

The St. Georges Bay Ecosystem Project: A Social Profile of Lobster License Holders in Pictou, Antigonish and Inverness Counties

A Preliminary Report of Research Results

SRSF Research Report #2

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Introduction

A group of social researchers based at St. Francis Xavier University (St.FX) completed a short telephone survey, during the summer of 1998, of a random sample of lobster license holders fishing within the St. Georges Bay ecosystem.¹ The core purposes of this study were to ask license holders to identify the persons that they felt were most knowledgeable about the local fishing grounds; to document several key social characteristics of the fishing community; and, to gather some basic information about the region's fisheries. A brief report of the study's results was prepared and sent to all participants. A copy of this report can be accessed through the St. Georges Bay Ecosystem Project website at: <http://www.stfx.ca/research/gbayesp/sereports.htm>.

This summary report of the telephone survey findings has several purposes. One of these is to insure that all GNSBFA members are informed and reminded about the results of this study, especially in relation to SRSF's intention to move forward now with the next phase of this social research. It is also important to revisit the survey results independent from the initial summary report. In this manner a fresh examination may be made concerning additional attributes important the region's fisheries. Of course, it is especially important to identify any and all core factors that may better inform the design and coverage of this research's next steps.

History of the Research Project

The telephone survey was conducted as the first step in a research project focused on the documentation of St. Georges Bay fish harvesters' ecological knowledge. The impetus for the overall study originated with the region's fish harvesters, including the executive of the Gulf Nova Scotia Bonafide Fishermen's Association (GNSBFA). Several marine harvesters had approached researchers affiliated with St. FX's Interdisciplinary Studies in Aquatic Resources (ISAR) programme with a request for research that would document the extent of groundfish predation on juvenile lobster.

The request for this research arose from a concern that the groundfish moratorium was resulting in an uncontrolled growth of groundfish populations, especially white hake, which was resulting in increased predation on juvenile lobster. This concern arose from fishermen observations of the contents of groundfish stomachs that indicated an increased incidence of juvenile lobster predation. Of course, any indications of increased lobster predation would sound alarms as local fisheries livelihoods depend substantially on the lobster fishery. GNSBFA research has shown that the lobster fishery has generally accounted for at least three quarters of the total sea fish revenue from the 1950s up to today.

Marine harvesters also expressed frustration with their apparent inability to convince Fisheries and Oceans Canada, Gulf Region (DFO), that research needs to be focused on their concerns. They had been informed that research survey results did not indicate that there was any substantial basis for concern about groundfish predation on juvenile lobster. But, the marine harvesters insisted that these results were inaccurate because the surveys were being conducted in the wrong places on the fishing grounds and at inappropriate times of the year. The fishermen argued that their local knowledge should be used in the research process to help identify known areas of hake and lobster occurrence and therefore where the sampling should take place.

In the fall of 1999, GNSBFA joined a consortium of fisheries community organisations and university-based researchers to form Social Research for Sustainable Fisheries (SRSF). Through this collaboration research funds have become available to complete the next phase of the local ecological knowledge component of the St. Georges Bay Ecosystem study.

Social Research for Sustainable Fisheries (SRSF) is a partnership linking university researchers with Mi'kmaq and inshore commercial fisheries community organisations. Although administered at St. Francis Xavier University, SRSF represents a working collaboration between Gulf Nova Scotia Bonafide Fishermen's Association, Guysborough County Inshore Fishermen's Association, the Afton Band, and St.FX. Additional fisheries, community organisations and university-based researchers are

linked with SRSF through relations with these core partners (www.stfx.ca/research/srsf).

