

Co-management in the Maine Lobster Industry: A Study in Factional Politics

James M. Acheson

Department of Anthropology and School of Marine Sciences, University of Maine, Orono, ME, USA

E-mail: acheson@maine.edu

Abstract

One of the most promising mechanisms to conserve fish stocks is co-management, a type of ICCA (Indigenous Peoples' and Community Conserved Territories and Area), in which responsibilities are shared by resource users and the government. In Maine, the lobster co-management system, established in 1995, divides the coast into seven zones. It permits license holders in each zone to recommend rules on four issues to the commissioner of the Department of Marine Resources. This article describes the history of the Maine lobster co-management system, emphasising the role of factional politics in determining the development of policies and rules. In the Maine co-management system, political outcomes depend on the power of factions of fishermen and the coalitions of those factions with government units at higher scales. Cross-scale cooperation is necessary. In the cases where such a cross-scale coalition existed, rules were passed and policies went into effect. In those cases where no such coalition existed, gridlock reigned. If we wish to understand the production of rules for the lobster industry, we must focus not only on the actions of different industry factions, but also on the byzantine relationships between lower levels of management (i.e., the zone councils and the Lobster Advisory Council) and higher scale institutions (i.e., legislature, Maine Department of Marine Resources, etc.). In this paper, special attention is paid to the reasons that stricter trap limits have not been devised, despite the fact that such limits would solve a variety of serious problems.

Keywords: co-management, factions, lobster, Maine, fisheries management

INTRODUCTION

In resource management circles, there is a realisation that traditional fisheries management techniques have not worked well and a growing interest in new management techniques and governance structures. One of the most promising and controversial of these new management organisations is co-management, a type of ICCA (Indigenous Peoples' and Community Conserved Territories and Area). In co-management systems, authority to manage and promulgate rules is shared between resource users and agencies of governments (Ostrom 1990; Pinkerton 1994). While there are several different kinds of co-management institutions (Berkes 2002), all

co-management institutions have two essential defining characteristics: 1) decentralised decision-making in which local resource users participate (Jentoft et al. 1998: 423); and 2) 'powersharing and partnership' between user groups, government agencies, and other stakeholders (Jentoft 2003: 3). Some rights and duties are allocated to higher-level units; others are made the purview of lower-level units. The result is not two different units cooperating, but a new kind of governance structure composed of hierarchically organised units at different scales that perform different functions and which must coordinate to be effective. Co-management thus represents a middle course between top-down management by the government and a 'commons' managed at the local level (Pinto da Silva 2004: 419–420).

In some cases, co-management appears to work well; in others it does not. In the burgeoning literature on co-management, a great deal of attention has been devoted to the conditions under which co-management succeeds (Pinkerton 1994; Sen and Nielsen 1996; Noble 2000; Pomeroy et al. 2001). In this body of literature, comparatively little attention has been paid to the effect of political factions on the working and effectiveness of co-management regimes. This is true even though analysts

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have noted the existence of divisions, power differentials, and conflict between user groups (McCay 1988; Pinkerton 1994; Jentoft 2003; Wilson 2003; Kearney and Berkes 2007).

Factional fights have played a critical role in developing lobster legislation in Maine. One could say that the operation of the entire lobster management system is a study in factional politics. Vinal Look, former commissioner of the Maine Department of Marine Resources (DMR), stressed the importance of the industry in legislation by pointing out during an interview, “the legislature has never passed an important regulatory bill without substantial support from the industry”. But factions of fishermen working alone cannot change policies and get rules passed. What was needed was a powerful faction of fishermen allied with state agency personnel or other government officials. When such a coalition existed, rules were passed and policies went into effect. When no such coalition existed, gridlock reigned, much to the frustration of some and the satisfaction of others. What this means is that if we wish to understand the production of rules for the lobster industry, we must focus not only on the actions of different industry factions, but also on the byzantine relationships between lower levels of management (i.e., the zone councils and the Lobster Advisory Council) and state-level institutions. By learning about factional politics in Maine, we can learn something about some of the challenges that ICCAs and co-management systems will need to come to terms with in other parts of the world.

Three different levels of government are involved in lobster co-management. At the local level are the zone councils and the Lobster Advisory Council; at the state level are the DMR and the Maine Legislature; at the federal level are the Atlantic States Marine Fisheries Commission (ASFMC) and the National Marine Fisheries Service (NMFS). All attempts to devise rules for the lobster industry involve at least two of these three levels. As we shall see, the co-management structure with its multiple scales has permitted rules to be developed that solve some difficult problems. However, it has not been able to solve others, especially the need for a stricter trap limit.

In this article, I focus on the history of the development of the rules under the co-management system, stressing the factional disputes involved. I describe in some detail the genesis of the trap limits put in place in 1997–1998 and the resulting reactions of the ‘big’ fishermen to get rules to limit the power of ‘small’ and part-time fishermen. I place special emphasis on recent efforts to get even stricter trap limits. Although efforts to get stricter trap limits would solve a number of serious problems, they have been blocked by a powerful faction of big fishermen. This case gives insight into the ways in which factions are formed and the complex mix of attitudes behind political commitments.

METHODOLOGY

Most of the data on which this article is based were gathered from 1994 to the present. Anthropology has a long and proud tradition of fieldwork. Much of the information in this article was obtained using qualitative data-collection techniques, including direct observation, open-ended interviews with key informants,

and semi-structured interviews. These are standard data-gathering techniques in anthropology. I also did archival work at the Maine State Library and the Fogler Library of the University of Maine. I made use of articles in *Commercial Fisheries News*, whose reporters do a particularly good job recording events as they occur.

During most of the time, I was an observer of the politics of lobster management. My perspective of lobster management was enhanced by participation in a number of commissions and committees and a few research projects. I was one of the consultants who wrote Amendment 5 of the lobster management plan for the New England Fisheries Management Council (NEFMC) in 1993 and 1994. In 1995 and 1996, I was a member of the Zone Management Law Implementation Committee, which planned the Maine lobster co-management system. In 1998, I served on the Sub-Zone Task Force established by the Maine Legislature to make recommendations on changes in the Zone Management Law. From 1997 to 2002, I served on the Social Science Advisory Committee of the NEFMC.

