Fisheries Privatization and the Remaking of Fishery Systems

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ABSTRACT: This article draws on directed ethnographic research and a review of literature to explore how the commodification of fishing rights discursively and materially remakes human-marine relationships across diverse regions. It traces the history of dominant economic theories that promote the privatization of fishing access for maximizing potential profits. It describes more recent discursive trends that link the ecological health of the world's oceans and their fisheries to widespread privatization. Together, these economic and environmental discourses have enrolled a broad set of increasingly vocal and powerful privatization proponents. The article provides specific examples of how nature-society relationships among people, oceans, and fish are remade as privatization policies take root in fishery systems. We conclude with an overview of several strategies of resistance. Across the world there is evidence of alternative discourses, economic logics, and cultures of fishing resistant to privatization processes, the assumptions that underlie them, and the social transitions they often generate.

KEYWORDS: catch shares, fisheries, individual transferable quotas (ITQs), political ecology, privatization

Nation-states began privatizing fishing rights on a large scale nearly four decades ago. Since that time, 35 nations have restructured major fisheries, implementing nearly 400 access privatization programs to manage over 850 species (Environmental Defense Fund [EDF] 2012; Melnychuk et al. 2011). We use the term *privatization* to signify a variety of processes that redefine access rights or privileges to open, common, or state-owned fisheries. While true privatization implies "assigning clear, legally enforceable private property rights to hitherto unowned, state-owned, or communally owned aspects of the social, cultural, and/or natural worlds" (Castree 2010: 10), we use the term here to describe many processes that increase the level of private allocation of, and control over, public resources. Privatization of fishing rights often involves new processes of *marketization,* creating mechanisms for the monetary exchange or transfer of fishing rights or privileges between individuals, corporations, or other collectives, and relatedly, *commodification,* reshaping the access rights to fish into objects that can be bought and sold.

There is a range of variation in the nature of privatization, marketization, and commodification processes in various fishery systems worldwide. A consistent step in these diverse privatization processes is the private allocation of resource rights, often in the form of "individual fishing quotas." These individual fishing quotas usually confer to fishermen, fishing companies, or less frequently communities or collectives the right to fish for a certain portion of a total catch limit. Approximately 80 percent of all individual fishing quota programs worldwide allocate fishing

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rights as tradable commodities (Bonzon et al. 2010), and are often thus named, individual transferable quotas (ITQs). Among fishermen, scientists, managers, and interested citizens, ITQs have been, and continue to be, deeply polarizing. Agnar Helgason and Gísli Pálsson (1998: 131) note that "the ITQ system has become one of the most contentious and tumultuous issues in Icelandic political history." The US Congress put a moratorium on ITQs for almost a decade in response to widespread concern about the equity issues that result from fisheries privatization. A growing environmental discourse advocating for individual fishing quotas, or "catch shares," for environmental conservation goals has recently reinvigorated privatization processes.

As Petter Holm and Kåre Nolde Nielsen (2007: 193) note, the "ITQ literature is massive." Several syntheses of this burgeoning literature provide helpful reviews of a wide range of ITQ case studies (e.g., Shotton 2000a, 2000b, 2001), the relationship between catch shares and fish resources (e.g., Chu 2009; Costello et al. 2008; Melnychuk et al. 2011), and the social impacts of fisheries privatization (e.g., Copes 1986; Lowe and Carothers 2008; McCay 1995, 2004; Olson 2011; Pálsson and Pétursdóttir 1996). This article, contributing to a volume on capitalism and the environment, does not attempt to provide an exhaustive review of this literature, but focuses instead on exploring how the privatization, marketization, and commodification processes in fishery systems discursively and materially remake human-marine relationships across diverse regions. The article is informed by previous and current directed ethnographic study of fisheries privatization processes in Alaska and Iceland.[1] It traces the history of economic theories that promoted the privatization of fishing access for maximizing potential profits from common property fisheries. It then describes more recent discursive trends that link the ecological health of the world's oceans and their fisheries to the widespread implementation of private property rights. Together, these economic and environmental discourses have enrolled a broad set of increasingly vocal and powerful privatization proponents. Next, it tempers this enthusiasm for privatization with a detailed look at how nature-society relationships among people, oceans, and fish are "remade" (Braun and Castree 1998; Heynen et al. 2007; Mansfield 2008) as privatization policies take root in fishery systems. The article concludes with a presentation of several strategies of resistance to this reframing and remaking of fishery systems.

Fish and Property: Tragedies, Crises, and the Inevitability of Privatization

Increasingly in both academic and popular literature, the fate of the world's fish stocks is linked to the widespread privatization of fishing rights (e.g., Costello et al. 2008; EDF 2012; Festa et al. 2008; Weiss 2008). Environmental Defense Fund, a leading US environmental nongovernmental organization (NGO), has recently created a catch shares design center and manual, including a seven-step process for creating new privatization programs (Bonzon et al. 2010). Its website prominently displays the more than fourfold increase in the number of ITQ programs in effect worldwide since 1990 (EDF 2012). The enthusiasm for fisheries privatization is easily perceivable in scientific literature and conferences. At the International Marine Conservation Congress (of the Society for Conservation Biology) held in Washington DC, in 2009, for example, a speaker introduced his presentation about the benefits of catch shares in fisheries management by showing an image of two small boys drinking a single milkshake with two straws. As he explained, in the absence of separate glasses that would fairly divide their shares, the kids are doomed to compete for the precious milkshake, each trying to drink as much of it as he can before the other. Like many popular stories about shared resources, this story also ends in tragedy. As the presenter explains, rather than enjoying their milkshake at a leisurely pace, both boys end up experiencing a painful ice cream headache. To many conservation scientists in the room that day, the link between two children "competing for" a milkshake and fisheries management

needed little explanation. The tragedy of the commons narrative (Gordon 1954; Hardin 1968) has been so overused in describing the problems of fisheries management that today it is not presented as an empirical question but rather as dogma. According to this tale, fishermen—in the absence of private property rights, acting as self-interested, competing, and profit-seeking individuals or businesses—race to outfish their fellow fishermen, securing as much of an open access resource as possible, ending in ruin for all, both the fishermen and the fish.

