Dispute Settlement in the Newfoundland Inshore Fishery

A Study of Fishery Officers' Responses to Gear Conflicts in Inshore Fishing Communities

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ABSTRACT Dispute settlement is integral to fishery officers' regulation of the Newfoundland inshore fishery. Fishery officers act as mediators in disputes relating to a variety of fisheries utilizing different gear types. Drawing upon interview data with 51 fishery officers, it will be shown that they make reference to usufruct, or informal rules used by local fishers, in the settlement of many disputes. Moreover, even when they enforce regulations in dispute settlement, fishery officers prefer a flexible rather than strict implementation of rules. However, disputes cannot be reduced to personality differences between inshore fishers. Many disputes are rooted in the ecological conditions of inshore fishing communities. But, the disputes between small boat and longliner fishers are a consequence of state policies which have generated inequality within the inshore fishery. The paper concludes by arguing that given recent changes in the inshore fishery and the fishery officer occupation, the future of dispute settlement is away from mediation and towards strict enforcement.

Introduction

Dispute settlement is intrinsic to the day-to-day operation of the Newfoundland inshore fishery. Data collected in interviews with fishery officers located in the Canadian Department of Fisheries and Oceans' (hereafter – DFO) Newfoundland Region, show that fishery officers settle a variety of conflicts among inshore fishers. These include: disputes over berth draws and rights to access, conflicts among owners of fixed gear and conflicts between fixed and mobile gear owners. In dealing with gear conflicts, fishery officers act as mediators balancing usufruct or use-relations derived by local communities and formal DFO rules. Mediation is the norm, enforcement is the exception.

It will be argued here that disputes have their roots in the ecological and social contexts of the Newfoundland inshore fishery. In particular, it will be argued that conflicts among fixed gear owners, and especially the conflicts between fixed and mobile gear users, are due to state policies which encouraged rapid expansion and social differentiation within the inshore fishery. Moreover, the current crisis in the Atlantic Canadian fishery will only serve to entrench and intensify conflicts.

Finally, it will be shown that the DFO response to this crisis is to intensify enforcement. This will result in a shift from the compliance-based policing, currently prevalent in Newfoundland's inshore communities, to deterrence-based

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policing emanating from organizational directives. Recent DFO policy is based upon bureaucratizing the recruitment, training and location of fishery officers. This is accompanied by measures to intensify surveillance of inshore waters. Given this, fishery officers future handling of disputes is oriented towards the courts rather than towards mediation on the fishing grounds.

"Policing" the Inshore Fishery

According to Wilson (1968) and Ericson (1982), police officers tend to resolve disputes at their point of origin. That is, they practice "order maintenance" rather than strict enforcement. Moreover, rural police officers make reference to both community and legal norms in their day-to-day work (Banton 1964; Cain 1973; Decker 1979). Reiss (1984) and Kennedy (1990) refer to this practice (among police officers in general) as compliance-based policing. Local and formal rules are used as a basis for conflict management, rather than enforcement. These observations are relevant to our consideration of fishery officers.

Studies of inshore fishing communities have demonstrated that informal, as well as formal rules, are used in regulating access to the fishery (Martin 1979; Davis 1984; McCay and Acheson 1987; Matthews and Phyne 1988). "Policing" is not restricted to DFO rules.

Davis's (1984) study of Port Lameron Harbour, Nova Scotia, demonstrates the existence of usufruct or use-relations in regulating access to the community's coastal waters.[1] According to Davis: "Claims of ownership and control of property is centred in the community, and individual use rights are derived from membership in the community" (1984:146). In short, the community defines and "polices" access to the resource. Davis (1984) goes on to argue that when fishers from a nearby community persisted in setting gill nets in Port Lameron Harbour, these were removed because their presence violated both usufruct relations and local fishers rights to a livelihood. Below it will be shown that in dealing with some fixed gear disputes (especially berth draw disputes), Newfoundland fishery officers often make reference to the usufruct relations of fishing communities.

Sometimes local norms are codified. Martin's (1979) study of space allocation in Fermeuse, Newfoundland shows how local small boat fishers, using handlines, had a rule passed preventing longline fishers from setting gill nets in community waters. This rule was codified by a forerunner of the DFO and enforced by the local fishery officer. However, Martin (1979) argues that the fishery officer only involved himself with disputes between handline and gill net fishers if a complaint was lodged. The data presented below shows that fishery officers take a similar passive stance in regulating gear conflicts, even when they have the prerogative to enforce DFO rules.

The contemporary Newfoundland inshore fishery consists of both informal and formal rules. Inshore fishers still refer to local customs within the confines of formal DFO rules. For example, while inshore fishers agree with federal licensing policy, they also use local rules such as cod trap berth draws and the allocation of gear types within specific areas (Matthews and Phyne 1988). In interviews

with 144 inshore fishers located in six communities, Matthews and Phyne (1988) discovered that in five of these communities traditional rules remain in controlling access to local fishing grounds. However, this combination of usufruct and formal rules is a transitional phenomenon in the "bureaucratization" of the inshore fishery (cf. Thiessen and Davis 1988). The current trend is toward the greater use of formal rules (cf. Haché 1990). While this trend is the direction for the future, fishery officers will be shown to refer to both usufruct and formal rules in regulating conflicts in the inshore fishery. The current emphasis is upon compliance in order to avoid future conflict (cf. Reiss 1984; Kennedy 1990).

Methods

The data on dispute settlement were collected during a larger study concerning the relationship between managerial control and workers' discretion in the fishery officer occupation (Phyne 1988). On the basis of structured interviews, data were collected on fishery officers' discretionary role in mediating a variety of disputes.

The data on dispute settlement were collected on the basis of questions which examined fishery officers' public relations role. These questions (and the interview schedule in general) are based upon the job description outlined in *The Fishery Officer Career Log* (cf. Fishery 1984).[2] Since all fishery officers were familiar with this document, the researcher decided to examine the relation between the job description and actual work and discretionary practices of fishery officers. The public relations role was recognized by 86.3 per cent (n=44) of the respondents. Questions included: "When you are working in the area of public relations, what groups of people are you most likely to deal with?"; "Do you think public relations is important?" In answering both of these questions, fishery officers emphasized public relations as a device to be used in dispute settlement.

