

Challenge in the Commons: (Re)defining Rights in a Lobster Fishery

Christina H. Hamm (chamm@clarku.edu)

Clark University

Graduate School of Geography

Abstract

Ecological, community, and institutional complexities have gained recognition as important yet vexing elements in the management of natural resources. The lobster fishery of the Long Island Sound (LIS), with complex institutional arrangements regarding access and management of the resource, is subject to increasingly urgent social dilemmas and rising environmental uncertainty. It is one resource in a multi-use commons. There have been recent and extensive die-offs of lobster and other fauna in the western and central portions of the Sound, and shell disease in the east. Some lobstermen may be forced out of the fishery. There is the potential for lobstermen who are able to remain in the fishery to move away from affected areas of the Sound in the west to other areas where die-offs have been less extensive but where other tensions exist.

New York and Connecticut share interstate fisheries resources, providing fishing entitlements across state boundaries. The exception to this interstate agreement, however, is the lobster conservation zone around Fishers Island in the eastern portion of the Sound. A combination of factors have attracted other New York lobstermen to the inshore fishery surrounding Fishers Island creating territorial tensions among several communities of users. The lobster fishery surrounding Fishers Island experiences contested, spatially explicit territorial claims concretized and challenged through interpretation of legal statutes as well as through everyday practices associated with fishing. Historical use of particular locales, narratives of tradition and meaning associated with lobstering, and informal and extra-legal practices are employed to legitimize claims to areas around Fishers Island. Therefore, ecological changes in conjunction with existing tensions present uncertain long-term ramifications in the LIS lobster fishery.

In recent years, an entitlements framework (based on Sen's entitlement analysis of famine) has been broadened conceptually to encompass the environment and resources, including common pool resources and associated institutions. This paper engages environmental entitlements to explore how critical components of livelihood are challenged, extended, and defended through rights claims within institutionally complex property regimes.

Introduction

This study, currently in its beginning stages, examines rights claims in select areas of the economically valuable and institutionally complex American lobster fishery. Institutions are comprised of multiple social structures and activities that shape human interaction (North, 1990; Scott, 1995). In this case, the institutions of concern are those that influence access to and withdrawal of resources from the Long Island Sound (LIS).