I have also used data from two research projects in this paper. One, called the Lobster Zone Questionnaire Project, was conducted in the summer of 1998 and was financed jointly by Sea Grant and the Maine DMR. In this project, questionnaires were sent to a random sample of half the lobster license holders in Maine. It was completed by 1,140 fishermen (Acheson and Acheson 1998). A second survey was done as part of a study entitled *The Evolution of Norms and Conservation Rules in Two Fisheries*, funded by the National Science Foundation. In this study, questionnaires were mailed in 2009 to 3,000 lobster license holders selected at random from the license list; 701 responded. In the spring of 2010, I conducted follow-up telephone interviews with 124 people who responded to the 2009 survey and said they were willing to be contacted for a follow-up interview. The phone interview concentrated on lobster fishermen’s attitudes toward stricter trap limits and the assumptions behind their political stances. The data in Tables 1–3 come from the 2009 survey and the data in Tables 4 and 5 come from the 2010 follow-up phone study.

THE MAINE CO-MANAGEMENT SYSTEM

Origin of the system

In 1995, a co-management system was established in the Maine lobster industry with the passage of what has become known as the Zone Management Law (Legislative Document 782, 1995). This law changed many aspects of the governance of the Maine lobster industry. It established 1) an individual 1,200-trap limit per licensed fisherman for the entire state; 2) a trap tag programme to identify owners of traps; 3) an apprenticeship programme for new entrants into the lobster industry; 4) eligibility criteria to qualify for a lobster and crab fishing license; and 5) most important, a co-management system that gives members of the lobster fishery powers to manage some aspects of the fishery, while others were retained by the state of Maine—this was done by mandating that the commissioner of the DMR create lobster management zones. These zones are managed by an elected council of lobster

license holders. These zone councils were initially empowered to propose rules on the number of traps an individual fisherman in that zone would be allowed to fish, providing that that number did not exceed the 1,200 maximum limit; the number of traps on a line; and the time when lobster fishing is allowed. If the rules proposed by a zone council are approved by a two-thirds vote of the lobster license holders in the zone, the zone council must refer them to the commissioner; and if he or she approves of them, they are adopted as part of DMR regulations and enforced by state wardens (Alden 1995; Jones 1995). In 1999, the legislature gave the zones one additional power – namely, the power to recommend limited-entry rules. In short, the law gives the zone councils the power to recommend rules only on four different issues. They become rules only after approval by the commissioner.

Why did the legislature pass such a law? Co-management, after all, was a radical departure from the past. In retrospect, there were three reasons. First, by the 1990s, there was much interest on the part of academics and resource managers in co-management. By that time it had become obvious that traditional methods of managing fish stocks were not working well and that something different needed to be tried. Robin Alden, who became commissioner of the DMR in 1995, had a special interest in co-management and strongly advocated such a system (Acheson 2003:100).

Second, from the early 1980s to 1995, the National Marine Fisheries Service pushed for several rules that proved to be unpopular with the lobster industry. One was the State-Federal Plan, which would have done away with rules the industry considered essential, including the V-notch law and the oversize law (Acheson 2003). A second unpopular action was federal efforts to save the right whale; and the third was a plan to impose a low trap limit after the passage of the federal Sustainable Fisheries Act in 1996. These experiences with federal management convinced many fishermen that they needed to do more to manage their own industry as a means to forestall federal management. As Larry Knapp, the Zone D chair put it in an interview with me in 1997: “Either we manage this industry or the feds will.”

Third, trap limits, limited entry, numbers of traps on a line, and the times fishing would be allowed were longstanding problems for the legislature. The issue of trap limits had proven to be especially intractable. Beginning in 1956, groups of fishermen introduced trap-limit bills into 17 legislatures. All attempts since the 1950s to get limits failed (Billings 1979, 1985). Although many fishermen were in favour of a trap limit, there was no consensus on what the limit should be. Different areas of the coast fished different numbers of traps, and full-time and part-time fishermen in the same zone also wanted to have different numbers. By handing the rights to make rules on these matters to the zone councils, the legislature was divesting itself of some vexing and intractable problems.

The Maine coast and the lobster zones

The boundaries of the zones were initially established in 1997 (Figure 1) and have remained essentially the same. The

characteristics of the communities encompassed by the zones, however, are quite different. The whole coast of Maine is a continuum. Zones F and G include the heavily populated, highly urbanised and industrialised area adjacent to the New Hampshire border. Fifty per cent of Maine’s total population lives within 30 miles of Portland, the largest city (Zone F). In this part of Maine, only a small percentage of the population lives by fishing.

Zone A, adjacent to the Canadian border, is one of the most rural, sparsely populated areas of Maine. Towns are widely separated and small; a paper mill is the only sizeable factory in this zone and this plant is inland. Fishing and resource-based occupations (e.g., blueberries and forest products) are the most important industries. The zones around Penobscot Bay and in the Midcoast region (Zones C, D, and E) have characteristics that fall between these two extremes.

Zones are administrative units, not communities. Within zones, network density is quite low. For example, it takes about an hour and a half to go by car from Belfast, the easternmost town in Zone D, to New Harbor, the westernmost town in that zone. The communities are the hamlets within towns. The lobster fishermen anchoring their boats in a small harbour know all the other fishermen in that harbour personally, while those in the largest harbours know all the fishermen in that harbour at least by reputation, if not personally.