Respondents were selected from a population of 85 fishery officers situated in the island portion of the DFO's Newfoundland Region.[3] From this population, interviews were conducted with 23 senior and 28 junior officials.[4] Interviews were held from May 1 to August 3, 1985. Since data were collected at the height of the inshore fishing season, fishery officers were able to draw upon immediate experiences in their discussion of dispute settlement.

Due to budgetary and time constraints, data collection had to be restricted to structured interviews. Unfortunately, it was not possible to draw upon ethnographic information from local fishers directly involved in gear disputes. Despite this, fishery officers' views are not divorced from local settings. Among the 51 fishery officers interviewed, 86.3 per cent (n=44) were born and raised in rural Newfoundland. In addition, 27.4 per cent (n=14) are the sons of inshore fishers and 25.4 per cent (n=13) are former inshore fishers. Hence, many fishery officers have had some direct experience with the usufruct relations they describe as being a basis for resolving gear disputes.

Finally, although no ethnographic data were collected on inshore fishers' views of gear disputes, data presented by Matthews and Phyne (1988), Davis and Kasdan (1984) and Kearney (1989) will be used to demonstrate inshore fishers' views of usufruct relations. Such views are integral in determining how fishers interpret what constitutes conflict, and the relations fishers have with fishery officers in resolving conflicts.

Dispute Settlement in the Newfoundland Inshore Fishery

Fishery officers are involved in a variety of disputes in the Newfoundland inshore fishery. Data will be presented concerning three types of disputes: berth draw and rights of access disputes, conflicts among owners of fixed gear and conflicts between owners of fixed and mobile gear. As we shall see, these conflicts cannot be reduced to technological disputes. On the contrary, conflicts often occur during the intersection of different fisheries within the narrow ecological niches of coastal communities. Moreover, fishery officers settle disputes by reference to informal and formal rules. Throughout, it will be shown that fishery officers, like police officers, use compliance-based policing in settling disputes (Reiss 1984; Kennedy 1990).

Berth Draw Disputes and Rights of Access

Usufruct relations are present in many inshore fishing communities. During the early spring of each year, inshore fishing communities which have cod and/or salmon trap fisheries usually participate in a draw for fishing berths. The draw is held to ensure regulated access to the limited number of fishing berths, and is usually overseen by the local fishers' committee. Even though this is a common practice, it is by no means universal. Many communities have berths which are held by specific families and passed along to the next generation. However, in both instances, usufruct rights are used to regulate community fishing grounds for the use of fishers within the community.

Despite the existence of informal rules, conflicts over access rights may occur. Due to this, inshore fishing communities with berth draws usually invite the local fishery officer in order to legitimate the process. According to one junior fishery officer:

> We sit back and let them do what they want at berth draws. When they are completed we sign berth draw licenses. We are asked not to step in, but to let them iron out their own problems (Interview no. 47).

One senior fishery officer described how he mediated a berth draw dispute between two neighbouring communities:

> This year [...] and [...] have a joint cod trap berth draw committee. They decided they wanted to split and divide the area of control. They could not agree upon a boundary. We had several meetings with them and we got them to compromise in the end (Interview no. 26).

However, sometimes disputes cannot be resolved within a fishers' committee. One senior fishery officer referred to how he used his position to have local customs codified in one community (cf. Martin 1979).

> The regulations in the cod trap draw say no new entrants. On the other hand, one can become involved if a berth becomes available. In the past, we allowed the committee to do it, but a lot of injustice was done (i.e., friends and relatives were given berths). I proposed that a person should only be allowed to enter the berth draw if he worked with a cod trap operation for the past five years. That was accepted by the department (Interview no. 1).

This fishery officer was involved in the codification of local rules because he made reference to usufruct rights in his policy recommendation.

In dealing with disputes in berth draw committees, the fishery officer's presence is mobilized by inshore fishers. And, he makes reference to local customs in settling disputes. This also applies in cases pertaining to rights of access where berth draws are not used. One fishery officer described a case in point:

> Another beauty we get entangled with in a lot of cases is what they call traditional cod trap berths. Forty years ago someone would use a certain place to use a cod trap and it has been used down the years, and someone else will decide to use it for something else. But if someone else puts a net there he has got to take it out of there (Interview no. 30).

Another officer related a similar situation in this manner:

> In the last week a fisherman took up a cod trap for repair. When he went to replace it, someone put their trap in his place. This was not a berth draw place ... But we felt that the individual should be given a day or two to repair his trap. We talked to both parties and the guy who set his trap there removed it to let the original guy set his trap (Interview no. 12).

Hence, fishery officers act as mediators in areas where formal DFO rules are not used. They are brought into conflicts by inshore fishers to act as "impartial" enforcers of local rules. In addition, some fishery officers have participated in the codification of local rules.

Fixed Gear Disputes

While cod trap disputes revolve around the placement of gear, other fixed gear disputes are based upon the use of different gear types within a restricted harvesting space. Informal rules often govern the regulation of different gear types. According to one fishery officer:

> This year we dealt with several committees with regard to restricting the use of gill nets on fishing grounds. They wanted them off the grounds around the middle of August. The general feeling goes that way in order to help handlining and jigging (Interview no. 43).

Despite this, formal regulations are used to regulate the *distance* between fixed gear. Fishery officers rarely enforce these regulations. Moreover, they only respond to gear conflicts at the request of inshore fishers. As one officer described it:

> Settling fishing disputes is up to yourself. You got two cod traps that are supposed to be 80 fathoms apart. You may not have enough room to move 80 fathoms apart and we try to tell them: "Now boys you can't move 80 fathoms apart but move 70 fathoms apart" (Interview no. 31).