SRSF is funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) through its Community-University Research Alliance (CURA) programme. The basic purposes of SRSF are: to develop fisheries-focused social research linkages between university researchers and community organizations, to build the social research skills of the community organization partners, and to facilitate fisheries social research activities that examine the concerns of the partner organizations. Social research capacity, experience and linkages are developed through research-focused workshops and specific research projects. Further information about SRSF and its projects is available either through the project's web site or by contacting any of the SRSF project staff, either at St. FX or the offices of the partner organisations.²

Background Social Characteristics

The Nova Scotian inshore fishery is characterised by deeply rooted family and community attributes. These qualities are certainly characteristic of the participants in this study. For instance, fully 96.1% of all of those interviewed reported that they felt themselves to be 'definitely' a part of their fishing community. This high level of community attachment is explained by a number of factors. One of these is that the vast majority of the respondents are currently fishing out of the community in which they grew up. Additionally, most began their fishing livelihoods with immediate family or kin within their home community. For instance, almost fifty percent of participants reported that they began fishing with their fathers. Another twenty percent identified family and kin such as brothers, cousins, uncles, and grandfathers as the persons with whom they began fishing. And, an additional twenty percent reported that they began with either friends or neighbours.

A further demonstration of the way family, kin and familiarity root and define coastal small boat fishing throughout the region is evident in the respondents' descriptions of who in their immediate families either fished in the past or is currently fishing. Fully 76.4% reported that their fathers either fished in the past or are currently fishing. Almost sixty percent noted that one or both of their grandfathers fished or are fishing. Another 64.6% have or had at least one uncle fishing and 54.3% had or have at least one brother fishing. Clearly, family and community ties have been a major (social) factor in the development of the small boat fishery. These qualities are shared throughout the region and in every fishing port.

An echo of change in this social fabric is evident in the fact that only slightly more than one in every four respondents (26.8%) reported that at least one of their sons either fished or was fishing. Given that a substantial number of the current

holders of lobster licenses are middle aged or older (median age of 51 years for the entire population), this suggests that the dynamics of family-based recruitment into inshore fishing livelihoods is changing with smaller numbers of sons currently entering the fisheries than in the past. It is also worth noting that 16.4% reported that their wives fished or were fishing, a total that is not that far removed from the numbers of sons. These data suggest that recruitment into the region's inshore fisheries may be on the way to becoming a critical issue.

Table 1 profiles and compares selected background characteristics of the respondents resident on the Western Shore of Cape Breton Island with those living along the Southern Gulf of St. Lawrence shore of Mainland Nova Scotia. Here the mean and median scores for the selected attributes are presented, as well as the Standard Deviation (S.D.) of the mean scores. Mean, or average, scores are often usefully contrasted with median scores. The median score simply identifies the midpoint where there are an identical number of cases located on either side of this point or score. For instance, for the Cape Breton Island sub-region the median age of 54 states that among those interviewed as many participants are 54 years of age and older as are 54 years of age and younger. Often the median score provides a better illustration of an attribute's distributional characteristics than does a mean or average score because a cluster of high or low scores will likely have a distorting effect on averages. This is evident in some of the differences between mean and median scores presented in this table, for example the difference between mean and median scores for years fishing.

The standard deviation score provides an indication of the extent of variation from the mean or average scores. For example, the standard deviation of 12.3 for the mean age of Cape Breton Island lobster license holders simply indicates that, on average, the respondents' ages vary between a minimum of 42.2 and a maximum of 66.8 years. The standard deviation statistic also may provide a window on some important differences between comparison groups. For instance, the differences between the Cape Breton Island and Mainland Nova Scotia sub-regions on standard deviation scores for age indicate that many Cape Breton respondents are considerably older than Mainland respondents.

Table 1: Selected Background Characteristics by Cape Breton Island and Mainland Nova Scotia Sub-Regions

Characteristics	Cape Breton Island			Mainland Nova Scotia		
	<i>Mean</i>	<i>S.D.</i>	<i>Median</i>	<i>Mean</i>	<i>S.D.</i>	<i>Median</i>
Age	54.5	12.3	54.0	51	10.0	50.0
Formal Education	10.9	2.3	11.0	11.2	2.8	11.5
Years Fishing	30.3	14.1	27.0	25.4	10.8	25.0
Weeks Fishing	19.1	9.2	19.0	18.0	6.8	17.0

(1997)