Why has this tragedy of the commons problem and property-rights-solution framing become such a potent and dominant discourse? Networks of scientists, fishing industry leaders, advocacy groups, and policymakers that have historically, and are currently, promoting catch shares have complex rationales. However, two points appear central to understanding the recent fervor for catch shares. First, the discourses of fisheries privatization, as presented by neoclassical economists, appear as common-sense facts, articulating well with processes of management that strive for objective science informing policy (Wingard 2000). Neoclassical economics provides to capitalist logics the scientific abstraction and mathematical modeling that make these logics appear to be natural, defining features of human society (Davis 1996; Polanyi 1944; Wilk 1996). Theoretical abstraction has made the privatization of fisheries appear as inevitable progress in fisheries management across diverse political processes. Second, the enrollment of a diverse set of actors, promoting much broader goals than aggregate profit maximization, including resource conservation, has made it increasingly common to link fisheries privatization to a host of positive outcomes. Within this broadening of goals has also come a powerful linkage with crisis narratives of overfishing. Scientists, conservationists, and diverse publics are now being told that without enclosure and privatization, fisheries are bound to collapse (e.g., Costello et al. 2008, Weiss 2008).

Economic Science and Capitalist Logic: Privatization for Rent Maximization

> The (economics) profession's most important policy achievement must surely be its influence on getting the ITQs on the agenda as a viable policy instrument.
>
> —Wilen (2000: 321, cited in Holm and Nielsen 2007: 176)

The tragedy of the commons framing of fisheries was first clearly articulated in scientific literature in the 1950s. Resource economists noted that open access fisheries managed only biologically for total catch limits did not generate any aggregate profits, or resource rents, as did land and other natural resources. If enclosed by private property rights, fisheries could generate maximum profits for firms or profit-seeking individuals that were shared too widely under common property regimes (Anderson 1976). H. Scott Gordon (1954) was among the first to specifically define the absence of private property rights as the key problem of fisheries, and Francis Christy (1973) the first to set out individually allocated "fishermen's quotas" as a solution. Many scholars have since provided critical reviews of this economic framing of fisheries (e.g., Acheson 1981; Carothers 2008; Davis 1996; Macinko and Bromley 2002, 2004; Macinko and Shumann 2008; Mansfield 2004, 2008; McEvoy 1986; Reiser 1999; St. Martin 2005, 2007a, 2007b, 2008), and others have offered a more general critique of such framings that obscure a wide range of successfully managed commons worldwide (e.g., Ciriacy-Wanthrup and Bishop 1975; McCay and Acheson 1987; Ostrom et al. 2002). According to neoclassical economic theory—in the absence of property rights—a "persistent and inevitable" process ensues whereby fishermen work to outcompete each other for their catches of fish, thus investing in "unproductive labor and capital" and "dissipating" all potential resource rents possible from the natural reproductive fish stocks (Moloney and Pearse 1979: 860). The solution is to eliminate the "totally useless accumulation

of excess capital" (Crutchfield 1979: 751) and labor (i.e., fishing boats, gear, and fishermen) to enclose the fisheries for fewer individuals and vessels thus maximizing profits for the fleet that remains. The social goal of fisheries according to this economic framing is to maximize aggregate profit for the most efficient fishermen or firms. These goals of efficiency and profit are presented as natural facts of human society, reflecting the close connection between neoclassical economics and capitalism (Polanyi 1944; Wilk 1996). Market mechanisms are seen to be more neutral than democratic processes because they "get the politics out" of fisheries management and provide for the primary goal of fishery systems in a capital-centric imaginary—the "maximization of economic benefit in the long term" (Hannesson 2006: 161).

Since the 1950s, resource economists have developed increasingly sophisticated models for representing optimal allocations of fishing effort to maximize profits. A common framing of fisheries privatization by fishery managers and scientists is that the so-called technical realities of the global crisis of too many boats chasing too few fish demand rationalist management measures such as privatization, often termed "rationalization" by fisheries economists and managers. Because economists tend to use value-neutral language backed by abstract and highly specialized representations, they often more easily align with policy processes that prioritize objectivity and attempt to erase the political dimensions of management. Bourdieu (1999: 165) reminds us that once relegated to a body of specialists, certain discourses can gain a "monopoly of legitimate cultural production." In many regions, the economic discourse of fisheries privatization has gained an ideological and commonsensical power that has obscured its normative framing. This power may, in part, explain the widespread adoption of fisheries privatization policies.

Expanded Goals: Fate of Oceans Linked to Privatization

Strikingly, current proponents of fisheries privatization do not often cite rent maximization as a primary goal. The Environmental Defense Fund (2012), for example, states that catch shares can "bring back fish populations, save commercial fishing jobs, ensure fishing communities prosper and thrive, preserve our fishing heritage, and attract new participants." Conservation of fish stocks is first among these benefits and is increasingly used as a rationale for fisheries privatization in both academic and popular media and discourse. The *New York Times,* the *Los Angeles Times,* and the *Economist* popularized the findings of Christopher Costello, Steven Gaines, and John Lynham (2008) presented in *Science*: "privatization prevents collapse of fish stocks." If ITQs transfer a secure property right to individuals, some argue that those ownership rights will foster a conservation ethic among participants who, as owners, want the fishery resources to remain healthy over the long term for their own benefit (e.g., Hannesson 2005; NOAA Fisheries Service 2012). However, this relationship between privatization and conservation has often been theoretically assumed (e.g., Festa et al. 2008; Fujita and Bonzon 2006), rather than empirically documented (Brandon 2004).