Another officer explained the situation in the following way:

> The 50 fathom thing for fixed gear (i.e., other then cod traps) – the rationale for regulation is there for us to settle disputes. If you set your own nets closer we don't care, but when other people complain we intercede to try to settle it (Interview no. 48).

In fact, although the settlement of gear disputes became part of fishery officers' duties in 1960 (Kelland 1961), they try to settle conflicts on the fishing grounds and not in the courts. They argue that all inshore fishers have a right to make a living. This also pertains to the conflicts between the users of fixed and mobile gear.

The Conflicts Between Fixed and Mobile Gear

While fixed gear conflicts may occur among inshore fishers operating out of small boats (less than 35') and longliners (motorized vessels 35' to 65'), the conflict between fixed and mobile gear operators is usually between the small boat fishery and those in the longliner fishery. The conflict between fixed and mobile gear tends to occur when longliners, equipped with purse seines, harvest capelin stocks in the vicinity of the fixed gear of small boats. As purse seiners chase spawning capelin close to the shoreline, they may interfere with both the catch and gear of fixed gear fishers (cf. Sinclair 1985). According to a junior fishery officer: "Big seiners can go through a mackerel or herring net and tear it up trying to get capelin" (Interview no. 39). This occurs although regulations prohibit mobile gear from being cast any closer than 400 metres to fixed year. Fishery officers commented that small boat fishers often complain about the use of mobile gear. As one officer noted:

> The fixed gear fishermen are complaining that purse seine fishermen are destroying the gear and taking their fish. We [settle disputes] mostly by being seen ... Last year we went out and counted 48 seiners at the front of the harbour, and if we weren't there they would have been around the fixed gear (Interview no. 21).

Another fishery officer described the situation in the following manner:

> The big problem between mobile and fixed gear is in the capelin fishery. A gear conflict is your longliners coming in and striking up your cod traps, and causing damages not only

> to your cod traps but also to salmon gear. A lot of fishermen say that the seiners are catching too many fish and taking all the cod (Interview no. 15).

However, fishery officers rarely enforce the 400 metre distance between fixed and mobile gear. One fishery officer argued that violations of the 400 metre distance only resulted in seven charges in his district in 1983 and no charges in 1984 (Interview no. 23). This is in an area where the capelin quota is concentrated. As the following comments indicate, fishery officers argue that restricted harvesting spaces and the *right* for mobile gear users to make a living precludes the use of strict enforcement:

> It is impossible because there is so much fixed gear in the water – it leaves no room for the mobile gear (Interview no. 43).

> We had the capelin fleet going in on top of the fixed gear in the [...] area and tearing it up. We instigated patrols into the area. When boats set seines too close to the fixed gear, we had to get them to move. The regulation is supposed to be 400 metres, but if we followed that to the T, there would be no mobile gear in [...] because there is fixed gear all over the bay (Interview no. 45).

> We have problems of mobile seiners for capelin shooting gear across fixed gear – they have to make a living too. So there comes your discretion. If they are not damaging the gear, I try to tell them about it. But if they are damaging it out they go (Interview no. 31).

In sum, the settlement of gear disputes results in the reproduction of the status quo. But, as the next section reveals, this status quo is full of contradictory relations between different groups of fishers.

The Social and Ecological Context of Gear Disputes

The narrow ecological niches harvested by coastal community fishers play a vital role in structuring the nature of access to fish stocks (Martin 1979; Davis 1984). And, while access to such stocks are usually regulated through usufruct relations, it has been shown that fishery officers play an integral role in using such local norms in dispute settlement.

However, all conflicts over access to coastal waters cannot be reduced to a community's ecological niche. On the contrary, many fixed gear disputes and conflicts between fixed and mobile gear users are directly attributable to state policies which encouraged both expansion and social differentiation within the Newfoundland inshore fishery. This placed excessive strains on the resources available to coastal communities, and can be illustrated through a brief examination of the longliner fishery, a fishery which utilizes both fixed and mobile gear.

According to McCay (1979), since Newfoundland joined Canada the provincial government encouraged the development and expansion of the longliner fleet. Fishers were encouraged to abandon small boats and cod traps in exchange

for a larger, more mobile vessel equipped with longlines and gill nets. Moreover, with the rapid decline in fish stocks in the late 1960s many fishers turned to these longliners as a means for moving further offshore to catch fish. Fishers were able to finance the cost of their longliner with the aid of government loans and subsidies, in addition to their 10 per cent down payment.

In 1973 longliners cost $40,000 to $60,000 and cod traps cost $3,000 to $5,000 (McCay 1979). Hence, longliner fishers had a much bigger capital overhead to cover. Since some longliner fishers use a combination of fixed and mobile gear, they are in a better position than small boat cod trap fishers to harvest fish stocks. Fishery officers argue that capelin seiners can make a lucrative income from the capelin fishery. According to one senior fishery officer:

> In terms of effort, capelin is the most lucrative fishery in this area. They can get $1,000 a tonne for capelin and they can get 20 tonnes a day. It is only a three week fishery, but in those three weeks he can make more than with all of his other licenses combined (Interview no. 1).

A junior fishery officer remarked that during economic hardship capelin seiners will ignore the 400 metre rule:

> This year a lot of purse seiners are not doing very well and there is instances where they operate closer than 400 metres from the traps and if we don't have any complaints from the trap fishermen, we turn to one side (Interview no. 27).

Hence, the conflict between fixed and mobile gear operators has a structural basis in the emergence of a capital-intensive longliner fishery from the labour-intensive small boat fishery (cf. Fairley 1985).

By the late 1970s and early 1980s, low interest rates for fishery loans (as low as 3.5 per cent) facilitated the rapid expansion of the longliner and inshore dragger fleets.[5] Table 1 shows the expansion of this fleet in the period 1978-1981. The nearshore fleet (including longliners) was taking advantage of the fact that by 1978-1979 three-quarters of the total allowable catch was allocated to the inshore fishery which consisted of all vessels under 65' (Newfoundland 1980). Table 1 shows that while the inshore or, small boat fishery (under 35') was stable between 1978-1981, the nearshore fishery rapidly expanded. This was especially evident in vessels from 35' to 45', which increased by 48.13 per cent.