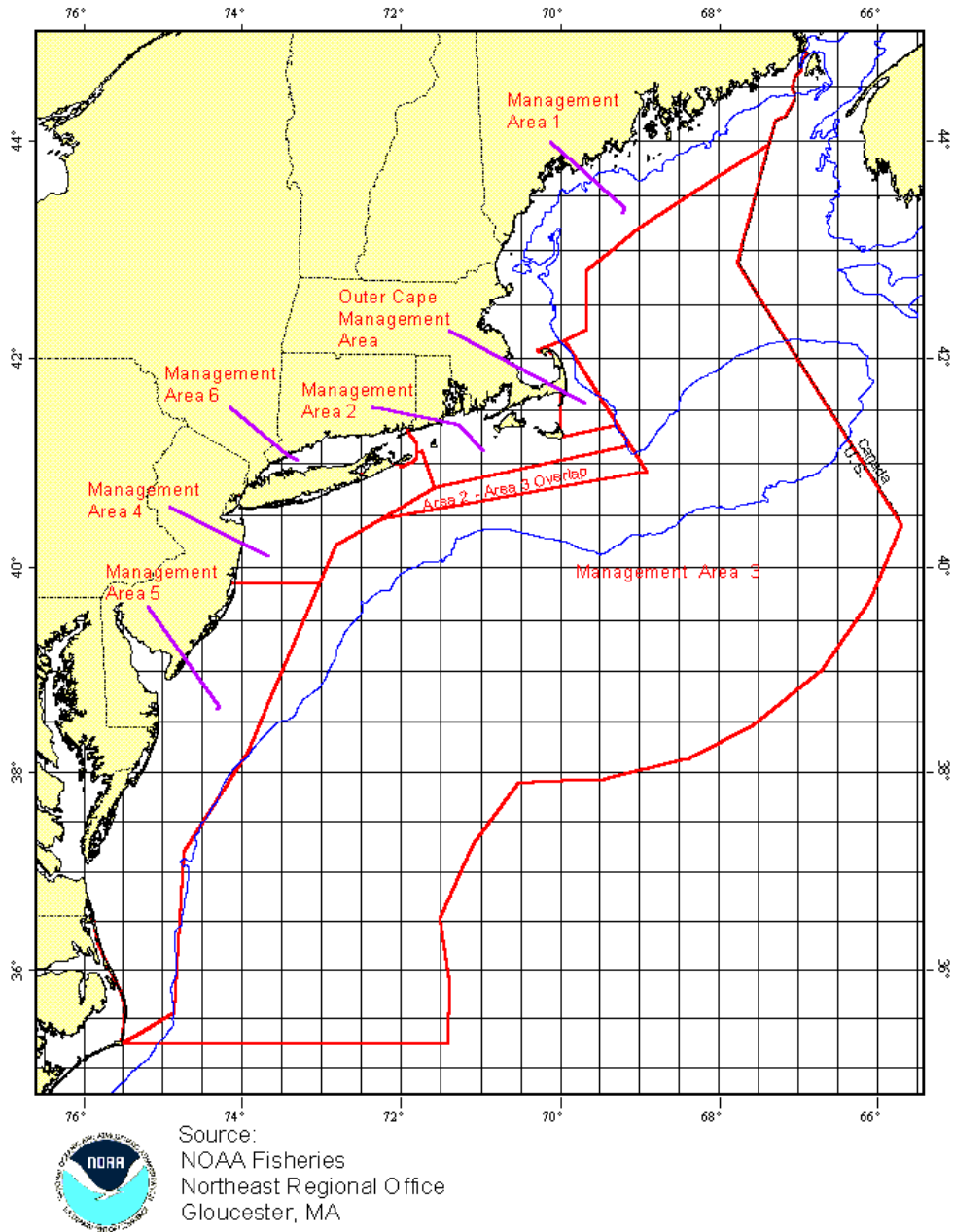
The lobster fishery is based on a common pool resource managed through an interplay of formal and informal institutional arrangements. An environmental entitlements approach, developed by Leach, Mearns, and Scoones (1997) to examine sustainable development provides a framework for exploring the dynamics of a contested common pool resource in the United States. I am most interested in the pivotal and dynamic role of institutions employed by rights holders for enabling and maintaining resource access. The objective of this research is to illuminate the sites of encounter between formal and informal institutions influencing resource rights to the lobster fishery in the context of a multi-use commons of the Long Island Sound.

Context: American Lobster and the Long Island Sound

The American lobster (*Homarus americanus*) industry, limited to the east coast of North America, is one of the most valuable commercial fisheries in the United States, with annual commercial landings (*i.e.*, inshore and offshore) ranging between \$150 and \$270 million over the last decade, and consistently more than \$200 million for the five year period between 1994-1998 (NMFS, 2000). The study area involves the Long Island Sound (LIS) lobster fishery, comprising the majority of inshore landings for New York and Connecticut which bound it (see Management Area 6 in Figure 1). Although Maine and Massachusetts dominate domestic landings, and the Maine lobster fishery has been the focus of social research (Acheson, 1988), other geographic areas of the fishery invite investigation. New York has ranked third in domestic landings in recent years, with the harvest from New York and Connecticut increasing to nearly 20% of total landings in some years (NMFS, 2000). The NY/CT Long Island Sound lobster fishery, with approximately 1300 licensed lobstermen (CT Sea Grant, 2000) and additional crew, is thus significant in terms of regional economic activity. It is also a fishery subject to increasingly urgent social dilemmas and rising environmental uncertainty. Recent environmental and socio-economic impacts culminated in a two-day conference focused on the LIS and its lobster fishery in Stamford, Connecticut on April 17, 2000 entitled the *First Annual Lobster Health Symposium*. This symposium, a combination town meeting and scientific conference that was sponsored by a number of organizations including state environmental agencies, universities, and multiple Sea Grant programs, characterized the Sound in general, and highlighted problems facing the lobster fishery in particular.