Recent studies have attempted to make up for the lack of investigation of the link between ITQs and increased resource conservation (e.g., Chu 2009; Costello et al. 2008, Heal and Schlenker 2008; Melnychuk et al. 2011), but no simple relationship emerges from this literature. Some authors conclude that ITQs confer benefits to fish stocks (e.g., Costello et al. 2008); others show how stock declines occur years after ITQ implementation (e.g., Copes and Pálsson 2000). Several factors appear to affect the relationship between ITQs and fishery stocks, including the association between total catch limits and division of those limits into ITQs, the property relationship conferred by ITQs, and the fishing practices generated by ITQs. First, the distinctions between various types of quotas are important to consider. Among nonspecialists, the discourse

of ITQs may imply that what is being implemented with individual fishing quotas are limits on overall harvests, which have obvious conservation goals. However, the point of ITQs is to divide up (e.g., among individuals, firms, or other collectives) a total, fleetwide catch quota, that is usually set with biological and ecological considerations in mind. Total catch limits are set and enforced in many fisheries managed without ITQs, and have been effective in some ITQ fisheries long before individual quota implementation. A recent study of 345 privatized access fisheries concludes that while catch share programs tend to decrease overexploitation, that "appears to be due more to the presence of a fleet-wide quota cap than to the division of that quota into shares" (Melnychuk et al. 2011). This is a key point. Setting and enforcing total catch limits has obvious benefits for fish stocks. Individually dividing up that total catch limit into tradable commodities has less clear effects on fish stocks.

A second confusing issue that is often glossed over in pro-catch shares discourses is the actual property rights or privileges conferred by ITQs. As Daniel Bromley (2008) notes, there is much "conceptual confusion" about the theory and practice of ITQs. In the economic discourse described above, the closer ITQs are to true resource privatization the better (Hannesson 2006). True privatization—according to these theories—implies stable, clearly defined ownership rights, free transferability, and long-term planning possibilities, thus setting the stage for the increased efficiency and rent maximization, the economic goals that provide the impetus for ITQs in the first place. In the environmental discourse, those who link resource stewardship to ITQs do so under the assumption that real property rights engender a conservation ethic. Oddly, the broader set of proponents of ITQs, including environmental NGOs and fishery managers, tend not to employ the language of privatization. According to Macinko and Bromley: "It is common for IFQ proponents in the United States to reassure a nervous public that they aren't privatizing anything—they are simply advocating what they consider to be the best management tool. Yet proponents then lapse into justifications for IFQs that are thoroughly predicated upon a logic in which privatization is not only beneficial but also necessary" (2002: 21). In the United States, ITQs are defined as revocable access privileges without legal liability, recently described as being conferred in "(revocable) perpetuity" (Abbott et al. 2010). In Iceland, ITQs are permanent shares of a total catch quota, although the Icelandic Supreme Court has ruled ITQs are not equal to private property rights in perpetuity (Hannesson 2006: 78), and a 2012 bill before the Icelandic Parliament aims to define the longevity of ITQ rights. In New Zealand, ITQs are perhaps closest to private property, because they are awarded in (actual) perpetuity; and in the United Kingdom and the Netherlands, long-term rights are not conferred by ITQs (Shotton et al. 2001).

Third, the actual fishing practices employed in ITQ fisheries demand exploration if any conclusions about ITQs and resource health are to be drawn. Parzival Copes (2000) discusses both how ITQ systems in general, and the various specific fishing practices such systems may encourage (e.g., high-grading, or selectively choosing to fill an individual quota with premium fish while discarding suboptimal fish), can create negative impacts on fishery stocks. The practice of leasing quota share from owners by fishermen is common in many ITQ fisheries. Those captains and crew who directly interact with the fish often do not own rights to the resource; thus predictions about how they will or will not behave for the long-term interest of that resource are not straightforward. For example, disenfranchised captains and crew members who resent such leasing practices (e.g., Lazrus et al. 2011) cannot be assumed to employ fishing practices with long-term resource sustainability in mind. The rural-to-urban migration of ITQs also demands attention. Those individuals who reside in coastal communities, who may well be more concerned about the long-term health of their marine ecosystems than those nonlocals who migrate in and out only for commercial fishing, are often dispossessed of fishing rights after

resource privatization (Carothers 2012). The diversity of practices catalyzed by ITQs demands attention before broad generalizations about ITQs and resource outcomes are made.

Each of these points demonstrates the unclear relationship between privatization and resource conservation. Despite these ambiguous relationships, the discursive linking of fisheries privatization to environmental stewardship and ecosystem health (as well as other goals, such as increased human safety[2]) has had important implications. In the language of actor network theory (Callon 1986; Latour 1987), the expanded goals of fisheries access privatization have successfully enrolled important actors in fisheries and marine management and conservation networks. Within this expanded environmental discourse, resistance to privatization is increasingly imagined not as resistance to dominant cultural logics that promote the marketization and commodification of fishing rights for maximizing profit, but to the environmental logics that are redefining a new environmentalism of marine ecosystems. This emerging environmental discourse has constructed privatization processes, both of access rights to extractive fisheries and of marine spaces, as necessary precursors for protecting ecosystem integrity and health. These discourses have mobilized environmental activists, marine recreationalists, coastal tourists, and seafood consumers to support privatization processes. ITQs have now been reframed as "catch shares." The individual and tradable nature of the resource rights that defined the economic framing is no longer central to this environmental discourse, in which catch shares are the "new hope for fisheries" and a "real investment in sustainability" (EDF 2012: n.p.).

From Inevitable Natural Logics to Capitalist Production Systems

The dominance of the tragedy of the commons metaphor in both economic and environmental discourses, paired with the requisite privatization of access rights to fishing, has gained such commonsense status in international fisheries science and management that it is often discussed in terms of its inevitability (Árnason 1993; Hannesson 2006). For example, a fishery manager in Alaska described the push for fisheries privatization, often called "rationalization" in this region, in Kodiak in March 2006: "We had a situation, worldwide, where people in fisheries are having an increasing race for fish … more and more boats, more and more people, more and more technology and gear going after the same number of fish. And worldwide there has been a lot of variation, but there's been one form or another of rationalization." In addition to articulating the perceived inevitability of fisheries management regimes moving toward privatizing fisheries, this statement presents the problems of fisheries as a technical one of too much steel and too few fish. Missing here, and often in both economic and environmental discourses, is the key point that this "race for fish" is not a technical problem created by individual, unconnected human behavior presented in the tragedy of the commons story, but rather a political economic problem created by larger-scale processes of global capitalism and industrial fisheries.

