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## Revisiting Maine's lobster commons: rescaling political subjects

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**Abstract:** Calls for cross-scalar theoretical and methodological approaches are not new to commons scholarship. Such efforts might be hastened by channelling poststructuralist and critical theory perspectives through the geographic subfield of political ecology, including attention to political scales and subjects. Toward this end, this paper reconsiders Maine's lobster fishery. This case has provided rich material for watershed commons scholarship, demonstrating the ability of social groups to conserve resources independent of government or markets, and it continues to offer new findings. Recent fieldwork shows that as lobster boat captains advance collective interests through state-supported co-management governance arrangements, concerns of crew and non-fishing community members may be marginalized. Regulatory exclusion prevents broader distribution of resource benefits at a time when employment alternatives are scarce. More pluralistic approaches to commons theory and its policy application have utility well beyond the lobster case.

**Keywords:** Co-management, fisheries, *Homarus americanus*, lobster, privatization, United States

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## I. Introduction

Over almost a quarter century, anthropologist Jim Acheson's seminal monograph *The Lobster Gangs of Maine* (1988) has introduced thousands of readers to common property theory. Urbanites and suburbanites are often fascinated with the book's description of a lobsterfisherman's<sup>1</sup> workday, and conflicts over access to fishing grounds. Some perceive for the first time that society can organize beyond the reach of government and markets to encourage collectively beneficial human behaviours. If we follow the case through Acheson's more recent work, that of economist Jim Wilson, and references in the writings of Nobel laureate Elinor Ostrom and fellow travelers, we see more clearly how the fishery sheds new light on theories of institutions, games, and complex systems (Berkes et al. 1989; Acheson and Knight 2000; Ostrom 2005, 2009; Wilson 2007; Wilson et al. 2007; Acheson and Gardner 2011). We also learn that the jurisdictional environment in which Maine lobstermen operate has evolved into co-management, a sharing of resource decision making between government and resource users (Acheson 2003). This arrangement of nested informal and formal institutions opens new possibilities to investigate cross-scalar dynamics, phenomena less thoroughly considered by commons scholars thus far (Agrawal 2002; Dietz et al. 2003; Young 2006; Berkes 2008).

Provided with this solid empirical and conceptual platform comprising three decades of data adeptly theorized by leading commons theorists, the present paper re-examines the Maine lobster case through a somewhat different lens, and offers complimentary findings. Its approach is rooted in the discipline of geography, entraining intersecting perspectives of political ecology, poststructuralism, and feminist critical theory, all of which play central roles in contemporary geographic scholarship. Specifically, this paper focuses on political scales, and associated understandings of the political subject. In doing so, it revisits collective action solutions to common pool resource management dilemmas in nested institutional contexts, with a geographic appreciation for scale as both causal and contingent (Sayre 2005; Stallins 2012). Data collection and analysis explicitly consider multiple scales and subjectivities, including the strategic formation of collective identities, and corresponding mobilization of local or supra-local political resources. In addition to assessing the capacity of lobster license holders to collectively advance shared interests, this synthesis facilitates understanding of the extent to which those apparent solutions address, aggravate, or marginalize present and future concerns of more diverse publics. It investigates multiple junctures at which political subjects are constituted and re-constituted, including arenas in which access to fishery-related resources is determined. Like

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<sup>1</sup> Most Maine women who fish commercially voluntarily self-identify as "fishermen," so the term "lobsterman" is used here to include both men and women. The vast majority of lobster license holders are male (97% in a 2002 random mail survey, n=29), but numbers of female crew and captains are increasing (Brewer 2012).

any scholarship fully informed by poststructuralist feminism, it claims only a partial perspective, exposing a reality that persists in tandem with other narratives, including the important work by Acheson and others. Rules of resource use that seem rational or desirable at one unit of analysis, may entail tradeoffs at another. This recognition leverages questions about the evolution of commons scholarship, and about co-management, which has become a normative natural resource policy model, especially in less developed and indigenous contexts (Agrawal and Gibson 1999; Dongier et al. 2002; Wilson et al. 2003; Mansuri and Rao 2004; Feit and Spaeder 2005; Young 2006; Armitage et al. 2008; Nelson and Agrawal 2008; Rasul et al. 2011). It echoes prior work in other fisheries, demonstrating how management changes can inadvertently exacerbate conservation or equity concerns (Copes 1986; Munk-Madsen 1998; National Research Council 1999; Eythórsson 2000; Mansfield 2004; Degnbol et al. 2006; Pinkerton and Edwards 2009; Gibbs 2010; Carothers 2011).

### **1.1. The geographic lens of political ecology**

Roughly simultaneous with the emergence of interdisciplinary common property theory in the 1980s and 1990s, which was strongly informed by ecological anthropology (e.g. Netting 1976; McCay and Acheson 1987; Wade 1988) and of which a central strain tended toward rational choice theory (e.g. Ostrom et al. 1991; Baland and Platteau 1996; Acheson 1998), anthropologists and geographers cultivated a shared literature on political ecology. This emerged directly out of cultural ecology (Blaikie and Brookfield 1987; Ellen 1988; Turner 1989; Rappaport 1990; Robbins 2004), the latter having already borrowed systems theory from the relatively young biological subfield of ecology (Moran 1990; Zimmerer 1996). While anthropologists adopted systems frameworks within the Stewardian ethnographic tradition of ecological anthropology, geographers introduced it to the Sauerian tradition of landscape morphology, or historical narratives of land use and resource management (Sauer 1941; Steward 1955; Brookfield 1964; Orlove 1980; Bebbington and Carney 1990). These two variants of political ecology increasingly inform one another, yet the anthropological retains its more ethnographic and deeply discursive focus, while the geographic remains more intent on material outcomes and cross-scalar analyses. Both rely on mainly qualitative methods of field data collection and analysis at local scales to raise questions about differential access to ecological goods and services as a causal driver in dynamic human-environment systems. Political ecology has thus arisen as a central movement within the scholarship of human-environment relations alongside common property theory, and many political ecologists and common property theorists are familiar with the other literature. Since few scholars publish routinely for both audiences, however, it would seem that deeper exchange is overdue. In particular, political ecology gains traction from tenets of poststructural and critical theory, which commons theory has not generally embraced.

The importance of political scale to geographers should be obvious, especially to those understanding the discipline as the study of spatial relations more than the study of human-environment relationships (e.g. Brenner 2001; Cox 2003; *cf.* Turner 2002). Central to the present paper, poststructuralist theory replaces deterministic tendencies of hierarchical and binary structuralist frameworks that fix dependent and independent variables at particular scales. Scalar fixity can expose certain phenomena and obscure others, lending an aura of completeness and finality to politico-theoretical constructs. By contrast, a poststructuralist proclivity for scalar pluralism encourages competing analyses at alternate scales, and can more easily cross the boundaries between public and private spheres presumed by pre-feminist liberalism (e.g. Marston 2000; Gal 2002; Popke 2003). We might think of poststructuralism as the humanistic strain of complexity theory, reaching commons theory by a parallel but epistemologically distinct route (*cf.* Cox 2011). Explicitly or not, most political ecologists accept general precepts of poststructuralism, recognizing the fluidity and emergent nature of relationships between mutually constitutive social constructions, such as hegemon and subaltern, knowledge and power, local and global, and symbolic and socio-material (e.g. Escobar 1996; Rocheleau et al. 1996; Mosse 2003).

In turn, poststructuralism has close linkages to feminism, especially in the French psychoanalytic tradition, and feminists are largely responsible for introducing poststructuralism to geography and political ecology (e.g. Gibson-Graham 1995; Massey 1995; Katz 2001; Rocheleau and Roth 2007; Elmhirst 2011; Nightingale 2011). Research informed by feminist perspectives, whether structuralist or poststructuralist, tends to accommodate phenomena at the scales of households and individuals, recognizing that pre-feminist scholarship often ignores variables relating to unpaid domestic labour, and lived experiences of women and other household members perceived by researchers or informants as marginal to the central concerns of adult men. Moving forward the ethical projects of critical theory, more committed feminist analyses trace causal linkages that cross from household and individual scales to larger spatial scales such as village, state, and markets. They note both the influence of larger scales on smaller ones, and the extent to which resistance strategies at smaller scales, including interpersonal, knowledge, and cultural-symbolic struggles often excluded from pre-feminist conceptions of the political realm, can influence larger scale phenomena (e.g. Enloe 2000; Harding 2008).