Figure 1

American Lobster Management Areas

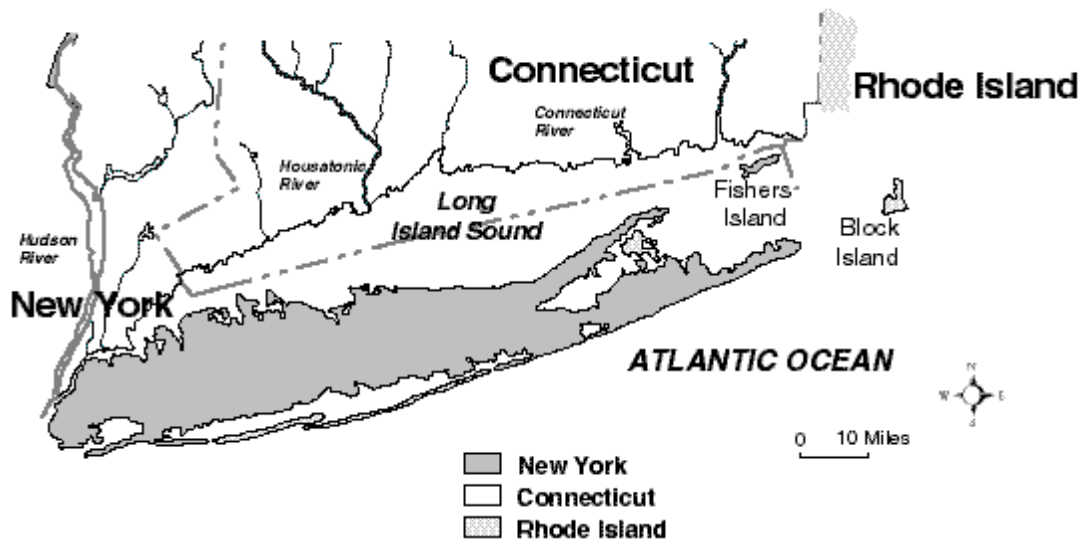


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The Long Island Sound (Figure 2) is influenced by biotic and physical factors as well as anthropogenic activities. The waters in the western end of the Sound are circulated relatively poorly with respect to the eastern end which meets with ocean waters one hundred miles to the east. Several rivers empty into the LIS: the East River from

New York in the west, and the Housatonic, Connecticut, and Thames Rivers from Connecticut in the north. Waters of the LIS are used by commercial vessels, recreational boaters, as well as commercial and sports fisheries. In effect, the Long Island Sound comprises two complex commons, because it supports economic activity through fishing and recreation, and because of its geography, it serves as a sink for anthropogenic contaminants. The LIS receives non-point source run-off as well as treated, chlorinated effluent discharged by several tertiary-level sewage treatment plants. Dump sites of contaminated dredge spoil have been deposited at several locations in the Sound by the Army Corps of Engineers.

Figure 2: The Long Island Sound



There have been repeated episodes of hypoxia in portions of the Sound, shell disease in the east, and recently, what can be described as environmental surprise (Kates and Clark, 1996; Roe, 1998), extensive die-offs of lobster and other fauna in the western and central LIS. This loss amounts to hundreds of thousands of lobsters over the past year, and is predicted to result in millions of dollars lost annually over the next several years (CT Lobstermen’s Association as per CT Sea Grant, 2000). The die-offs may be due to *Paramoebiasis*, a parasitic paramoeba, as well as other diseases, but no definitive cause has been identified (CT Sea Grant, 2000). Research is ongoing.