Utilizing a political ecology framework, Becky Mansfield (2010) provides an overview of both the critique of tragedy of the commons framings and the industrial fisheries development that has led to global fisheries crises. As she notes, overfishing is not caused by the human propensity for individual greed, but rather industrial processes that have modernized and developed fisheries in recent decades. The scale of industrial fisheries became massive in the 1960s and 1970s; technological development enabled fishing fleets in the US, UK, Spain, Japan, and Russia, to travel farther and catch and process more fish (McGoodwin 1990). During this development, Mansfield also notes the inequitable flow of resource wealth of fisheries from developing to developed countries. Nearly three-quarters of all fish traded internationally comes from nations in the Global South exported for consumption in nations in the Global North, over 70 percent of which is for markets in the European Union, Japan, and the United States. Overfishing in the

Global South is caused in large part by export commodity markets and the demand generated in these wealthier countries (Mansfield 2010).

Rather than an inevitable process, we see industrial fisheries developing for specific reasons. Fisheries were targeted as an underdeveloped realm for increased economic growth. In the United States, federal policies aimed at developing fishing capacity in the 1960s and 1970s resulted in a near doubling of commercial fishing vessels in the country between the mid-1960s and 1980s, accounting for two-and-a-half times more fish harvested between the 1970s and 1990s (Wingard 2000). Large-scale subsidies financed between 50 and 87 percent of costs for constructing or refurbishing fishing vessels, shore-based infrastructure, and marketing (Mansfield 2010; Wingard 2000). Today, approximately US$16 billion are spent on increasing fishing capacity worldwide, and US$4–US$8 billion are spent on fuel subsidies (Mansfield 2010).

Rather than situate overfishing in a global system of uneven development that generates large-scale extraction, cheap products, inequitable flows of resource wealth from south to north (Mansfield 2010), both economic and environmental narratives tend to link overfishing to inevitable human nature (tragedy of the commons). These discourses, paired with the striking statistics of the overfishing that has resulted from the industrialization of fisheries, where 32 percent of all stocks are estimated to be "overexploited, depleted, or recovering," 50 percent are fully exploited, 12 percent moderately exploited, and 3 percent underexploited (Food and Agriculture Organization [FAO] 2010: 35), have created a fertile context for fisheries restructuring. Yet, the overfishing problem constructed in this way as one of individual human greed, paired with a solution of privatization, leaves unimagined alternatives that would actually address the root causes of overfishing—the industrialization and uneven development of fishery systems.

Remaking Nature-Society Relationships

Social scientists have increasingly explored relationships between the environment and privatization (e.g., Heynen et al. 2007; McCarthy and Prudham 2004). Building on the work of Karl Marx, scholars have explored how privatization processes and the new property relationships they create often dispossess people from land, sea, and resources, such that they are forced to labor for the owners of capital and newly created commodities (Mansfield 2010). Wealth is often accumulated through these processes of dispossession (Harvey 2003). In the fisheries context, the connection between the economic theories that promote the privatization of fisheries access and wealth accumulation is explicit. The point of resource privatization—as described in economics literature from the 1950s to the present—is to maximize potential profits, or resource rents, by eliminating so-called wasteful labor and capital. Processes of privatization are often conceived of as inevitable processes for those employing capitalist logics, so alternatives are left unimagined in this economic literature (Carothers 2008; Davis 1996; St. Martin 2007a), except in cases of perceived extreme difference, such as indigenous fisheries or fisheries in isolated communities, where more attention might be paid to fishing as a way-of-life rather than as a profit-generating endeavor (e.g., Crutchfield 1979: 751). The environmental logics that promote the privatization of resource rights and marine space for preserving marine ecosystems also generate dispossessions. For example, prioritizing uses of marine spaces for scientific research and maritime recreation in marine reserves over extractive fishing redefines legitimate uses of marine resources and spaces and often reframes fishing as a practice that threatens ecosystem structure and function.

The question we explore in this section is how privatization processes remake nature-society relationships in fishery systems. Scholars like Bruce Braun and Noel Castree (1999), Becky Mans-

field (2004, 2008, 2010), and Julia Olson (2011), who write about the ways in which enclosure and privatization processes remake nature-society relationships, are careful to caution against broad-brushed generalizations. As many case studies of fisheries privatization in diverse contexts reveal, places, peoples and natures vary considerably, as do the specific impacts of restricting, commodifying, and marketizing fishing rights. Yet some general trends are observable when comparing processes of fisheries access privatization across the globe. Olson presents an impressive review of the social impacts of fisheries privatization and the "new ways of organizing around fishing" (2011: 353) that emerge once privatization policies are enacted. Olson documents cases in the US, Canada, Iceland, Norway, and Australia, describing the diverse impacts of privatization based on national approach, fishery, and social context; however, a key finding presented is that "negative impacts from privatization often fall on less powerful segments of the fishing industry, namely the crew, or the small business owners" (Ibid.: 361). Those best able to reap the benefits of new programs, larger firms or vertically integrated corporations, come to redefine the structure of fisheries—by leasing out rights and shifting hiring and compensation practices for captains and crews, and of fishing communities and regions that are made up of those captains and crews among other fishery participants (Olson 2011).

Initial Allocation, Market Trading, and Concentration of Wealth and Power

Several scholars use the concept of experimentation to describe the implementation of ITQs (e.g., Copes and Pálsson 2000; Helgason and Pálsson 1998; Olson 2011; Reiser 1999). Resource economists and marine scientists often view nature as something essentially manageable, and ITQs are a direct extension of this notion (Pálsson and Helgason 1996). Common outcomes of fisheries privatization are fully predicted to occur according to the economic theories that promote it, including the concentration of wealth derived from fishing. Among the first steps in privatization processes is allocating the newly defined fishing rights. ITQs have been most commonly allocated to boat owners (individuals, firms, or in some fisheries, vessels), even in fisheries where hired skippers are common. This common practice is based on a capital-centric logic of rewarding those who have invested financially in fisheries, rather than with their labor; "vessel owners and lease holders are the participants who supply the means to harvest fish, suffer the financial and liability risks to do so, and direct the fishing operations" (NOAA Fisheries Service 1993: 59378). An exception is the Bering Sea crab fishery privatized in 2005 that allocated hired captains some fishing quota, although collectively they received only 3 percent of the total fishing quota. In many other fisheries, hired skippers and crew received no portion of the newly created wealth, often generating much ill will between boat owners and operators. These tensions contributed to an anti-ITQ movement among fishermen in the US, resulting in a seven-year moratorium on ITQs (McCay 2001; see also Criddle and Macinko 2000).