By 1981 nearshore vessels such as longliners and inshore draggers, which constituted less than 18 per cent of all vessels under 65', harvested over 53 per cent of the total catch for such vessels (calculated from Navigating 1983). Hence, during the crisis of the early 1980s the small boat fishery was being squeezed by the nearshore fleet. Given these circumstances, one can see the structural basis of gear conflicts.

Atlantic Canadian fisheries are in the midst of another crisis, and once again conflicts are emerging in the inshore fisheries. One of the biggest conflicts in Atlantic Canada is between the inshore dragger fleet and small boat fishers in

Table 1. *Changes in the Inshore and Nearshore Ground Fish Fleet of Newfoundland, 1978-1981*

Type of Fishery	Size of Vessel	Number of Vessels 1978	1981	Percentage Change
Inshore	Under 35′	6342	6318	−0.37
Nearshore	35′ - 45′	590	874	48.13
	45′ - 65′	457	507	10.94

Note: This table is derived from figures in Tables 10.2 and 10.3 in Navigating (1983:208-09).

southwest Nova Scotia. The Haché Commission reports that small boat fishers viewed inshore draggers to be a "destructive fleet". During the late 1980s, the size and capacity of the inshore dragger fleet escalated while groundfish stocks and catches declined (Haché 1990).[6]

In sum, while many conflicts are rooted in the ecological conditions of inshore communities, state policies have altered the social organization of the inshore fishery. The differentiation of longliner and other nearshore producers from the small boat fishery has contributed to a competition for fish stocks. This often results in gear conflicts which have to be mediated by fishery officers. While small boat fishers are committed to fixed gear, it is clear that nearshore producers are committed to a variety of gear types, including mobile gear. And, given the current costs of many vessels within the nearshore fishery [some inshore draggers in southwest Nova Scotia cost $750,000 (Haché 1990)], producers are going to continue to use mobile gear to finance the "escalating" costs of their fishing.

The Nature of Conflict Regulation

Up to this point, data have been presented on the mediating role of fishery officers in resolving gear disputes, as well as on the social and ecological context of such disputes. Here, it will be shown that fishery officers' dispute settling role is analogous to the compliance-based role of police officers. However, recent changes in the fishery officer occupation are viewed as having negative implications for this role.

The Relations Between Inshore Fishers and Fishery Officers

The attitudes and role of fishery officers in dispute settlement reflect research findings in the literature on rural policing. Like the police officers studied by Banton (1964), Cain (1973) and Decker (1979), fishery officers make use of local norms in handling disputes. The object is to prevent conflicts from escalating into "troubles" which require legal action. By adhering to both custom and legal norms as a basis for conflict management, rather than resorting to legal action,

fishery officers are practising compliance-based regulation.

According to Reiss (1984) and Kennedy (1990), police officers in general have access to compliance-based and deterrence-based policing. For Kennedy (1990:88):

> Compliance systems seek to create law-abidingness and rely on preventive or remedial actions. This process does not necessitate the detection, processing or penalizing of violators but rather emphasizes the need to provide incentives to individuals to comply with the law or to threaten to invoke penalties for noncompliance.

This process is exemplified in fishery officers' reference to usufruct relations in dispute settlement. Here "the law" is not merely formal regulations. In contrast, deterrence-based policing is more legalistic and is based upon penalizing those in violation. The emphasis is upon arrests. Moreover, such actions take conflict out of the community and place it in the courts (Kennedy 1990).

But how do inshore fishers feel about usufruct relations as a basis for dispute settlement? More importantly, how do they relate to fishery officers? Although no ethnographic data on inshore fishers were collected for this study, research by Matthews and Phyne (1988) on Newfoundland and Davis and Kasdan (1984) and Kearney (1989) on southwest Nova Scotia, demonstrate fishers' attitudes on the importance of usufruct relations.

As it was shown earlier, Matthews and Phyne (1988) provide data on the prevalence of usufruct relations in Newfoundland. On the basis of these data, they conclude that in the midst of limited entry practices imposed by the DFO

> ... [t]raditional cooperative arrangements remain because they do regulate the resource itself. That is, they are tools of resource management ... To violate such regulations deliberately and knowingly would lead to social censure by one's peers. Most fishermen also recognize that a violation of such principles might indeed lead to a battle in which they too can only lose (1988:168).

While Matthews and Phyne (1988) do not indicate cases where fishers seek out fishery officers to resolve conflicts, they do show that usufruct relations are part of local customs. This, combined with the data on fishery officers, demonstrates that both users and regulators do not restrict themselves to legalistic criteria in settling disputes over access to the fishing resource.

But, southwest Nova Scotia is a different case. Davis and Kasdan (1984) and Kearney (1988) show that conflict between the DFO and lobster fishers occurred in 1983 because the former violated local customs in its enforcement practices. While lobster pot limitations were implemented in 1968, these were never strictly enforced. But when fishery officers persisted in hauling untagged lobster pots in the spring of 1983, local lobster fishers burned and sank two DFO patrol vessels. Fishery officers had violated local customs which dictated that "... no individual is to handle another's gear once it is set" (Davis and Kasdan 1984:119).

Hence, the respect for local customs by fishery officers in Newfoundland, even

in cases where they have recourse to legal measures, facilitates their ability to resolve conflict. It facilitates compliance-based policing. However, fishery officers in southwest Nova Scotia in 1983 were practising deterrence-based policing by directly penalizing violators in the lobster fishery. While this is not a gear conflict between different groups of fishers, it shows how fishery officers can be the *object of conflict*, rather than mediators, once local customs are ignored.[7]

The Future of Dispute Settlement and Enforcement

The data, presented above, demonstrate the existence of compliance-based policing by fishery officers within the context of a rapidly changing inshore fishery. While compliance-based policing is facilitated through reference to local norms, such norms mean little to nearshore fishers (i.e., those on longliners and inshore draggers) who participate in fisheries which *often* are not community-based.