These data demonstrate several interesting differences between the two groups of fishermen interviewed. On average, the Cape Breton Island inshore fishermen, when compared with those from Mainland Nova Scotia, are older, have fished for more years, in 1997 fished for more weeks, and have achieved slightly less formal education. No doubt, greater number of years spent fishing reflect the fact that the Cape Breton Island respondents are considerably older than those from Mainland Nova Scotia, a quality that is reflected in differences between standard deviation scores. Differences in age are also reflected in the standard deviation scores respecting weeks fished in 1997. That is, the greater variation evident among Cape Breton Island residents reflects the simple fact that larger proportions of this population are older and likely fishing for a fewer number of weeks than is the case among the comparatively younger lobster license holders.

Finally, the information concerning years of formal schooling certainly indicates that many marine harvesters throughout this region have achieved a notable level of schooling, a level that in some respects is uncharacteristic of many small boat fishing settings. For example, a recent study of lobster license holders resident in Richmond and Guysborough Counties reported a mean score of 9.3 and a median score of 9.0 years of formal education attained. A difference of two full years of schooling is very substantial. Indeed, all age categories within these two regions are characterised by more years of formal schooling for Antigonish, Inverness and Pictou County inshore fishers than is the case among Guysborough and Richmond County marine harvesters. The explanation for this resides with a variety of factors. Among these would be the cultural and institutional emphasis on educational attainment within a setting that features strong local connections between the Catholic Church and St. Francis Xavier University. Additionally, fishing within Nova Scotia's Southern Gulf of St. Lawrence region has for many been a seasonal activity focused on fisheries such as lobster. Participants have often mixed fishing with other livelihood pursuits such as farming and trades. Fishing is more commonly the only source of livelihood among Guysborough and Richmond County marine harvesters, meaning that until recently, success at completing formal schooling was of little importance either to successful participation in fishing or to developing additional livelihood opportunities. Indeed, a comparatively remarkable number (31.5 %) of Antigonish, Pictou and Inverness County lobster license holders of all ages have completed 12 or more years of formal education. While younger respondents reported higher levels of formal schooling than the older respondents, notable proportions of all age categories reported having completed grade 12 or better.

Increased educational attainment has not necessarily related positively with entering the small boat fisheries as a primary livelihood. In fact, success at completing school has often been understood as one way to develop a livelihood other than fishing.

Within the Southern Gulf fisheries seasonal conditions of ice and other winter

conditions affect fishing livelihoods, prohibiting fishing for extensive periods of time. This ensures that fishing is only one of several livelihood activities for many individuals. This situation is one in which education, such as completed high school and participation in vocational and university programmes, would provide greater livelihood opportunity within the region's communities than would otherwise be the case. In this setting, even minor changes in resource availability, conditions affecting access to participation in fisheries, or income potentials might quickly result in numerous potential or current marine harvesters applying their formal education in pursuit of non-fisheries employment. In all likelihood, recent developments such as the groundfish moratorium, the Marshall decision, federal government license buy-back programmes, and limited entry fisheries are contributing to fewer persons entering the fishery, thereby changing the social environment of the inshore fishery.

Recruitment to and the Social Renewal of the Fisheries

The issues and challenges associated with recruitment of young persons to the fishery are emphatically demonstrated in the following graphs. Participants in this study were asked how likely would they be to choose to enter fishing if they had their lives to live over (Figure 1). The responses clearly illustrate the high levels of personal satisfaction and attachment that the vast majority feel about fishing for their living. Furthermore, the strength of these feelings and preferences is expressed equally among lobster license holders residing in both Cape Breton Island and on Mainland Nova Scotia.