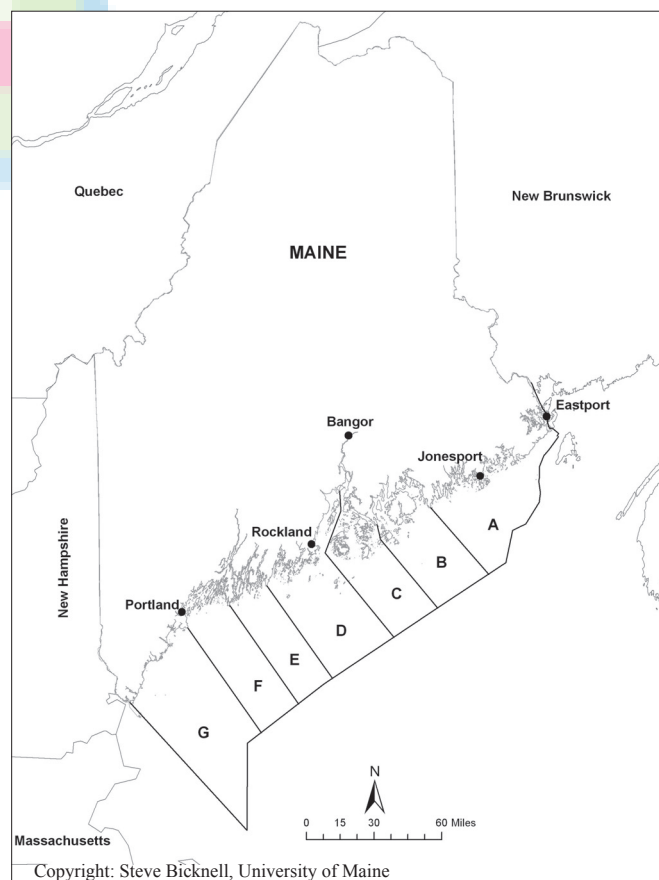


Figure 1
Maine Lobster Management Zones, 1997

The first years of co-management: legislative dominos

When the permanent zone councils began operation in June 1997, two issues came to dominate their agendas. First, the commissioner of the DMR asked the zone councils to address the lawsuit concerning the right whale, brought forward under the Marine Mammal Protection Act, that threatened the entire lobster industry (Acheson 2003: 105). Even though the zone councils were not empowered to deal with the whale issue, they devoted a good deal of time lobbying industry members to frame an industry-wide response to the proposed National Marine Fisheries Service plan (see below). The result of all these efforts was a set of rules that the industry could live with. Second, all the zones took up the issue of trap limits, devoting literally months to the discussion. In August 1997, Zone E voted to establish limits of 800 traps by 1998, 700 by 1999, and 600 by 2000; in September, Zone G had passed a similar build down that established an 800-trap limit by 2000 (Commercial Fisheries News 1997). By summer 1998, all seven zones had held referendums in which trap limits were passed.

The referendums were overwhelmingly in favour of trap limits. In all cases, the vote was more than 80% in favour of the proposed limits; in Zone B, 94% voted in favour; the exception was Zone D where only 77% voted in favour (Jones 1998a,b; Acheson 2003). There were two reasons for the favourable vote. A powerful faction of fishermen and the commissioner favoured trap limits. Those who voted for trap limits fished part time and had grown tired of seeing the big fishermen, whom they called “hogs”, take a disproportionate amount of the catch and contribute to the trap tangles (Acheson 2003: 105). The commissioner favoured trap limits to help reduce the trap congestion problem. A second factor was the threat of federal action to impose a trap limit under the Sustainable Fisheries Act (Jones 1998a). This prompted the zone councils to take action in an effort to stave off action by the federal government, which would have developed rules not to their liking.

While the zone management system accomplished a great deal in the first five years after the council system went into effect, the actions of the lobster co-management governance structure created serious conflicts, which have resulted in lawsuits and subsequent remedial legislation. The solutions that resulted have set lobster management on a path that has had long-term consequences.

Revenge of the big fishermen

The passage of trap limits was approved by the majority of the lobster fishermen. It was bitterly opposed, however, by the vast majority of the fishermen with a lot of traps because trap limits have severe distributional effects. Trap limits or caps do not constrain all fishermen. The only people who had to reduce the number of traps they fished were those fishing more than the new legal limit—the big fishermen. One zone council chair said he opposed the imposition of trap limits because it “singles out the guys who fish 1,200 traps” (Griffin

1998:16B). At the same time, small fishermen and part-timers benefited greatly because a trap limit automatically increased the proportion of traps that they had on the bottom, giving them a higher percentage of the overall catch. Moreover, if small fishermen were fishing less than the maximum allowed number of traps, they could also increase the number of traps they fished (Acheson 2001). Even worse, many commercial fishermen from other fisheries were moving into the lobster fishery on a full-time basis, attracted by record high lobster landings in the late 1980s and 1990s, when landings in most other fisheries were declining. Although lobster catches increased phenomenally during the 1990s and early in the twenty-first century, the established big fishermen saw a disturbing proportion of those lobsters going to new entrants into the fishery and people with small operations, while they had to cut back their own effort. They were angry because they were convinced the trap limits worked against them and benefited their competitors. Many still are angry.

The big fishermen fought back, and their efforts to increase their proportion of the lobster catch continue to this day (2011). At first their tactics were ineffective (Acheson and Taylor 2001). In 1998, however, the Lobster Advisory Council, an industry group advising the commissioner, recommended two bills, which were passed by the legislature in 1999. One was a trap tag freeze, which permitted people fishing fewer than 800 traps to fish only 100 more tags than they fished as of November 20, 1998 (LD 982).

The second was limited entry by zone (LD 1992). This law spelled out a process by which each zone council holds a referendum specifying a ratio of licenses that would be allowed to enter the zone for a number of licenses that were retired. A five-to-one ratio means that five licenses would have to be retired before one would be issued to a new fisherman. If the referendum on the ratio passed with a two-thirds vote, the referendum would be conveyed to the commissioner. If approved, it would become a departmental regulation.

The zone councils received the power to limit entry into their zones in 1999. By January 2001, five of the seven zones (B, D, E, F, and G) had established limited-entry rules. Zone A followed suit in 2004. Zone C began the process in the fall of 2008. The zone councils were able to tailor in/out ratios to meet local conditions. The need for limited entry was greater in the overcrowded ports along the western coast (Zones E, F, and G) than in the less crowded ports of the east (Zones A, B, and C). As a result, Zone A in rural eastern Maine voted for a one-to-one in/out ratio; whereas Zone F in the heavily urbanised area around Portland voted for a three-to-one ratio (Acheson 2003).

Both of these laws were crafted with the interests of the big fishermen in mind. The trap tag freeze stopped small and part-time fishermen from building up the amount of gear they used, while the limited-entry law slowed entry of new fishermen. Both laws prevented part-timers and newcomers from putting in more traps while big fishermen were forced to reduce the amount they fished. As one fisherman put it at the time: “This was our answer to the part-timer problem.”

What was not foreseen was that this would exacerbate problems with zone boundary lines. When the Zone Management Law was passed in 1995, the initial committee implementing the law (of which I was a member) thought that no serious dispute would come from implementing zone boundaries. After all, these boundaries would coincide with existing informal territorial boundaries, and these boundaries would be permeable, allowing fishermen to place traps where they had traditionally fished. Within two years, however, serious boundary problems emerged. There were two causes. First, there was a dispute between Zone D and E, which occurred because Zone E passed a 600-trap limit whereas Zone D passed an 800-trap limit. Zone management rules state that in areas where fishermen from zones with two different trap limits fish, the rules of the most restrictive zone will prevail. Therefore, Zone E fishermen could place traps to the east of the boundary, but those from Zone D could not place traps west of that boundary. The fishermen from Zone D thought this was unfair since it deprived them of part of their traditional fishing grounds. A similar dispute arose between Zones E and F for the same reasons. Like Zone D, Zone F had an 800-trap limit.