The employer of fishery officers – the DFO – has been active in not only promoting changes in the inshore fishery, the fishery officer occupation is also undergoing changes. Fishery officers are now being recruited, trained and located in terms of the organizational directives of the DFO. This is placing greater emphasis upon enforcement, or what Reiss (1984) and Kennedy (1990) refer to as deterrence-based policing. In fact, fishery officers are being trained with the Royal Canadian Mounted Police (RCMP).[8] And the officers who have completed this training have given it a positive evaluation (Phyne 1988). One fishery officer who completed the RCMP training program recommended increased enforcement to regulate gear conflicts:

> I did a report last year and I strongly recommend more helicopter patrols for the capelin fishery. [These patrols are] wanted to mediate disputes between fixed gear capelin fishermen and seiners. I did a report for my supervisor and he passed it on to the area office in St. John's (Interview no. 15).

This fishery officer is suggesting a shift from reactive (responding to the community) to proactive (organizational initiative) enforcement in settling disputes. While this approach cannot be attributed to all fishery officers, the DFO is moving towards proactive enforcement. In that sense, it parallels the RCMP's emphasis upon greater bureaucratization and deterrence-based procedures in the policing of small towns and rural areas (Murphy 1986; Apostle and Stenning 1989).

Job quotas have accompanied the introduction of limited entry measures in the inshore fishery. These quotas structure the relation of fishery officers to inshore fishers. While fishery officers use considerable discretion in filling their job quota for the various commercial fisheries (Phyne 1990), attention is being given to stricter enforcement. The Haché Commission reported that inshore fishers wanted stricter enforcement. But, the enforcement measures favoured

demonstrated the variety of conflicts within the inshore fishery. Haché recommended stiffer fines and penalties for violations under *The Fisheries Act*. In addition, the Commission debated the use of a "black box", an electronic surveillance device which can monitor the location and movement of vessels at sea (Haché 1990). Given this, one should not be surprised if fishery officers begin to take more of a proactive stance in dealing with gear conflicts.

Reference to usufruct relations was never part of official DFO policy. However, it was recognized by fishery officers. But the ability to use such relations is clearly on the decline as the DFO completes its belated contribution to the "iron cage" of modernity (cf. Weber 1958).

Conclusion

There are a variety of conflicts in the Newfoundland inshore fishery. Some of these conflicts such as disputes over berth draws for cod traps are structured by the ecological conditions of inshore communities. Here inshore fishers "police" conflicts by reference to informal, usufruct relations. In addition, fishery officers are mobilized by inshore fishers to mediate such disputes.

All disputes are not "policed" through informal rules. Fishery officers have access to formal rules in the regulation of fixed gear disputes and conflicts between fixed and mobile gear users. However, these rules are not strictly enforced; such rules are used as a basis for dispute settlement. Fishery officers refer to the restricted harvesting spaces in inshore waters and the livelihood rights of all fishers as their basis for mediating disputes on the fishing grounds. Compliance is given preference over deterrence.

The source of all disputes cannot be reduced to the coastal geography of inshore fishing communities. On the contrary, state policies facilitated the emergence of a nearshore fleet within the midst of the small boat fishery. This, coupled with the decline in stocks, often results in gear conflicts between the labour-intensive small boat fishery which uses fixed gear, and the capital-intensive nearshore fleet which uses a combination of fixed and mobile gear. In acting as mediators in gear disputes, fishery officers are reproducing a status quo of unequal property relations.

Nevertheless, enforcement is moving away from a compliance to a deterrence-based emphasis. This is reflected in the bureaucratization of the fishery officer occupation and increased calls for more surveillance and enforcement. As a result, one should not be surprised if fishery officers take a more proactive stance in dealing with gear disputes.

The inshore fisheries of Canada are witnessing a decline in usufruct relations. While a wholesale return to usufruct rights is improbable, the way to move ahead is to involve coastal communities more directly in "policing" access to the fishery. Decision-making within the community is ultimately preferable to the dictates of either market-driven capitalism or command socialism, and the bureaucratic ethos espoused by each (cf. Thiessen and Davis 1988).

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Notes

1. Usufruct, or use relations, constitute the use of informal or local rules in the regulation of resources. These rules define common property resources such as fisheries as the property of the community. Community members participate, at an informal level, in regulating access to common property resources. Hence, property rights are not derived from individual ownership. On the contrary, communal rather than individual rights take priority. However, recent public policy is oriented towards undermining communal rights with licensing policies which encourage individual ownership. For more details, see Davis (1984); McCay and Acheson (1987); Matthews and Phyne (1988) and Thiessen and Davis (1988).

2. *The Fishery Officer Career Log* lists the following job responsibility areas: resource management, habitat management, enforcement, public relations, administration, supervision, enhancement and related duties. For more information on these job areas, see Phyne (1988).

3. The Newfoundland Region consists of the east, northeast and south coasts of the island of Newfoundland, as well as all of Labrador. The west coast of the island of Newfoundland is administered from the Gulf Region, which has its headquarters in Moncton, New Brunswick.

4. Among the sampling population, there were 27 senior officers and 54 junior officials. There were also four recruits. An attempt was made to interview all of the senior fishery officers. In addition, on the basis of a proportionate sampling method, an attempt was made to interview 50 per cent of the junior fishery officers from the three administrative areas of the island portion of the Newfoundland Region. Interviews were conducted with 23 senior fishery officers, 25 junior fishery officers and 3 recruits. Since the DFO considered the latter to be junior fishery officers, they were included among those officials in the analysis of the data. For more details on the research design and sampling methodology, see Chapter Three in Phyne (1988).

5. While the inshore dragger fleet has a noticeable presence in the shrimp fishery of northwestern Newfoundland (see Sinclair 1985), this fleet has rapidly expanded in the inshore fishery of southwestern Nova Scotia (see Haché 1990).

