



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Canada's oceans  
*A natural resource, a natural treasure*

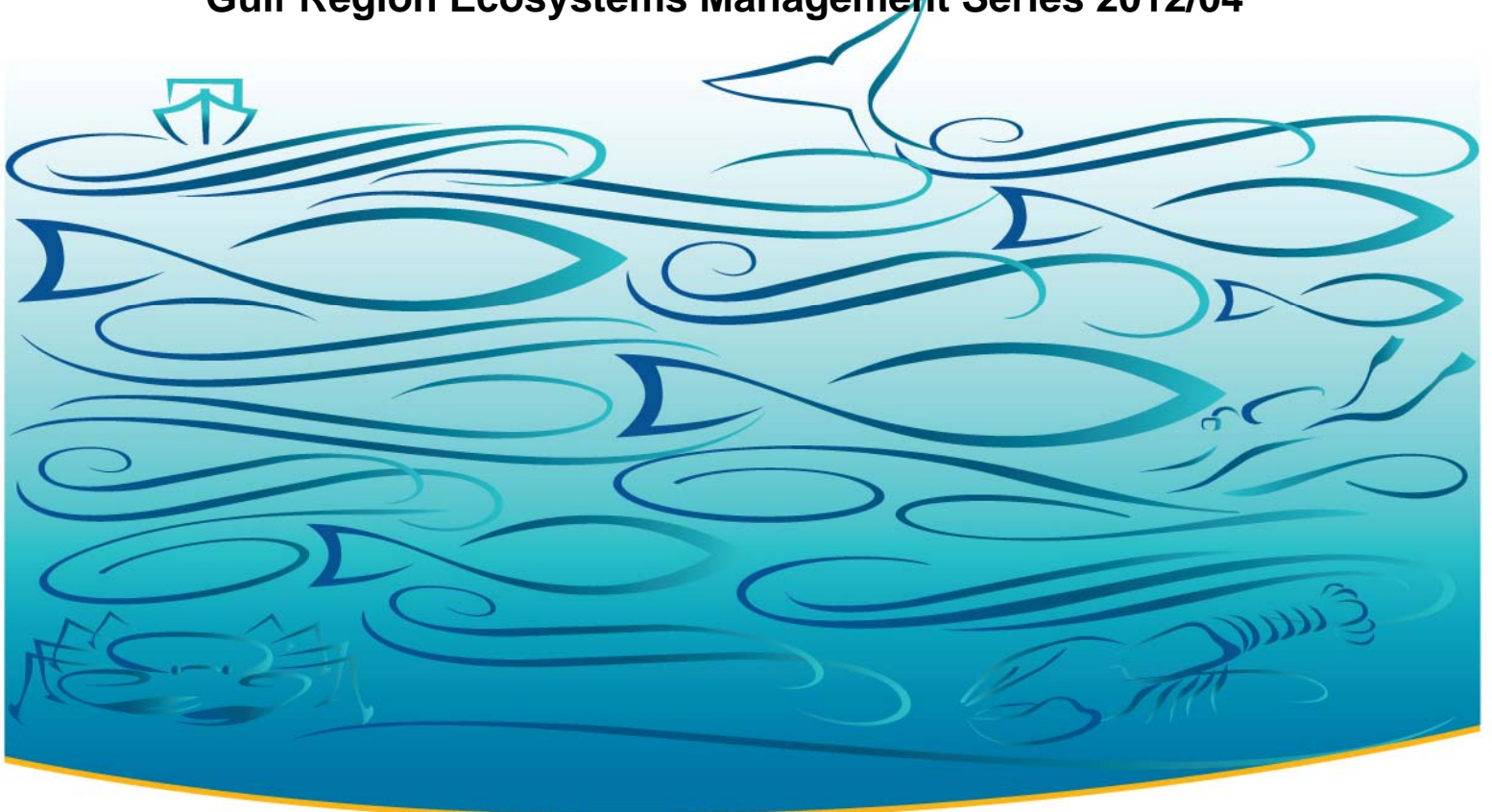
# Assessing Socio-Economic Parameters and Methodology for Food, Social and Ceremonial (FSC) Fisheries in a *Species at Risk Act* (SARA) Perspective

**Ed Koenig and Robert Adlam**

Fisheries and Oceans Canada  
Gulf Region  
343 Université ave  
Moncton, NB  
E1C 9B6

2012

**Gulf Region Ecosystems Management Series 2012/04**






## **Gulf Region Ecosystems Management Series**

The Gulf Region Ecosystems Management series of publications are reports on initiatives undertaken in or supported by the Gulf Region and consist of discussion papers, studies, consultant reports, workshops and other public documents. The Ecosystems Management series replaces the Gulf Region Oceans Management Series established in 2010. The Oceans Management Series ends at 2012/02 and is replaced by the Ecosystem Management Series 2012/03. Topics in the series are concerned with a broad spectrum of public interest such as policy and Fisheries and Oceans Programs including Governance, Integrated Management, Marine Protected Areas, Coastal Management, Fish Habitat management, Species at Risk protection and recovery, Ecosystem Risk Assessments, Economic Development and Ecosystem-based Fisheries Management. Reports in this series have been written by or prepared under the guidance of staff of the Department of Fisheries and Oceans - Gulf Region. The content of this series is meant as a source of information for public and internal dissemination.

## **Série sur la gestion des écosystèmes de la Région du Golfe**

La série de publications sur la gestion des écosystèmes de la Région du Golfe regroupe des rapports au sujet d'initiatives entreprises ou appuyées par la Région du Golfe et se compose principalement de documents de travail, d'études, de rapports de consultants, d'ateliers et d'autres documents publics. La série remplace celle dédiée à la gestion des océans de la région du Golfe créée en 2010; celle-ci se termine avec la publication numéro 2012/02 et sera dorénavant remplacé par la série dédiée à la gestion des écosystèmes débutant avec le numéro 2012/03. Cette série couvre une large gamme de sujets d'intérêt public tels que les politiques et les programmes du Ministère, la gouvernance, la gestion intégrée, les zones de protection marines, la gestion côtière, la gestion de l'habitat du poisson, la protection et le rétablissement des espèces en péril, les évaluations des risques aux écosystèmes et la gestion des pêches écosystémique. Ces rapports ont été rédigés par le personnel du Ministère de Pêches et Océans ou ont été préparés sous la direction de ceux-ci – dans la Région du Golfe. Le contenu de cette série se veut une source d'information pour une diffusion publique et interne.



Gulf Region Ecosystems Management Series 2012/04

2012

ASSESSING SOCIO-ECONOMIC PARAMETERS AND METHODOLOGY FOR FOOD, SOCIAL AND CEREMONIAL (FSC) FISHERIES IN A SPECIES AT RISK ACT (SARA) PERSPECTIVE.

Ed Koenig<sup>1</sup> and Robert Adlam<sup>2</sup>

Fisheries and Oceans Canada  
Gulf Region  
343 Université Ave  
P.O. Box 5030  
Moncton (NB)  
E1C 9B6

<sup>1</sup> Ed Koenig Consulting, Waterloo, ON, N2J 1K5, ed.koenig@sympatico.ca

<sup>2</sup> Robert Adlam & Associates Sackville, NB, E4L 4H4, radlam@mta.ca



This report was prepared by the Ed Koenig Consulting Company.

The opinions and interpretations contained in this report are those of the authors and do not necessarily reflect the views of the Government of Canada or of Fisheries and Oceans Canada. The authors are responsible for all interpretations of information provided.

© Her Majesty the Queen in Right of Canada, 2012.  
Cat. No. Fs 103-3/2012-4E-PDF ISBN 978-1-100-21315-6 ISSN 1929-7513

Published by:

Fisheries and Oceans Canada  
Gulf Region  
343 Université Ave  
P.O. Box 3050  
Moncton, NB  
E1C 9K6

Correct citation for this publication:

Koenig E. and Adlam R. 2012. Assessing Socio-Economic Parameters and Methodology for Food, Social and Ceremonial (FSC) Fisheries in a Species at Risk Act (SARA) Perspective Gulf Reg. Ecosystems Mgmt. Ser. 2012/04: v + 36 p.

<sup>1</sup> Ed Koenig Consulting, Waterloo, ON, N2J 1K5, ed.koenig@sympatico.ca

<sup>2</sup> Robert Adlam & Associates Sackville, NB, E4L 4H4, radlam@mta.ca

## TABLE OF CONTENTS

Abstract.....	v
Résumé .....	v
<b>1. Introduction .....</b>	<b>1</b>
<b>2. Preamble on Research Methods and Information Sources.....</b>	<b>3</b>
2.1. “Aboriginal Input”.....	3
2.1.1. Aboriginal Input and Other Information Sources.....	3
2.2. Definitions .....	4
2.2.1. “Fishery” .....	4
2.2.2. “Resources”.....	4
2.3. Fishery Categories .....	4
2.3.1. “Subsistence Fishery” .....	4
2.3.2. “Commercial Fishery” .....	5
2.3.3. “Recreational Fishery” .....	5
2.3.4. “Aboriginal Fishery” .....	5
2.3.5. “Food, Social, and Ceremonial (FSC) Fishery”.....	6
<b>3. Approaches and Frameworks.....</b>	<b>7</b>
3.1. Collaborative and Participatory Approaches .....	7
3.1.1. First Nations Participation.....	7
3.1.2. SARA and First Nations Participation .....	8
3.1.3. Consultations and First Nations Collaborations .....	8
3.1.4. Aboriginal Knowledge .....	8
3.2. Socio-economic Impact Assessment .....	9
3.2.1. Rethinking SEA and SIA.....	11
3.2.2. Measuring “Values” .....	11
3.3. Social Impact Assessment .....	12
<b>4. Parameters and Methods .....</b>	<b>14</b>
4.1. Parameters.....	14
4.2. Methods .....	14
4.2.1. Planning and Designing Research .....	14
4.2.2. Gathering Information.....	15
4.2.3. Analysis .....	16
4.2.4. Writing .....	16