Figure 1: Percentage Who Would Enter Fishing Again

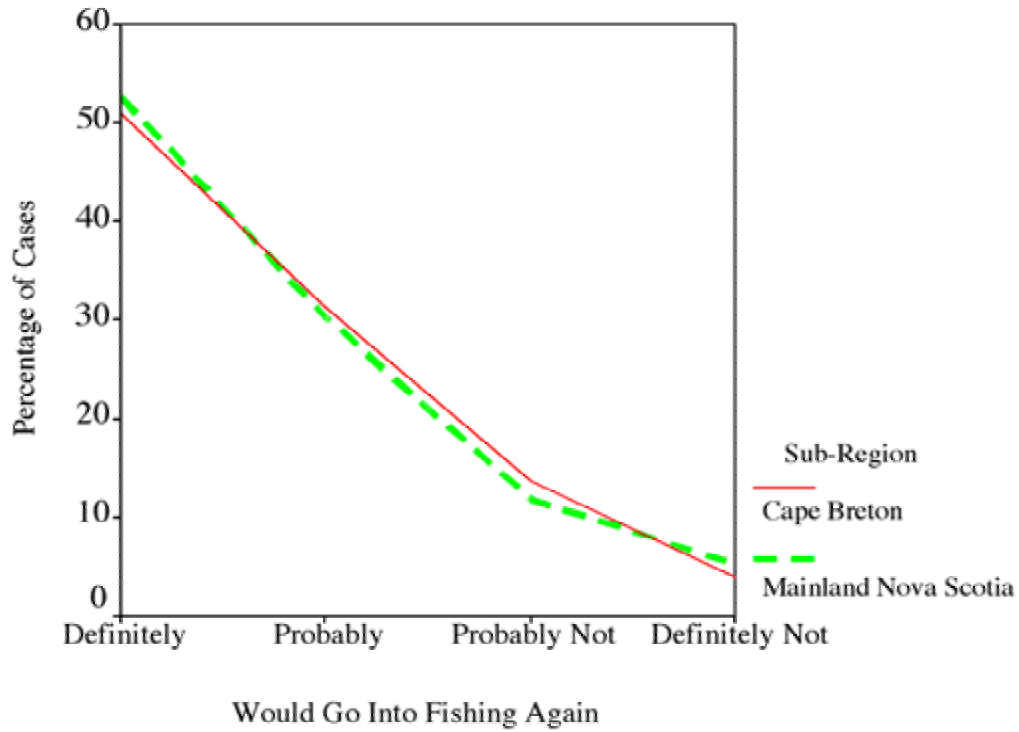


Figure 2: Would Advise A Child to Enter Fishing, Starting From Scratch