Of particular interest within this changing context is the effect on and response of social and institutional arrangements regarding rights to access and use of the lobster fishery and other LIS resources. There are multiple groups or communities accessing the lobster fishery (not to mention other commercial and recreational fisheries in the LIS), and therefore, the community of users consists of multiple geographic and organizational constituencies. There are several geographically-based Lobstermen's associations, some with intra-organizational differences: the Long Island Sound Lobstermen's Association, the Eastern Long Island Sound Lobstermen's Association, the Western Long Island Sound Lobstermen's Association, and the Fishers Island Lobstermen's Association. Furthermore, different forms and levels of capital investments influence networks of fishing through scale of operation, travel distances, and areas fished.

Lobstermen may be organized to pursue their livelihood as individuals, through familial ties, as a company, or in some combination. Family members may work together with one or more boats. A company operation involves one owner with several boats, each with a licensed lobstermen and crew. Although some lobstermen fish close to their geographic community, some may come from different areas to fish a particular locale. Local ecological knowledge and level of skill are significant in determining success in financially rewarding but difficult and dangerous fishing areas. For example, several unrelated lobstermen from different areas in western Connecticut fish the Race, a site located south and west of Fishers Island.

Existing Tensions: Fishers Island and the Eastern Long Island Sound

New York and Connecticut share interstate fisheries resources. This provides fishing rights across state boundaries for lobstermen and other fishers in the Long Island Sound (see Figure 2). The exception to this interstate agreement is a conservation zone around Fishers Island. The island is two or three miles from Connecticut, and approximately thirteen miles to Montauk, the nearest large port on Long Island, New York. Although the Fishers Island is geographically closer to Connecticut, a restricted conservation zone around the island (NY ECL § 13-029) bans non-New York residents from lobstering in the area .

Because of its relatively distant location from Montauk, the inshore lobster fishery surrounding Fishers Island has been until recently the domain of a small group of full-time and part-time island-based lobstermen. A combination of factors have attracted other New York lobstermen to the island's inshore fishery. Larger boats with larger engines make the trip from Montauk feasible, yet a high volume catch is needed to make the long trip economically viable. Montauk lobstermen are said to fish more

"aggressively," with trawls consisting of multiple traps per buoy, averaging 1,500 traps per boat, three times that of Fishers Island lobstermen (pers. comm., FILA; Haberstroh, 1998b). Although all lobstermen using this area are linked to a common pool, Fishers Island lobstermen have had *de facto* rights linked to the island fishery due to the combination of the conservation zone (restricting out of state residents), and geography, favoring local residents. It appears that both formal and informal institutional arrangements are being employed by certain rights holders *and* challenged by others by various means to secure access to areas around Fishers Island.

With Montauk lobstermen accessing the fishery, Connecticut sued to gain access to the conservation zone in April of 1998 (Haberstroh, 1998a; 1998b). New York counter-sued, yet had already stopped enforcing residency requirements due to questions regarding the constitutionality of such restrictions (Haberstroh, 1998b). In effect, Connecticut claims that a restricted zone prevents pursuit of livelihood by interfering with interstate commerce (Article I, § 8 of the US Constitution, the Commerce Clause). Furthermore, there have been several informal, extra-legal incidents that reflect growing tensions in this area: (1) gear dumping in which lines and pots are "dumped" directly on gear already in place (buoys that mark pots or trawl lines may be underwater at high tide, but established fishing areas are generally known); (2) in the immediate vicinity of Fishers Island, buoy lines have been cut from traps (Haberstroh, 1998a); (3) gear has been allegedly dragged and displaced from outside the restricted conservation zone to inside the zone (Anonymous 2, pers. comm., 2000); (4) one lobsterman admits to placing hooks on his buoy lines to prevent gear tampering (Anonymous 1, pers. comm., 1998).