Second, when limited entry was being contemplated in 1999, it became immediately apparent that zone boundaries would have to be made impermeable. After all, there was no sense in one zone limiting membership into its zone if people from other zones could place traps in the waters of that zone. As a result, the commissioner of the DMR passed a departmental regulation that has become known as the 49/51 per cent rule, limiting fishermen to placing a maximum of 49% of their gear in the waters of another zone. This immediately caused problems along three boundaries where fishermen had traditionally fished in waters now belonging to another zone (Acheson and Taylor 2001; Acheson 2003).

The disputes between Zones C and D and Zones D and E were settled in the winter of 2000 by negotiations between the fishermen, the zone councils, and the DMR in which 'buffer zones' were established where fishermen from both zones could fish. These buffer-zone lines were formalised by the commissioner, but only after groups of fishermen and the two zone councils went through difficult negotiations. The dispute between Zones F and G, which began in 1997, proved so intractable that the commissioner imposed a new boundary in 2001 using his regulatory powers. Neither the people from Zone F nor those from Zone G were completely happy with the result. Consequently, this line has since been renegotiated.

The faction of big fishermen had their revenge, but they were never able to get rules passed to allow them to fish more traps, and the limited-entry rules they lobbied for resulted in costly boundary problems.

Actions by single zone councils and the state

Since 1999, zone councils have devoted a good deal of effort to solving problems particular to that zone. Three of these actions are of interest for our purpose.

The grey zone

The Zone A council has devoted a good deal of time to the so-called 'grey zone' issue. The international boundary in the area between Grand Manan Island (New Brunswick) and the eastern part of Zone A has not been agreed on by the United States and Canada. This area is fished by lobster fishermen from both countries, and there is no agreement on the fishing rules that should prevail in this area. The lobstermen from New Brunswick favour the Canadian rules featuring short fishing seasons and strict trap limits, while the Americans like the Maine rules, which emphasise conserving juvenile lobsters (minimum-size law) and conserving the reproductive stock (oversize and V-notch laws).

Fishermen have tried to get the US State Department and the Canadian Department of External Affairs to adjudicate the boundary line, but to no avail. Those who fish in the grey zone have had multiple meetings in an attempt to come up with an agreed-on set of formal rules that everyone fishing in this zone would obey. To date, these efforts also have failed. At present, there is an informal agreement among fishermen that those fishing in the grey zone will use the rules of their own country. The Canadians believe that this gives the US fishermen an unfair advantage since the Americans can use more traps and can fish all year. As of late 2010, negotiations were continuing.

Double-tagging rule

Zones F and G, along the western coast, have been focused on a continuation of the boundary dispute that arose in the late 1990s when limited-entry rules were passed. Zone F fishermen have been able to negotiate a large buffer zone outside the 12-mile limit off the coast of Zone G. Zone G has retaliated by successfully negotiating the passage of a double-tagging rule. This means that if fishermen from Zone F want to fish in the buffer zone in Zone G waters, they can only put 49% of their traps in Zone G waters, and they must have tags from both Zone F and Zone G on their traps. Predictably, the Zone F fishermen hate this rule.

Conservation zones and sub-zones

Since the Zone Management Law was established, several islands have lobbied for special rules for the lobster fishery around their islands. Some of these efforts have succeeded; others have failed; and one is still pending.

Monhegan Island and Swan's Island lobbied the state government to establish conservation zones around their islands where special conservation rules are enforced (Acheson 2003). Monhegan has the strictest conservation rules in the industry. In 1907, they successfully approached the legislature for a law establishing a six-month fishing season in the waters around the island. They also had an informal trap limit and limited-entry programme (Acheson 2003: 61). In 1974, the legislature established a 600-trap limit for the island. Then in 1998, after a long and bitter battle with a group of fishermen from Friendship who wanted to fish in the waters around Monhegan, island fishermen again successfully lobbied the legislature for a law making the waters around the island a special conservation zone

with a special apprenticeship programme and trap limit. This effectively took Monhegan out of Zone D and gave the island lobstermen the right to administer their own small sub-zone. In 2007, Monhegan fishermen were again successful in making a deal with the commissioner to lengthen their season from six to eight months and to reduce the limit to 300 traps.

In 1984, Swan's Island was successful in persuading the commissioner of Marine Resources to enact a regulation making the traditional fishing area around the island a conservation zone. Establishing this conservation zone engendered little conflict with other harbours since a few leaders among the Swan's Island fishermen negotiated an agreement allowing fishermen from the mainland harbours to fish in the Swan's Island's zone provided they abided by the island's rules. Few take advantage of this right. The Swan's Island zone is run by a commission of four fishermen and one representative from the DMR. These islanders wanted their own conservation zones so they could get a stricter local trap limit than the one in force in their zone. Another reason was territorial defence (Acheson 2003).

In 1998, Isle au Haut approached the commissioner for a special conservation zone, and the commissioner established a taskforce to study the issue. The taskforce report recommended that sub-zones "should be discouraged at this time" (Commercial Fisheries News 1998). This report, in effect, ended Isle au Haut's attempt to get a special zone. The primary reason for the task force recommendation was that establishing a conservation zone means establishing zone boundaries. The conflict between Monhegan and Friendship was so bitter and divisive that the DMR and legislature wanted no more of them. No other conservation zones have been established to this date (2011).

Other islands, however, currently are seeking to have a law passed to maintain the number of lobster licenses on the islands and prevent them from migrating to the mainland. In 2009, a bill was introduced into the legislature that would give residents of islands without bridge connections to the mainland the right to petition the state to establish limited-entry programmes for their islands. These islands would be allowed to establish special waiting lists for fishermen from these islands to get a lobster license. The aspiring fishermen would still have to pass through an apprenticeship programme, but the wait for a license would presumably be much less. On these islands, lobster fishing is the only full-time occupation. Proponents argue such a law is necessary if island communities are to survive (Trotter 2009a). The legislature passed this law in the spring of 2010 at the urging of the commissioner of DMR, the Island Institute, and island fishermen themselves.