4.2.5. Sharing Information .....	16
4.2.6. Other Stages and Sources .....	17
<b>5. Research Example: Atlantic Salmon on the Miramichi.....</b>	<b>18</b>
5.1. Approaches .....	18
5.2. Frameworks .....	18
5.3. Parameters.....	18
5.4. Information Gathering Methods.....	19
5.5. Analysis.....	19
5.6. Writing and Dissemination.....	20
<b>6. Prospects and Challenges .....</b>	<b>21</b>
6.1. Adapting Research to Local Situations .....	22
6.2. General Observations .....	22
6.3. Commentary on the hypothetical Atlantic Salmon FSC Fishery example .....	24
6.4. Future Possibilities .....	26
6.4.1. Promoting Collaboration .....	26
6.4.2. Final Comment .....	26
<b>7. Conclusion .....</b>	<b>27</b>
<b>8. Acknowledgments .....</b>	<b>28</b>
<b>9. References.....</b>	<b>29</b>

## LIST OF TABLES"

<i>Table 1: Preliminary Suggestions about FSC Research .....</i>	<i>21</i>
--	-----------

## Abstract

**Koenig, E. and Adlam, R. 2012. Socio-Economic Assessment Parameters and Methodology for Food, Social and Ceremonial (FSC) Fisheries in a *Species at Risk Act* (SARA) Perspective. Gulf Reg. Ecosystems Mgmt. Ser. 2012/04: v + 36 p.**

In 2011, a research was conducted on socio-economic assessment parameters and methodology for food, social and ceremonial (FSC) fisheries in a *Species at Risk Act* perspective. This report is based on a review of published material and represents the preliminary phase of this research. This report discusses research approaches, frameworks, methods, and parameters that could be potentially applicable to future research projects aimed at gathering information about FSC fisheries that could assist in making decisions pertaining to the *Species at Risk Act* (SARA). A hypothetical case - a FSC research project focused on Atlantic Salmon (*Salmo salar*) – presents elements in a more specific context.

## Résumé

**Koenig, E. and Adlam, R. 2012. Socio-Economic Assessment Parameters and Methodology for Food, Social and Ceremonial (FSC) Fisheries in a *Species at Risk Act* (SARA) Perspective. Gulf Reg. Ecosystems Mgmt. Ser. 2012/04: v + 36 p.**

En 2011, une recherche a été menée sur la méthodologie et les paramètres d'évaluation socio-économique pour la pêche à des fins alimentaires, sociales et rituelles (ASR) dans la perspective de la Loi sur les espèces en péril. Le présent rapport se fonde sur l'étude de documents publiés et constitue la phase préliminaire de cette recherche. Il traite des approches, cadres, méthodes et paramètres de recherche qui pourraient être applicables aux futurs projets de recherche dont le but serait de recueillir de l'information sur la pêche ASR qui pourrait éclairer la prise de décisions liée à la Loi sur les espèces en péril (LEP). Un cas hypothétique, un projet de recherche ASR axé sur le saumon de l'Atlantique (*Salmo salar*), présente les éléments dans un contexte plus spécifique.

## 1. INTRODUCTION

The Species at Risk Act (SARA) was proclaimed in June 2003, and forms part of the Government of Canada's strategy for the protection and recovery of wildlife species at risk. In its preamble, the SARA recognizes the roles accorded to Aboriginal peoples in the conservation of wildlife as essential. The Act also promotes that Aboriginal peoples be provided opportunity to participate in its implementation (Canada 2002). It also recognizes that the traditional knowledge of the Aboriginal peoples of Canada should be considered, when possible, in the assessment of which species may be at risk and in developing and implementing measures for their recovery. Aboriginal groups throughout Canada are involved in Food, social and ceremonial (FSC) fisheries which form a valuable component of the fabric of their communities. The social, cultural and economic value of these FSC fisheries has yet to be assessed and fully understood via traditional socio-economic assessment methods.

The *Constitution Act, 1982* affirms Aboriginal and treaty rights. Supreme Court decisions have re-affirmed Aboriginal rights that extend to the harvest, including fishing, of natural resources for food, social and ceremonial purposes. This natural resource use includes fishing.

Adding a species to the SARA for protection and recovery is a regulatory process, the Department of Fisheries and Oceans Canada (DFO) must follow the Cabinet Directive on Streamlining Regulation (Government of Canada, Treasury Board of Canada Secretariat, 2007a) to explain to Canadians the estimated costs and benefits of such a decision. Socio-economic assessments carried out by DFO describe and, where possible, quantify the positive and negative impacts of alternative decisions on Canadians. Socio-economic assessments at the listing stage could be greatly improved by the inclusion of unique aboriginal perspectives, especially for species with historical aboriginal importance. To date, information on the particular significance of FSC fisheries is generally lacking. Addressing this gap will require both the development of guidelines to ensure consistency and completeness of analyses, and the collection of new information not normally housed within federal departments.

This report presents approaches, frameworks, methods, and parameters that we see as potentially applicable to future research projects aimed at gathering information about FSC fisheries. This information could assist in making effective decisions about how to best protect particular species in compliance with the SARA. The advantages of collaborative approaches are noted, along with the potential usefulness of Social Impact Assessment (SIA) and Socio-Economic Assessment (SEA) approaches for SARA purposes. We discuss ways to select parameters and design information gathering and analysis methods.

In addition, we present a hypothetical case - a FSC research project focused on one species, Atlantic salmon (*Salmo salar*). This includes more specific suggestions for selecting approaches and frameworks, and developing parameters, choosing methods, analyzing gathered information, and disseminating findings.

Finally, we discuss the potential of building approaches, frameworks, parameters, and methods presented throughout the report, into similar projects focusing on various



species. We note features that are more likely to require major adjustments to particular local circumstances, and we consider guidelines and principles that might apply more generally.

## **2. PREAMBLE ON RESEARCH METHODS AND INFORMATION SOURCES**

This section explains the context of the present study and the background discussions that led to its development. As the authors of this report, we (Ed Koenig and Robert Adlam) also draw on our own past research experience in Aboriginal communities. Koenig has worked with various First Nations groups, mostly in Ontario, as part of Land Claims research. Adlam has done substantial Aboriginal fisheries research and interview work in New Brunswick. We cannot presume to know what “Aboriginal perspectives” on questions relevant to this project are, but based on our combined experience, we feel that we have a sense of what they might be, and we have an informed appreciation of the importance of trying to include Aboriginal perspectives in research that involves Aboriginal communities.

### **2.1. “Aboriginal Input”**

One of the requirements in the Statement of Work for this project was to include systematic input from an Aboriginal group or organization. Prior to accepting our contract proposal, Fisheries and Oceans Canada representatives had initiated plans for collaborating with one or more North Shore Micmac District Council (NSMDC) communities. NSMDC hoped to arrange this through Michael Cox, Environmental Coordinator of NSMDC’s Aboriginal Aquatic Resource and Oceans Management (AAROM) program. Mr. Cox was supportive of this research, and made diligent efforts to arrange for us to meet with NSMDC Chiefs, in order to explain our project and ask for their support of the project.

After we were informed that our proposal was accepted, we met with Fisheries and Oceans Canada representatives and Mr. Cox. At that meeting it was decided that one of the first tasks was to inform the Chiefs about the project. The Chiefs learned about the project approximately two weeks later – at a scheduled Chiefs’ meeting. The Chiefs raised concerns, including an expectation that they should have been informed about the project earlier. It was also apparent that their reluctance to support the project was linked to issues related to consultation processes. They expressed concern that their collaboration in this project could be regarded as meeting government obligations to “consult”.

It was determined that a subsequent effort to explain the project and its potential benefits to the Chiefs should occur by way of a formal letter. Following the advice and recommendation of Fisheries and Oceans Canada representatives, we noted in the letter that Aboriginal community participation in the project would be “without prejudice” – that it “would not be regarded as consultation” by the Crown. The Chiefs responded three weeks later, noting that they were still reluctant to collaborate on this project because the Assembly of New Brunswick Chiefs were in the process of establishing a consultation policy, and they were awaiting the recommendations and outcomes of that process.

#### **2.1.1. Aboriginal Input and Other Information Sources**

This report is a desktop study based mainly on information taken from books, scholarly articles, and Fisheries and Oceans Canada reports and documents. We also used materials found on websites.

## **2.2. Definitions**

The notion of a “Food, Social, and Ceremonial (FSC) fishery” is central to this project, so should be clarified. Several related terms warrant attention as well.

### **2.2.1. “Fishery”**

The term “fishery” sometimes refers to a fish species or population reductions without reference to human activities or interactions (fish as prey for other species). In other uses the emphasis is more on human harvesting and food production activities. Unless otherwise indicated, we imply this second meaning.

### **2.2.2. “Resources”**

While working with Aboriginal community members on developing a survey questionnaire pertaining to fisheries involvement, one of the report authors was alerted to the fact that the term “resource”, while sounding objective and neutral, may have connotations with which some Aboriginal community members are uncomfortable (Koenig, 2005). Some hold the view that the connotation is tied closely to an exploitative approach to nature. If we see things in the natural world as so many “resources”, we may have a tendency toward treating them merely as something available for the satisfaction of human needs and interests. In terms of what “values” we give them, this aligns with an “instrumental” or “use” value approach. Some see Aboriginal relations with the natural world as more in line with approaches that recognize “intrinsic values” of things, so there is dislike for the term “resources”. Apart from the “environmental ethics” question of which kinds of values best applies to Aboriginal peoples’ harvesting practices and belief, it is worth noting that even apparently neutral terms might be regarded with suspicion, especially in the political contexts of Aboriginal fisheries.

