sea and Aleutian Islands Area" *Federal Register* **57** 2683

———, 1999 *Biological Opinion on 2000 TAC Specifications for BSAI and GOA Groundfish Fisheries, and the AFA* (National Marine Fisheries Service, Silver Springs, MD)

———, 2000 *Biological Opinion and Incidental Take Statement on Authorization of Bering Sea/Aleutian Islands Groundfish Fisheries and Authorization of Gulf of Alaska Groundfish Fisheries* (National Marine Fisheries Service, Alaska Region, Juneau, AK)

———, 2001 *Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement* (National Marine Fisheries Service, Alaska Region, Juneau, AK)

———, 2002 *Final Environmental Impact Statement for American Fisheries Act Amendments 61/61/13/8* (National Marine Fisheries Service, Alaska Region, Juneau, AK)

———, 2003 *Fisheries of the United States, 2002* (National Marine Fisheries Service, Silver Springs, MD)

NPFMC, 2001 *Impacts of the American Fisheries Act: Report to the US Congress and the Secretary of Commerce* (North Pacific Fishery Management Council, Anchorage)

O'Connor J, 1998 *Natural Causes: Essays in Ecological Marxism* (Guilford Press, New York)

Peck J, 2004, "Geography and public policy: constructions of neoliberalism" *Progress in Human Geography* **28** (3) 392-405

Peck J, and Tickell A, 2002, "Neoliberalizing space" *Antipode* **34** (3) 380-404

Perreault T, 2005, "State restructuring and the scale politics of rural water governance in Bolivia" *Environment and Planning A* **37** 263-284

Polanyi K, [1944] 1957 *The Great Transformation: The Political and Economic Origins of Our Time* (Beacon Press, Boston)

Prudham S, 2005 *Knock on Wood: Nature as Commodity in Douglas-Fir Country* (Routledge, New York)

Robertson M, 2004, "The neoliberalization of ecosystem services: wetland mitigation banking and problems in environmental governance" *Geoforum* **35** 361-373

Smith F L, Jr, 2000, "The market and nature", in *Ecology, Liberty & Property: A Free Market Environmental Reader* Ed J H Adler (Competitive Enterprise Institute, Washington DC) 25-38

State of Alaska, 2004, "Online database of Individual Permit & Vessel Information", http://www.cfec.state.ak.us/mnu_Pmt_Vess_Recs.htm

Stavins R N, 2003, "Experience with market-based environmental policy instruments", in *Handbook of Environmental Economics* Eds K G Maler and J R Vincent (Elsevier, Amsterdam) 355-435

Vogel S K, 1996 *Freer Markets, More Rules: Regulatory Reform in Advanced Industrial Countries* (Cornell University Press, Ithaca, NY)