INDUSTRY CHALLENGES AND FACTIONAL POLITICS IN CO-MANAGEMENT

Fishermen's attitudes about the conservation laws and zone management plan

No major initiatives are planned by any of the zones.

Conversations with all of the zone chairmen indicate that they have nothing major on their agendas for the near future. As we shall see, the most important reason stems from factional support for stasis. Part of the reason is that a large number of people in the lobster fishery are satisfied with the management plan and the rules passed by the zone councils. Lobster catches are at all time highs. There are more lobsters being caught now than at any other time in the past, even in the nineteenth century. From 1947 to 1989, about 20 million pounds of lobster were landed in Maine per year. After 1989, more than 30 million pounds were caught annually (Acheson 2003:17), and since 2000, landings have been more than 50 million pounds (Maine Department of Marine Resources 2009). In 2010, over 93 million pounds were landed.

Fishermen are quite convinced that the lobster management plan is working well. The most important lobster conservation rules are those that protect juvenile lobsters (minimum-size and escape-vent laws) and laws to protect the large reproductive-sized lobsters (i.e., the maximum-size measure, prohibition against taking egged lobsters, and the V-notch law).¹ There also is a law specifying that lobsters may only be taken by traps. In our 2009 survey of the industry, we asked fishermen to assess the effectiveness of these laws. As can be seen in Table 1, fishermen rated these laws as being highly effective.

In our 2009 survey, we also asked questions about fishermen's attitudes toward several specific kinds of rules in their zones. The data in Table 2 indicate a high positive rating of the zone rules. Based on the survey findings presented in the tables, one can only conclude that there is strong support for the existing lobster conservation rules and little sentiment to change them.

Severe industry problems

In spite of favourable attitudes about zone management and the positive assessment of fishermen about the fishery, there are a number of serious problems facing the industry, and lobster fishermen see those quite clearly (Table 3). In 1997, when we asked fishermen in a survey: "What is the most serious problem faced by the lobster industry?" the largest number said too many traps" or "overfishing". The next largest number listed a potpourri of problems, which we coded as "other". The third largest coded category was regulations or government bureaucracy, due to fishermen's recent experiences

Table 1

Question: "How effective are each of the following laws in conserving the lobster stock?"

Law	Very effective (%)	Somewhat effective (%)	Not effective (%)
Minimum size measure	90.2	8.8	0.9
Maximum size measure	61.5	27.9	10.6
V-notch	90.7	7.8	1.5
Traps only	76.8	16.6	6.6
Escape vent	77.8	18.5	3.7
Prohibition on taking eggers	95.5	3.6	0.9

Table 2
Attitudes about Specific Zone Management Rules, 2009

Question	Yes (%)	No (%)
Are you in favour of the trap limit in your zone?	61.8	38.2
Are you in favour of the limited entry ratio in effect in your zone?	69.8	30.2
Should your zone council change the number of traps fishermen can fish on a line?	24.0	76.0
Should your zone council change the times that fishing is allowed?	24.1	75.9

Table 3
Question: "What is the most serious problem facing the lobster industry?"

Coded response	1997		2009	
	N	%	N	%
Overfishing (too many traps/fishermen)	528	46.0	159	24.9
Cost-price			223	34.9
Regulations/government bureaucracy	206	18.0	82	12.8
Part-timers/full-timers	66	6.0		
Whale regulations			70	11.0
Bait scarcity			18	2.8
New entrants	39	3.0		
Illegal activity			14	2.2
Lack of trap limit	28	2.0		
Other	276	25.0	73	11.4
Total responses	1,143		639	

with the whale issue and attempts of the federal government to impose a 475-trap limit under the Sustainable Fisheries Act. In 2009, when we asked the same question in our mail survey, another mix of problems came to the fore. Now, the largest number of fishermen said economic problems were the most important, followed by too many traps and overfishing. Third was government intervention and regulation. A sizeable number also mentioned problems with bait availability and the right whale.

Problem 1: trap congestion and overfishing

The problem of trap congestion has plagued the lobster industry since the 1950s, when the first bills for trap limits were introduced into the legislature (Acheson 2001). After passage of the Zone Management Law, many fishermen hoped that implementation of trap limits and then limited-entry rules would result in fewer traps being fished. Instead, the number of trap tags sold increased appreciably due to large numbers of people responding to opportunities in the booming lobster industry (Acheson 2003). In 1997, lobster fishermen bought a total of 2.6 million trap tags; in 2007, they purchased 3.2 million tags, a 19% increase (Maine Department of Marine Resources 2008). To be sure, not all of these trap tags are actually fished, but many observers of the industry are certain the number of traps was increasing up until 2007.²

Problem 2: economic problems

Lobster fishermen are caught in a serious cost-price squeeze.

The cost of bait has increased by about 500% in 10 years. In 2000, a barrel of bait cost about USD 25; in March 2010, it cost USD 150 (Plante 2010). Fuel price has also increased. In 2002, fishermen paid an average of USD 1.30/gallon; in August 2008, it was more than USD 5.00/gallon though it has since declined. A 36-foot boat might have cost USD 125,000 in 1998; the same boat would have cost USD 350,000 in 2007. At the same time, revenues to lobster fishermen dropped appreciably in 2008. In 2007, the annual average ex-vessel price of lobster was USD 4.43/pound. In the summer of 2008, the average ex-vessel price was USD 3.50/pound, but in the fall of 2008 the ex-vessel price fell to USD 2.00/pound for a period of weeks when the lobster catch was at its highest (Hewitt 2008). Since fishermen could not make enough to pay expenses with these low ex-vessel prices, many pulled their traps and ceased fishing by late November 2008. In 2008, the value of the Maine lobster catch was USD 235.5 million, USD 50 million less than it was in 2007 (Trotter 2009b). The pattern of low ex-vessel prices persisted through 2009 and into 2010.

Although there are no reliable figures available, it is clear that the decline in revenue combined with increasing costs has put many lobstermen in precarious financial straits. Of the 657 fishermen in our 2009 survey who answered the question about their plans for the future, 51 (7.7%) said they would leave the industry or might leave the industry; another 331 (50.4%) said they would remain in the industry, but that it would be difficult for them to do so. Industry leaders predicted that fishermen would not be able to make their boat payments and would be driven out of business. An indeterminate number of fishermen have dropped out of the industry and more will likely follow.

