

DFO/FSRS Local Ecological Knowledge Survey of Inshore Commercial Fish Harvesters on the Scotian Shelf

The DFO-FSRS Inshore Ecosystem Research Project is a joint project between the Fishermen and Scientists Research Society (FSRS) and DFO which began in 2005. Inshore areas are critical nursery and feeding areas for many marine species but we have insufficient scientific data to meaningfully and comprehensively contribute to the management of the inshore areas and associated marine species on an ecosystem basis. The primary objective of the project is to increase our understanding of the inshore ecosystems in support of an ecosystem approach to management through field studies, data analysis and by conducting a local ecological knowledge (LEK) study of fish harvester's knowledge. This report summarises some of the initial results from the LEK study.

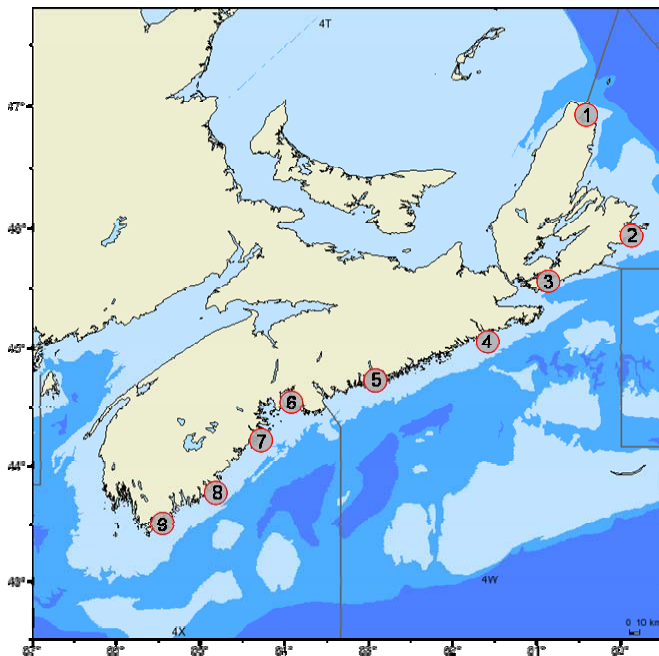


Figure 1: Map of the Study Sites along the Atlantic coast of Nova Scotia

- 1 = Cape North
- 2 = Mira Bay/Gabarus Bay
- 3 = St Peters Bay
- 4 = Country Island
- 5 = Ship Harbour/ Chezzetcook
- 6 = St. Margarets Bay
- 7 = La Have
- 8 = Port Mouton
- 9 = Port La Tour

The objectives of the LEK study were to map fishermen's knowledge of the distribution, seasonal changes in abundance, and life history and habitat associations of fish, invertebrates, birds, mammals and macrophytes, as well as to identify areas considered to be ecologically and biologically significant. The survey was conducted in nine sites along the Atlantic coast of Nova Scotia (Figure 1) in two stages. In the first stage, a random sample of fish harvesters were interviewed by telephone and were asked to identify up to three fishermen particularly knowledgeable about the ecology of their fishing grounds. In the second stage, face to face interviews were conducted with the peer-identified experts who were most frequently recommended through the phone survey. This methodology was employed to ensure that fish harvesters recognised as experts by their fellow fish harvesters participated in the survey.

The survey took place from December 2006 to June 2008. In total, 318 telephone interviews (Stage 1) and 53 face-to-face interviews (Stage 2) were conducted (Table 1).

Table 1. Number of interviews conducted by area for the LEK study, Stage 1 and 2.

AREA	Stage 1 Number Telephone Interviews	Stage 2 Number Face to Face Interviews
N Cape Breton	30	6
Gabarus and Mira Bay	49	6
Isle Madame/St Peters Bay	19	6
Country Harbour	17	6
Chezzetcook and Ship Harbour	46	6
St Margarets Bay	30	6
La Have River	22	6
Port Mouton	50	5
Port La Tour	55	6
Totals	318	53

The average length of the face to face interviews was 4 ½ hours. This represents a large body of knowledge which has not yet been fully analysed. In this brief report we present raw summary results for the following 7 questions:

1. Are there any spawning areas that you consider to be really ecologically important (particularly significant) either currently or in the past?
2. Nursery or juvenile areas are areas where young fish are known to aggregate. Are there any nursery or juvenile areas that you consider to be really ecologically important (particularly significant) either now or in the past?
3. Are there areas that you know of that have a very high abundance of one particular species (relative to other areas where this species aggregates) either currently or in the past?
4. Areas of high diversity are areas where many species, such as fish, birds, marine mammals, invertebrates, etc. aggregate. Currently or in the past are there areas that have a particularly high diversity of species either part of the year or year round?
5. Are there areas that you would consider to be unique, rare or distinct either currently or in the past? For example, a unique area may be the only place you now about where a particular seabird nests or where the ocean bottom has a particular feature.
6. Are there areas that you would consider to be pristine, e.g., where there are minimal impacts from human activity?
7. Are there areas that are of particular significance to you for any reason either currently or in the past (e.g. cultural, historical, ecologically, etc...)?

The seven types of significant areas were identified in all sites with the exception of Gabarus Bay and Mira Bay, and Port Mouton where no unique areas were identified (Table 2). These data reflect the raw information provided by the peer-identified experts and require further analysis. For example, some of these areas are identified by more than one expert. Sites of high abundance were the most frequently identified, followed by spawning areas.

Table 2. Number of significant areas identified by 53 peer-identified experts in the 9 LEK sites.

	Type of Significant Area						
	Spawning	Nursery	High Abundance	Diversity	Unique	Pristine	Other
Cape North	12	8	13	6	4	5	5
Gabarus and Mira Bay	5	3	4	7	0	2	2
Isle Madame/St Peters Bay	9	1	10	3	8	2	1
Country Harbour	6	2	4	5	10	7	3
Chezzetcook and Ship Harbour	23	9	29	16	6	5	2
St Margarets Bay	5	5	19	3	16	3	2
La Have River	11	19	29	13	8	5	7
Port Mouton	16	1	9	4	0	4	2
Port La Tour	1	0	6	1	13	1	1

In addition to the specific questions about significant areas, the LEK survey included questions about fishing history, fishing ground, fish and invertebrates (areas of high abundance, spawning areas, nursery areas and migration routes), birds, other species and marine plants. A large amount of data and information has been provided by the peer-identified experts. This data has been entered into databases and will be studied over the next two years.

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