Some Aboriginal community representatives with whom we have worked worry that if they accept existing management language they reduce their chances of asserting their own perspectives. The point about how language (or particular words) can have political consequences is worth considering. At the same time, it is difficult to debate or otherwise engage in fishery management issues without using familiar terminology. While understanding that there are potentially pitfalls in its use we apply the term “resource” in our report for a convenient reference. Our report is aimed at gaining perspective into how FSC fisheries are “used”, but we see implications for a wide range of values associated with FSC fisheries as part of this objective.

## **2.3. Fishery Categories**

Another lesson from previous research applies to how we might discuss “commercial”, “subsistence”, or even “recreational” fisheries in FSC research contexts. While it may be useful for allocation or management purposes to distinguish these, some Aboriginal community members we have worked with are uncomfortable dealing with these categories because of their political and legal implications. They may also feel that these are imposed categories that do not easily fit their own notions about what fishing is and means to them.

### **2.3.1. “Subsistence Fishery”**

Anthropologists, along with economists, have helped develop the concept of “subsistence” practices. In efforts to understand economic activities cross-culturally and

comparatively, anthropologists adopted the term “subsistence” to mean activity aimed at meeting basic needs. A broader anthropological definition of “subsistence” would also include attention to potential cultural biases associated with notions of “affluence”. For example, groups that follow subsistence practices are not necessarily less “fortunate” in terms of how much labour they typically contribute. Where resources are plentiful, or where social organization facilitates productive harvests, consumption levels may be quite high. Regardless of efforts or consumption levels, subsistence practices are generally regarded by anthropologists and economists as not involving “exchange”. However, exchange of various resources, including fish, has been common among many Aboriginal groups across Canada from earliest time. Subsistence and exchange are not then exclusively separate activities in the view of aboriginal groups. The absence of exchange does not seem to be as good an indicator of “subsistence” practices as the kind of exchange involved. Where we use the term “subsistence” we include the possibility of informal trade and sharing.

### **2.3.2. “Commercial Fishery”**

“Commercial” fishing is “for-profit” activity. This term seems useful for discussing examples of modern fishing, whether practiced by Aboriginal or non-Aboriginal fishers. However, when using this term, we keep in mind that there are legal, political, and management conditions that distinguish Aboriginal communal commercial fisheries and non-Aboriginal commercial fisheries in some way. Thus, it should be understood that commercial Aboriginal fisheries are almost always communal in nature and which means that any allocation of resources belongs to the license holder, which is the Band or Aboriginal organization as a whole.

### **2.3.3. “Recreational Fishery”**

The notion of a “recreational fishery” is often imagined as a non-Aboriginal domain, especially in conflict situations where sport-fishing associations oppose Aboriginal fishing rights. While there is a cultural history of European practices such as “angling” being transplanted and elaborated among settler groups in various parts of Canada, hook-and-line- techniques were used by some Aboriginal groups in prehistoric times. It must also be noted that recent recreational fishing technologies are not restricted solely to non-Aboriginals. Aboriginal community members often live in proximity to good recreational fishing places, and are typically interested in outdoor activities such as “fishing” that have obvious links to past subsistence practices. We refer to “recreational fishing” as a domain that could include both Aboriginal and non-Aboriginal involvement and be carried out for enjoyment or as an activity that provides foods resources for households that goes beyond recreational use. In the Maritime Provinces there is also a history of Aboriginal participation as guides in a sport fishing economy, which also speaks to the need for an inclusive definition of “recreational fishery”.

### **2.3.4. “Aboriginal Fishery”**

“Aboriginal fishery” is another term worthy of reflection. We assume that it encompasses diverse possibilities – a broad range of resources, harvesting practices, and cultural beliefs. We use this term with awareness that there may be differences in practices and ideas typically associated with “Aboriginal fisheries” and “non-Aboriginal Fisheries”, but we cannot presume to know what features or qualities are unique without attention to particular cases. We assume that in many ways the two are interconnected (Koenig 2001).

### 2.3.5. “Food, Social, and Ceremonial (FSC) Fishery”

The terms discussed in this section are important because they are used in efforts to equitably allocate access to fishery resources. A term which has clear legal and political importance in this sense, and which is the focus of our project, is the “Food, Social, and Ceremonial (FSC) fishery”. It came into existence as a legal precedent when it was first referenced in the Sparrow decision of 1990. The Sparrow ruling determined that first priority for fish resources, after conservation, is Aboriginal peoples. The decision was based on the recognition of Aboriginal rights in Section 35 of the Constitution Act, 1982. The FSC fishery is often referred to as simply the “food fishery” (Koenig 2005). In some local contexts it is also indicated as the “Food and Ceremonial” or “Social and Ceremonial” fishery. However, these alternate terms have contributed to confusion in the interpretation of “Food, Social and Ceremonial Fishery.

In the Sparrow decision the actual kinds of activities that qualified as part of the FSC fishery were not determined. Given that there is diversity among Aboriginal groups in Canada, in terms of available local food resources, social activities, and ceremonial practices, notions about what a FSC fishery is may understandably vary. It is worth considering that the practical interpretation and application of FSC fishing rights might vary among First Nations as well. A practical example of a local interpretation of a FSC fishery is noted by Fishing Program representatives from Lennox Island First Nation on Prince Edward Island. They inform us that social events that qualify for social and ceremonial lobsters include significant birthdays, anniversaries, charity and sport fundraisers, graduations, funerals and community dinners. Ceremonial Events that qualify include sweat lodge ceremonies, baptism ceremonies, Pow Wow, weddings, first communion, confirmation and St. Ann Sunday<sup>1</sup> (Minigoo Fisheries: Fisherman’s Pride 2010). This is one example of many that could be listed.

There is uncertainty with respect to interpreting the full spectrum of Aboriginal fishing rights, desired management outcomes and the application of rights based on court decisions. This uncertainty extends to the SARA decision making process and the effects of listing decisions of FSC fisheries.

---

<sup>1</sup> <http://www.lennoxisland.com/experiencelennox/Experiences.html> Patron saint of Mi’kmaq people, Most important social and religious event for the year at Lennox Island, July 26.

### 3. APPROACHES AND FRAMEWORKS

This section presents research approaches and frameworks that we see as having potential for gauging the possible impacts of SARA decisions on FSC fisheries.

#### 3.1. Collaborative and Participatory Approaches

There is growing attention to research ethics and protocols, and to approaches that can reduce the distance between researcher as “objective observers” and communities as “subjects”. The ethical social researcher considers how communities and participants involved in projects might be impacted by research findings and research processes. In a participatory research setting there is a due diligence to report back to participants with findings and potential uses of recommendations. Responsibilities that researchers have to communities they work with are increasingly recognized, in part due to critiques articulated by communities themselves and in part due to efforts of conscientious researchers.

It is also clear that Aboriginal community participation can enhance research quality. In culturally unfamiliar settings local help may be essential. Key contacts can be made and relationships of trust can be built. Where a community has reason to be suspicious of a researcher or of the group they appear to represent, involvement of local community members may help dispel distrust, and thereby increase access to sensitive information.

Research projects can present unique opportunities for historically marginalized communities. Projects may support some level of local employment (e.g. food and accommodation providers, interpreters, research assistants). There is also potential for community benefit through capacity building. Training opportunities, along with experience in addressing research questions linked to important community issues, can contribute to a community’s ability to influence processes by which local services are provided and governance is shaped (Warry 1990).

##### 3.1.1. First Nations Participation in Research

Social science research institutions and funding bodies have not always recognized the potentials of participatory or collaborative research (Ryan 1989), but much has changed in the past few decades. In some cases participatory approaches are now required.

Nevertheless, ethical issues associated with research in Aboriginal communities are far from resolved (Fleuhr-Lobban 1998; Waldram 1998). Consequently, several Aboriginal groups and organizations have recently developed, or are in the process of developing “Research Protocols” or guidelines that they hope will facilitate more locally appropriate research practices, and enhance community input into how research is conducted. These guidelines provide insight into local concerns, and can serve as a focus of agreement that can improve the prospects of building productive collaborations.

There are unresolved debates about how attention to the social contexts of research may influence a researcher’s commitment to gathering accurate and reliable information (Hastrup et al. 1990). But given the advantages and benefits of participatory

approaches, we encourage efforts to extend them where possible. Our perspective is that in some contexts good research requires attention to these areas.

### **3.1.2. SARA and First Nations Participation**

Hurlburt (2008) notes that the Species at Risk Act promotes the concept that First Nations communities should have the opportunity to participate in decisions (Canada, 2002). Participatory research approaches can be key to designing processes for gathering meaningful input from these communities.

### **3.1.3. Consultations and First Nations Collaborations**

The term “consultation” has important legal connotations for First Nations communities that may influence their willingness or ability to participate in SARA related research. As noted above, the Sparrow decision recognized that First Nations had an Aboriginal right to fish for food, social and ceremonial purposes. It recognized resource protection and conservation as the interests that can take priority over FSC fisheries. The court states “Within the analysis of justification, there are further questions to be addressed, depending on the circumstances of the inquiry. These include: whether there has been as little infringement as possible in order to effect the desired result; whether, in a situation of expropriation, fair compensation is available; and whether the aboriginal group in question has been consulted with respect to the conservation measures being implemented” (SCC, 1992). . The idea of “consultation” is also important more broadly in Aboriginal-rights contexts, since it is increasingly recognized as a general principle of fair and equitable negotiation.

The Species at Risk Act (Canada, 2002, s. 3) states that: “for greater certainty, nothing in this Act shall be construed so as to abrogate or derogate from the protection provided for existing aboriginal or treaty rights of the aboriginal peoples of Canada by the recognition and affirmation of those rights in section 35 of the Constitution Act, 1982”. This statement appears to imply that Aboriginal participation in SARA research and decisions should not have any impact on existing rights - is without prejudice to them. But given that uncertainties about legal interpretation and implication remain, as do uncertainties about what might be interpreted as “consultation”, Aboriginal leaders are cautious about participating in research related to FSC fisheries. This may limit opportunities for collaboration, or may at least require that extra time and effort be given to planning FSC fishing projects.