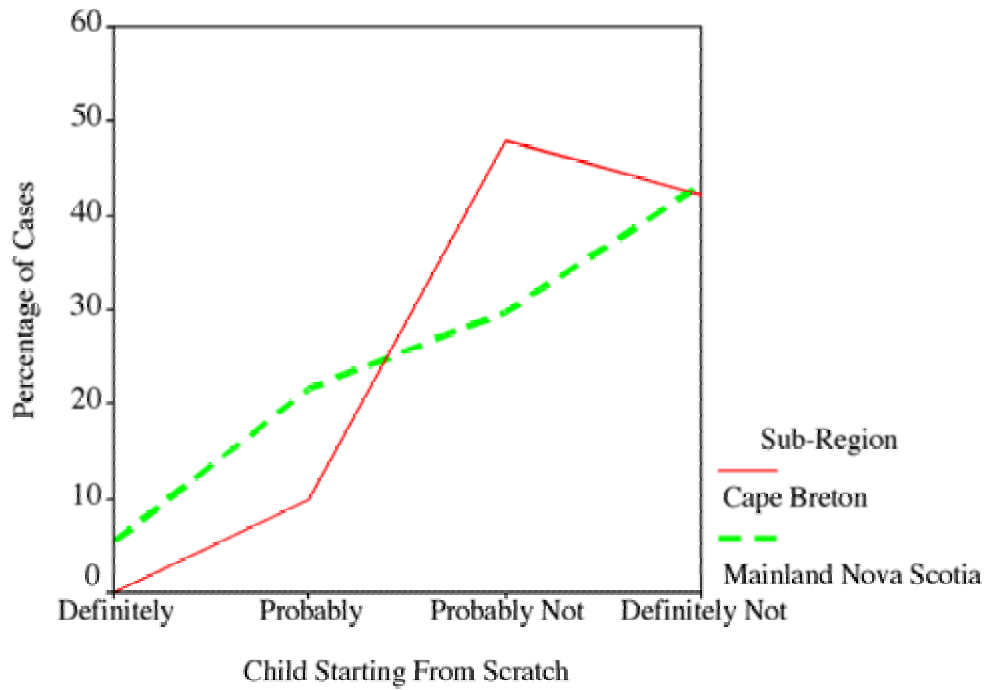


Figure 3: Would Advise Entry , if Holding All Important Licenses

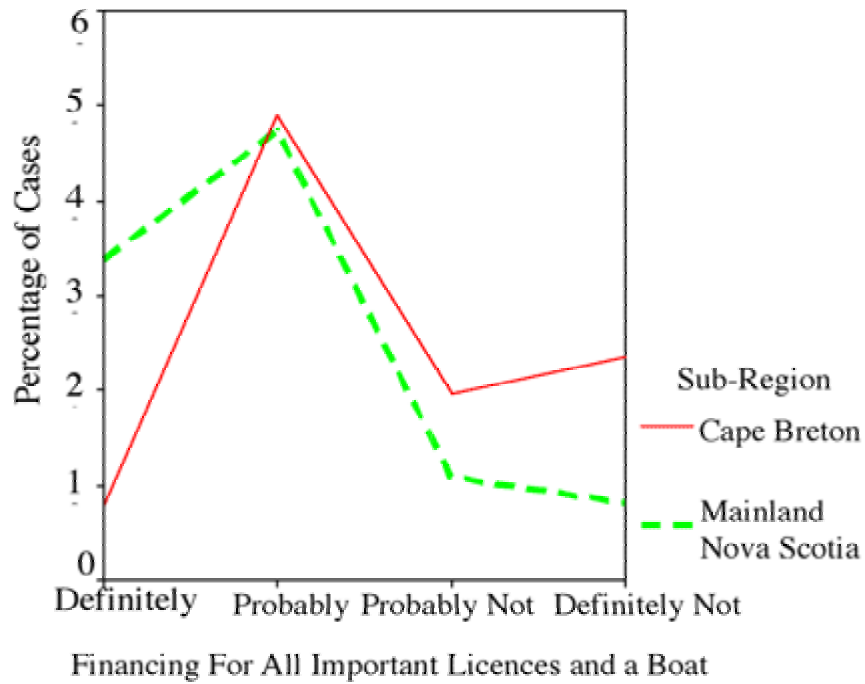
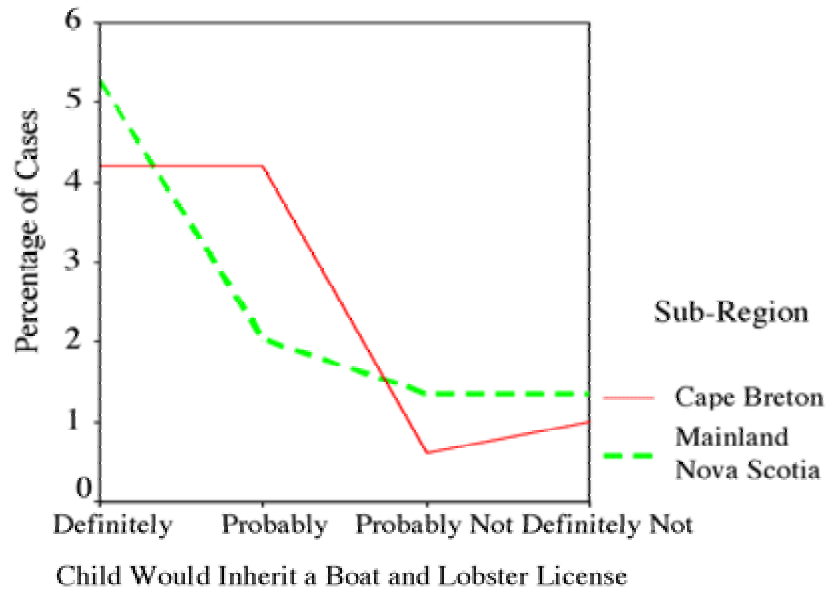