Though more so in anthropology than in geography, some political ecologists have actively engaged in the cultural turn among social sciences, including understandings of multivalent personal identities as social constructions (e.g. Biersack and Greenberg 2006; Rocheleau and Roth 2007; Elmhirst 2011). Some with poststructural inclinations explore subjectivity more deeply, rejecting dualistic taxonomies of structure and agency that undergird some structuralist work. Poststructuralism instead finds analytic purchase in conceptions of multiple human experiences and symbolic-representational domains as mutually constitutive, and

therefore existing in states of constant plurality, flux, and transformation (e.g. Kristeva 1986 [1973]; Cixous and Clément 1986 [1975]). Merged with critical theory, this opens opportunities to theorize emergent subjectivities, simultaneous subjugation and resistance, and embodied relations shaped by a multiplicity of motivations, rationalities, allegiances, and materialities. Unlike the structuralism of conventional Marxist political economy, poststructural critical theory recognizes that social status or positionality is relative and contextual, not absolute.

## 2. Retelling the familiar tale of Maine's lobster commons

Amply documented, the Maine lobster fishery offers classic collective action solutions to free rider challenges in natural resource management (Acheson 1988, 1997; Berkes et al. 1989; Feeny et al. 1990; Acheson and Knight 2000; Ostrom 2005; Wilson et al. 2007). The most repeated stories revolve around lobster boat captains, their daily lobster chase, and related events on the water. Lobstermen create rules that constrain lobstering effort, some enforced through local custom, others codified as law or regulation. Longstanding legal rules maintain reproductive capacity, including harvest protections for egg-bearing female lobsters, and for small and large lobsters (Acheson 1997). Lobstermen both compete and cooperate beyond the scope of law, forming harbour-based groups to claim areas of ocean bottom for the setting of lobster traps, and using social and physical sanctions to enforce those area boundaries. Physical sanctions can include damaging or destroying fishing gear, equipment, or other property, or spoken or unspoken threats of violence to person or property. Social sanctions can include gossip, slander, or shunning, all of which can have significant consequences in the dense economic networks of fishing villages (Acheson 1988; Brewer 2012). Lobstermen use similar sanctions to prevent newcomers from lobstering unless they have strong local ties, usually premised on kinship. More recently, they also use regulatory means to prevent newcomers from lobstering, restricting entry primarily to teenagers with a multi-year commitment to lobstering. The state of Maine has enabled a sharing of co-management responsibility between fishermen and government, with outcomes that are widely praised (Acheson and Brewer 2000; Acheson and Taylor 2001; Acheson 2003; Wilson et al. 2007; Steneck and Wilson 2010). State government now largely supports the customary management regime, though gross violations of the law are penalized more vigorously than in the past.

Less often told by scholars are narratives about fishing crew and non-fishing members of fishing-dependent towns. Also less explored are relationships between the fishery and government agencies, and between the lobster fishery and other fisheries that share overlapping fishing group memberships, fishing grounds, and habitat and trophic variables linking lobster to other fished species (Brewer 2010, 2012). These broader narratives raise new questions about politico-lobstering identities and scales of analysis as understood by commons scholars. In fact, if we adopt an analytical lens informed by the geographic variant of political ecology,

a more mixed assessment of social and material outcomes somewhat dampens optimism about co-management of the lobster commons. As some lobster fishery interests advance, gaining unprecedented management influence, more broadly defined interests of coastal villages recede from those decision arenas. These changes take place against a backdrop of larger social changes, but can nonetheless be partly traced to co-management mechanisms and associated shifts in salient political scales and subjectivities. As described following, one cluster of changes is most readily framed in terms of policy and regulation, and includes associated shifts in fishing practices and the parameters of fishery membership. A second cluster pertains to individual and household livelihood strategies within the context of local economies. Evidence integrates prior empirical work with my own field data conducted between 1989 and 2012 (Acheson and Brewer 2000; Brewer 2010, 2011, 2012).

## **2.1. Fishing practices and policies**

Existing case literature documents a causal chain by which federal lobster management preferences at the National Oceanic and Atmospheric Administration influenced the New England Fishery Management Council, which was the lead regional regulatory body in the 1980s and early 1990s, and the Atlantic States Marine Fisheries Commission, which was the lead regional regulatory body from the 1990s onward. In turn, Maine's executive and legislative decision makers found themselves cornered between federal pressures, state commitments to represent the interests of its fishing communities, and limited logistical ability to enforce unpopular regulations on thousands of boats from dozens of harbours (Acheson and Taylor 2001; Acheson 2003; Brewer 2012). Of these regulatory challenges, the most immediately relevant to our discussion involved federal efforts in the early 1990s to set a uniform, region-wide maximum number of lobster traps per lobstering boat. Opposition to a federally-mandated trap limit arose in Maine, partly among a few locally-described "hogs" who were setting unprecedented numbers of traps, but also among less greedy fishermen who had always been free to tailor individualized fishing strategies, including trap numbers. Lobstermen normally make strategic capital and labour investment decisions in response to considerations such as the spatial and temporal availability of harvestable lobsters; local tidal and seafloor characteristics; fluctuations in dockside lobster prices; prices of variable inputs such as fuel, bait, and labour; capital investments in boat and engine; personal physical health; desire for shoreside time with family; crew availability; and peer norms (Acheson 1998, 2003; Brewer 2012). Regulatory interference in such decisions was rare before the 1990s.

Caught between federal pressure and industry resistance, leadership at Maine Department of Marine Resources averted a jurisdictional showdown on trap limits by devolving decision authority. They created seven state lobster co-management zones with elected councils, each including several harbours (see Figure 1). They granted lobster license holders the power to vote by majority rule for or against a

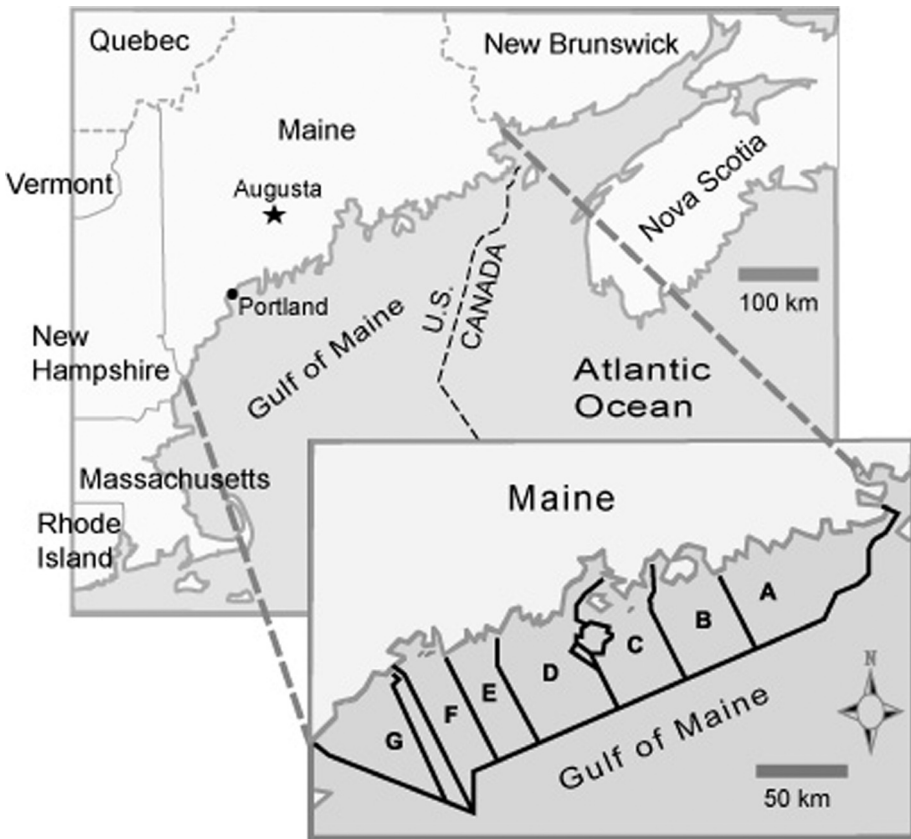


Figure 1: Lobster co-management zones.