### **3.1.4. Aboriginal Knowledge**

We use the terms Aboriginal Knowledge, or AK; and Traditional Environmental (or Ecological) Knowledge, or TEK, as generally interchangeable, though TEK is explicitly limited to environment issues. Interest in traditional knowledge maintained within Aboriginal groups has grown in the last several decades, in parallel with recognition of its relevance to Aboriginal resource rights issues, and to broader resource management questions. The body of research in this area has roots in early Land Use and Occupancy studies (Weinstein 1993; Usher 2000). TEK (Berkes 1999) studies and publications cover a wide range of areas, from possible sacred domains, to comparisons between Aboriginal and non-Aboriginal knowledge systems, and to more practical questions about how it can be applied in current management contexts. Usher’s (2000) article concerning the use of TEK in Environmental Assessment is an example of the latter area. TEK and AK are also

linked with global political and intellectual rights issues. In that context it is tied to the notion of “Indigenous Knowledge” (Sillitoe 2002).

Given the potential relevance of Aboriginal Traditional Environmental Knowledge (ATEK) for various areas of concern to Aboriginal communities (e.g. Education, Land Claims, Resource Management) it is not surprising that several communities in the Maritimes are already involved in TEK or ATK projects (example, NSMDC-AAROM 2008a; NSMDC-AAROM 2008b).

The Species at Risk Act (Canada, 2002) states that Aboriginal Knowledge related to a species should be taken into account where possible (see also Hurlburt 2008). There is potential for linking TEK research projects and FSC fishery research, or for FSC researchers to gain important findings through access to information gathered as part of TEK projects. But issues associated with “consultation” may have a limiting effect here as well, as may intellectual property rights issues.

Sharing cultural or traditional knowledge can be deeply significant and provide a sense of pride and long standing attachment to nature for individuals and communities that have a history of being marginalized by modern society. Establishing meaningful collaborations with research communities will increase the chances of finding appropriate ways to show appreciation for what is shared.

There are a number of examples of collaborative projects aimed at gathering ATK. The ongoing work of researchers and communities linked to the Social Research for Sustainable Fisheries group (Social Research for Sustainable Fisheries 2002; McMillan and Davis 2010) is of special interest because of its Maritimes location. They have produced important information about particular species, along with insights into collaborative research processes.

### **3.2. Socio-economic Impact Assessment**

We refer to Social Impact Assessment (SIA) as a framework for studying and articulating potential consequences of planned developments, undertakings or interventions. There is considerable variation in the steps or phases that can be included in SIA. We regard SIA and Socio-Economic Assessment (SEA) as interchangeable terms in many ways, though they are potentially different given the explicit economic reference in SEA. Our report title refers to SEA parameters and methods, but we give attention to challenges associated with the economic focus in SEA, and suggest that the advantages of approaches more consistent with SIA are worthy of consideration..

The economic focus in SEA studies is most obvious in its attention to costs and benefits that could accompany a particular development or intervention. This focus fits with important government policies and directives, such as the Federal government’s Cabinet Directive on Streamlining Regulation, or CDSR (Government of Canada 2007a), which requires that costs and benefits of regulations be analyzed. The Treasury Board’s “Canadian Cost-Benefit Analysis Guide - Regulatory Proposals” (Government of Canada 2007b) presents guidelines for carrying out cost-benefit analysis, and “impact analysis” more broadly.

A discussion draft produced by Fisheries and Oceans Canada’s policy sector (2006) and circulated within the department, called “Framework for Integrating Socio-



Economic Analysis in Species at Risk Act Decision Making” also has an economic focus. It discusses potential ways to standardize measures of various kinds of values so they might be used in calculating potential impacts of SARA decisions. It also articulates the challenging task of measuring “non-use” values.

In a report entitled “Socio-economic Evaluation in Species at Risk Listing and Recovery: Considerations for the Mi’kmaq of Nova Scotia”, Hurlburt states that compared to other departments dealing with SARA requirements, Fisheries and Oceans Canada has the “most extensively developed socio-economic analysis process” (2008, p. 8). She sees Fisheries and Oceans Canada’s SEA framework (2006) as practical in that it encourages flexibility. The report suggests that a preliminary assessment of the scope of potential impacts be performed, and then a research effort appropriate to estimated significance of potential impacts could be planned (e.g. if little impact is anticipated as per the preliminary report, a minimal SEA would follow, and vice versa).

Hurlburt (2008) sees Fisheries and Oceans Canada’s SEA approach (2006) as focused largely on cost benefit analysis. While she recognizes the practicality of this, she notes difficulties and limitation as well.

Some impacts of SARA decisions might be fairly easily translated into costs in monetary terms. For example, George et al. (1995) working with Cree communities on James Bay, measured the amount of bush food (wild game) harvested each year by the community, and calculated what it would cost to replace that food if it were no longer available due to flooding from a proposed hydro development.

Other impacts are more difficult to quantify or calculate in monetary terms. Hurlburt (2008) states that while “non-market values” are often ignored in impact assessments; they may determine the effectiveness of protection and recovery efforts. The author suggests that methods to include non-market values in economic assessments do exist, but does not elaborate on how best to translate them into measurable economic terms.

“Non-market” values could refer to subsistence harvests, in which case costs could be calculated as noted in the James Bay example. But “values” associated with traditional resource-use practices are sometimes thought of more broadly, when speaking of “non-use values”. For example, the overall sense of well being that is attributed to being engaged in an activity that has the potential to provide sustenance to the community as a whole.

Hurlburt states “there appears to be no specific examples of how to handle loss of treaty rights in socio-economic analyses” (2008, p. 7). It is not yet clear whether replacement costs can cover this, or whether other considerations are required as well. If restrictions on traditional practices are planned, there may be “internal” costs related to forced culture changes.

If we attempt to account for “internal costs” related to culture change impacts, then the past as well as current FSC fishing practices will be among the list of relevant research topics, since a group may be in the process of reviving traditions. This possibility would contribute to the need for a broad ranging and flexible framework, whether it is called a SIA or a SEA.

For some SARA purposes the structure of a SEA is predetermined. A limited number of hypothetical models are to be proposed, and one is then to be recommended, based on analysis of costs and benefits. Hurlburt (2008) sees problems with the limited range of scenarios typically used, and with the limited range of models used to evaluate scenarios.

It is likely that this rigid approach is in place because it has been or is regarded as efficient and workable. But it is worth questioning whether a rigid SEA format provides the best way to gather and produce valid and useful insights concerning FSC fishing with respect to the implementation of SARA. The economic focus in SEA is useful and important for some purposes, but it may not be well suited for all purposes. When looking at FSC fishery issues in SARA contexts, gaps and limits associated with such an approach are evident. This approach has been developed mainly to meet the requirements of federal government regulatory processes and directives (e.g. CDSR 2007a), and ultimately to inform Canadians about the potential outcomes of regulatory decisions.

### **3.2.1. Rethinking SEA and SIA**

When it comes to species considered to be at risk, not all governing bodies base decisions on SEA or SIA studies. The Nova Scotia provincial government, under its Endangered Species Act, has an approach to SARA listing decisions that does not include such use (Hurlburt 2008). Alternative kinds of studies, as well as variations in SEA or SIA approaches are worth considering.

To address difficulties associated with the limits of economic analysis one could look for new ways to measure values in economic terms that have so far been hard to capture or calculate. This approach is explored later in this report. A second approach is to restructure the SEA framework, so it can be better adapted to SARA purposes. Non-use values could still be considered, but not necessarily just in economic terms. If this second approach is considered, gathering information relevant to economic analysis would still be a primary goal, but more broadly defined “values” would be regarded as equally significant. This is also explored below.

### **3.2.2. Measuring “Values”**

In several existing Fisheries and Oceans Canada reports based on a socio-economic analysis of a particular species for SARA purposes, the authors note the difficulty of assessing the “value” of a FSC fishery (e.g. Fisheries and Oceans Canada 2008). This may be in reference to the lack of information on economic value, but, in some cases it is in reference to a lack of tools available for measuring ‘non-use’ economic value. But, accounting for “non-use” value may also be problematic.

Several interesting studies are aimed at finding ways or tools to measure non-use values existence. For example, Rudd’s study (2009) describes a survey that asked people how much money they would personally contribute each year if that contribution could ensure that a particular species was preserved (just to know it was still out there – not so it could be harvested for any particular human purpose). This approach to measuring “non-use values” is interesting, and may have some practical value, but it is not clear if it is applicable to FSC research.

### 3.3. Social Impact Assessment

We noted above that we regard SIA and SEA as similar, except for the explicit economic focus in SEA. We also noted that in SEA a set number of scenarios are often required, as is a cost benefit analysis of the scenarios. A less formally structured and more flexible format, which we refer to in this section as a SIA framework, would have several advantages for SARA related FSC research.

Social Impact Assessment is described by Ervin (2005) as a flexible framework that includes a number of potential research stages. He sees social science research methods, especially fieldwork methods, as well suited to the kind of work required in most of these stages. Some typical stages of SIA are noted and include:

- determining the scope of regions, people, and interests;
- constructing profiles of groups (including attention to local “values” associated with impact issues);
- projection of potential impacts as informed by various theories (e.g. culture change theory, development theory, cultural ecology);
- assessment and evaluation stages.

He also notes that in larger development projects, SIA stages might include work around mitigation, management, and monitoring. Furthermore, Brizinski (1983) describes SIA as basically consisting of four stages:

- developing community profiles,
- projecting possible impacts,
- assessing the extent of possible changes or impacts, and
- evaluating impacts.