Although not common, such incidents are not unprecedented in the Long Island Sound. Three "territorial" confrontations within the central and western portions of the Sound highlight tensions: a lobster boat was bombed off a New York port in the Sound in the late 1990s (Haberstroh, 1998b); multiple marine enforcement agencies were called to a face-off between New York and Connecticut lobstermen in the mid-1990s; and gun shots were fired at two lobstermen in 1993 (Bleyer, 1995).

The lobster fishery surrounding Fishers Island in the eastern portion of the Long Island Sound is subject to contested, spatially explicit territorial claims concretized and challenged through interpretation of legal statutes as well as through everyday practices associated with fishing. Historical use of particular locales, narratives of tradition and meaning associated with lobstering, and informal and extra-legal practices are employed to legitimize claims to areas around Fishers Island.

Common Pool Resource Dilemmas and Institutions

In the face of common pool resource dilemmas such as resource sustainability or conflict over access, it is necessary to recognize complexities and understand linkages in an effort to resolve problems. To do this, we need to look at the embeddedness of institutions that govern common pool resources in an effort to understand linkages and relationships among these components and how their combination influence successful or "tragic" commons (Berkes *et al.*, 1989; Feeny, *et al.*, 1990; Hardin, 1968). Resource governance involves a complex, rather than neatly nested, interplay of formal, legal rules and informal *de facto* arrangements at multiple levels - creating institutional complexity. Furthermore, institutional arrangements concerning resource use are embedded within particular social systems (Granovetter, 1985; Hanna and Jentoft, 1996; McCay and Jentoft, 1998; Peters, 1987; Polyani, 1957; Wilson and Jentoft, 1999). For example, local level norms or government regulations that are a part of resource governance systems are part of larger political, economic, and cultural structures (Hanna and Jentoft, 1996; Peters, 1987). Therefore, property is an embedded relational construct designed for a particular social purpose such as secure access to resource benefits (Bromley, 1992; Oakerson, 1992; Peters, 1987).

Property regimes (Bromley, 1992) encompass *property rights*, as entitlements to resource use, as well as *duties* with respect to others, and *property rules*, through which entitlements are secured (Bromley, 1991a; 1992; Hanna *et al.*, 1996; Schlager and Ostrom, 1992). Although various forms of property develop for particular purposes, with property regimes encompassing "complex constellations of rights, duties, privileges, and exposure to the rights of others" (Bromley, 1991a:14), property regimes are often presented as four distinct categories: private property, state property, common property, and non-property (or open-access; *res nullius*) (Bromley, 1991a; 1991b; 1992; Feeny *et al.*, 1990; Ostrom, 1990; Schlager and Ostrom, 1992).

Rights and duties are complementary elements organized and employed at different, nested levels of action within property institutions (Bromley, 1991a; Schlager and Ostrom, 1992). Yet, rights and duties are contested and negotiated at various "levels of action." Firstly, various studies question the direct cause and effect relationship between a specific property rights regime and expected outcome (Feeny *et al.*, 1990; Hanna and Munasinghe, 1995; Hanna *et al.*, 1996; McCay, 1996). Secondly, the four property categories are not necessarily mutually exclusive, and may overlap or exist in a range or combination of "bundles of rights" (Feeny *et al.*, 1990; McCay, 1996:117). It is recognized, however, that a poor match between resources and property rights where there is an "inadequate specification of property rights to environmental services" (Hanna *et al.*, 1996) may lead to resource dilemmas (see also Oakerson, 1992). What is

important here is that *property rights count* and it has been suggested that there is a need to "match the scale and complexity of ecological systems with their property rights regimes, to ensure that sets of rules are consistent across different levels of authority, to design a distribution of authority that achieves representation and contains transaction costs, and to coordinate between jurisdictions" (Hanna and Munasinghe, 1995:10; see also McKean, 1996). For example, on Monhegan Island in Maine, a century of local stewardship has helped codify into law (read: legitimize) local norms governing the lobster fishery through the state legislature. These norms include a limited fishing season (winter and spring), and legitimate entry into the fishery. To enter the fishery, one must apprentice for a period of time with a local lobstermen. Although rights are vested in the local community, this is not interpreted by the state government as devolution of rights to the local level, but extension of states rights to protect its resources. The state retains responsibility for management and enforcement of rules developed at the local level.