Problem 3: bait

The price of bait has been rising for several years, and in the fall of 2008, a serious bait shortage developed. Some dealers had no bait to sell to fishermen. The shortage was caused by a shutdown of the herring fishery, which provides 85% of the bait, because the annual quota had been caught. A disastrous shortage was averted when the Atlantic States Marine Fisheries Commission (ASMFC), which manages the fishery, allowed herring fishing for seven additional days in the fall of 2008 (Plante 2008). More shortages and higher prices occurred in 2010 because the supply of bait was cut by a 41% decrease in the herring quota by federal fisheries managers (Plante 2010). One of the lobster zone chairmen said he was more worried about the bait situation than anything else. In interviews, fishermen with many traps said their bait bill was USD 30,000–35,000 per year.

Problem 4: the right whale situation and the Endangered Species Act

In 1996, the zone councils helped the DMR frame an industry-wide response to a lawsuit brought to protect right whales (Commercial Fisheries News 1997). In the years that followed, conservation organisations dedicated to protecting the right whale have lobbied ceaselessly for more regulations.

In 2008, the Atlantic Large Whale Take Reduction Team passed a rule outlawing the use of floating groundlines (rope between traps) to help prevent whale entanglements. Although fishermen protested for several months, that rule went into effect in April 2009; it is estimated that changing rope cost an average lobster fisherman USD 8,000 (Commercial Fisheries News 2008). Worse is likely to come because the Atlantic Large Whale Take Reduction Team is beginning to discuss the next phase of the whale-protection programme, including reducing the use of vertical lines. Reducing vertical lines could force major changes in the lobster industry, including more trap limits or changes in the number of traps fished on a line (Commercial Fisheries News 2009). A group of scientists is going further and calling for the end of all lobster fishing with gear using vertical lines (Stevens 2008). In the meantime, a Massachusetts fisherman was sued by Max Strahan, a whale conservationist, for entangling a right whale with his lobster gear (Stevens 2009).

Stricter trap limits

Interestingly enough, it is being argued that all of these problems could be solved by stricter trap limits (Trotter 2009c). Stricter trap limits, proponents suggest, would reduce the cost of traps, and should result in substantial savings in bait and fuel. In addition, fishermen with fewer traps would be able to operate with smaller boats, which cost much less, and presumably they would not need stermmen much of the time. Of course, fishing fewer traps would reduce trap congestion and help to reduce the amount of bait used and the probability of a bait shortage. Moreover, reducing the number of traps would reduce the number of vertical lines in the water and the threat of a serious lawsuit against the entire industry under the Endangered Species Act.

There is experimental evidence that reducing traps would greatly increase the catch-per-trap haul. In the fall of 2005, Carl Wilson, head lobster biologist of the DMR, conducted an experiment off Monhegan Island in which he compared the catches in specified areas that each covered approximately one square nautical mile with three different trap densities: 50, 150, and 500 traps. He found that comparing the 150-trap and 500-trap densities (66% fewer traps), the 150-trap densities caught 87% of the number of lobsters caught in the 500-trap densities (Trotter 2009c). The reduction in trap density produced a 143% increase in the pounds per trap hauled. These results indicate that if all fishermen in an area reduced the number of traps they fished, there would be a great increase in trap efficiency.

Fishermen's attitudes about stricter trap limits

Since fishermen identify 'too many traps' as a major problem, one might think that an overwhelming proportion of fishermen would favour a stricter trap limit. This is not the case, however. In our 2009 survey, we asked: "Would you support measures to reduce the number of traps a fisherman is permitted to fish in your zone?" Of the 649 who answered this question, 47%

said yes, 44% said no, and another 8% said they did not know. When asked: "Do you approve of a tiered licensing programme such as the one currently being considered by the Lobster Advisory Council?", which would establish far stricter trap limits, only 13% of the 663 who answered the question said yes, 32% said no, and 56% said they were not familiar with it. Yet when they were asked to agree or disagree with the statement: "There are too many traps in the water in my zone", 63% of the 672 who answered the question either agreed or strongly agreed; only 14% disagreed or strongly disagreed. Certainly these results buttress our findings reported in Table 4, where an excess number of traps in the water was identified as a major problem by many fishermen. In short, many fishermen believe there are too many traps in the water; but far fewer want their zone council to pass more stringent trap limits.

The reasons for fishermen's reactions were revealed by data out of my 2010 follow-up phone interviews. One open-ended question in the original survey was: "Do you favour a stricter trap limit than the one in force in your zone at present?" In the telephone interview, I asked the respondents the reasons for their answer. The results are summarised in Tables 4 and 5.

Those advocating for a lower trap limit (Table 4) believe that the industry is inefficient. In their view, having a lower trap limit will increase profits by reducing expenses for fuel and bait, reduce trap tangles, and increase catches per trap hauled. Others generalised by saying that a stricter trap limit would increase efficiency. A lower trap limit, they assume, would result in gains for everyone.

Table 4
Reasons given for favouring a stricter trap limit (N=61)

Coded reason	Number responses	% Responses
Crowding	44	23.0
Costs of bait	41	21.5
Costs of fuel	41	21.5
Efficiency	40	20.9
Monhegan/Swan's Island successful with fewer traps	10	5.2
For it, but not fair to young guys or big fishermen	6	3.1
Yes, but control entry	4	2.1
Other	5	2.6
Total responses	191	

Table 5
Reasons given by those not favouring a reduction in traps (N=60)

Coded reason	Number responses	% Responses
Would reduce catch and income	25	28.4
Trap build-up (by part-timers and new entrants)	28	31.8
No overcrowding in my zone; in/out ratios working	14	15.9
Against reduction, but know it would save	9	10.2
Don't believe Monhegan experiment would work elsewhere	2	2.3
Want to work hard, not part-time	2	2.3
Total responses	88	

The fishermen who do not favour a trap limit (Table 5) have a more complicated set of reasons for their political position. Of these, 25 said that a stricter trap limit would reduce catches and income. Most argued that income is a function of effort. To get high earnings, you need to work hard and use a lot of traps. Ten of these people also mentioned that a stricter trap limit would not reduce the costs of bait and fuel because “you would have to pull them more often and bait them more often”. A few of these people also mentioned the aquaculture hypothesis—the idea that the large number of traps offers lobsters a large amount of food, which positively influences the stock size. “We’re growing them ourselves”, one fisherman said.