trap limit in their zone, and on the maximum number of traps allowed under such a limit. Because a majority of license holders supported the general concept of a trap limit, but varied in views about the locally appropriate maximum number of traps, each zone eventually passed its own limit (Acheson 1998, 2003; Acheson and Taylor 2001). Initially, trap limit supporters wished to constrain hogs, and reduce trap tangles caused by excessive, hastily set, and infrequently tended gear. A majority soon concluded that trap limits also reallocate an aggregate lobster harvest that is relatively constant in the overall percentage of available lobsters trapped. With a smaller number of better-tended traps, average catch per trap haul increased. Trap limits thereby introduced new incentives for boats fishing fewer traps to set more, reducing some of the most exaggerated income disparities among boats previously fishing vary large or very small numbers of traps, and now fishing more equal amounts of gear. As a result, it is likely that trap limits slowed the statewide rate of trap increase, but they did not reduce the total number of traps



(Acheson and Brewer 2000; Brewer 2012). In the view of Maine's state lobster biologist, after observing the fishery closely for more than a decade, trap limits may not be very effective as a lobster conservation tool unless set at levels about half what most zones established (field notes, 2008). More revealing of problems intrinsic to the co-management governance arrangement, however, questions arise as to the socio-ecological value of a large lobster population. The population has repeatedly broken records over the last two decades, supporting record profits that compensate for low dockside prices caused by the global economic recession. While the large lobster population is often attributed to careful state management, including local norms and co-management (Acheson 1988, 2003; Acheson and Taylor 2001), it is likely that water temperatures, declines in predator populations, and the availability of bait in lobster traps are also causal drivers (Steneck and Wilson 2001; Saila et al. 2002; Chang et al. 2010).

Much of the federal pressure to maintain high lobster populations, with trap limits and other means, comes from mandates in the Fisheries Conservation and Management Act of 1976, and amendments in the Sustainable Fisheries Act of 1996. Law requires that all managed fish species maintain maximum sustainable yield, a standard derived by fisheries scientists in the early and mid 20th century from agricultural and industrial production models (Larkin 1977; Pahl-Wostl 1995; St. Martin 2001; Finley 2009). The impossibility of maintaining multiple species at maximum levels is obvious, especially with datasets on species abundance that vary in spatial and temporal extent, and therefore generate different historical and spatial baselines. The Congressional mandates, as interpreted by environmental organizations, courts, and government lawyers, make it difficult for stock assessments to address spatial and temporal heterogeneity, such as variables relating to benthic habitat, oceanographic conditions, trophic relations, fishing gear usage, or species cycles of migration, growth, and reproduction. Assessment scientists generally assume that their datasets have sufficient spatial and temporal coverage to incorporate these variables, despite extensive evidence to the contrary (Ludwig et al. 1993; Wilson et al. 1999; Jackson et al. 2001; Ames 2004; Walters et al. 2005). More concerning, "limited access" and "catch share" policies promoted increasingly by federal managers since the 1980s, and intended to maintain maximum sustainable yield, discourage fishermen from adapting to dynamic marine systems by shifting fishing effort among a number of target species (Wilson et al. 1991; Brewer 2011). Regulatory mechanisms reflecting these policies prevent the entry of new fishermen, locking holders of permits into maximal usage of each existing permit, to avoid losing it in the likelihood of future regulatory restrictions on purportedly "underutilized" permits or harvest allocations. In many fisheries, catch share mechanisms make limited access permits and associated harvest allocations saleable, further increasing the incentive to maximize species harvests, lest the resale value of the permit decline.

Despite efforts by Maine decision makers to avoid observed problems with regulatory entry limits and catch shares, lobster co-management followed the

same pattern (Brewer 2012). Shortly after the zones limited trap numbers, most requested, and were granted, permission to reduce the number of lobstering licenses issued by the state, first at moderate rates of decrease, then more drastically. This has effectively closed the fishery, except to young people who can still gain access if they hold a student license for three years before turning 18. Most zones have accumulated license waiting lists years long. Only one zone remains open, with no regulatory entry limit. Few license holders now retire their licenses, knowing they can never be replaced, and anticipating the possibility that license transfer or sale might be legalized in the future. Transferable licenses for some other New England fisheries, especially scallops, have brought windfall profits of one or two million US dollars. An effect of near closure in the lobster fishery has been to concentrate lobster earnings among a small number of coastal residents at a time when lobstering profits hit record highs, while other jobs and earnings endure recession-induced lows. This has been accomplished in the zones through anonymous, mail-in ballot voting for low ratios of license issues to license non-renewals, so that lobstermen have excluded neighbours and kin without public scrutiny or participation (Brewer 2012). Anonymous voting mechanisms and entry limits effectively removed lobster fishery decision making from its broader social context. In the past, lobster politics were enmeshed with the interests of other fisheries, shoreside businesses, kinship, and household economies. Many fishermen participated in a number of fisheries (Acheson 1988; Wilson 1990; Brewer 2010). Each also contributed to, and benefitted from, a diversity of paid and unpaid labour in household, kin, and village economies. While lobster license holders always played dominating roles in lobster fishery decisions, they were somewhat constrained by dense social networks. They relied heavily on non-lobstermen for essential shoreside goods and services, and for access to other fisheries (Acheson 1988; Wilson 1990; Brewer 2012). Since zone creation, state lobster politics are now under more exclusive purview of lobster license holders.

Concurrently, state legislative oversight has lessened on many fishery agency and zone decisions. This was one rationale for co-management zone creation, since the potential for jurisdictional conflicts was rising. Prior to the 1990s, Maine's legislature played a central role in lobster management (Acheson 1988, 2003). Under new federal policies promoting limited access and catch shares to satisfy simplistic species yield models, pressures on the state legislature increased from federal, regional, and state fishery management agencies, and from the fishing industry (Brewer 2012). In cases of state non-compliance with regional mandates, federal agencies can withhold funds otherwise destined for state coffers. Further, increasingly computational stock assessments raise the level of statistical and biological knowledge required for management decisions. The lobster industry has held a special place in Maine's identity and political life for several decades, but since zone creation, lobster license holders have become more organized, more politically adept, more confident in promoting their interests, and more bold in obstructing others. Under zone co-management, the state fisheries agency retains lobster fishery jurisdiction, but political incentives are high to oblige any vote of a

zone majority. Knowing this, most zones have discussed the possibility of further restricting licenses for those under the age of 18. Non-license-holding crew are unable to cast zone votes, though most boats employ one crew member, and many crew are highly lobster-dependent, with few marketable skills outside the fishing industry. Even as other fisheries struggle to maintain viable businesses due to fish migratory changes, fish population declines, and regulatory constraints, when lobstermen accidentally catch those species in traps, they routinely spear them as bait instead of releasing them to grow and reproduce. Some lobstermen use new zone boundaries and membership to legitimize setting traps on bottom once exclusively controlled by neighbouring harbour groups (Brewer 2012). More open conflicts between lobstermen and other fishermen have increased, with more lobstermen accusing otter trawlers<sup>2</sup> of wrecking traps, and more trawlers accusing lobstermen of setting traps on grounds previously dedicated to trawling.