Figure 4: Would Advise Entry if Would Inherit Lobster License



But, while the vast majority of respondents' throughout the region report that they would probably or definitely choose to re-enter fishing if they had their lives to live over, many are much less certain about advising their children to fish for a

living. Figures 2, 3, and 4 profile the participants' responses to the question that asked them whether they would advise a child to go into fishing under three different conditions. As Figure 2 shows, most would likely not advise a child to enter fishing if that child had to start from scratch, with neither a boat nor any licenses. This perspective contrasts sharply with the response distributions presented in Figures 3 and 4. Participants were asked if they would advise a child to enter fishing if they had financing in hand for a boat and all of the important fishing licenses (Figure 3). Then they were asked if they would advise a child to enter fishing if they would inherit the respondent's boat and lobster license (Figure 4). A solid majority of respondents indicated that they would either probably or definitely advise entry for both of these scenarios, with the inheritance option obtaining the strongest support. Neither the respondents age nor level of formal educational matter to the distributional pattern evident in these responses.

In all likelihood, these responses were framed by knowledge of the impact that debt financing can have on small boat fishing livelihoods. The inheritance scenario receives the strongest support since it offers the new entrant the prospect of participating in the high value lobster fishery with little by way of debt financing obligations and pressure.

This information reveals much about critical factors that influence the recruitment of young people to the region's inshore fisheries. Certainly most current lobster license holders do not think that entry is advisable if social, family and community backgrounds in fishing are the only resources available. The access and economic realities of fisheries managed through quota and limited entry mechanisms are such that new entrants must either have the means to purchase entry through financing arrangements, or, preferably, enter the coastal fisheries through the advantage of family inheritance. Importantly, these data suggest that recruitment in today's fisheries is becoming increasingly contingent on, if not exclusive to, families in which a member currently possesses high value fisheries quota and/or licenses. Considering that many of the current lobster license holders are middle aged or older, processes and factors affecting recruitment into the inshore fisheries are fast becoming critical issues. The social renewal and sustainability of the region's small boat fisheries are at issue here. After all, these fisheries are still a critical cornerstone in coastal community and family life. Thus, present and future vitality of many coastal communities and the small boat fisheries way of life remains dependent in no small measure on the ability to recruit and to sustain new entrants.

Attributes of the Lobster Fishery

The interview included several questions that were intended to document specific social and organisational features of the region's lobster fishery. There is no doubt that lobstering is the region's single most important fishery, at least in

terms of its importance to annual fishing incomes and the economic sustainability of inshore fishing. Respondents reported that in 1997 lobster catches were landed in 21 different ports throughout the region. No other fishery lands and sells in nearly as many ports as this. Certainly, the activities and economics of the lobster fishery provide key reasons for maintaining many wharves within the region's coastal communities that otherwise would fall out of use and into disrepair.

The lobster fishery is conducted on grounds adjacent to community wharves and to the participants' homes. The vast majority of lobster fishermen have fished only on this adjacent ground and for most, this is the very same ground that was fished previously by their fathers and other ancestors. Fully 89% of the participants in this study reported that they have always lobster fished on the same ground. Only fourteen respondents noted that they had fished on lobster grounds other than those on which they are currently fishing. Of these, most reported the other grounds were near to their present grounds, for example elsewhere in St. Georges Bay. This is a core social attribute of the region's lobster fishery.