She notes that this general framework should not necessarily be seen as a set of fixed or linear processes, but rather as a general orientation - the purpose of a SIA should dictate the finer details of its design.

Ervin (2005) explicitly notes the importance of gaining perspective on local “values” associated with impacts, and there is certainly room for this in Brizinski’s framework (1983). Attention to local values can both expand our understanding in areas where “use-values” do not seem to apply, and it can also clarify local issues directly related to potential impacts. Using ethnographic fieldwork methods, researchers can explore how people feel about potential impacts, for example about not being able to harvest a particular species. This in turn provides an appreciation for what value that species might have for the community in question.

Preister (1987) suggests that anthropological skills can facilitate effective information gathering and communication required to explore local values. He also notes that the process of information gathering itself can have important consequences within

the contentious environments associated with the social impacts that are being assessed. We feel that insights into local perspectives on potential SARA related decisions and actions are worth pursuing alongside other questions about FSC fisheries. This is an “issues-centered” approach for developing a SIA; it acknowledges the potential for conflict between competing interests.

While Preister (1987) suggests a focus on “issues” which implies that political questions will get attention; a related approach to Social Impact Assessment, known as Social Impact Research, is presented by Lane et al. (1997)., This approach brings political contexts to the forefront. They suggest ways to integrate more technical SIA and more politically focused SIA approaches. They see this work as being in line with recent attempts to make SIA more relevant. Much can be gained, they feel, by encouraging participation from diverse, and especially historically underrepresented groups. They incorporate Strategic Perspectives Analysis (SPA) as part of SIA, by which qualitative information about “the nature and interests of relevant stakeholders” is gathered.

The authors suggest that the way different groups view technical data may reflect local values. They suggest that we need to think critically about the manner in which quantitative figures are presented within the broader assessment context. By including political dimensions, an assessment may be limited in its intended objectivity.

Lane et al. (1997) also discuss common problems associated with the use of Social Indicators, which are typically found within SIA. Often existing data is used, and commonly such information is not current or not very specific. There is a significant body of literature pertaining to SIA studies within First Nations communities in Canada and elsewhere (Notzke 1994). These references should be consulted in the development of an approach with a flexible framework on which to design FSC research within the context of a SIA for SARA purposes. Some of these studies suggest ways to interconnect various indicators. For example, when assessing local concerns one might see threats to cultural belief as potentially affecting psychological health, and this in turn has an effect on physical health. Likewise, changes in social patterns or features may have impacts on cultural notions and practices.

They also recommend a model for use in cross-cultural settings that focuses on community values and can help assess how communities might respond to particular impacts. This model emphasizes three areas of focus: social viability (capacity to deal with changes), economic viability (earning ability), and political efficacy (self-governing effectiveness). As the authors note, when integrating technical and political approaches to SIA, communities are more fully recognized as active agents of change, rather than passive respondents.

## 4. PARAMETERS AND METHODS

In this section, we discuss parameters and methods that we see as having the best potential for producing useful insights into possible impacts of SARA decisions on FSC fisheries. In many ways the selection of specific parameters and methods is subject to chosen approaches and frameworks.

### 4.1. Parameters

Parameters refer to specific areas, categories, factors, questions, or topics that seem especially important, or relevant to a research objective. It is useful for researchers to know what parameters are typically used in similar studies. If the same parameter (or set of parameters) is used in a number of studies, there is potential for correlating findings in powerful and efficient ways. Likewise, existing data sources that include common parameters - or from which one can extract common parameters - can be usefully combined (e.g. Usher and Wenzel 1987). This advantage is most obvious when analyzing quantitative information.

For gaining insights into potential impacts on FSC fisheries, it is worth looking for parameters that allow consistency and efficiency - one might think of these as having “potential breadth”. But it is equally important to consider “potential depth” i.e. significance and validity. By “validity” we mean how closely a measurement or finding is actually tied to what it is said to represent. “Reliability”, on the other hand, refers to how accurately information is gathered. The ideal is to establish parameters that can be consistently applied, since this expands quantitative analysis possibilities. But in practice, useful insights will require that one focuses on areas and issues that are especially (deeply) relevant to local conditions, regardless of their potential breadth.

### 4.2. Methods

Our discussion of potential methods to be used follows typical project stages, but in keeping with approaches noted earlier, we do not assume that these stages are separate and consecutive; they can however be interconnected. Along with material we discuss here, we recommend the source material by Bernard (e.g. 1988, 2000, 2005) noted in our references for details on particular research methods.

#### 4.2.1. Planning and Designing Research

Once a research objective is established the planning and designing of the research project is dependent on what research instruments or methods (e.g. surveys, in-depth individual interviews, group interviews) are seen as most appropriate to the project's purpose and the local cultural setting. When a participatory approach is followed, collaboration with Aboriginal community representatives should begin as early as possible. Some participatory approaches (for example Participatory Action Research – PAR) assume that communities will initiate research, according to their needs and interests. In our case, the purpose has already been established – our project is to investigate methods that can be utilized to bring Aboriginal knowledge on biological, social and cultural understandings of a species forward to better inform SARA decision making processes (listing decisions, recovery planning).

It is unlikely that collaborations will begin until funding is in place, and putting funding in place requires some project planning and design work. If there are ways to

establish Aboriginal input and communication processes earlier, at departmental planning stages, they may be worth considering. If the planning occurs prior to Aboriginal community involvement then it is wise to allow for adaptive processes which allows for Aboriginal input. If this commitment can be communicated effectively, then chances of arranging Aboriginal collaboration can be enhanced.

Proper collaboration depends on the quality of ongoing relationships between government departments and Aboriginal communities. In this light, each individual project may influence this relationship, and in turn may have an effect on future research possibilities.

To this end Aboriginal leaders may recommend a person who will act as community liaison or facilitate collaboration by recommending the establishment of a project steering committee. Some communities may have their own researchers, or people who have experience working with researchers. The identified persons may be able to join this steering committee. People with special knowledge of the research topic and/or related issues of interest are also viable candidates. Any steering committee would benefit from involvement of at least one Elder due to the level of respect accorded to Elders within Aboriginal communities.

The role of a steering committee would be to establish the final planning process. This includes determining if there are local protocols concerning consent process, methods to gather information (e.g. surveys, in-depth individual interviews, group interviews), reporting process (review process, finalizing report), and communication strategy (how to show appreciation for shared information, how to communicate results).

#### **4.2.2. Gathering Information**

The role and responsibilities of all project members is determined in the planning process. Decisions are made concerning the use of research instruments or methods (e.g. surveys, in-depth individual interviews, group interviews). Where interviews are planned the inclusion of local knowledge will be essential, using committee members or local volunteers to assist lead researchers. They can provide a list of key participants to be interviewed, and will know how to contact interviewees and how best to schedule interviews.

In-depth interviews have a great deal of potential for gaining insight into FSC harvesting and consumption practices and into the significance of these practices. Using an "interview schedule" or list of topics and questions to cover, will help to ensure that important areas are not missed. When specific information is required, "closed" questions, which limits the range of responses, is preferred. The use of "open-ended" questions is suggested for topics that cover a broader range of responses. It allows interviewees to say what they mean in their own words.

In conducting group interviews or "focus groups" (Morgan 1991), similar skills are required. One advantage of focus groups is that people may feel more comfortable sharing ideas within a group setting. Things others say may also awaken memories. In some cases the big picture can be constructed with input from several people. When explaining the purpose of the interview at the beginning of a group session, it is a good idea to note that all contributions are valued, and during the interview it is good to make room for less talkative individuals where possible.

Survey questionnaires may be used for gathering FSC fishery information. Questionnaires can be “administered” in various ways. An interviewer can go through the questionnaire with an interviewee, in person or over the phone, or interviewees could fill them out themselves. They can be sent by mail, via web sites, or dropped off at places frequented by community members to be self-administered.

Weinstein and Morrell (1994) provide an example of effective use of self-administered questionnaires that were distributed throughout several Aboriginal communities. The research was for a project focused on FSC fisheries. It is possible that the success of this method in their case was linked to the fact that their project was initiated and controlled by an Aboriginal organization.

#### **4.2.3. Analysis**

Quantitative data analysis techniques to be used are established in the design stage and described in the methods section. Questionnaire responses are coded and entered into applicable statistical software package. Qualitative analysis can begin immediately, with the researchers immersing themselves in data to bring order and meaning to the narrative.

Interview material is typically transcribed. If deeper questions involving local values, assumptions, or metaphors used to make sense of particular situations are of interest, the transcriptions, as texts, can also be used various systematic approaches. Approaches for analyzing qualitative data include hermeneutics<sup>2</sup>, narrative and performance analysis, discourse analysis, grounded theory, and content analysis (Bernard 2005). In all of these approaches topics or themes are coded and then efforts are made to provide credible inferences about underlying values or assumptions. Saturation points of key messages are sought. Inferences should be reviewed with participants for verification of meaning

#### **4.2.4. Writing**

Report writing is the responsibility of lead researchers or individuals to whom researchers have entrusted such responsibility. Dividing workload and sharing report writing is at the discretion of the principal authors.

#### **4.2.5. Sharing Information**

Agreement on the how, who, and when for the dissemination of information is an important component in the design and planning stage. Researchers should make commitments and establish clear agreements in the project design stage regarding how to share research findings.

---

<sup>2</sup> Discipline of interpretation used primarily in the study of written texts and in understanding and interpretation of linguistic and non-linguistic expressions.

#### **4.2.6. Other Stages and Sources**

SIA studies can include additional stages, including implementation and monitoring. These are assumed to be beyond the scope of our report. As noted in the previous section, one good source of ideas about how to design a research project is by looking at similar projects that have already been done. In addition to work described according to these stages, literature surveys might be conducted, typically in the early stages of a project. Useful meanings about particular species or cultural beliefs and practices might be found, as well as insights into possible methods. Book knowledge may be limited for particular purposes, but a good project should give attention to all potential sources.