Engineers of the lobster zones, including state agency personnel, academics, industry members, and legislative representatives, wished to avoid precisely this kind of species specialization and commodification (Brewer 2012). Given federal trends toward entry barriers and catch shares, in the absence of state intervention, they anticipated shifts in the industry's diversified and adaptive thinking about multiple ecological relationships and overlapping management interests toward a narrower set of fishery-specific interests as understood in the more exclusive and utilitarian calculus of individual license holders. They hoped, however, that industry participation in the new zone co-management arenas would prevent such shifts, given the more communitarian ethic of Maine's rural fishing communities, with an interest in providing sustainable livelihoods to their children and grandchildren. Instead, license holders seized on the unprecedented opportunity to advance their immediate interests, modelling exclusionary proposals after trends in fisheries such as scallops and groundfish, where federal pressure for entry closure and catch shares has made faster progress. They felt particularly justified in doing so since most lobstermen had been closed out of scalloping and groundfishing by federal regulations supported by some scallop and groundfish permit holders. Interestingly, those closures were accomplished through the New England Fishery Management Council, which is itself a co-management entity, albeit a regional one with little opportunity for local input (Butler et al. 2001; Brewer 2011). These cascading changes in fisheries policy and regulatory frameworks, initiated at the federal level, but advanced at the state and local level, have reconfigured the political subjectivities of lobster license holders. Where they were once constrained by local relationships among household members, kin, and neighbours, license holders are now more free to advance personal interests and consolidate economic and political power.

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<sup>2</sup> Otter trawls are net gear that are heavily weighted to capture finfish on or near the ocean bottom. The word trawler usually refers to a boat that is built and rigged to fish with a trawl. It is sometimes used to refer to a fisherman who regularly fishes using a trawl.

## 2.2. Livelihoods, households, and villages

Beyond the relatively formalized context of policy and state-enabled rulemaking, subtler changes have taken hold. These are deeply embedded in the personal identities of lobster fishermen and fellow villagers, affecting livelihood strategies and the terms of interpersonal relationships. Some of these changes are woven into larger social trends, partially driven by forces distant from lobstering villages. Nonetheless, new rationalities are also inspired by the unprecedented capacities for political autonomy among lobster license holders under the new co-management regime.

For at least a half century, and likely since European settlement, multi-generational families in coastal villages have maintained deep and pervasive kin ties, including economic interdependencies. Many live close to immediate family, often on land that is given, inherited, or purchased below market value, in houses built by kin and neighbours. In addition to fishing for cash income, subsistence and barter activities have been essential components of diversified livelihood strategies. Family and friends assist with activities such as maintaining fishing boats and gear, providing wood for heat, hunting and gathering, vegetable gardens, vehicle and mechanical repairs, home and property maintenance projects, childcare, eldercare, and domestic chores (Brewer 2012). Kin relationships also carry symbolic meanings, and influence social and political standing (Acheson 1988; Brewer 2012). Surname-based reputations, allegiances, quarrels, prejudices, and power often endure for decades.

Prior to the introduction of co-management zones, and especially secret ballot voting, lobster fishery decisions were made by individuals embedded deeply within this dense and complex social milieu of local kin and neighbours. Coastal villages have long held boat captains in high esteem, but historically lobster boat captains fell lower on the hierarchy than captains of larger fishing and freight vessels. The status of crew has always been low, though in the past, the more hardworking and capable among them had reasonable aspirations to captain their own boats in the future. Wives and other family members of lobstermen rarely voiced opinions on lobstering activities *per se*, and those doing so were easily overruled by boat captains. Most fishermen were nonetheless reliant on wives and family for shoreside labour, and therefore somewhat cognizant of their concerns and interests. Virtually all wives relayed messages for fishermen, and timed meals, laundry, and other household activities to accommodate fishing schedules. Many kept all financial records for the household and business, ran business-related errands, and provided food and additional support to crew.

The last two decades brought major changes to southern Maine coastal communities, and less dramatic changes to more northeastern coastal villages, which are farther removed from suburbanization trends. An influx of relatively wealthy seasonal visitors and year-round residents from more urban parts of the northeastern U.S. to the gentrifying coast spurred growth in services and construction, offering new employment options for both women and men, in

jobs that increase exposure to non-fishing and non-local interests. These include the building trades, landscaping, retail, and provision of food, beverages, accommodations, recreational activities, financial and legal services, health care and personal services. The new jobs are less physically demanding than fishing, and, prior to the recession, seemed to offer more reliable incomes, with more predictable advancement opportunities. Many such jobs are not located in peninsular fishing villages, but in towns a few miles inland, with larger populations, more diversified economies, and closer access to major roads. They help women join the paid economy and become less reliant on the fishing incomes of men. Less household labour is devoted to barter and natural resource economies. Non-fishing men and women are less apt to claim a stake in fishing futures as family, neighbours, or providers of fishery-related goods and services, and are unlikely to object to the exclusion of new license holders from lobstering.

Given this context, fishing villages were already changing prior to lobster co-management. The recession interrupted these trends by dramatically reducing non-fishing employment options, however. Many of the new income streams have slowed dramatically. Small construction-related businesses that employed three to five people in 2007 were scarcely employing one or two by 2011 (field interviews, 2007, 2009, 2011). Available jobs in health care, hospitality, and professional services require skill sets unfamiliar to most would-be lobstermen, and most casualties of the construction bust. Most available jobs are in urban areas, requiring unmanageable commutes from fishing villages. For Mainers without jobs, and without job prospects, lobstering is no longer the fallback option it always was in the past. It is now only a realistic choice for those who have held a license and renewed it annually for more than a decade, for those willing to crew with no hope of ever running a boat themselves, and for those younger than 15 with the foresight to get and renew a license. This exclusivity affects not only would-be lobsterfishermen, but their partners, families, and neighbours. In addition to providing the unpaid labour described above, some villagers, especially those without full time paid jobs, would have helped increase and circulate household lobstering income by painting buoys, stuffing bait bags, or crewing, especially since the presence of women on lobster boats and wharves has become more socially accepted in recent years.

In other respects, zone letters have replaced more traditional identities. For most of the twentieth century, new fishermen were often prevented from establishing a viable lobstering business, or setting traps in certain areas, due to absent or tenuous kin relationships, a relatively short period of local residence, or some unusual personal history. They might be warned or ostracized, their traps might be cut off, other personal property might be damaged, or they might experience personal threats (Acheson 1988; Brewer 2012). There were sometimes openings for negotiation, however, such as moving traps to different bottom, talking it out, seeking and mobilizing allies within the fishery to retaliate or lobby on one's behalf, or patiently waiting out the opposition (Brewer 2012). Under regulatory

entry limits, negotiation is impossible. Zone-affiliated lobstering identities are thus more permanent and exclusive than their pre-zone incarnations. Now, if someone stops lobstering, such as to retire, do other work, or recover from illness or injury, the license is usually renewed, since it can never be regained, once lost. In the past, lobstering was perceived as something more like a repeated choice, even if one made every day for an entire lifetime. Some people never did any other kind of paid work, but there was always other work to be done for subsistence and barter. One often had the option of leaving the boat ashore to do something else for a few months or longer, such as building a house or recovering from an injury. Some went on longer and more distant fishing trips for scallops, groundfish, or tuna, on their own boats or larger ones.

Given the security of a limited entry license that excludes many prospective competitors, plus a recent history of record lobster harvests and profits, many lobstermen took on large loans and mortgages in the 1990s and 2000s. While a used lobster skiff and gear can be found for less than US\$15,000, a big new boat, engine, and traps can easily amount to more than US\$100,000. As global markets continue to reel from the 2008 economic crisis, ex-vessel lobster prices have fallen to multi-decade lows. In some eastern Maine harbours, where landings have been exceptionally high, gross profits are still recordbreaking (field notes, January 2010). In westerly harbours, however, where landings have levelled off, lobstermen with large debt can barely break even (Acheson and Acheson 2010: field notes, March, 2012). They now have no choice but to go lobstering, and go hard, because there are no other jobs available that could pay those loans. Further, some fear that present lobstering histories may be used to qualify for future lobstering access, if lobster populations decline and fleet consolidation emerges as a proposed regulatory response. Such a scenario would closely mimic other limited entry fisheries, especially federally managed ones, where landings histories determine catch quota allocations. While some of the impetus to incur unprecedented lobster business debt arises from record lobstering profits, state-supported entry restrictions lend a sense of economic entitlement and political confidence to license holders.