Dilemmas Facing the Long Island Sound Lobster Fishery

There are several environmental and social issues facing the LIS lobster fishery. It is one resource in a multi-use commons. It is a common pool resource on which diverse actors depend for livelihood or supplemental income. There have been recent and extensive die-offs of lobster and other fauna in the western and central portions of the Sound, and shell disease in the east. Some lobstermen may be forced out of the fishery. There is the potential for lobstermen who are able to remain in the fishery to move away from affected areas of the Sound in the west to other areas where die-offs have been less extensive in the east. Therefore, ecological changes in conjunction with existing tensions present uncertain long-term ramifications in the LIS lobster fishery. What are the implications for the eastern LIS lobster fishery?

Questions in a Complex Setting

Complexity in human and ecological systems is recognized as an important yet vexing factor in the management of natural resources (Healy and Hennessey, 1998; Holling and Sanderson, 1996; Ostrom, 1995; Wilson *et al.*, 1994; Zimmerer, 1994) particularly because there are ecological, community, and institutional interdependencies (Roe, 1998). Complexity in ecological systems refers to the potential for inconstant and episodic change, multiple equilibria, organizational heterogeneity and non-linear processes (Holling and Sanderson, 1996). In communities, complexity refers to the idea heterogeneity and multiplicity. In other words, a "community of users" may be comprised of multiple constituencies, rather than a singular, homogenous group even at

relatively small scales. Finally, institutional complexity is reflected by the interplay of formal and informal rules and norms among multiple social actors.

The focus in this study is on the pivotal role of institutions within the dynamic ecological and social context of this lobster fishery. I contend that institutions are the locus of resource rights claims, and various means are employed to claim those rights. To examine resource rights claims in this particular fishery, I am raising several questions: *Who are the actors in the Long Island Sound lobster fishery? What are the formal and informal institutions associated with the LIS lobster fishery and where do they intersect? How do resource users employ existing institutions to gain or maintain rights to common pool resources in a complex milieu? More specifically, At what institutional levels are rights to the LIS lobster fishery claimed?; and What means are employed for establishing, maintaining, or challenging rights to resource access at various institutional levels? Finally, How do rights associated with this fishery shift with respect to formal and informal institutions in a dynamic ecological and social context?*

Analysis

Several analytical approaches, beyond that of the "Tragedy of the Commons" (Brox, 1990; Hardin, 1968), are available to examine relations among and between resources, rights-holders, and property institutions (Bromley, 1991a; Buck, 1989; Leach *et al.*, 1997; 1999; Oakerson; 1992; Schlager and Ostrom, 1992). A few of the approaches that highlight institutions as central to mediating various aspects of human-environment relationships are presented here. Bromley (1991a; 1991b) uses a neo-institutional approach to frame the relational dynamics between rights holders and others under different property rights regimes. For example, with a common property regime, members have rights and duties with respect to the resource and one another, and non-members are proscribed access (Bromley, 1991b). Schlager and Ostrom (1992) present an in-depth conceptual framework to describe the "bundles of rights" with respect to natural resource access and decision-making that are accorded variously positioned actors in the commons. Oakerson (1986) provides a model for framing problems regarding equity and efficiency in the commons by focusing on four interactive components: resource characteristics and appropriation technology; decision-making arrangements; strategy choices and patterns of interaction; and resultant outcomes. Buck (1989) also presents a problem structuring typology for analyzing commons dilemmas by focusing on three components: the nature of the resource (*i.e.*, renewability and mobility), property rights, and scale of the user pool (e.g., jurisdictional attributes). Finally, an *Environmental Entitlements Approach* explores how actors command necessary goods

and services under conditions of community heterogeneity, differential power relations, and ecological dynamism (Leach *et al.*, 1997; 1999). An environmental entitlements framework, used initially for analysis of community-based sustainable development, is a broad, flexible, and encompassing form of analysis ideal for addressing the complexities of a contested commons. Environmental entitlement engages complexity and thus complements existing frameworks and models. It is not an explanatory theory, but an exploratory tool for unraveling the multifarious dimensions of commons dilemmas.