Twenty-eight lobster fishermen said they were against stricter trap limits because of the trap build-up problem. These respondents said that the first trap limits did not work because new entrants to the fishery and part-timers expanded the number of traps they fished, resulting in an increase in the total number of traps. One said: “I am not going to take traps out of the water only to see someone with another job put them back in.”

Still other people opposed a lower trap limit because, they said, it was not needed. Many said there was no overcrowding where they fished. Others said even though there were currently a lot of traps, the problem would soon be solved by limited-entry rules, which are reducing the number of fishermen. Two said the Monhegan experiment did not prove that a lower trap limit would result in an increase in catch per trap. One said: “Monhegan has a unique ecology so that one cannot assume that the same results will occur in other locations.”

The follow-up phone survey revealed that many full-time fishermen are filled with calumny about part-timers, who are seen as doing something unfair. One said: “They [part-timers] have another job and then they come down here in the summer and take our lobsters.” Many of those who do not want stricter trap limits assume that their fishing a large number of traps will cause no problems as long as others fish small numbers of traps. The problem, in their view, is how to stop part-time fishermen from expanding the numbers of traps they fish. The politics of the trap limit reflects this situation. The big fishermen with their allies in the Lobster Advisory Council worked successfully for a limited-entry law, and a law limiting the speed with which new license holders could expand their operations. For similar reasons, they tried, but did not succeed in getting a tiered licensing programme.

The 2010 follow-up phone interviews revealed still another reason for fishermen to oppose stricter trap limits—namely, the idea that industry inefficiency will work in their favour. They feel certain that they can remain in the industry, while the cost-price squeeze will wipe out their competition.

Factional politics and the possibilities for stricter trap limits

Factional politics has the lobster industry at an impasse regarding the prospects for a stricter trap limit. Even though a majority of fishermen in the 2009 survey said they would support lower trap limits, there has been no move to get lower

trap limits. There are a number of reasons why no such rules are likely to be devised in the near future. First, the lobster management zone councils are not likely to recommend lower trap limits because referendums need to be approved by two-thirds of those voting. Based on our 2009 survey results, in no zone did two-thirds of the license holders favour a lower trap limit. Second, no zone council is likely to recommend such a referendum because the vast majority of the zone council members are full-time fishermen who are against stricter trap limits (see Acheson and Acheson 2010).

Some fishermen, frustrated by inaction on the part of the zone councils, have quietly suggested that the commissioner of the DMR ask the Marine Resources Committee of the legislature to frame a bill for a lower trap limit. Neither the commissioner nor the Marine Resources Committee is likely to do this. The DMR is mandated to promote conservation of the resource. A lower trap limit would help fishermen financially, but it would not have any effect on fishing mortality unless a very low trap limit was enforced (i.e., less than 300 traps) (Carl Wilson pers. comm. 2008). Passing laws to help fishermen earn higher profits is not in the purview of the commissioner. The fact that all of the zone councils would not support a bill for a lower trap limit gives the commissioner an additional disincentive to act. The Marine Resources Committee of the legislature will not act on any such measure unless it has overwhelming support in the industry. In a few instances, the legislature will vote in favour of measures in the common good. Usually, however, they count votes before doing anything. In the current climate, a small majority of fishermen favouring lower trap limits is not sufficient to motivate the legislative committee to frame such legislation.

No one can predict accurately whether Maine’s lobster zone councils or the legislature will pass regulations to lower the trap limit. If the past provides any insight, industry factions will play a key role in blocking or motivating changes in trap limits. But the factions currently emerging around the trap limit issue are complex. There are people with different views and motives, and many could be persuaded to change factional allegiance, perhaps suddenly, if conditions change. Bailey (2001) points out that factional politics are inherently unstable (and nasty) because people are motivated solely by self-interest and can quickly abandon one side and join another if it is to their advantage. Loyalty plays no role.

Several factors working singly or in tandem could change the strength of factions and the possibilities for a stricter trap limit. Costs of fuel and bait are likely to increase, which could lead more fishermen to favour lower trap limits to increase profits. Other factors are increasing the number of part-time fishermen. The average age of fishermen is increasing. Many full-time fishermen are taking part-time jobs. Both sets of fishermen are fishing fewer traps, and they might join those calling for lower trap limits to increase the proportion of traps they have on the bottom. Moreover, if history is any guide, outside intervention could result in a lower trap limit rule. Demand for fewer traps in the water could come from a lawsuit to protect the right whale under the Endangered Species Act, or actions of the National Marine Fisheries Service under the Sustainable Fisheries Act. It

should be recalled that the original trap limits were developed, in part, because the NMFS was seriously discussing imposing a trap limit in 1996.

The future

There appears to be a serious downward trajectory in the effectiveness of the Maine lobster zone councils. Shortly after they were founded in the late 1990s, they passed some critically important rules—namely, the first trap limits and limited-entry rules. Since 2000, individual zone councils have tried to solve problems in their zones (i.e., the grey zone problem, boundary problems between Zones F and G), but no rules have been passed for the industry as a whole. Meanwhile some serious problems have built up, including increased trap congestion, the bait problem, a cost-price squeeze, and the threat of actions to protect right whales. All of these problems could be alleviated or solved by the imposition of still stricter trap limits. To date, the zone councils have not taken any action on any of these problems, and they show no signs of doing so.

The question then becomes: will the zone councils, the state of Maine, and possibly units at the federal level (i.e., NMFS and the ASFMC) be able to coordinate efforts to fashion effective strategies to solve these problems? If the zone councils play no role in solving the problems currently facing the industry, the action will pass to other units and the zone management system may wither on the vine. The ability and willingness of the zone councils, commissioner of the DMR, the Lobster Advisory Council, and the legislature to work together to address these questions will likely dominate the politics of lobster management for the next several years.

CONCLUSION

Collective action and factional politics

The Maine lobster industry is unusual in that it has had great success in solving the collective action problems it faces by promulgating rules to constrain individual action. In recent years, some of the most important lobster management rules have been passed under the new co-management system. Work by Knight (1992) is especially applicable to understanding the genesis of rules in the Maine lobster industry (Acheson 2003). Knight (1992) hypothesises that rules come about in the aftermath of negotiations over distributional rewards. That is, rules rarely allocate resources to different groups of people. People know this and strive to negotiate rules that will benefit themselves most. Those with most power will usually be able to negotiate rules favourable to themselves; those with less power will have no other option but to accept those rules since they cannot do better (Knight 1992). Virtually all of the current laws governing the lobster industry, including the minimum-size regulation, the maximum-size regulation, the V-notch law, and traps-only law were passed by the legislature in response to lobbying by powerful industry factions (Acheson 2003). This is also true of the rules developed by the co-management

governance system. Factional politics is nothing new on the Maine lobster scene.