Identities of lobster-reliant villagers thereby reify as the state and fellow lobstermen grant apparently permanent lobstering privileges. Concurrently, non-lobstering identities of villagers denied those privileges also become entrenched. Especially in more eastern towns, boat captains as young as their early 20s proudly command shiny new trucks and boats, while non-lobstering peers and elders choose between paying for home repairs and health care. Some lobstermen now grappling with low lobster prices more loudly lament their exclusion from other fisheries, and use the argument to advance license transfer proposals. One said publicly to state legislators, "Ever since you put us in a box.... It used to all connect. Now you've got us all boxed in or divided and conquered or whatever it is... I lost my scallop license. I lost numerous licenses... It's always been a family thing." He then asserted that kids with trust funds are fishing in his zone,

and argued that he should be allowed to sell his license. His rhetorical strategy posits lobster license sale as the solution to inter-species flexibility lost through consolidation of access to scallops and other fisheries. Inviting accusations of ethical fallacy, and shirking any personal liability by establishing that government and the idle rich are responsible for precipitating wrongs, he offers privatization as appropriate redress for the errors of privatization, since this time he would end up on the winning end of the deal.

Legal exclusivity has cultivated a more governmentalized rationality among license holders. Lobstermen previously perceived government and law as marginal to lobstering activities. They generally accepted the few existing regulations, including bans on the taking of productive females and undersize and oversize lobsters, as means to protect the industry from lobster population declines experienced in the 1920s and 1930s (Acheson and Steneck 1997). In sharp contrast, day-to-day determination of who got to fish and where was centred around harbour-based concerns. Kin and neighbours served as fishery gatekeepers. Local relationships comprised the primary means of personal influence on access opportunities, whether through combative or cooperative strategies. Now, state government is the central ally in decisions and constraints concerning access. This effectively segregates license holder interests from the more complex interdependencies of coastal villages. State administration of voting enables aggregated license holder preferences to supersede discussion that might have taken place at the local level.

Judgment as to the desirability or undesirability of this governmentalization depends partly on whether one focuses on moments of local, extra-governmental discussion that might be characterized as pluralistic, communitarian, or fraught with prejudice and discrimination. Indeed, all such moments can be observed, at different times, in different places. One can argue that the lobster zones opened more neutral spaces for public deliberation that are transparent to state oversight, in which lobster license holders can consider the merits of any change in the allocation of resource access, and cast a vote in without fear of reprisals for dissent. Minority interests might thereby be better protected, even while the majority rules. In this liberal perspective, the politico-lobstering subject might be seen as modernized, removed from the archaic pressures of nepotism and prejudice. In newly administrative fishery decisions arenas, reason is expected to overcome emotion, yielding more rational outcomes. From a more communitarian perspective, however, the zones shift the scale of lobstering activities, lobstering identities, and the political leverage of lobstering interests in ways that incur long-term costs to collective interests of coastal communities. The state and license holders allied to accomplish regulatory exclusion, veiled in conservation rhetoric, and largely without visible opposition. They removed resource management decision making from local publics, where ideals of equal opportunity, justice, and pluralist identities might be voiced, and where debate might compare these lofty ideas to lived realities. In this time of economic uncertainty, without legal

entry limits, villagers might have exerted sufficient pressure on lobstermen to allow more new boat captains among kin and neighbours, distributing lobstering profits more equitably, not just among the anointed few. This paper cannot aspire to resolve those debates, though they are relevant to the broader development of common property theory, and its relationship to longstanding tensions in democratic theory. Less ambitiously, the following returns to the aforementioned geographic traditions in poststructural political ecology and critical theory, with the more modest intent to leverage additional analytic purchase on issues of scale and subjectivity as they may impinge on the margins of these democratic debates, and on associated policy implications of commons scholarship.

### 3. Political scales and subjectivities

Recognition of political scales as multiple and interactive reveals important insights in the lobster case. Assessed from the perspective of lobster license holders, lobster co-management seems to be a success. License holders have agreed to constrain fishing effort through trap limits and entry limits. Lobster populations are abundant and trap increases have slowed, increasing or stabilizing average catch per unit of fishing effort, as measured in labour and monetary inputs. It is not clear, however, that the lobster population would have declined without these constraints. Discrepancies in scalar assumptions about lobster population dynamics linger between federal and state scientists. Further, at village to statewide scales, questions arise about the public value of large lobster populations, the distribution of benefits and costs of lobster conservation, and the status of other ecological goods and services co-located with lobster. Distribution of lobstering income is now restricted to a narrower group of direct beneficiaries. This narrowing will continue unless some action is taken to reverse it, as a disproportionate number of older license holders age into retirement, and the state issues few new licenses. In western harbours, teenagers have little financial incentive to maintain a license now, unless they anticipate that lobster prices will rise as the economy improves. While rebounding profits are quite possible, from global economic recovery or reduced fishing input costs with lower trap limit proposals, teenagers tend to pursue immediate rewards, with less interest in possible futures. Those without three-year license histories when they turn 18 face 12–20 year waiting lists.

From the perspective of non-lobstering fishermen and their households, the increasingly powerful lobster lobby can overwhelm other fishing interests, both locally and in formal management. Groundfishermen increasingly encounter gear conflicts with lobster traps, and local groundfish population recovery is hindered by lobstermen spearing live fish as bait. Diversified fishermen who also set lobster traps are particularly vulnerable if they protest, risking trap losses. Paradoxically, the older management regime accommodated flexibility and pluralism at the local level in ways that the present co-management regime does not. Formal and informal rulemaking activities were conducted in dual spheres, one state controlled, one locally controlled. Regulation focused on how to fish, such as by what size



and reproductive criteria to select marketable catch, not what species to fish for. Fishermen could switch target species on an annual or interannual basis, depending on species abundance, markets, fishing or non-fishing labour availability, or physical capabilities related to age or health. Since zone co-management merged local and state management roles, pluralism is less in these respects. Zone entry limits, and the prospect of further fleet consolidation, draw legal boundaries between dedicated lobster boat captains and other villagers (Brewer 2012). The latter group includes non-fishing would-be-lobstermen, non-lobstering fishermen for other species, casual or dedicated lobstering crew who don't hold licenses, members of lobstering families who play shore support roles, and other residents of coastal villages. Formerly diversified fishermen are now pressured to specialize in lobster or another species. The zones are not simply mediators between local and state-regional regimes; they disaggregate lobster license holder interests from diversified fishing and non-fishing publics. This affects not only management outcomes, but micro-scale institutions of household and village life. Zone meetings erode the centrality of informal, iterated conversations in such places as kitchens and workshops, where local non-lobstering interests might also be heard. Ecological and economic implications of increased lobstering specialization are significant. If the lobster population ever falters, many lobstermen will be locked out of other fisheries for lack of landings history, and will have no viable employment option. In this event, political pressure to permit continued levels of lobstering activity would likely be acute, even at risk of further lobster population declines.

While these changes manifest at the local level, they emerge from a multi-layered jurisdictional context. Co-management arose as a state strategy to deter federal usurpation of local, informal management. Though beyond the scope of this article, that manoeuvre required executive and legislative coordination, regional alliances with other state agencies, and support or tolerance from trade groups representing portions of the lobster industry (Brewer 2012). In this newly expanded political setting, encompassing villages, zones, state, region, and nation, identities and subjectivities become central to the evolving politics of co-management. When informal, local management persisted principally beyond the optic of government, lobstermen weighed multiple loyalties and beliefs in each decision about fishery entry and access (Brewer 2012). Pervasive and multilayered webs of economic and symbolic relationships including kinship, class,<sup>3</sup> gender, and age all impinged on daily actions that supported, undermined, or avoided conflicts over lobstering grounds, markets, information, wharf space, labour, and other lobstering inputs. Each lobsterman's words and actions confirmed or contradicted village perceptions, affirming or attenuating innumerable social ties and allegiances, and shaping personal identities. Under

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<sup>3</sup> The term "class" arises directly from field data collection, referring not only to differences between fishing and non-fishing work, but to differences within and among fisheries.

this regime, most lobstermen rarely went to lobster management meetings organized by government. On rare occasion, perceiving some grave impact from a proposed regulatory change, some number of them would appear at a legislative or agency hearing in the state capitol. Such an adventure would generally be undertaken as a group, to support a unified majority position. Many travellers would not even speak up to the room as a whole, but intended their presence to indicate support for bolder speakers from their harbour. In this atmosphere, it was difficult to express dissenting or minority opinions without substantial support from some faction and a willingness to take on considerable financial risk, with lobstering gear and other property vulnerable to vandalism back home.