The proportion of the total catch allocated to owners or vessels in an ITQ system is usually based on past catch levels in the fishery. These historic catches often reflect an average catch of a vessel over a short range of years (Shotton 2001). This pattern of allocating fishing rights based on the percentages of catch within a set number of years has catalyzed a phenomenon where fishermen fish for "fishing history" in fisheries they expect to become privatized (Copes and Pálsson 2000; Maurstad 2000). In the Alaska halibut fishery, for example, Clarence Pautkze and Chris Oliver (1997: n.p.) note that "effort pour[ed] in to establish a fishing history and rights to what probably w[ould] be a permit of considerable value." In this fishery, as in many others, those boats that caught the most fish and most contributed to the problems of overcapacity in need of restriction were rewarded with the most fishing rights. Bonnie McCay (2001) notes that

even the "catch history" for illegally harvested clams was used to determine future fishing rights in the Mid-Atlantic region of the United States.

Economic theories predict that those who are most efficient (e.g., have lower costs and make higher profits) will buy out those less efficient fishermen (see, e.g., Árnason 1993; Crutchfield 1979; Hannesson 2006). The market mechanism creates a space that favors those who are economically efficient and have access to capital (Eythórsson 1996). Those most efficient with access to capital are often large, vertically integrated firms (Copes and Charles 2004; McCay et al. 1995; Pálsson and Helgason 1995). In Iceland, consolidation of quotas occurred quickly in the first four years after ITQ implementation (Pálsson and Helgason 1995). In 2009, the 5 largest fishing companies held 33 percent of all fishing quota and the 20 largest held 66 percent (Icelandic Ministry of Fisheries 2011). Over the course of a decade, ITQs held in New Zealand fisheries consolidated substantially. By 1996, 86 percent of total catch quotas were owned by the 12 largest companies (Stewart et al. 2006). Individual ownership limits in New Zealand are currently among the highest worldwide. An individual firm may own as much as 35 to 45 percent of total quota in a fishery, limits that do not allow an outright monopoly but provide for an oligopoly of control by a few companies (Stewart and Callagher 2011). Dramatic consolidation has occurred in some ITQ fisheries in the US. For example, the fleet of vessels participating in the Bering Sea red king crab and snow crab fisheries in 2004 shrunk by 63 percent and 58 percent respectively during the first full year of ITQ management (2005 and 2006 respectively); currently, both fleets number just over 30 percent of their pre-ITQs highs (Abbott et al. 2010). In some fisheries, limits on consolidation and fishing quota linked to vessel-size classes have prevented widespread wealth concentration (Fina 2011; National Research Council [NRC] 1999a).

Fleet consolidation often translates into a direct loss of jobs, especially for nonquota owning captains and crew. Job loss can be rapid, as in the Bering Sea crab fisheries where approximately 70 percent of crew jobs were eliminated with the privatization of fisheries access rights (Abbott et al. 2010). Economists assume those less efficient quota shareholders are properly compensated because they sell their fishing quota, and moreover, they better serve society because their labor is assumed to be mobile and can be better put toward other ends (Hannesson 2004). However, several case studies take issue with these conclusions, noting instead the role that culture and economic stress can play in bringing about the sale of fishing rights by those who highly value them (e.g., Carothers 2010, 2012), and that labor and capital based in communities is often not mobile (Davis 1996). Gunnar Knapp (2011) recently demonstrated in Alaska salmon fisheries that as the value of a fishery increases, the level of local ownership decreases. Low-income and indigenous fishermen tend to be more likely to sell ITQs in the Alaska halibut fishery and less likely to purchase them (Carothers in press; Carothers et al. 2010). These trends have led to a rural-to-urban migration of fishing quota out of small (under 1,500 people), remote coastal communities in the Gulf of Alaska region; the number of rural fishermen in this region that hold halibut quota has decreased by 40 percent and the number of rural halibut quota share holdings has decreased by 56 percent since 1995 (NOAA Fisheries Service 2010). In Iceland, a similar rural-to-urban shift in fishing ownership and operation has occurred. Vertical integration of fishing companies and the increasing scale of fishing vessels and processing plants has limited employment options for fishermen and processing workers in rural communities.

Olson (2011) notes privatization is not always accompanied by consolidation or an increasing concentration of wealth. In the case of Australian South East Trawl fishery privatized during a time of wide unemployment and uncertainty about future fishing prospects, the number of fishers remained fairly constant (Connor and Alden 2001). New Zealand fleets expanded after the implementation of ITQs largely due to state support of offshore fishing capacity (Olson 2011).

If ITQs lengthen fishery seasons, other fishery sectors may increase employment opportunities, for example in the processing and support business sectors (Olson 2011). Contrary to these common trends of the concentration of fishing rights more inequitably in increasingly fewer hands, individually allocated fishing rights can also be used as equalizers of wealth. The Norwegian implementation of ITQs in 1990, for example, provided for equivalent incomes for boat-owning fishermen; however, equity issues were created for those without boats (Olson 1997, 2011).