Factions and cross-scale cooperation

What are the characteristics of factions and coalitions that are able to impose rules on the industry in a co-management environment? Oran Young (2002: 266) writes of co-management systems: “The key to success lies in allocating specific tasks to the appropriate level of social organisation and then taking steps to ensure that cross-scale interactions produce complementary rather than conflicting actions.” Our analysis strongly buttresses Young’s statement about the need for cooperation between organisations at different scales. In the Maine lobster co-management system, rules and policy come about when there is an effective coalition between a powerful faction of fishermen and officials and agencies of government. Without such cross-scale cooperation, nothing happens.

In the short history of co-management in the lobster industry, there are eight events that demonstrate this hypothesis. Five involved successful attempts to get rules, while three were unsuccessful. First, the trap limits imposed in all of the zones in 1997 and 1998 are the result of a strong coalition of small and part-time fishermen that passed trap-limit referendums with such high margins that the commissioner could only impose trap limits of 600 or 800 on all the zones. Second, in 1998, a trap tag freeze was imposed by the legislature after it was recommended by the commissioner and the Lobster Advisory Council with the support of the big fishermen. Third, the limited-entry law was imposed by the legislature on the advice of the commissioner and the Lobster Advisory Council, reflecting the wishes of many big fishermen. Fourth, buffer zones were created by agreement of the zone councils involved, in coordination with the commissioner. Fifth, Monhegan and Swan’s Island were able to enter into agreements with the commissioner for departmental regulations and laws giving them special conservation-zone status with strict trap limits. Finally, in 2010, islands got a law establishing a special waiting period, which allowed island fishermen to get a lobster license faster than people from mainland towns. Passage of this law involved a coalition of island fishermen, the commissioner, members of the legislative sub-committee on marine resources, and the Island Institute, a private organisation.

There are at least three instructive cases where no rule was forthcoming. First, Zone A fishermen could not get rules for the grey zone because they could not form an effective coalition with the state of Maine and the US State Department and Canada’s External Affairs to negotiate the international border between Cutler, Maine, and Grand Manan Island (New Brunswick). The probability of a successful negotiation would have been improved had the state of Maine and the US State Department become involved and negotiated with their counterparts in Canada. Second, Isle au Haut failed to get an exclusive conservation zone because it could not persuade a committee appointed by the legislature, i.e., the Sub-zone Task Force (Acheson 2003), to make such a recommendation. Third,

in 2009–2010, an effort to get a stricter trap-limit rule was not successful even though it was supported by a large proportion of small fishermen and the commissioner. The gridlock was caused by the opposition of an influential coalition of big fishermen who have unusual strength on the zone councils.

In summary, rules are not forthcoming when they do not have the support of two different governance units at two different scales. When industry attempted to get rules without the support of any state or federal agency, they failed. In the entire history of lobster management under the co-management system, there is only one instance of a rule being imposed by actions at one level—namely the 49/51 per cent rule imposed by the commissioner to help solve the zone boundary problem. Even if support comes from two different scales, efforts will fail if they are opposed by a powerful industry faction. What this means is that if one wants to understand the genesis of lobster-conservation legislation under co-management, one must understand not only the politics of industry factions and the zone councils, but also the complicated, strategic interaction between industry factions and higher levels of government. Sometimes the rules and policies produced are optimal from the point of view of the industry. Sometimes they are not in the common good. This is not surprising given the fact that powerful industry factions operate to get rules to benefit themselves in spite of the effects on others (Knight 1992).

Strengths and weaknesses of co-management

One of the themes that runs through the literature concerns the advantages of co-management. Proponents argue that co-management rules will be regarded as sensible, effective, and legitimate, thereby reducing enforcement costs (Pomeroy and Berkes 1997; Lane 2001; Jentoft 2003; Wilshusen et al. 2003; Hoffman 2009). Pomeroy (2003) points out that government action legitimises and empowers local-level structures, while Wilson (2003) argues that alliances with government give local-level institutions access to resources they would not have otherwise. Ostrom (2005: 269–270) points out that co-management allows such systems to overcome the problems of both local-level management and top-down management.

The Maine lobster co-management system underlines the fact that if co-management has advantages, it also has the disadvantage of being very fragile. Co-management in Maine works well only when a powerful coalition of fishermen and government agencies coordinate their efforts. If this does not happen, then gridlock occurs. The Maine lobster co-management experiment has seen several examples of gridlock, most notably in the efforts to get a stricter trap limit in 2008 and after. The fact that cooperation is necessary from units at two different scales gives both local factions and government units a huge club they can use to stop anything from happening. Many writers on co-management seem to assume the government is the dominant partner in co-management arrangements, one that is somehow above

the fray (e.g., Wilson 2003). In the Maine co-management system, the government appears to be the dominant partner. The legislature is the only entity empowered to pass laws, and the commissioner must formally approve all actions and referendums voted on under the zone council system. The law makes the zone councils advisors to the commissioner. In actuality, however, the lobster industry has a good deal of power. The Maine DMR commissioner has never refused to pass a referendum. “The broad democratic foundations of the councils” make it virtually impossible for the commissioner to overturn their actions (Loucks et al. 2003: 163). The co-management system gives the councils a good deal of power that they have used to stymie the commissioner and his wishes. In Maine, neither the state agency nor the zone councils are preeminent. They hold each other in a state of mutual vulnerability. The inertia in the Maine co-management system, where lower trap limits have not been established, demonstrates that ICCAs and other forms of co-management will not always solve conservation problems.

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Notes

1. No fisherman is legally allowed to take lobsters with eggs. If they want, they can voluntarily cut a notch in the tail of a lobster with eggs. That lobster cannot be legally taken as long as the notch lasts (about two to three moults). Thousands of fishermen cut notches in the tails of the egged lobsters they catch to help conserve the proven breeding stock.
2. Data indicate that the mean number of traps fished by individual fishermen has peaked and may be beginning to decline. Our 1997 survey showed that the mean number of traps fished in our sample was 552; our 2009 survey showed that respondents reported fishing an average of 513 traps in 2008.

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