Co-management does not obviate intensive village bonds, or censorship of minority opinions, but it overlays a very different decision arena, in which identities and political subjects are substantially reconstituted (Brewer 2012). In the effectively segregated setting of zone meetings, kin, class, gender, and age relations persist, but they compete with unprecedented legal identities of license holders who presume more permanent resource access, ensured by the state. Boat captains legally exclude new lobstermen with state support and enforcement, and leverage state support to trump many non-lobstering coastal interests. On the other hand, they are somewhat less free to persecute dissenting fishermen with gear destruction because of greater scrutiny from the state as management partner, and more frequent communication between industry members and public officials. With many of the most controversial regulatory decisions made by secret mail-in ballot, as in the instances of entry limits and trap limits, minority opinions gain some traction, as do majority opinions that might otherwise be vulnerable to retaliation from a powerful minority. Spatial and temporal segregation of the voting act suspends interpersonal and moral commitments that might otherwise maintain broadly negotiated resource access. Voting in the isolation of one's home excuses license holders from public scrutiny. A decade ago, many of the lobstermen now voting to exclude neighbours from lobstering couldn't imagine supporting such a position. For the vast majority, a first instinct was to voice the near-universal moral abhorrence in their villages to the idea of privatizing a common property resource. A second gut response was to note the centrality of lobstering income to their village. The prospect of personal gain from regulatory privatization was rarely discussed before zone creation. This changed rapidly, however. By 2011, individual license holder income had become a driving discursive force, often couched as resource stewardship to mask the injustice of privatization: the lobster population must be conserved, therefore increasingly restrictive entry limits are necessary to control lobstering effort. Comments about village reliance on lobster-related jobs are also heard, but less often than in the past, and with weaker moral claims. Objections to entry limits as privatization are now rare, except in conversation beyond the earshot of license holders. One lobsterman who could likely sell his boat for tens of thousands of dollars

upon retirement angrily asked a public panel of state legislators, “Why can’t [licenses] be transferable or sellable? Because your business isn’t really worth something unless you can sell it... I’d like to think that would be a retirement... not have a dead thing sitting on top of you.”

License holder concerns do persist about the prospect of industry consolidation if licenses are made transferable, despite windfall profits that could be made by selling them. In spring 2012, a lifelong lobsterman with two decades of leadership experience in the Maine Lobstermen’s Association estimated that 75% of license holders oppose making licenses sellable. Similarly, a state legislator recalls hearing from one zone representative, “If we ever get to a point where a kid getting out of high school can’t get a license, we should all be taken out and shot.” Further, one lobster zone still bucks the trend, with no entry limit as late as early 2012. In that highly fishery-dependent zone, debates continue over the relative importance of employment options in isolated villages and islands, compared to the higher future profits that might be made with entry limits. So while the state lobster industry has not embraced privatization wholesale, it has substantially reordered the balance between the priorities of individuals and collectivities. Hoping to scale up the communitarian political subjectivities of the fishery, co-management inadvertently scaled down the logic of capital accumulation through state-sanctioned regulatory exclusion. Even as lobstering subjects have succeeded in constraining the greediest among them, they consolidated fishery control, partially sidelining other village interests. Witnessing an increasing number of entry-related legislative proposals, and with public debate mounting, the balance between individual profits and collective well-being will continue to evolve, in rhetoric and policy. With it evolves a tension within fishing subjectivities between dense local affinities that argue for broader distribution of ecological goods and services, and instrumental motives more comfortably supported at supra-local scales, which would concentrate resource profits in the shorter and longer terms.

#### 4. Toward plural commons

Limited to the particular instance of Maine lobster, these observations may seem less than precipitous. The economic woes and deliberative claims of a few thousand people living in a relatively developed and resource-rich locale are not the most pressing of global policy concerns. Nor are these outcomes unduly surprising to political ecologists. The case raises questions, however, about the trend toward decentralized co-management in fisheries, forests, water, wildlife, and other resources. Commons scholars have rightly won wide acclaim for distilling elegant rules that enable successful resource conservation beyond government or markets. Nonetheless, as Ostrom herself points out, most commons are nested in dense institutional landscapes. The target resource and the target resource users are never the only variables in play. Resource users and other community members have interests, capabilities, and burdens that reach across scales of analysis. Further,

the parameters and relative salience of those scales change over time. While we might laud the interest of governments, non-governmental organizations, and parastatal organizations in policy innovation to empower decision making at more local scales, those interventions inevitably reconstitute any number of political subjects, in ways that can trigger a perpetual cascade of changes throughout the human-environment system.

Put in more practical terms, policies purporting to conserve resources can alter resource access patterns in ways that are ultimately more or less desirable for different segments of society. Not only do we each maintain multiple rationalities simultaneously, but the predominance of one rationale over others depends partly on which scalar frame of reference prevails at any given moment. Re-aligning collective identities by bolstering them in one decision arena or another affects not only how each person understands her social position, but how each perceives capacities for collective action, and which inevitably divergent loyalties adhere. This is as true of researchers and policymakers as it is of resource users. The scales we choose in the course of inquiry, explanation, and decision making result in different epistemologies, assessments, and policy outcomes. Governments, industry, NGOs, and other groups are co-creating new management institutions in both more and less developed contexts worldwide. If we fail to consider appropriate scales of analysis and ensure opportunities for public deliberation prior to policy implementation, some populations will bear socio-ecological costs without prior consent or knowledge.

Other papers in this journal have pointed to related concerns about institutional complexity, and have offered plausible means by which to cope (Berkes 2008; Cox 2011; Stern 2011). The present paper offers no systematic solution, but presents one example of a well-documented commons that we might assess differently by adopting more deeply theorized notions of political scale and subjectivity. While scholars and decision makers are inevitably limited in capabilities and resources, if we do not maintain broadly critical perspectives on our own assumptions, if we do not allow analysis and deliberation to inform one another before initiating social experiments, we run the risk of creating new policy problems, even if we resolve existing ones. As demonstrated by the interplay of theoretical frameworks to re-examine the lobster case, deep empirical research and persistent interaction among epistemic communities in scholarship and practice can help to identify and explore decision tradeoffs. Such work is not always rewarded by academic audiences or in polarized decision arenas, but it may produce knowledge and practice that better accommodate socio-ecological pluralism.

## Literature cited

- Acheson, J. M. 1988. *Lobster Gangs of Maine*. Hanover, NH: New England University Press.
- Acheson, J. M. 1997. The Politics of Managing the Maine Lobster Industry: 1860 to the Present. *Human Ecology* 25(1):3–27.