Entitlements and Environmental Entitlements

The entitlement approach, developed and applied initially by Sen (1981) to examine actors' varying abilities to command food by legal means in the face of famine, focuses on differential endowments and entitlements to resources necessary for well-being. Endowments involve the ownership, control, and access to a resource (Devereux, 1996; Sen, 1981). Entitlements, related to and derived from endowments, are interpreted as rights of control and access to benefits - what persons are entitled to *legally* in the form of commodities (Devereux, 1996; Gasper, 1993; Gore, 1993; Sen, 1981). Thus initially, endowments and entitlements are interpreted as particular rights legitimized by the legal system.

There are multiple ways to legitimize access and control resources through social networks and seemingly informal mechanisms such as local norms and customs, which sanction alternative forms of entitlement. According to Gore (1993), Sen's early scholarship on this issue expressed the rules of entitlement in three ways: (1) rules of entitlement are bound and interpreted by legal rules in law; (2) rules of entitlement are legal rules in practice; (3) rules of entitlement are extended to include informal social rules that can influence command over commodities (e.g., intra-household allocation) in addition to legal rights. Thus, what has been referred to as an *extended* view of entitlements takes note of how legal rules work in practice along with acknowledgment that some informal modes influence entitlement, and are therefore not limited to legal interpretations (Devereux, 1996; Gasper, 1993; Gore, 1993; Leach *et al.*, 1997). The question has been raised, however, as to whether Sen's extended entitlements goes far enough in incorporating alternative means (*i.e.*, other than legal mechanisms) to acquire either commodities per se, or other goods and services (Devereux, 1996; Gore, 1993; Leach *et al.*, 1997). Gore (1993) points toward Sen's "marginalization" of informal rights that affect entitlement by neglecting the importance of socially enforced moral rules. Rather than changing or creating new entitlements, an extended approach views moral rules as "supplementary" to legal entitlements (Gore, 1993). Ultimately, the interaction

of moral and legal rules that determine entitlements in practice are not part of the entitlements or extended entitlements approach.

A *broader* view of entitlements is suggested:

"A broad view of the rules of entitlement would not be like the 'extended entitlement' analysis, which retains a positivist notion of state-enforced law and which downplays the working of socially accepted moral rules or compartmentalises them to the domestic sphere. It would take note of how legal rules work in practice in determining entitlement; it would examine non-governmental sites of rule-making and rule-enforcing; and it would analyse the interplay between state-enforced legal rules and socially enforced moral rules in constraining and enabling command over commodities" (Gore, 1993:)

In effect, a *broad* view of entitlements examines informal arrangements or "non-governmental" rule development and enforcement along with consequent entitlements that arise from inter-institutional dynamics between formal and informal systems (Gore, 1993). Environmental entitlements (Dietz, 1996; Leach *et al.*, 1997), based on an extended (Leach *et al.*, 1997) or broadened (Gore, 1993) entitlements approach shifts the focus from commodities enabling food acquisition (Sen, 1981) to "environmental goods and services" necessary for livelihood such as:

"... food, water, or fuel, the market value of such resources, or the rights to them; and the utilities derived from environmental services, such as pollution sinks or properties of the hydrological cycle. Entitlements, in turn, enhance people's capabilities, which are *what people can do or be with their entitlements*" (emphasis in the original).