## **5. RESEARCH EXAMPLE: ATLANTIC SALMON ON THE MIRAMICHI**

This section is presented in order to provide a hypothetical example of how some of the elements we have noted could be presented in a practical and specific context. It is provided for illustrative purposes and is not based on actual research. Atlantic Salmon was chosen as a species because it was being evaluated by COSEWIC at the time that this report was written and because of its significance to Aboriginal communities. It begins with historical sketches that may be relevant to local perspectives on issues linked to species protection plans and related research.

### **5.1. Approaches**

As noted throughout this report, we recommend that a collaborative or participatory approach be followed when planning and carrying out this project. This is a shift from traditional power balances. The expertise of non-community researchers is still to be respected, but so is the knowledge of local FSC salmon fishing practices and issues held by community members. In a participatory approach local insights and local involvement should be encouraged in all stages of a project.

### **5.2. Frameworks**

A general Social Impact Assessment, as discussed earlier, has good potential as an orientation for capturing and interpreting the range of information potentially relevant for exploring FSC Atlantic Salmon for SARA purposes. Economic impacts are likely to be identified as a key to understanding the broader range of social impacts. Equal attention to less easily quantified areas may be required. Local perspectives on related issues may be essential factors, if impacts are to be equitably mitigated. The range of local “values”, which has proven difficult to assess in existing SARA related impact studies, may also be worthy of research attention.

### **5.3. Parameters**

Useful insights into the Atlantic Salmon FSC fishery will require that appropriate parameters be selected. As noted earlier the process of deciding on useful parameters can itself be a productive exercise in terms of encouraging collaborations and capacity building. It is possible that community perspectives on relevant research questions and topics will be different from ones to which researchers are otherwise accustomed. Local ideas and views may be linked to historical and political issues surrounding fishing opportunities and practices.

For example, when discussing similar issues with Aboriginal community members, one of the writers of this report was surprised that “location” of fishing activity was so high on a list of potential parameters. It later appeared that this was tied to the fact that clarifying fishing locations could contribute to efforts linked to a range of fishing-rights issues (Adlam, 2002). Non-community members may have a useful comparative perspective on this hypothetical Atlantic Salmon FSC impact study. If parameters have proven relevant in similar case-studies they should be brought up for discussion with them as well.

## 5.4. Information Gathering Methods

Potentially useful information from any available source should be gathered. Various kinds of publications are worth considering (e.g. books, articles, reports). Existing research or ongoing projects focused on similar topics likewise have potential. COSEWIC's ATK subcommittee may be worth contacting at the information gathering stage of an Atlantic Salmon FSC study, given their mandate: "to advise writers of status reports of known sources of ATK" (COSEWIC 2010). Local research assistants may also know about local research projects that might be worth reviewing.

Surveys have good potential as information gathering tools or instruments in this case, as do in-depth interviews (see earlier parameters and methods section). Specific questions can be developed according to particular chosen parameters. If oral history of subsistence salmon uses is itself chosen as a parameter, open-ended interviews will be essential. These can allow interviewees to express broad notions; for example, they might have important things to say about how salmon is tied to cultural identity. It is best to allow as much room for people to put things into their own words as possible in cases where symbolic meanings are of interest.

## 5.5. Analysis

Some might think it reasonable to have a community member help with information gathering, but would reject the idea of community involvement in analyzing information. Some analysis procedures can require specialized training. Although this can be an obstacle, it might also be viewed as a training opportunity for Aboriginal participants. There are also questions about the objective evaluation of information, which might make people suspicious about community involvement at this stage. While this is a danger, collaboration allows unique opportunities to increase accountability for assessments on all sides. It also presents unique chances to construct better interpretations of information patterns, given that local communities might know of possible explanations that may not be obvious to outsiders. Some species may taste better at certain times of year, for example, and this could affect harvest and use patterns. This fact might only be obvious to local people.

There are also cases where things may be more obvious from outside. For example, a taste preference for Atlantic Salmon, as with all foods, is to some degree subject to culturally defined categories and values. Some species may have an image problem, so to speak. This appeared to be the case in research one of the authors of this report conducted in another location where recent fishing conflicts linked to Aboriginal fishing rights occurred (Koenig, 2000) . There seemed to be a strong consensus among interviewees about which fish were good to eat; the preferred species were uniformly ones that had long been part of local resource-use patterns and diets, and the disliked species were all newly introduced.

There could be other factors involved here, but it appears that an individual's assessment of fish taste has a lot to do with socialization. Also, it could perhaps have something to do with current political tensions. In this case there were marked tensions between Aboriginal rights supporters and sport fishing associations - the fishing associations promoted ongoing stocking of the newly introduced species that did not taste very good to Aboriginal-rights supporters. Historical trends in the appeal of lobster, and its marketability, also reflect shifting images of this species and changes in its position within cultural domains.

## **5.6. Writing and Dissemination**

It is often difficult to coordinate writing tasks, but if writing about Atlantic Salmon FSC fishing can be shared, this should be encouraged. While there are issues concerning ownership of FSC impact assessment reports written for SARA purposes, where possible, sharing reports with communities is a requirement of collaborative and participatory work. This symbolically recognizes their contributions, and it may also have practical value for them. Disseminating and sharing of research reports and/or findings within the broader community is also important, since other researchers may gain insights relevant to their topics of interest. Sharing research produced through collaborations between Aboriginal and non-aboriginal communities can promote a collaborative research culture.

## 6. PROSPECTS AND CHALLENGES

Challenges related to social science research with a focus on qualitative data and values and attitudes related to culture and custom is recognized. We note some of the key points and provide our insight on the issue.

*Table 1: Preliminary Suggestions about FSC Research*

Preliminary Suggestions	Explanation/Details
<b>Approaches</b>	
1/ Community based, collaborative, and participatory research approaches can enhance the quality of a project.	<ul style="list-style-type: none"> <li>a) This can improve access to local information.</li> <li>b) This can provide opportunities for community capacity building.</li> <li>c) Local participation in a project should begin as early as possible.</li> <li>d) There may be ways to articulate these ideas that are more appropriate to local or cultural contexts (e.g. language).</li> <li>e) Ethical issues need to be considered from the start and on an ongoing basis.</li> </ul>
2/ An "iterative" approach, that allows one to "go back and forth" between research "stages" is useful.	a) Insights can be built by gathering and analyzing information as required, not just as part of a rigid series of steps.
<b>Frameworks</b>	
1/ A flexible and adaptable framework is needed.	<ul style="list-style-type: none"> <li>a) A Social Impact Assessment framework can be adapted to specific purposes.</li> <li>b) Local models can be used on their own, or can be integrated with established frameworks.</li> <li>c) Preliminary work may be required to assess how much research attention a particular species or topic warrants.</li> <li>d) Political questions may warrant attention.</li> </ul>
<b>Parameters</b>	
1/ In collaborative work, parameters (main focus areas) can be developed as part of project planning and orientation.	<ul style="list-style-type: none"> <li>a) The notion of "parameters" can be expressed in local terms - e.g. "main topics".</li> <li>b) Local "values" may be worth exploring.</li> <li>c) Historical contexts may be relevant.</li> </ul>
<b>Methods</b>	
1/ Like parameters, methods need to match selected approaches and frameworks, and be locally appropriate.	<ul style="list-style-type: none"> <li>a) Fieldwork techniques, especially face-to-face interviews have special potential, since they allow access to various kinds of information.</li> <li>b) In-depth interviews, as oral history gathering, can fit into local models of knowledge sharing (e.g. story telling).</li> <li>c) Survey questionnaires may have potential where communities are comfortable with that format and with the research project topic.</li> </ul>

## 6.1. Adapting Research to Local Situations

Researchers must pay attention to the uniqueness of local perspectives and the potential for cultural sensitivity. There are political dimensions to this, in that it presupposes some level of appreciation for cultural diversity, but this is also practical. For example, if one is not aware of unexpected meanings that “common” words can have in particular local or cultural settings, it may be hard to communicate with interviewees, let alone gather information from them.

Our preliminary view is that research projects will likely require significant adaptation to local settings. Not all Aboriginal communities are alike but consistency might be enhanced through recognition of general approaches and principles that could apply to this kind of research. It would be useful if guidance documents or technical procedure “guidelines” for conducting SARA related FSC research could be developed. Since FSC fishing activities associated with one species may be very different from those linked with another, research questions will have to be designed on a case-by-case basis.

Appropriately demonstrating appreciation to Elders and others for sharing knowledge is important. Providing recognition through a gesture of respect is warranted. In some contexts, traditional gifts, which can symbolically indicate respect for traditions, may be an example.

## 6.2. General Observations

We regard this report as a first step and a preliminary document. We hope it can play a role and can contribute to taking the next steps in research efforts to provide insights into fishing for FSC purposes. Well informed listing and recovery decisions within the context of SARA require this type of understanding.. We re-iterate the need for collaboration with Aboriginal communities in designing locally appropriate research for SARA purposes whenever possible.

Our inability to arrange formal Aboriginal input into this project is unfortunate albeit understandable; the timeline constraint that we, along with Fisheries and Oceans Canada representatives, our Aboriginal community liaison person, and the Chiefs, had with which to work was a major impediment. There may have been other historical tensions and sensitivities underlying this constraint but it is likely that the main obstacle we faced was simply that everyone had other more pressing priorities. This experience itself is insightful in the context of our project’s purpose. It provides lessons about how collaborative research might best be designed and carried out, in particular that timelines need to be flexible when working with Aboriginal communities.