- Acheson, J. M. 1998. Lobster Trap Limits: A Solution to a Communal Action Problem. *Human Organization* 57(1):43–52.
- Acheson, J. M. 2003. *Capturing the Commons: Devising Institutions to Manage the Maine Lobster Industry*. Hanover, NH: University Press of New England.
- Acheson, J. M. and J. F. Brewer. 2000. Changes in Territoriality in the Maine Lobster Fishery. In *The Commons in the New Millenium: Challenges and Adaptation*, eds. N. Dolsak and E. Ostrom. Cambridge, MA: MIT Press.
- Acheson, J. M. and R. Gardner. 2011. The Evolution of the Maine Lobster V-Notch Practice: Cooperation in a Prisoner's Dilemma Game. *Ecology and Society* 16(1):41.
- Acheson, J. M. and J. Knight. 2000. Distribution Fights, Coordination Games and Lobster Management. *Comparative Studies in Society and History* 42(1): 209–238.
- Acheson, J. M. and R. S. Steneck. 1997. Bust and then Boom in the Maine Lobster Industry: Perspectives of Fisheries Managers and Biologists. *North American Journal of Fisheries Management* 17(4):826–847.
- Acheson, J. M. and L. Taylor. 2001. The Anatomy of the Maine Lobster Comanagement Law. *Society & Natural Resources* 14:425–441.
- Agrawal, A. 2002. Common Resources and Institutional Sustainability. In *Drama of the Commons*, eds. E. Ostrom, T. Dietz, N. Dolšak, P. Stern, S. Stonich, and E. Weber. Washington, DC: National Academy Press.
- Agrawal, A. and C. C. Gibson. 1999. Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development* 27(4):629–649.
- Ames, E. P. 2004. The Stock Structure of Atlantic Cod in the Gulf of Maine. *Fisheries* 29(1):10–28.
- Armitage, D. R., R. Plummer, F. Berkes, R. I. Arthur, A. T. Charles, I. J. Davidson-Hunt, A. P. Diduck, N. C. Doubleday, D. S. Johnson, M. Marschke, P. McConney, E. W. Pinkerton, and E. K. Wollenberg. 2008. Adaptive Co-management for Social-ecological Complexity. *Frontiers in Ecology and the Environment* 7(2):95–102.
- Baland, J. M. and J. P. Platteau. 1996. *Halting Degradation of Natural Resources: Is There a Role for Rural Communities?* Oxford: Oxford University Press.
- Bebbington, A. and J. Carney. 1990. Geography in the International Agricultural Research Centers: Theoretical and Practical Concerns. *Annals of the Association of American Geographers* 80(1):34–48.
- Berkes, F. 2008. Commons in a Multi-Level World. *International Journal of the Commons* 2(1):1–6.
- Berkes, F., D. Feeney, B. McCay, and J. Acheson. 1989. The Benefits of the Commons. *Nature* 340:91–93.
- Biersack, A. and J. B. Greenberg, eds. 2006. *Reimagining Political Ecology*. Durham, North Carolina: Duke University Press.
- Blaikie, P. and H. C. Brookfield. 1987. *Land Degradation and Society*. London: Methuen.

- Brenner, N. 2001. The Limits to Scale? Methodological Reflections on Scalar Structuration. *Progress in Human Geography* 25(4):591–614.
- Brewer, J. F. 2010. Polycentrism and Flux in Spatialized Management: Evidence from Maine's Lobster (*Homarus americanus*) Fishery. *Bulletin of Marine Science* 86(2):287–302.
- Brewer, J. F. 2011. Paper Fish and Policy Conflict: Catch Shares and Ecosystem-Based Management in Maine's Groundfishery. *Ecology and Society* 16(1):15.
- Brewer, J. F. 2012. Don't Fence Me In: Boundaries, Policy, and Deliberation in Maine's Lobster Commons. *Annals of the American Association of Geographers* 102(2):383–402.
- Brookfield, H. C. 1964. Questions on the Frontiers of Geography. *Economic Geography* 40:283–303.
- Butler, M. J., L. L. Steele, and R. A. Robertson. 2001. Adaptive Resource Management in the New England Groundfish Fishery: Implications for Public Participation and Impact Assessment. *Society and Natural Resources* 14: 791–801.
- Carothers, C. 2011. Equity and Access to Fishing Rights: Exploring the Community Quota Program in the Gulf of Alaska. *Human Organization* 70(3): 213–223.
- Chang, J.-H., Y. Chen, D. Holland, and J. Grabowski. 2010. Estimating Spatial Distribution of American Lobster *Homarus Americanus* Using Habitat Variables. *Marine Ecology Progress Series* 420:145–156.
- Cixous, H. and C. Clément. 1986 [1975]. *The Newly Born Woman*. Translated by B. Wing. Minneapolis: University of Minnesota Press.
- Copes, P. 1986. A Critical Review of the Individual Quota as a Device in Fisheries Management. *Land Economics* 62(3):278–291.
- Cox, K. R. 2003. Political Geography and the Territorial. *Political Geography* 22:607–610.
- Cox, M. 2011. Advancing the Diagnostic Analysis of Environmental Problems. *International Journal of the Commons* 5(2):346–363.
- Degnol, P., H. Gislason, S. Hanna, S. Jentoft, J. R. Nielsen, S. Sverdrup-Jensen, and D. C. Wilson. 2006. Painting the Floor with a Hammer: Technical Fixes in Fisheries Management. *Marine Policy* 30(5):534–543.
- Dietz, T., E. Ostrom, and P. C. Stern. 2003. The Struggle to Govern the Commons. *Science* 302(5652):1907–1912.
- Dongier, P., J. Van Domelen, E. Ostrom, A. Rizvi, W. Wakeman, A. Bebbington, S. Alkire, T. Esmail, and M. Polski. 2002. Community Driven Development. In *A Sourcebook for Poverty Reduction Strategies*, ed. J. Klugman, Washington, DC: The World Bank.
- Ellen, R. 1988. Persistence and Change in the Relationship Between Anthropology and Human Geography. *Progress in Human Geography* 12(2): 229–262.
- Elmhirst, R. 2011. Introducing New Feminist Political Ecologies. *Geoforum* 42(2):129–132.

- Enloe, C. 2000. The Surprised Feminist. *Signs: Journal of Women in Culture & Society* 25(4):1023.
- Escobar, A. 1996. Constructing Nature: Elements for a Poststructural Political Ecology. In *Liberation Ecologies*, eds. R. Peet and M. Watts, New York: Routledge.
- Eythórsson, E. 2000. A Decade of ITQ-Management in Icelandic Fisheries: Consolidation without Consensus. *Marine Policy* 24(6):483–492.
- Feeny, D., F. Berkes, B. McCay, and J. Acheson. 1990. The Tragedy of the Commons: Twenty-Two Years Later. *Human Ecology* 18(1):1–19.
- Feit, H. A. and J. J. Spaeder. 2005. Co-management and Indigenous Communities: Barriers and Bridges to Decentralized Resource Management – Introduction. *Anthropologica* 47(2):147–154.
- Finley, C. 2009. The Social Construction of Fishing, 1949. *Ecology and Society* 14(1):6.
- Gal, S. 2002. A Semiotics of the Public/Private Distinction. *Differences: A Journal of Feminist Cultural Studies* 13(1):77–95.
- Gibbs, M. T. 2010. Why ITQs on Target Species are Inefficient at Achieving Ecosystem based Fisheries Management Outcomes. *Marine Policy* 33(1): 83–89.
- Gibson-Graham, J. K. 1995. Identity and Economic Plurality: Rethinking Capitalism and ‘Capitalist Hegemony’. *Environment and Planning D: Society and Space* 13(3):275–282.
- Harding, S. 2008. *Sciences from Below: Feminisms, Postcolonialities, and Modernities*. Durham: Duke University Press.
- Jackson, J. B. C., M. X. Kirby, W. H. Berger, K. A. Bjorndal, L. W. Botsford, B. J. Bourque, R. H. Bradbury, R. Cooke, J. Erlandson, J. A. Estes, T. P. Hughes, S. Kidwell, C. B. Lange, H. S. Lenihan, J. M. Pandolfi, C. H. Peterson, R. S. Steneck, M. J. Tegner, and R. R. Warner. 2001. Historical Overfishing and the Recent Collapse of Coastal Ecosystems. *Science* 293(5530):629.
- Katz, C. 2001. On the Grounds of Globalization: A Topography for Feminist Political Engagement. *Signs: Journal of Women in Culture & Society* 26(4):1213.
- Kristeva, J. 1986 [1973]. The System and the Speaking Subject. In *The Kristeva Reader*, ed. T. Moi, Oxford: Blackwell.
- Larkin, P. A. 1977. An Epitaph for the Concept of Maximum Sustainable Yield. *Transactions of the American Fisheries Society* 106(1):1–11.
- Ludwig, D., R. Hilborn, and C. Walters. 1993. Uncertainty, Resource Exploitation, and Conservation: Lessons from History. *Science* 260(5104):17–36.
- Mansfield, B. 2004. Rules of Privatization: Contradictions in Neoliberal Regulation of North Pacific Fisheries. *Annals of the Association of American Geographers* 94(3):565–584.
- Mansuri, G. and V. Rao. 2004. Community-Based and -Driven Development: A Critical Review. *The World Bank Research Observer* 19(1):1–39.