Changes in Fishing Relations and Practices

> Some of these quota lords are friends of mine. And they kind of know the deal, but they're caught in this whole capitalist thing … I've given up on the halibut and the black cod fishery. It's just a lost fishery to me at this point. You know, chasing – allowing myself to get Q-teased.
>
> —Interview with a Kodiak fisherman (July 2011)

Kevin St. Martin (e.g., 2005, 2007a, 2007b, 2008) has explored processes of capitalism and "non-capitalism" in New England fisheries. He explores how the use of a share, or lay, system of compensation as distinct from wages is characteristic of alternative economic arrangements that characterize many fishing systems. Fishing crew members, like captains and owner-operators are usually compensated for their labor in catching fish (and other vessel and shore-based work) by sharing in the earnings of the catch (minus some shared expenses, commonly including groceries, fuel, and bait) rather than a per hour, day, or trip wage (McCay 1995; St. Martin 2008). In many cases, the privatization of fishing access has restructured similar share systems, often dramatically reducing the shares paid to crew. Prior to the implementation of ITQs in the US North Pacific halibut fishery, for example, crew members collectively earned a share of the gross profits up to 70 percent. After the implementation of halibut ITQs, this crew percentage has dropped to 33 percent (Rosvold 2007). Though economic analyses of these shifts point out that crew earnings rose with the increased value of halibut following the introduction of ITQs (Hartley and Fina 2001; Herrmann and Criddle 2006), a much larger percentage of the rent generated by access privatization went to quota owners. Prior to the privatization of the Bering Sea crab fisheries in 2005, crew members collectively tended to receive approximately 35 percent of gross vessel revenues; this percentage dropped to 23 percent by 2010 (Fina 2011). Public testimony given by crab crew members suggest that some vessels in these fisheries maintain historic crew percentages, but other boats have dropped their individual crew shares from 5–6 percent to 0.5–2 percent after ITQ implementation (Dochtermann, personal communication, 2012). In these fisheries, Abbott and colleagues (2010: 333) find that "both seasonal and daily employment remuneration increased substantially for many crew" after the privatization of the fishery, although earnings per crab caught decreased "as a result of increased crew productivity and the necessity of paying for fishing quota in the new system." Evelyn Pinkerton and Danielle Edwards (2009) note a shift in crew shares from 10–20 percent in Canada to 1–5 percent post-ITQ implementation in the British Columbia halibut fishery. Although the value of that fishery has increased about 25 percent over the last 20 years, the proportion of value of the fishery going to crew members has dropped by over 70 percent.

One primary rationale for the decreasing shares given to crew members in privatized fisheries is the widespread practice of quota leasing and deducting ITQ "costs" from vessel earnings before crew shares are paid. Pinkerton and Edwards (2009) refer to quota leasing in the British Columbia halibut fishery as the elephant in the room because nearly 80 percent of all quota in this fishery is leased, yet these practices have received relatively little analysis. Lease prices doubled between 1993 and 2008, reaching 78 percent of the total value of the catch (Pinkerton

and Edwards 2009). In the Bristol Bay red king crab fishery, lease fees can reach approximately 70 percent (Lazrus et al. 2011). Deductions for the ITQ costs have risen in this fishery from 40 percent in 2005 to 80 percent in 2006 and 2007; approximately 80 percent of vessels deduct ITQ costs from crew shares (Abbott et al. 2010), although the practice of charging for initially allocated "owned quota," or the "opportunity costs" of ITQs is still considered unfair by many quota owners (Abbott et al. 2010; Lazrus et al. 2011). In the halibut fishery, rates of ITQ deductions have been one of "decelerating acceleration," as one Kodiak fisherman noted. "At first people weren't charging anything, then it was 20 percent, 50 percent, 60 percent, 65 percent. So it went up pretty fast in the first few years. When people started buying it then they had debt service, so they're financing it with a piece off the top" (interview with a Kodiak fisherman, April 2011).

In Iceland, as quota accumulated in the hands of larger companies, small-scale fishermen were often forced to lease quota from them (Helgason and Pálsson 1997; Pálsson and Helgason 1995, 1996). Fishermen were placed under the direct control of the companies in terms of wages earned. In Icelandic fishing discourse, fishermen became "tenants" who were "fishing for others" under control of the "lords of the sea." In British Columbia, quota owners often charge their lease fees through middlemen like processing plants because of the ethical issues they have with charging such fees directly to fishermen (Pinkerton and Edwards 2009). Some fisheries privatization programs, such as those in Australia do not prohibit outside investors from buying quota share; this practice further removes fishermen from ownership (Bradshaw 2004; Copes and Charles 2004; Pálsson and Helgason 1995). Helgason and Pálsson (1997) suggest that the increase in the prevalence of quota share leasing marks a shift in the nature of fishing rights such as individual transferable quotas. This practice of profit making from fishing rights without fishing shows that ITQs are "not just use-rights, but, in effect, property rights that could be exchanged solely for profit" (Helgason and Pálsson 1997: 457; see also Karlsdóttir 2008).

In several ITQ fisheries the crew share system has entirely shifted to a wage system (e.g., British Columbia halibut and the Tasmanian rock lobster fishery [Olson 2011]). Recent interviews in Kodiak suggest that some captains in the Alaska halibut and other ITQ fisheries are employing more wage workers as fishermen operating outside of the customary share system. These workers, commonly called "$100/day guys," are often viewed negatively by long-term crew members used to being part of a share system they see as being eroded by the new restructuring that accompanies access privatization. This practice reflects to some crew members a devaluing of their knowledge and skills.

These shifts in compensation practices, while not universally negative for all crew in all ITQ fisheries, do further institutionalize and legitimate uneven distributions of wealth that flow from fisheries, particularly resource rent created by privatization processes. In many ITQ fisheries the value of the ITQs reflects real costs for operators who have purchased or leased quotas, or opportunity costs for those who were originally allocated quotas. The owners of the capital have realized increased benefit and power, while the labor class has become less able to obtain ownership of their own means of production. The changing nature of fishing relationships in many ITQ fisheries has substantially decreased upward labor mobility, often creating impassable class divisions. In many ITQ fisheries, it is not a realistic expectation that a fishing crew member could become a fishing captain or boat and quota owner. The added capitalization of fishing rights has severely eroded options for crew members or new entrants who cannot afford them (e.g., Lowe and Carothers 2008; Yandle and Dewees 2008).

The further entrenching of class roles has shifted the power relationships in fishing. In Alaska ITQ fisheries, long-term crew members describe being "Q-teased." Crew may dedicate boat and gear labor time for the promise of a crew position on a future ITQ trip that may not materialize, or may be offered work as a crew member in other less lucrative fisheries with the potential

for ITQ trips in the future. For some long-term crew members, new feelings of dependency on "quota lords" for employment, and uncertain employment, is not worth the promise of potential earnings. In a July 2011 interview, one Kodiak fisherman described this in terms of power shifts: "you no longer have any power as a crewman … the power shifted away … from the people that actually do the work."