While encountering some disappointment that we were not able to arrange as much input from Aboriginal community representatives as we originally planned, we acknowledge that the difficulty provides useful insights. Our project demonstrates the complexity of building productive research collaborations on short notice. This reaffirms the need to focus on collaboration at the inception stage of research. This is the manner in which community representatives will have the time to carefully consider participation and its impacts with respect to how and when to be involved in particular research projects.

Collaboration can include Aboriginal input in research design stages, for example involvement in decisions about research approaches, frameworks, parameters, and methods, but it can extend to all other stages, including analysis.

From past experience we can speak to the importance of returning research findings to communities, and the added benefits of returning them promptly. This can be essential to developing reciprocal trust.

We feel that research in this domain requires attention research ethics. Research disciplines typically have ethics statements, academic institutions have ethics review boards, and specific First Nations communities, as well as larger Aboriginal bodies, have ethical protocol documents. All of these are important guides that should be considered as part of a project's first stages. But ethical questions do not typically disappear once a project is up and running. Manderson and Wilson (1998) point out that researchers may be caught in a balance of various perspectives that exist across or within particular groups. Professional ethics codes provide important guidelines, but in the field we may have to deal with unique situations that require original ethical responses. We are likely to have to revisit ethical commitments regularly throughout the duration of a project. We need to sharpen our awareness of "ethical precepts" – and honor them.

Regarding frameworks, we see a flexible "Social Impact Assessment" model as likely more workable and more appropriate to FSC research for SARA purposes than a rigid cost-benefit assessment formats.

That Aboriginal leaders want to be informed of projects at the earliest possible stage is understandable, since they want some level of control over actions, interventions, and decisions that can have consequences for their communities, and over evidence used to make decisions. This is no surprise, given that all political leaders have such roles, and given that historically, political power and process in Aboriginal communities has been limited by the provisions of the Indian Act. Involving Aboriginal representatives in early stages can increase the likelihood of building a locally appropriate project. Research in Aboriginal communities across Canada has to be approved by community leaders, typically Chief and Council. If and when leaders support a project they are likely to have suggestions about how best to arrange collaboration.

Finally, consultation issues may need to be explicitly addressed. We considered the possibility of developing a standard disclaimer for FSC researchers to use to help dispel the reluctance some Aboriginal community members might have to contribute to FSC research, given questions about what constitutes "consultation". Perhaps a statement that interviews would be given "without prejudice" could be used. While something like this has worked in a few cases, its effectiveness is tied to the levels of trust that already exist outside of the interview situation. However, we concluded that there are legal questions involved that are beyond our expertise, but still requires resolution.

These are preliminary recommendation, and as such might or might not withstand testing against local Aboriginal community members' perspectives, concerns, and ideas, or against the experience of researchers or resource managers.

### **6.3. Commentary on the hypothetical Atlantic Salmon FSC Fishery example**

The current use of Atlantic Salmon by Aboriginal groups in the area for FSC purposes is tempered by historical conditions. Historical insights such as these can help track, for SARA purposes, the role of this species within the area's broader FSC fishery. Since Atlantic salmon is known historically as a very important subsistence food, and given the history of restrictions on Aboriginal harvests, research related to this species may entail special challenges.

When we are dealing with technical information, the research requires a science where we hope to optimize control for reliability and validity. In contrast, social science focuses on questions about the human side of resource relationships. Knowing something about history - about how Atlantic Salmon fishing has been regulated (or not) in the past, and about how Aboriginal people have been impacted by changes in the salmon fishery - may provide a glimpse into how Aboriginal people currently feel about Atlantic Salmon FSC fishing opportunities. In light of this history, and the broader Aboriginal fishery picture, we might expect that FSC research will require that a lot of attention be given to establishing an appropriate research relationship with Aboriginal communities. Good research will require awareness of issues linked to past grievances and current aspirations. It will require meaningful collaboration.

As noted earlier, having a research objective and plan already in place prior to discussions with Aboriginal community members poses an obstacle to collaboration and meaningful participation. This may be an inevitable challenge for SARA related research, given the prescriptive nature of the legislative process by which particular species are considered for protective actions.

This problem could potentially be reduced if it was addressed earlier in the process. COSEWIC (Committee on the Status of Endangered Wildlife in Canada) is the body that recommends species for SARA listing actions. It currently includes an Aboriginal Traditional Knowledge Subcommittee. One of its mandates is: "to facilitate the access to relevant ATK for wildlife species assessment using appropriate processes and protocols related to ATK gathering" (COSEWIC 2010). We recommend that this committee begins to explore links between ATK research and FSC fishing research, and perhaps play a more active role in communicating with specific Aboriginal communities about potential listing decisions while facilitating their participation in required SIA studies. However, the current terms of reference for this sub-committee focus the gathering of ATK in relation to biological and ecological information. We suggest giving this sub-committee the ability to broaden the scope of its mandate to include social and cultural 'meaning' research.

Another challenge related to SARA decisions is the time factor. While timing may be critical when developing species protection plans, it may be impossible to arrange a good collaborative research project within prescribed timelines. Aboriginal leaders will require sufficient opportunity to review issues and make decisions. Obviously, early communication can help here. Another way to shorten the time needed to build collaborations is by working toward building a "culture of collaborative research". A body of collaborative work already exists on this topic. Research workshops could be held in various communities to explain how research collaborations can work, using existing examples. Communities would then be better

prepared to engage in collaborative projects should the need or opportunity for them arise.

If and when a collaborative Atlantic Salmon FSC project finds support by one or more communities, Aboriginal participation in designing the project will increase the likelihood that it will be effective and efficient. As noted above, community leaders may offer to recommend individuals who could play active research roles. A steering committee, consisting of these and other individuals, can help develop specific approaches, frameworks, parameters, and methods. They can inform researchers about local protocols, and may have ideas about how to inform community members about the project, and how to encourage their participation.

It may be good to have various sectors of communities represented on steering committees. It is likely that community leaders will recognize the benefits of this range of participation for the project, and more broadly may see it as a positive community building strategy.

In order to encourage research collaborations, community benefits need to be clearly articulated (e.g. hiring, training, capacity building, and applicability of findings to other community projects or efforts).



## **6.4. Future Possibilities**

### **6.4.1. Promoting Collaboration**

As noted throughout this report - taking the next steps toward understanding FSC fisheries in ways that can inform SARA decisions - certainly requires support and involvement of Aboriginal communities. Meaningful Aboriginal input may require that leaders are comfortable with the level of control that their communities will have in such research. Given political sensitivities that have historically been part of relations between Aboriginal communities and government resource management departments, research that is funded through these departments may be difficult to carry out.

Departments can attempt to counter this condition by continuing to foster communication and by demonstrating that they take Aboriginal perspectives seriously. As well, relations can be improved through continuing efforts to support research collaborations involving individuals representing various perspectives and positions, e.g. Fisheries and Oceans Canada representatives, arm's length researchers (e.g. academic researchers), and Aboriginal individuals with experience in resource related programs. This would help build capacity within aboriginal communities to partner fully in social research required to better understand the issues related to FSC fishery and other ATK type studies.

Also, if collaborative projects could be arranged between academic and Aboriginal partners (without Fisheries and Oceans Canada), some of the legal, historical, and political stumbling blocks noted above could be avoided. This would however require funding from Aboriginal communities or from academic funding sources. The obvious question in this case is how a topic relevant to SARA concerns would get off the ground without initiatives from departments dealing with SARA issues. Some academic researchers are already aware of the need for this kind of research, and academic funding may be available for applied work in this area. Possible benefits of research into "past and present community fishing practices" may be evident to some Aboriginal communities. There appears to be potential for collaborations of this sort.

### **6.4.2. Final Comment**

It is recommended that as a follow-up to this report critical feedback from Aboriginal community representatives be gathered. This feedback should include what assertions are supported, rejected and what are the strengths and weaknesses of the recommendations.

The points made in Table A1 (see Appendix A) and throughout this report could be improved by soliciting feedback from affected users (various Aboriginal community representatives, resource managers, harvesters, among others - either Aboriginal or non-Aboriginal). Such feedback could provide a basis for continued dialogue on the prospects and challenges associated with FSC related SARA decisions. It could also enhance the potential of building future collaborations by which to meet these prospects and challenges.

## 7. CONCLUSION

In various SARA-related social impact studies or socio-economic studies, the difficulty of assessing impacts on Food, Social, and Ceremonial fisheries is noted as a significant challenge. As of yet, little information about the extent of FSC fishing practices, or about patterns of use is available to researcher.

Increased Aboriginal participation in SARA processes could increase the sharing of information about FSC fisheries. But given the history of fishing management and ongoing political issues, we cannot expect that sharing such information will be a straightforward process.

Citing a 2006-2007 evaluation of Canadian Species at Risk programs, (Environment Canada 2006), Hurlburt (2008) notes that managers from Fisheries and Oceans Canada, and other responsible departments have pointed out problems linked to the absence of a consistent approach to enabling Aboriginal consultation and participation in SARA decisions. Our report is part of an ongoing effort to develop a more consistent approach.

We emphasize that any recommendations we make in this report are tentative. As was stressed throughout, Aboriginal groups who may be impacted by SARA decisions should have opportunities to contribute to the design of such research. Our study benefits to some degree from Aboriginal input, but more substantial collaborations are required.

This region's FSC fishery is characterized by diverse species and fishing patterns, and a high degree of variability in how particular communities have been involved in it. And the historical and ongoing struggle to assert and define the rights of Aboriginal people to fish for FSC purposes, places FSC research processes within unpredictable political contexts.

Given these complex conditions, we feel that researchers need to keep flexibility and adaptability in mind when selecting research approaches, frameworks, parameters and methods. A great deal of attention to locally appropriate research design is needed; along with efforts to support the capacity of communities to engage in SARA related decisions.

## 8. ACKNOWLEDGMENTS

The authors would like to acknowledge and extend our sincere gratitude to Michael Cox, environmental coordinator, North Shore Micmac District Council - Aboriginal Aquatic Resource and Oceans Management (AAROM) program, for his valuable time, guidance and insight throughout the development of this project.