6. The Haché Commission (1990) was established to investigate the crisis in the groundfishery in the Scotia-Fundy Region. (The region includes all of Nova Scotia with the exception of the waters on the Gulf of St. Lawrence. It also includes the Bay of Fundy Region of New Brunswick.) The crisis became apparent in the late 1980s with the rapid depletion of groundfish stocks including: cod, pollock and haddock. The crisis was attributed to a number of factors, especially to the expansion in the capacity of inshore draggers in southwest Nova Scotia. Haché stated that stricter controls be placed on the capacity of the inshore dragger fleet. In addition, he recommended that greater surveillance of inshore waters be conducted by the DFO. Critics also claim that the decline in groundfish stocks is due to overfishing by foreign and domestic offshore trawlers.

7. Kearney (1989) points out that disputes over limitations in the lobster fishery in southwest Nova Scotia are still a point of contention between different fishers' organizations and the DFO. The differences between Newfoundland and southwest Nova Scotia, and the implications of such differences for the discretionary role of fishery officers is expanded upon in Phyne (1990).

8. All federal fishery officers have to take a six week training program with the Royal Canadian Mounted Police, Canada's national police force. This program emphasizes: weapons training, self-defense, legal instruction and defensive driving. At the time of this research, 52.9 per cent (n=27) of the officers interviewed had taken this training program.

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Discussion

Comment on Sinclair's "Fisheries Management and Problems of Social Justice: Reflections on the Northwest Coast of Newfoundland"

(*MAST* 3(1):30-47).

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It is hard to quarrel with Sinclair's main thesis that fisheries policy is, in essence, social policy and that the core of fisheries policy and the proper management of the resource rests, or should rest, on a broad understanding of how people in fishing regions make a living.

But it is no contradiction to say that, like the Russian doll, inside the social core lies, or should lie, another consisting of the ecological.

In Canadian fisheries policy formulation, certain biological factors, such as the total stock biomass, are often taken as constraining factors. But general ecological concerns are not taken as relevant, let alone decisive, in establishing the limits of our intervention into the marine resource complex.

Indeed, fisheries biologists are only now starting to recognize, and struggle with, the ecological relationships between related commercial fin-fish species (e.g., the predator/prey relationship between cod and caplin). These first steps at multi-species management show clearly that the very conceptual structure of present day fisheries management techniques makes a more innovative approach very hard to conceive, let alone achieve, however necessary such a new start may be.

But it should be well worth the effort, as I suspect that a "start with the ecology first" approach would be a powerful tool in reorganizing our thoughts as to how we should approach proper fisheries management issues generally.

In the past, when the level of fishing effort and the type of technology in use were, at least in a general sense, relatively less harmful to the marine ecosystem, such an approach may not have been as necessary.

But with the escalating change in modern fish catching technology, this is no longer the case. This is particularly true with respect to the complex of electronic/mechanical technologies which, since the Second World War, have been added to the much older bottom-dragging trawl technology.

As with the Gulf cod stock discussion by Sinclair, similar, if nor quite as advanced, problems exist with respect to the much larger cod stocks which reside on Newfoundland's east and Labrador coasts - the so-called northern cod stocks.

On the basis that fisheries management is as much an environmental issue as anything else, the Newfoundland Inshore Fisheries Association (NIFA) (un unlikely coalition of inshore fishermen, fish plant operators, fish plant workers and others) has worked to de-

velop links with such main-line environmental groups as Greenpeace, the Canadian Environmental Defense Fund, the Worldwide Life Fund and others.

From an ecological point, the east side of the Gulf of St. Lawrence, the area of Sinclair's study, is relatively small and capable of definition and study. As well, the limited range of catching technologies, user groups and regional interests should admit of clear analysis, leading to more effective decisionmaking.

For instance, the entire migratory range of the commercial stock of most interest, the so-called 4RS/3Pn cod, lies solely within Canada's 200 Mile Limit. Thus failure in management can not be attributed to the depredations of the "evil" foreigner.

The 4RS/3Pn cod stock winters in the area known as 3Pn on the southwest coast of Newfoundland (Cape Anguille to Burgeo) and then, for the most part, migrates north to spend its summers in the northeast corner of the Gulf (4R) and along the lower North Shore of the Province of Quebec (4S). It reportedly spawns in early spring at the midpoint in its range (4R).

Prior to the 1950s, the fishery on this stock was pursued in the main as follows.

During the winter, there was a highly-successful Lofoten Islands-style, hook and line fishery on concentrations of cod along the southwest coast from Cape Anguille to Burgeo mostly by local, small boat fishermen.

During the summer, there was an equally-successful inshore, small boat cod trap fishery 250 miles to the northwest on the west side of the Northern Peninsula of the Island of Newfoundland and along the Lower Quebec North Shore.

The levels of effort and types of technology used in these traditional fisheries did not apparently harm the stock or its relevant ecosystem.

However, when large-scale, mainly European, trawler activity began in the early '50s, the stock started to decline. This continued until the declaration of Canada's 200 Mile Limit in 1977, subsequent to which there was a rebuilding of the stock; catches reached a post-1977 (some say historic) peak of 106,000 in 1983.

Unfortunately, as Professor Sinclair has alluded, in the early 1980s, the Federal Government of Canada adopted a policy of promoting an inshore dragger fleet (less than 65' in length) which has not only ruined the fixed gear fishery in the Northeast Gulf but also the winter hook and line fishery on the southwest coast. Catches for all sectors have decreased to 47,000 tons in 1989 and will be even lower in 1990 (Advice 90/5); in 1990 winter hook and line catches were virtually nonexistent.

On this basis, Sinclair's analysis of impacts in the northeast Gulf should be extended to the impact of the inshore dragger fleet on the fixed gear winter fishery on the southwest coast.

That such an internal Canadian catastrophe should occur raises many questions as to the methods used by Canadian fisheries managers. The current system seems to suffer greatly by the fact that fisheries scientists do not have sufficient independence from the political arm of the government.