Changes in Communities, Cultures, and Economies

> The smaller operators and, it seems, the majority of Icelanders vehemently object to the new commodity identity of fishing rights. The transformation of the social identity of fishing right, from the status of common property to commodity, has turned out to be one of the most contentious issues associated with ITQs in Iceland.
>
> —Helgason and Pálsson (1998: 129)

Fisheries privatization policies remake the social and ecological relationships in fishing. The shifts generated by resource privatization have wider impacts on communities, cultures, and economies. The pattern of rural-to-urban migration of fishing rights is linked to changes in rural coastal economies and cultures. Vertical integration and the increasing scale of fishing in Iceland and other nations contribute to rural depopulation. For example, women in rural coastal communities in Iceland, who had once relied on steady income from fish processing plants are negatively impacted, as are crew and youth who may not easily transition into reproducing the social life of fishing communities (Karlsdóttir 2008; Skaptadóttir 2000). Anna Karlsdóttir (2008) discusses how such policies can influence the ways in which people define their identities and social roles that can have far-reaching social impacts, potentially damaging the moral fabric of communities.

Because ITQ fisheries redefine successful fishermen—leading to professionalization of the fleet, full-time engagements, and a favoring of those with access to capital—the structure and make-up of coastal communities can shift. Empirical studies of the impacts of ITQs suggest that the values of fishing change when quotas are implemented. Anita Maurstad (2000) describes the important distinction between "capitalistic" fishermen, privileged by ITQ management, and other small-boat fishermen who may only fish when they need income. Similarly Anthony Davis (1996) describes the varying motivations for fishing contrasting those of "accumulation-" versus "livelihood-" focused fishermen. In small indigenous communities in Alaska, there is evidence that individualization and competitiveness become more common after fishing rights become commodified and marketized, and "lifestyle" fishermen who do not seek profits from fishing become marginalized in these systems (Carothers 2008, 2012). These shifts in values and relationships often transform community structure as in the example of ITQs in New Zealand fostering new competitive relationships in opposition to traditional Maori social relationships (McCormack 2010).

For indigenous cultures, ITQs can represent another alienation process in a long history of colonialism. For example, Maori participation in commercial fishing in New Zealand prior to ITQs was primarily a part-time, but vital, source of income (Memon and Cullen 1992). The 1992 Fisheries Claims Act defined the commercial and customary use rights of Maori peoples as separate legal, economic and cultural categories. This dichotomization did not accurately reflect the reality of contemporary indigenous fishing cultures and economies (McCormack 2007, 2010) that employed mixed motivations (i.e., fishing for food, health and healing, cultural practice, education, income) for fishing participation. The reduction of fishing practices to either commercial or customary can mean a loss of authority over livelihood and work decisions, a decreased affiliation and identification with ancestral resources, and may undermine attachments to place (McCormack 2007, 2010). Similarly in Alaska, subsistence-based commu-

nities that mix commercial and subsistence productive systems have often been constrained by privatized fishing rights (Carothers 2010; Reedy-Maschner 2010).

Resisting the Reframing and Remaking of Fishery Systems

> If we do not want to see our marine resources and related communities, cultures, and jobs disappear, then we would do well to learn from our past lessons.
>
> —Fujita and Bonzon (2006: 312)

Processes of commodification and marketization that enable massive wealth transfer encourage accumulation by dispossession (Harvey 2003). Many fishermen and fishing communities have been alienated from fishing livelihoods through processes of commodification and marketization of fishery access rights. However, these processes have also generated much resistance, both discursively—resisting the dominant ideas about privatization that have come to frame fishery systems by creating and circulating challenging discourses, and materially—in some instances securing noncommodified and nonalienable access rights to marine-based livelihoods.

Increasingly, environmental, economic, and management discourses of privatization gain power in their ability to define away alternatives. As a result, the ability to articulate and enroll supporters for other framings of fisheries problems and goals is further constrained (Bourdieu 1998). As dominant discourses gain a monopoly on the power to name and define, those marginalized by the processes of enclosure become increasingly portrayed as irrational users (e.g., livelihood fishermen) or unproductive, redundant, expendable labor (e.g., skilled crew members). However, those irrational and redundant users have been vocal in this resistance to fisheries privatization.

Those affected by ITQs have reframed discourse. Fishermen and communities across the globe use explicit expressions of values of fairness and equity to critique the remaking of human-marine relations resulting from privatization processes. Helgason and Pálsson (1997), for example, explore how fishermen and others placed the privatization of their public fisheries resource in a moral language of theft, profiteering, and feudal inequality. In the United States and Canada, the development of a diverse but collective voice of resistance is repoliticizing privatization discourses and processes (Butler 2008; Carothers 2008).

Those affected by ITQs have also taken legal action. In New Zealand, for example, ITQs promoted resolution of Maori customary and commercial fishing rights (Bourassa and Strong 2000; Memon and Kirk 2011). As the eventual result of the 2004 Maori Fisheries Act, all 57 Maori *iwi* (tribal entities) own quota in perpetuity, totaling over 50 percent of the total quota (Dewees 2008). However, these rights to quota are not without difficulty, as this comanagement still operates under an ITQ framework (Batstone and Sharp 1999), and there are still issues regarding access to fish for rural employment. Many *iwi* lease their quota, so it is still hard for Maori to benefit from employment in fishing and fish processing (Memon and Kirk 2011). Dewees (1997: 105) notes that although the Maori now control a large proportion of fishing rights in New Zealand, many Maori informants were of the "general opinion that ITQs were not compatible with their beliefs about fisheries management … due to the Maori emphasis on collective rather than individual focus for distribution of benefits."