Grateful appreciation and thanks go to Randall Angus (Mi'kmaq Confederacy of Prince Edward Island), Jessica Pratt (DFO, Aboriginal Programs and Governance - Ottawa) and one anonymous reviewer for their helpful assistance given during the peer-review process.

We also wish to acknowledge the following DFO employees who have contributed to this document at various stages: Barbara Best (Economic Analysis and Statistics – Ottawa), Melinda Lontoc-Roy (Aboriginal Programs and Governance – Ottawa), Ross Alexander (Ecosystem Management Branch – Moncton), Maryse Cousineau (Species at Risk Program – Moncton), Stéphanie Lemieux (Policy and Economics – Moncton), Ray MacIsaac (Species at Risk Program – Moncton), Josiane Massiera (Aboriginal Fisheries – Moncton), This project was entirely funded by Fisheries and Oceans Canada aquatic Species at Risk Program.

## 9. REFERENCES

- Adlam, R. 2002. Fish Talk. *Anthropologica* XLIV: 99-111.
- Berkes F. 1999. *Sacred Ecology: Traditional Ecological Knowledge and Resource Management*. Philadelphia (PA): Taylor and Francis. 209 p.
- Bernard HR. 1988. *Research Methods in Cultural Anthropology*. Newbury Park (CA): Sage Publications Inc. 520 p.
- Bernard HR, editor. 2000. *Handbook of Methods in Cultural Anthropology*. Walnut Creek (CA): Altamira Press. 808 p.
- Bernard HR. 2005. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. 4th ed. Lanham (MD): AltaMira Press. 824 p.
- Brizinski PM. 1983. *A Survey of Social Impact Assessment: Theory and Practice, Volume 1: Public Policy and the SIA Process*. Technology Assessment in SubArctic Ontario (TASO) Research Report No. 7-11. Hamilton (ON): McMaster University, Faculty of Social Sciences.
- Canada. Parliament. House of Commons. 2002. *An Act Respecting the Protection of Wildlife Species at Risk in Canada*. Bill C-5, 37th Parliament, 2nd Session, 2002. Ottawa: Public Works and Government Services Canada – Publishing.
- Committee on the Status of Endangered Wildlife in Canada. 2010. *About COSEWIC: Terms of Reference Committee on the Status of Endangered Wildlife in Canada (COSEWIC)* [online]. Available from [http://www.cosewic.gc.ca/eng/sct6/s\\_ct62\\_e.cfm#annex1](http://www.cosewic.gc.ca/eng/sct6/s_ct62_e.cfm#annex1) [accessed 22 March 2011].
- Environment Canada. 2006. *Departmental Findings. Formative Evaluation of Federal Species At Risk programs 2006-2007* [online]. Available from <http://www.ec.gc.ca/aeve/default.asp?lang=En&n=53869FF31&offset=4&toc=show> [accessed 22 March 2011].
- Ervin A.M. 2005. *Applied Anthropology: Tools and Perspectives for Contemporary Practice*. 2nd ed. Boston (MA): Pearson / Allyn & Bacon. 288 p.
- Fisheries and Oceans Canada, Aboriginal Programs and Governance. 2011. *A Strategic Plan for Aboriginal Involvement in the Aquatic Species at Risk Program*.
- Fisheries and Oceans Canada, Policy & Economics. 2006. *Framework for Integrating Socio-economic Analysis in Species at Risk Act Decision Making Draft for Discussion*.
- Fisheries and Oceans Canada, Policy & Economics. 2008. *Socio-Economic Analysis For the Species at Risk Act Listing Decision for Winter Skate (Leucoraja ocellata) (Southern Gulf of St. Lawrence Population - Endangered)*. Gulf Region. 50 p.
- Fisheries and Oceans Canada. 2009. *First Nation Participation in Commercial Fisheries Following the Marshall Decision*. Atlantic Integrated Commercial Fisheries

Initiative (AICFI) [online]. Available from <http://www.dfo-mpo.gc.ca/fm-gp/aboriginal-autochtones/marshall/index-eng.htm> [accessed 22 March 2011].

Fleuhr-Lobban C. 1998. Ethics. In: Bernard HR, editor. *Handbook of Methods in Cultural Anthropology*. Walnut Creek (CA): Altamira Press. pp.173-202.

George P, Berkes F and Preston RJ. 1995. Aboriginal Harvesting in the Moose River Basin: A Historical and Contemporary Analysis. *Canadian Review of Sociology and Anthropology*. 32(1) 69-90.

Government of Canada, Treasury Board of Canada Secretariat. 2007a. *Cabinet Directive On Streamlining Regulation*. 14 p.

Government of Canada, Treasury Board of Canada Secretariat. 2007b. *Canadian Cost-Benefit Analysis Guide: Regulatory Proposals*. 47 p.

Hastrup K, Elsass P, Grillo R, Mathiesen P and Paine R. 1990. Anthropological Advocacy: A Contradiction in Terms? [and Comments]. *Current Anthropology*. 31(3): 301-311.

Hurlburt D. 2008. Report for the Confederacy of Mainland Mi'kmaq - Socio-economic Evaluation in Species at Risk Listing and Recovery: Considerations for the Mi'kmaq of Nova Scotia.

Koenig, EC. 2000 Native fishing conflicts on the Saugeen-Bruce Peninsula: Perspectives on resource relations past and present. Open Access Dissertations and Theses. Paper 2629. <http://digitalcommons.mcmaster.ca/opendissertations/2629>

Koenig EC. 2001. Rethinking a Native Fishery. In: Nichols JD, editor. *Papers of the 32nd Algonquian Conference*. 32nd Algonquian Conference. 2001. University of Manitoba, Winnipeg (MB). pp. 269-277.

Koenig EC. 2005. *Cultures and Ecologies: A Native Fishing Conflict on the Saugeen-Bruce Peninsula*. Toronto (ON): University of Toronto Press. 240 p.

Lane MB, Ross H and Dale AP. 1997. Social Impact Research: Integrating the Technical, Political, and Planning Paradigms. *Human Organization*. 56(3): 302-310.

Manderson L and Wilson RP. 1998. Negotiating with Communities: The Politics and Ethics of Research. *Human Organization*. 57(2): 215-216.

McMillan LJ and Davis A. 2010. What Does This Tell About Us? Social Research and Indigenous Peoples: The Case of the Paq'tnkek Mi'kmaq. *Traditional Marine Resource Management and Knowledge*. Secretariat of the Pacific Community. *Information Bulletin* 27: 3-16.

Minigoo Fisheries :Fisherman's Pride. 2010. Social & Ceremonial [online]. Available from <http://www.lennoxisland.com/minigoofisheries/social.htm> [accessed 21 March 2011].

Morgan D. 1991. Focus Groups as Qualitative Research. Newbury Park (CA): Sage Publications Inc. (Qualitative research methods; vol. 16).

NSMDC-AAROM (North Shore Micmac District Council - Aboriginal Aquatic Resource and Oceans Management). 2008a. Newsletter – Spring.

NSMDC-AAROM (North Shore Micmac District Council - Aboriginal Aquatic Resource and Oceans Management). 2008b. Newsletter – Summer.

Notzke C. 1994. Aboriginal Peoples and Natural Resources in Canada. Toronto (ON): Captus Press Inc. 339 p.

Preister K. 1987. Issue-Centred Social Impact Assessment. In: Wulff RM and Fiske SJ, editors. Anthropological Praxis: Translating Knowledge into Action. Boulder (CO): Westview Press. pp 39-55.

Rudd MA. 2009. National values for regional aquatic species at risk in Canada. Endangered Species Research. vol. 6: 239–249 [online]. Available from <http://www.int-res.com/articles/esr2008/6/n006p239.pdf> [accessed 21 March 2011].

Ryan J. 1989. Decolonizing Anthropology. In: Paine R, editor. Advocacy and Anthropology: First Encounters. St. John's: Institute of Social and Economic Research. Memorial University. pp. 208-14.

Sillitoe P. 2002. Globalizing Indigenous Knowledge. In: Sillitoe P, Bicker A and Pottier J, editors. Participating in Development: Approaches to Indigenous Knowledge. New York (NY): Routledge. pp. 108-137.

Social Research for Sustainable Fisheries (SRSF) (St. Francis Xavier University, Antigonish, NS) 2002. The Paq'tnkek Mi'kmaq and Kat (American Eel – *Anguilla rostrata*): A Preliminary Report of Research Results, Phase 1. in collaboration with The Paq'tnkek Fish and Wildlife Society. Research Report No. 4. 47 p.

Supreme Court of Canada. 1990. R. v. Sparrow, [1990] 1 SCR 1075

Usher PJ. 2000. Traditional Ecological Knowledge in Environmental Assessment and Management. The Arctic Institute of North America. 53(2): 183-193.

Usher PJ and Wenzel G. 1987. Native Harvest Surveys and Statistics: A Critique of Their Construction and Use. The Arctic Institute of North America. 40(2): 145-160.

Waldram JB. 1998. Anthropology in Prison: Negotiating Consent and Accountability with a "Captured" Population. Human Organization. 57(2): 38-244.

Warry W. 1990. Doing Unto Others: Applied Anthropology, Collaborative Research and Native Self-Determination. Culture 10(1): 61-73.

Weinstein M. 1993. Aboriginal Land Use and Occupancy Studies in Canada. Paper prepared for the Workshop on Spatial Aspects of Social Forestry Systems. Chiang Mai, Thailand. Program on Environment. East-West Center, Honolulu. 35 p.

Weinstein M and Morrell M. 1994. Need is Not a Number: Report of the Kwakiutl Marine Food Fisheries Reconnaissance Survey. Kwakiutl Territorial Fisheries Commission, Campbell River (BC).