Twenty of the respondents, accounting for 15.7% of all participants, reported that they lobster fished within a berth. Sixteen of these respondents reside in the Mainland Nova Scotia sub-region, while four live on Cape Breton Island. Admittedly, the claim by these Cape Breton Island resident lobster harvesters that they fish berths comes as a bit of a surprise since this local organisational practice was reputed to exist only on the Mainland Nova Scotia side of St. Georges Bay. None the less, the maintenance and use of berths as a locally determined means of organising access to and participation in lobster fishing is, to our knowledge, unique to this region. The origins of this practice likely are to be found in the Highland and Islands Scots practice of projecting property lines from the shore out into and over the adjacent coastal sea. Three of every four presently fishing a berth report that they inherited it from a relative. Four others noted that the berth came with their licenses. It is unclear whether they obtained their licenses from a relative or an in-law. The berth system is purely an expression of informal, local organisational practice within this region's fishery. Present day Fisheries and Oceans limited entry licensing provisions do not acknowledge the existence of the berth system. While only fished by a minority of present day license holders, the fact remains that the berth system remains in place and, to some extent at least, is respected as legitimate within certain fishing grounds.

What Does This Mean?

The information presented here describes the rich social context of the region's inshore fishery. It also highlights the deep attachment to fishing that remains broadly felt by the vast majority of fishers. This attachment is grounded in the

fact that small boat fishing livelihoods are seated within families and communities. To a large extent, the future sustainability of the region's inshore fisheries will depend extensively on the capacities of families and communities to remain at the heart of fishing livelihoods. Conversely, the sustainability of communities and families throughout the region's coastal areas will continue to depend, in no small measure, on the development and maintenance of economically viable fisheries' livelihoods in which participants experience high levels of satisfaction and attachment.

Having noted these critical qualities, it must be said that the information provided by those interviewed certainly highlights the importance of recruitment to building and sustaining the fisheries' vitality and viability. The average ages of fishing captains and license holders throughout the region show a pattern wherein the majority are becoming senior in years. Furthermore, recruitment of younger persons into these positions over the last thirty years has dropped substantially and threatens the future of the fishery. This situation has arisen from a number of circumstances: closure of the groundfishery, limited-entry licensing and government downloading costs of industry services.

The loss of the groundfishery has made it increasingly difficult participate in fishing year-round, due to shorter fishing seasons. Access to and participation in a variety of inshore fisheries through the course of the entire year is the basis on which sustainable fishing livelihoods are achieved. Certainly this has been acknowledged in the study by the fact that a solid majority of those interviewed would advise a child to enter the fishery only if they could begin, at least, with a boat and all of the important licenses. In the past, recruitment was assured through family processes and socio-economic interests. But, recent experiences in the inshore fisheries have left most fishing captains and license holders with the view that, while strongly attached to fishing themselves, fishing for a living simply is not a viable option for their children. The surprisingly small percentage reporting that they have sons currently fishing would seem to be the likely consequence. These findings suggests that family-based recruitment is in the throes of dilemma and crisis.

Of course, residing at the heart of this issue is the role and impacts of fisheries management policies and regulations. Possession of key limited entry licenses and, in some fisheries, quota is now required in order to have any hope of achieving a viable livelihood. The distribution and access of the region's marine resources pretty much dictate that livelihoods be based upon participation in a variety of fisheries. Contrary to this, the current situation is all about limits – limits defined by licenses, quotas, regulations, and marine resource scarcities. Such limits severely curtail the numbers of weeks that most may currently fish, thereby limiting current earnings and potential incomes. But the dollar value of licenses and quotas is such that for many, possession is quickly becoming next to impossible. Those able to finance the purchase of key licenses and quota soon find themselves working to cover the associated debt rather than achieving a satisfactory livelihood. That is, they fish for their licenses and quota, rather than

fishing their licenses and quota for their livelihood and families. This is not the sort of situation that encourages recruitment. Arguably, fisheries management policies and regulations have at least fueled, if not directly caused, many of the social, economic and resource conditions contributing to the situation described here.