Opposition and resistance to ITQs has led to legal action in Canada, Iceland, Norway, and the United States among other nations. Historical use, continued dependence, and shift in ownership resulting from ITQs were factors that influenced the Supreme Court of Canada to rule that the government must provide First Nations "improved access to fishery resources" (Copes and Pálsson 2000: 3). The Sami Parliament contested the implementation of vessel quotas in Norway

in 1990 and continues to fight for indigenous rights to fish (Davis and Jentoft 2001; Jentoft and Karlsen 1996). Similarly in the U.S., indigenous fishing tribes in Alaska have used the courts to argue that ITQs violate aboriginal rights to fish (Carothers 2011). The United National Human Rights Committee ruled in late 2007 that the existing Icelandic fisheries law based on ITQs violated the International Covenant on Civil and Political Rights in Iceland. The case, based on an act of resistance in 2001 by two fishermen fishing without quota, had also been tried in the Icelandic Supreme Court and, like similar cases that came before it, questioned the constitutionality of the ITQ system with regards to discrimination and the right to work (Einarsson 2011). "ITQ provisions have discriminated in favor of particular groups in the fishery, allowing them substantial wealth benefits from the public fishery resource, at the expense of others" (Copes and Pálsson 2000: 3).

The emerging disparity between theories guiding ITQ implementation and on-the-ground realities of fisheries and fishing livelihoods has led to several instances of changes made after implementation to ameliorate negative effects of quota system, oftentimes specifically for the purpose of addressing considerations of access and equity. In partial response to contested fishing rights and quota consolidation in Iceland, a separate small boat quota system was implemented for those who fish only with handlines or longlines. In addition, in 2009, the Icelandic Ministry of Fisheries instituted a "coastal fisheries" option, in which fishers are allowed to catch a certain amount of the total allowable catch (totaling 6,000 tons in 2010) without quota, under certain restrictions such as season, a daily weight limit, gear, and boat size. Although there are examples from Iceland of towns adapting to loss of fishing rights by reoutfitting boats for tourism operations (Einarsson 2009), and women coping with loss of processing plant jobs by creating handicraft business (Skaptadóttir 2000), "coastal fishing" offers hope of fisheries reengagement to places with limited employment and is deemed successful by many in small coastal communities that had been drained of quota (Einarsson 2011). New Zealand implemented an annual catch entitlement in 2001 that allows for fishing inshore without needing to own quota, under certain restrictions (Stewart and Callagher 2011). The United States implemented a community purchase option for small communities in Alaska that were otherwise unable to access fishing rights (Carothers 2011; Langdon 2008).

Bonnie McCay (2004) concludes that resistance to ITQ governance has brought about adaptations to these programs that can enhance community-based fisheries management. Property mechanisms can make secure the resource rights of indigenous groups like the Maori and Canadian First Nations. Similarly, the Community Development Quota program implemented in western Alaska in 1992 utilized a quota system to allocate a portion of fishing rights to small indigenous communities who did not participate in the industrial fisheries of the Bering Sea (Mansfield 2008; NRC 1999b). It is clear that countries once considered leaders in quota management design are making changes to alleviate negative aspects of these privatization programs, both in response to legal challenges and to provide alternative opportunities for rural and indigenous fisheries that have been largely constrained by privatization. The necessity of these amendments should lend cautionary notes to recent enthusiasm for continued privatization of fishing rights.

Concluding Thoughts

Fishery systems are complex. Simplistic stories about the tragedy of the commons and kids and milkshakes are not appropriate metaphors to guide thinking about these systems. Many cultures, communities, and economies continue to depend on access to fishery resources, yet across the

globe privatization of fishery systems is remaking these systems in ways that often inhibit alternative economies and cultural logics. Fishery system sustainability depends on sustaining cultural and economic pluralism and securing resource rights for coastal residents (McGoodwin 1990). This article has explored how the privatization of fisheries access rights discursively and materially remakes human-marine relationships across diverse regions. The economic theories, capitalist cultural logics, and large-scale experimentations that have led to the privatization of fishing access for maximizing potential profits from common property fisheries now has a forty-year history to review. Many of the common outcomes of privatization are expected: consolidation of fishing fleets, concentration of wealth, increasing efficiencies of vessels and vertically integrated firms, and the rural-to-urban migration of fishing rights. Others such as the solidification of classes of fishing participants, shifts in the relative earnings and power of these classes, changes in fishing practices, and transitions in fishing communities are perhaps less perceptible without detailed study. The economics literature that first promoted these policies had a narrow goal—maximize aggregate potential profits. Privatization of fishing rights for the economic goal of maximizing profits has been shown to often remake fishery systems in the image of capital production, to the detriment of alternative economic and cultural logics that typify a diversity of fishing communities worldwide currently struggling to resist these changes.

Environmental logics that increasingly redefine rationales for the privatization of fishing rights (and related marine spaces) for resource conservation and ecosystem stewardship, as well as other social goals, have enrolled a broader network of supporters who espouse a diversity of values (e.g., Ecotrust 2011). This diversity opens up new opportunities for resistance.[3] Some fishers and fishing communities are forming networks to better resist capitalist restructuring and facilitate pluralism (e.g., Community Fisheries Network 2012). Privatization processes are being reimagined in environmental and community discourses to accommodate goals other than maximized wealth generation. Marketizing and commodifying fishing rights, central for profit generation goals, are being challenged as more people advocate for the inalienability of resource rights and the inherent right to fishing livelihoods. How these new environmental and social logics are redefining privatization processes and reshaping fishery systems warrants more attention.

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NOTES

1. Previous research is summarized in Carothers (2008, 2010, 2011, 2012). Both authors are currently involved in an ethnographic study of experiences of fisheries privatization and impacts on individual and community well-being in Kodiak, Alaska (National Science Foundation, Arctic Sciences, Grant No. 1023619, 2010–2013). Current ethnographic research exploring fisheries privatization processes, among other changes in fishing communities, is also being conducted in Iceland (Fulbright Scholarship, 2011–2012; Leifur Eiríksson Scholarship, 2011–2012).
2. Safety is also becoming linked to ITQ management. When ITQ systems replace derby fisheries, safety improvements often result (see Fina 2011; Hartley and Fina 2001); however, safety gains are realized because of the elimination of unsafe fishery practices rather than the implementation of ITQ programs as such (see Lazrus et al. 2011 for a diverse range of perspectives on safety and ITQ implementation in the Bering Sea and Aleutian Island crab fisheries).
3. We thank one of our anonymous reviewers for making this important point.

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