- Marston, S. A. 2000. The Social Construction of Scale. *Progress in Human Geography* 24(2):219–242.
- Massey, D. 1995. Thinking Radical Democracy Spatially. *Environment and Planning D: Society and Space* 13(3):283–288.
- McCay, B. J. and J. M. Acheson. 1987. *The Question of the Commons: The Culture and Ecology of Communal Resources*. Tuscon, AZ: University of Arizona Press.
- Moran, E. F. 1990. Ecosystem Ecology in Biology and Anthropology: A Critical Assessment. In *The Ecosystem Approach in Anthropology: From Concept to Practice*, ed. E. F. Moran, Ann Arbor: University of Michigan Press.
- Mosse, D. 2003. *The Rule of Water. Statecraft, Ecology and Collective Action in South India*. Oxford: Oxford University Press.
- Munk-Madsen, E. 1998. The Norwegian Fishing Quota System: Another Patriarchal Construction? *Society and Natural Resources* 11(3):229–240.
- National Research Council. 1999. *Sharing the Fish: Toward a National Policy on Individual Fishing Quotas*. Washington, D.C.: National Academies Press.
- Nelson, F. and A. Agrawal. 2008. Patronage or Participation? Community-based Natural Resource Management Reform in Sub-Saharan Africa. *Development and Change* 39(4):557–585.
- Netting, R. 1976. What Alpine Peasants have in Common: Observations on Communal Tenure in a Swiss Village. *Human Ecology* 4(2):135–146.
- Nightingale, A. J. 2011. Bounding Difference: Intersectionality and the Material Production of Gender, Caste, Class and Environment in Nepal. *Geoforum* 42(2):153–162.
- Orlove, B. S. 1980. Ecological Anthropology. *Annual Review of Anthropology* 9:235–273.
- Ostrom, E. 2005. *Understanding Institutional Diversity*. Princeton: Princeton University Press.
- Ostrom, E. 2009. A General Framework for Analyzing Sustainability of Social-Ecological Systems. *Science* 325:419–422.
- Ostrom, E., J. Walker, and R. Gardener. 1991. *Rules, Games, and Common Pool Resources*. Ann Arbor: University of Michigan Press.
- Pahl-Wostl, C. 1995. *The Dynamic Nature of Ecosystems: Chaos and Order Entwined*. New York: John Wiley & Sons.
- Pinkerton, E. and D. N. Edwards. 2009. The Elephant in the Room: The Hidden Costs of Leasing Individual Transferable Fishing Quotas. *Marine Policy* 33(4):707–713.
- Popke, E. J. 2003. Managing Colonial Alterity: Narratives of Race, Space and Labor in Durban, 1870–1920. *Journal of Historical Geography* 29(2): 248–267.
- Rappaport, R. A. 1990. Ecosystems, Populations and People. In *The Ecosystem Approach in Anthropology: From Concept to Practice*, ed. E. F. Moran, Ann Arbor: University of Michigan Press.



- Rasul, G., G. B. Thapa, and M. B. Karki. 2011. Comparative Analysis of Evolution of Participatory Forest Management Institutions in South Asia. *Society & Natural Resources* 24(12):1322–1334.
- Robbins, P. 2004. *Political Ecology: A Critical Introduction, Critical Introductions to Geography*. Malden, MA: Blackwell Pub.
- Rocheleau, D. and R. Roth. 2007. Rooted Networks, Relational Webs and Powers of Connection: Rethinking Human and Political Ecologies. *Geoforum* 38: 433–437.
- Rocheleau, D., B. Thomas-Slayter, and E. Wangari, eds. 1996. *Feminist Political Ecology: Global Issues and Local Experiences*. New York: Routledge.
- Saila, S. B., S. W. Nixon, and C. A. Oviatt. 2002. Does Lobster Trap Bait Influence the Maine Inshore Trap Fishery? *North American Journal of Fisheries Management* 22(2):602–605.
- Sauer, C. O. 1941. Foreword to Historical Geography. *Annals of the Association of American Geographers* 31:1–24.
- Sayre, N. F. 2005. Ecological and Geographical Scale: Parallels and Potential for Integration. *Progress in Human Geography* 29(3):276–290.
- St. Martin, K. 2001. Making Space for Community Resource Management in Fisheries. *Annals of the Association of American Geographers* 91(1):122–142.
- Stallins, J. A. 2012. Scale, Causality, and the New Organism-Environment Interaction. *Geoforum* 43(3):427–441.
- Steneck, R. S. and C. J. Wilson. 2001. Large-Scale and Long-Term, Spatial and Temporal Patterns in Demography and Landings of the American Lobster, *Homarus americanus*, in Maine. *Marine and Freshwater Research* 52(8): 1303–1319.
- Steneck, R. S. and J. A. Wilson. 2010. A Fisheries Play in an Ecosystem Theater: Challenges of Managing Ecological and Social Drivers of Marine Fisheries at Multiple Spatial Scales. *Bulletin of Marine Science* 86(2):387–411.
- Stern, P. C. 2011. Design Principles for Global Commons: Natural Resources and Emerging Technologies. *International Journal of the Commons* 5(2):213–232.
- Steward, J. 1955. The Concept and Method of Cultural Ecology. In *The Theory of Cultural Change*. Urbana, Illinois: University of Illinois Press.
- Turner, B. L., II. 1989. The Specialist-Synthesis Approach to the Revival of Geography: The Case of Cultural Ecology. *Annals of the Association of American Geographers* 79:88–100.
- Turner, B. L., II. 2002. Contested Identities: Human-Environment Geography and Disciplinary Implications in a Restructuring Academy. *Annals of the Association of American Geographers* 92(1):52–74.
- Wade, R. 1988. *Village Republics: Economic Conditions for Collective Action in South India*. San Francisco: Institute for Contemporary Studies.
- Walters, C. J., V. Christensen, S. J. Martell, and J. F. Kitchell. 2005. Possible Ecosystem Impacts of Applying MSY Policies from Single-Species Assessment. *ICES Journal of Marine Science* 62:558–568.

- Wilson, J. A. 1990. Fishing for Knowledge. *Land Economics* 66(1):12–29.
- Wilson, J. 2007. Scale and Costs of Fishery Conservation. *International Journal of the Commons* 1(1):29–41.
- Wilson, J. A., J. French, P. Kleban, S. R. McKay, and R. Townsend. 1991. Chaotic Dynamics in a Multiple Species Fishery: A Model of Community Predation. *Ecological Modelling* 58(1–4):303–322.
- Wilson, J. A., B. Low, R. Costanza, and E. Ostrom. 1999. Scale Misperceptions and the Spatial Dynamics of a Social-Ecological System. *Ecological Economics* 31:243–257.
- Wilson, D. C., J. R. Nielsen, and P. Degnbol, eds. 2003. *The Fisheries Co-management Experience: Accomplishments, Challenges, and Prospects*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Wilson, J., L. Yan, and C. Wilson. 2007. The Precursors of Governance in the Maine Lobster Fishery. *Proceedings of the National Academy of Sciences* 104(39):15212–15217.
- Young, O. 2006. Vertical Interplay Among Scale-Dependent Environmental and Resource Regimes. *Ecology and Society* 11(1):27.
- Zimmerer, K. S. 1996. Ecology as Cornerstone and Chimera in Human Ecology. In *Concepts in Human Geography*, eds. C. Earle, K. Mathewson, and M. S. Kenzer, Latham: Rowan and Littlefield.