Now, this study does demonstrate that throughout the region there has been some important recruitment over the last decade of younger persons into the positions of captaincy and license possession. This group represents the core cohort from which future family-based recruitment will either rise or fall. This group also will be providing the next generation of leaders for fisheries organisations and communities. Unlike many in the more senior age group, the younger group has participated more broadly in both formal and fisheries-related education and training. Equipped with these skills, in combination with their fisheries know-how, many of these captains and license-holders are well positioned to engage, to debate, and to negotiate with government, industry, and research. Encouraging this group's participation within fisheries organisations and issues will be vital to the future sustainability and viability of fisheries livelihoods, and of the region's coastal communities.

Conclusions

Throughout the study several issues have been raised that point in the direction of further research. Among these are:

- The downloading from government to inshore fish harvesters and communities of financial and maintenance responsibilities for small craft harbours and wharves. The on-going resource and related income crises has made it extremely difficult, if not impossible, for many communities to generate sufficient revenue to cover the costs for harbour and wharf maintenance. Degradation of harbours and wharf facilities forces harvesters to shift their boats to other locations, inevitably assuring the loss of facilities that define and make-up the essence of being a coastal community. The characteristics and consequences of 'downloading' for fishing livelihoods and coastal communities have been specifically identified by participants as an issue of grave concern that requires a specific research focus.
- Application of computer-based opportunities within the fisheries and coastal community settings has been identified as potentially important to fostering viability and sustainability. Building computer-based capacities may provide opportunities that range from resource marketing and equipment information, through direct sales, to distance site participation in fisheries organisation and management meetings. Research is required to explore the economic feasibility, social practicality, and 'ways and

- means' attributes associated with developing computer system based approaches.
- Small boat fishing as a way of living and livelihood and the contribution that it and coastal communities make to provincial and regional life and economy need to be much better understood and appreciated by the public at large, let alone by government regulators. One way of assuring this is through developing research-based and informed materials developed for use within the public education system.
 - Documenting local knowledge of fishing grounds has been identified as an important area in which to focus future social research. Documenting this knowledge is an important element in representing local experiences and understandings within fisheries management and policy settings. Further, documented local knowledge respecting attributes such as nursery areas, key habitat for reproduction and recruitment, and seasonally critical areas with respect to resource access will be essential for development of locally-driven fisheries management initiatives. In turn, these will be vital in any effort to rebuild local fisheries resources and to develop sustainable fisheries livelihoods.

Certainly the enthusiastic participation in this study of the region's lobster license holders and captains is a clear indication of broadly felt concerns. Notably, this also represents the fact that most remain hopeful that positive steps can be taken to address the situation. Indeed, many appear ready to participate in initiatives offering promise. This enthusiasm and commitment represent critical and essential resources for any remedial actions. These, coupled with diligence and patience, offer considerable promise for capturing the moment and for successfully developing the basis for viable and sustainable small boat fisheries' livelihoods.

¹Funded through a grant from St. Francis Xavier University's Centre for Regional Studies, this research was lead by Dr. Daniel MacInnes, Professor, Department of Sociology and Anthropology. Nine fishing port areas were surveyed. These extended from Lismore, Pictou County to Mabou Mines, Inverness County. From a list of all 304 current lobster license holders (in 1998) within this region, 174 were selected for interviewing through a standard stratified random sampling selection procedure. An introductory letter was sent to all of those selected in which the purpose of the research was described and explained. The survey instrument was pre-tested on twelve persons associated with the fishery. Most of the interviews were completed between July 14 and July 22, 1998. The response completion rate to the fifteen minute interview was 73%, or 127 interviews completed. This is a superior rate of response for a telephone survey, clearly indicating the high level of interest in this research among the region's lobster license holders.

²The St.FX SRSF staff are Anthony Davis, Director (867-2452), John Wagner, SRSF Post-Doctoral Research Fellow (867-1777), Christie Dyer and Jessica Paterson, SRSF Project Officers and DFO Science Horizons Interns (867-2292). SRSF CRCs are Virginia Boudreau, the Guysborough County Inshore Fishermen's Association (366-2266), Kerry Prosper, Afton First Nation (386-2328), and Kay Wallace, the Gulf Nova Scotia Bonafide Fishermen's Association (867-1438).