Under pressure to react to annual quota debates basic ecological and biological studies play second fiddle to attempts to mathematically model the stock size. And because basic research principles have not been followed, in spite of this stock's limited range those factors influencing year-class success and the health of the stock generally are insufficiently known.

And further, the mis-reporting of catches and excessive levels of discards in the inshore dragger fishery, brought on by lax enforcement, have ironically reached such levels that the output of fish population models, which are based largely on catch per unit of effort statistics generated by the inshore dragger fleet, has been completely compromised.

To compound the problem, there is no effective communication of such biological and ecological information as is known by government to fishermen. Nor, perhaps more damaging, is there any attempt by managers to incorporate the wealth of knowledge of inshore fishermen as to the habits and state of the stock into their resource analysis.

Fisheries scientists/managers and fishermen live as two solitudes – to the detriment of both.

A large part of this problem arises from the fact that current fisheries management techniques do not have the ability to generate a fish population model based on traditional inshore fixed-gear catch statistics. These are available in profusion, partly in the written record but also just as accurately in oral tradition, virtually all of which information lies completely outside the ambit of the current analytical skills of fisheries biologists.

Such information does, within their intellectual framework, simply not compute.

The literature does not seem to contain much discussion of how such traditional knowledge of fish stocks and the sea can be utilized in the so-called "modern" fisheries management process, although Johannes has directly touched on this subject in relation to traditional conservation measures in Oceania (Johannes 1978) and Stoffle has discussed this in terms of "ethnoscience" (Stoffle 1986).

Based on my experience with the northern cod fishery on the east coast of Newfoundland, the knowledge base and perception of inshore fishermen in relation to shoreward or coast-wise migrating species and related hydrographic phenomena seems of exceptional quality.

Perhaps, then, it is not out of place to suggest that a collaborative effort is needed involving social scientists and fisheries managers of a biological and mathematical bent, not so much, as so often has been discussed, as to ascertain the social impact of various management options, but concentrating more on the manner in which ecological, catch and other relevant data can be collected from fishermen and used in the management process. Similarly, the whole social and intellectual context in which fisheries scientists and fishermen interrelate is deserving of attention (Durrenberger and Pálsson 1987).

From the Newfoundland experience, there appears much that fisheries managers can learn from both fishermen and social scientists – historians, geographers, anthropologists and sociologists alike.

It is hard to overestimate how important the development of such a collaborative effort would be. In the current context, fisheries biologists have inadvertently created, out of their special, yet extremely limited knowledge of the physical world, a virtual priesthood and traditional fishermen invariably suffer. This is not what many fisheries biologists really want and it need not be

In the specific case under study by Sinclair, the inability of 4RS/3Pn cod stock managers to use inshore fixed gear catch data for biomass calculation and a willingness instead to continue to attempt to use admittedly flawed trawler-catch based models is typical of the Canadian fisheries management system.

One suspects, that this dependency on modelling and analytical techniques which were initially developed to analyze North European trawler fleet/fish stock interactions is more a matter of intellectual dependency than anything else.

Indeed, one is led to speculate on the impact of current fisheries modelling dogma when imported into developing countries and where past experience in local, supposedly "underdeveloped," fisheries seems most always brushed aside.

In the west Newfoundland context, the coast-wise migration of fish and long history of the fixed gear fishery should provide an alternative and probably better basis of analysis.

This is equally, if not more, the case with respect to the northern cod stock which annually migrates inshore where it has been caught in cod traps for over a hundred years. The use of permanent trap "berths" and the relative stability of the cod trap technology would seems to make historical analysis of the biomass of this stock using the written record and oral tradition of trap landings a definitive possibility.

NIFA is currently organizing an extensive cod trap research project to test this hypothesis in collaboration with social scientists at Memorial University, St. John's and several hundred cod trap skippers (there are 1600 in total).

In West Newfoundland, it is absolutely clear that inshore fishermen must be brought into the management process front and center, not only to preserve social equality, but to create techniques of fish stock analysis that are realistic and actually work. Canadian fisheries scientists, working by themselves, have proven existing techniques to be intellectually bankrupt.

This "access to traditional expertise" benefit is additional to, but supportive of, the benefits of better compliance and enforcement as discussed by Sinclair.

In west Newfoundland, this would be the first and vital step and should lead quickly to the second, which would be to create a clear picture of the *potential size* of commercial stocks *in their restored state.*

This is vital, not only so that appropriate and practical ecological, biological, social and economic goals can be established, but also simply to create a positive tone to help offset the present dismal social context.

While this may sound simplistic, such goal setting could be extremely beneficial. For there is presently a terrible tendency for even younger inshore fishermen, let alone distant fisheries bureaucrats, to forget how abundant the cod and related stocks were, say, thirty years ago, prior to the coming of the foreign draggers in the late 1950s, a state which presumably can, more or less, be again achieved with wise management in spite of current stock conditions.

This tendency to forget past abundance is, if anything, even more prevalent in other parts of Newfoundland and Labrador and is, of all things, most corrosive of any will to change things for the better.

So while goal setting and improvements in management structure may, in the context of catch failure and poverty, seem secondary, this strategy constitutes perhaps the best lever by which an otherwise unresponsive management system can be moved.

I suggest, for instance, that use of a different approach in the early 1980s, one that included goal-setting and a stock or ecological impact assessment process, would have likely produced a far different result.

While now seldom admitted, the development and movement of the inshore dragger fleet into the southwest coast winter fishing grounds was a deliberate policy choice by fisheries managers. It seems to have been based partly on a sincere, if pathetic, belief in the need for fishermen in the area to adopt a more "modern" technology. One can, after all, question the automatic adoption of new technology without being an unthinking luddite or romantic (Serchuk and Smolowitz 1990).

And, of course, this choice of technology was made without analysis as to its ecological and social impacts. This failure is quite apart from Ottawa's parallel failure to adapt its "traditional" management measures to the efforts of this new fleet – apart, for instance, from the failure to police and curtail the use of small mesh liners, mis-reporting and the dumping of small fish.