Leach *et al.*, 1997:17

Work by Dietz (1996) at the international scale proposes that entitlements to natural resources are part of contemporary political environmental geography. These entitlements entail three fundamental rights: (1) the right to own resources; (2) the right to use those resources; and (3) the right to intervene in resource situations (p.41). An environmental entitlements approach suggests multiple ways of attaining resource rights by differently positioned social actors (Leach, *et al.*, 1997), in part by employing a broadened interpretation of rights, as well as incorporating power relationships and discursive practices (Fortmann, 1995; Leach *et al.*, 1999). For example, the "Tragedy of the Commons" (Hardin, 1968) might be considered a narrative (Roe, 1994) with particular assumptions (*e.g.*, a rational choice theoretic; conflation of property rights

regimes), leading ultimately to prescriptive solutions such as privatization or state regulation of resources. On the other hand, narratives of historical use and tradition are often incorporated into and are brought to bear in community-level claims (Fortmann, 1995; Li, 1996). For example, stewardship narratives (Fortmann, 1995) involving past rights and conservative resource use are employed to legitimize particular claims. Narratives of tradition and stewardship are part of the legitimization of local claims to lobster fisheries in Monhegan Island, Maine and Fishers Island, New York.

Importantly, "unruly" social practices are recognized as an active form of rights claim, challenge, or defense (Gore, 1993). For example, extra-legal practices such as cutting buoy lines attached to lobster traps that have encroached upon occupied fishing areas are a recognized means of defending territories. In this case, lobstermen secure and contest territory in daily practice through unwritten norms, unruly practices, as well as through narratives of tradition, and legal contestation and interpretation of statutes.

Methods

Multiple methods are suggested for the analysis of questions in complex situations (EERT, 1997; Roe, 1998). The Environmental Entitlements Research Team (1997) suggests a sequence of analyses - two of which will be incorporated in this study, an environmental analysis and an institutional analysis.

An environmental analysis includes site histories and records of environmental change (EERT, 1997). Much data is readily available through the National Marine Fisheries Service, and the Connecticut-based Long Island Sound Study that focuses on the environmental quality of the Sound, and sources of local ecological knowledge through multiple organizations including various lobstermen's associations. News media provide a record of changing environmental conditions as well as various conflicts within the study area. A content analysis is appropriate for examining the media records.

An institutional analysis as part of the environmental entitlements approach examines both formal and informal institutions that mediate access and control of resources (EERT, 1997). In addition to regulatory agencies and statutes, various types of communities and organizations need to be identified and explored in terms of their inter-institutional linkages and dynamics. In depth interviews with key informants reveal important organizational and institutional connections. This process has begun through informal conversations with lobstermen who have provided additional contacts, and snowball sampling will be part of this process. I have also attended the *First Annual Lobster Health Symposium* at which panel discussions, including input from lobstermen

and dealers, offered differing perspectives on the massive die-offs of lobsters in the Sound. Ultimately, I hope to clarify the nature of the interactions between the various actors through mapping of the complex web of institutional relationships that is part of the Long Island Sound lobster fishery.

Concluding Comments

Resource dilemmas are complex. Rights that are fundamental to the use of environmental resources exist in a variety of combinations of ownership, decision-making, and action through the interplay of formal and informal institutional arrangements. Therefore, opportunity exists for contestation and negotiation.

In the commons of the Long Island Sound, there are many actors. Although the Sound is multiple-use commons in practice, two very different, co-existing commons emerge. The one commons, a setting for fishing and boating, serves socio-economic and recreational activities. The other commons provides a sink for non-point, and point source anthropogenic contaminants. Claims to access and use occur at multiple levels in various forms. In effect, resource users negotiate and (re)define access through institutions, narrative, and action. *Therefore*, institutional arrangements in the form of property rights are continually established and redefined in order to determine (and to modify) the scope and nature of the governance regime over natural resources (Bromley, 1991a). An Environmental Entitlements approach provides a rich analysis by highlighting important linkages. Increased understanding illuminates opportunities for resolution for commons dilemmas.

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