Sinclair has already analyzed the questions of social inequality which developed within the fishery; an ecological analysis would have added other questions.

For instance, there are growing concerns as to the impact of bottom disturbing trawl gear on the health of benthic communities and the marine ecosystem generally (Effects 1990).

Additionally, a recent analysis of the impact of trawl gear on the reproductive capacity of cod, at the very least, raises a number of very serious questions (Fahraeus-Van Ree 1990).

Do bottom-dragging trawls, through noise, physical disruption and the clouds of mud raised by the warps and otter boards seriously effect the short-term reproductive capacity of those fish which are not caught? Significant stress-induced infertility has been observed by researchers in the handling of cod in captivity, but these observations may not be relevant to the impact of trawl activity (Kjesbu 1989).

Consequently in this case, a broader ecological review of the inshore dragger technology would have included an analysis of the impact of bottom dragging trawls on benthic organisms and the effect of the use of such trawls on the cod's spring spawning grounds.

Encouragingly, the Federal Government of Canada now intends to study both these areas in respect of the northern cod (Dunne 1990).

But it is a long way from initial study to the full incorporation of such aspects into management criteria. And surely, the fact that such basic ecological factors were, and are, not analyzed as part of the normal fisheries management process demonstrates a great gap in our understanding and competence in these matters. Fishermen have been voicing their concerns on such issues for years.

So Sinclair has quite rightly focused on the decision-making process and how its defects can lead to self-destructive strategies, as so obviously has taken place in this particular case.

However, to his analysis, the addition of a few words on "onus of proof" seems appropriate.

In Canada, fisheries managers often demand that traditional fishermen "prove" or "show" that a new fishing practice or piece of technology, which government wishes to licence and to which fishermen object, would be harmful to stocks before managers would consider banning or restricting its use. Inshore fishermen have been asked, for instance, to "prove" that trawling hurts the cod spawning process – a virtual impossibility for underfinanced inshore lobby groups.

However, a far different approach is used in the assessment of the anticipated environmental impact of federally-regulated projects on land.

In such cases, if there is a reasonable and genuine cause for concern, the proponent of a project bears the onus of showing that environmental protection standards would be met.

This is not the place to debate whether or not Canada's current legislative scheme is effective in providing a reasonable degree of environmental protection with respect to projects on land. We can say, however, that such a process, at the very least, puts some degree of onus on the proponent of change to examine and explain the impact of their proposed actions.

So it is not enough to attempt to anticipate the "progress" of technological change as recently discussed by Whitmarsh (1990). Rather, we need to predict as best we can the impact of such changes and restrict or ban as needed.

No such onus was upon federal fisheries managers, or on the prospective owners of the first inshore draggers when they entered the cod fishery in the northeast Gulf. Nor did it exist when these vessels later entered into the fishery on the winter fishing grounds on the southwest coast.

One suspects that if such a review had been required, this highly-destructive technology – destructive both ecologically and as to social equality – would have been rejected.

Indeed, in terms of the maintenance of some semblance of social equality, it is absolutely essential that traditional inshore fishermen be given an effective voice in a fisheries management process which uses a "what is going to happen if we" approach.

And, although not a form of "co-management" as discussed by Sinclair and others (Jentoft 1989), here again, Canada's environmental impact assessment process may offer a conceptual framework for an initial and substantial improvement in the present regime.

If, under the current Canadian Federal environmental impact assessment legislation, there is a substantial level of public concern as to the licensing of a new technology or project, the proponent (including Federal Departments) must prepare and make public an environmental impact statement setting out the expected impacts of the proposed action.

This document is then subjected to a public hearing process before an independent panel appointed by the Federal Minister of the Environment, independent of the proponent Minister.

Now, in Canada, the Minister of Fisheries and Oceans is traditionally an unchallengeable fisheries czar wielding enormous power over some of Canada's poorest and most politically disenfranchised citizens. Under the Canada Fisheries Act, the issuance of licences and establishment of quotas (both overall and individual) are entirely at the Minister's discretion.

Measured against the criteria set out by FAO's Advisory Committee on Marine Resources Research (ACMRR) in its comprehensive Report of March 1983, Canada's current regime is regressive and predictably ineffective (Lieberman 1966). Management of the Atlantic salmon fishery provides one example of Ottawa's reluctance to share real power with fishermen (Felt 1990).

The application of Federal environmental impact assessment law to the actions of the Federal Minister of Fisheries and Oceans would be an effective counter to the improper exercise of that power.

Indeed, the issue of the application of such laws to the Federal Fisheries Minister is now before the Federal Court of Canada (*NIFA, Martin and Bartlett* vs *Minister of Environment for Canada and Minister of Fisheries and Oceans for Canada*, Federal Court of Canada, F.C. No. T-2719-89).

And whatever the law now is, what it should be is clear.

And these are not novel thoughts. The United States has, from the very declaration of its 200 mile zone, required, via the *Magnuson Fishery Conservation and Management Act* of 1976, that relevant economic, social and ecological factors be assessed *prior to* important fisheries management decisions (Vanderpool 1981, 1986). And it is no argument against such an approach that the complexities of the USA management regime have prevented the inclusion of such analysis from being as effective as it might otherwise be.

Public hearings to review a published environmental impact statement would focus both user groups and fisheries managers on the ecological and social equality implications of various decisions before they are in cast stone.

This would seem a necessary, and adequate, way of negating the superior lobbying power which seems inevitably to accrue to those in the fishery who "accumulate capital," often in the form of larger boats and limited entry licences.

These comments are in no way meant as criticisms of the excellent paper by Sinclair under review. Nor is it meant as an attempt at learned analysis. But it is meant as a plea

on behalf of inshore fishing people and communities who are in desperate need of better fisheries management and through it, the chance to regain some semblance of control over their lives and futures.

Far from being in the nature of frills, analysis of such problems by the academic community is essential to the survival of traditional fisheries and fishing communities and to the maintenance of healthy marine ecosystems.

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