



Fisheries and Oceans
Canada

Pêches et Océans
Canada



Interview Code: TII _____

Fish Harvesters' Inshore Ecosystem Knowledge Study Tier II Mapping Local Ecological Knowledge

LEK MAPPING

[Interviewers: Fill in relevant blanks as indicated before interview starts.]

Interview code: _____

Interview date: _____

Interview location: _____

Do you have any questions before we begin?

Interview Start Time: _____

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SECTION I: FISHING HISTORY

To begin with we would like to ask you several questions about yourself and your fishing background.

1. Would you please tell me, what is the name of the harbour or wharf from which you are currently fishing?

(Name of harbour or wharf)

2. Also, would you tell me the name of the community in which you grew up?

(Print name of community)

3. Approximately how many years have you been fishing for a living? _____
(years)

4. Currently, would you describe yourself as a fulltime fisherman?

Yes.....1

No.....2

5. Have you always fished for your living?

Yes.....1

No.....2

Comments:

6. About how many years have you fished in the inshore (less than 12 miles)?

 (years)

Comments:

7. Would you tell me which of the following commercial fishing licenses or quotas you hold?
 (circle the response number)

	Yes	No	Comments
a) a lobster license?	1	2	_____
b) a snow crab quota?	1	2	_____
c) other crab license?	1	2	_____
d) a marine plant license?	1	2	_____
e) an eel license?	1	2	_____
f) a herring license?	1	2	_____
g) a mackerel license?	1	2	_____
h) a groundfish license?	1	2	_____
i) other license?	1	2	_____
j) other license?	1	2	_____
k) other license?	1	2	_____
l) other license?	1	2	_____

Comments:

8.

a) Approximately how many months did you fish last year (2005)? _____
(Months fished)

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec (*Optional*)

b) How many months did you fish in the inshore? _____
(Months fished)

Now we would like to ask you a few questions about your fishing experience.

9. What species of fish or shellfish do you feel you know the most about (including bycatch, invertebrates or non-commercial species)? [*1. LIST TO BE REFERRED TO FOR MAPPING, 2. RANK LIST ACCORDING TO KNOWLEDGE AFTER IT HAS BEEN COMPLETED.*]

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

10. What species do you fish now (in the last 3 years)?

SECTION II: FISHING GROUNDS

We would now like to talk with you about where you fish and which inshore area(s) you are most familiar with. Focusing first on the inshore,

11. Can you tell me please, were you fishing in the **inshore** (less than 12 miles) between...: *(If necessary refer to boats to establish time periods)* and in what months?

Time Period Months

(Optional)

- a) ... 1970 - 79 ? _____ - _____ Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
- b) ... 1980 - 89 ? _____ - _____ Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
- c) ... 1990 - 99 ? _____ - _____ Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
- d) ... 2000 - 05 ? _____ - _____ Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Comments:

12. What area(s) of the **inshore** are you most familiar with and what species do you fish there?
[BLACK]

MAP AKB_##

<i>Chart #</i>	<i>Map Code</i>	<i>Species Fished</i>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Now focusing on the offshore,

13. Have you fished **offshore** (more than 12 miles)?

Yes.....1

No.....2 (If No, proceed to Section III, Question 15, Page 9)

14. Were you fishing **offshore** between... (If necessary refer to boats to establish time periods) and in what months?

Time Period Months

(Optional)

- a) ... 1970 - 79 ? _____ - _____ Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
- b) ... 1980 - 89 ? _____ - _____ Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
- c) ... 1990 - 99 ? _____ - _____ Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
- d) ... 2000 - 05 ? _____ - _____ Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Comments:

SECTION III: UNIQUE OR SIGNIFICANT AREAS

[PURPLE]

Now we are going to ask you about areas that you think are unique or have high ecological significance. Although all areas have some ecological significance or importance we are interested in those that have particularly high ecological significance. For example, a spawning area that supports 80% of the population of a particular species at one time will have greater importance than an area that supports only 10%. We want to know about areas that have particularly high ecological significance to make sure they are being properly considered when managing human activities. For example, the shipping lanes were moved in the Bay of Fundy to try to avoid ship strikes with Right Whales. For each of the questions in this Section, we are interested in the whole ecosystem, including fish, invertebrates, birds, and mammals.

15. Are there any spawning areas that you consider to be really ecologically important (particularly significant) either currently or in the past?

- Yes.....1
- No.....2
- Not Sure....3

If yes, please draw the approximate boundary of the area(s) on the map and explain why you consider the area(s) important and for which species for specific times of year. *(Indicate on map and enter map code)*

MAP SASP_ ##, SASH_ ##

[The interviewer may want to prompt to see if there is additional information to explain why it is an area of particular importance.]

<i>Chart #</i>	<i>Map Code</i>	<i>Species</i>	<i>Year</i>	<i>Month(s)</i>	<i>Reason of importance</i>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

20. Are there areas that you would consider to be pristine, E.g., where there are minimal impacts from human activity?

Yes.....1

No.....2

Not Sure....3

If yes, please draw the approximate boundary of the area(s) on the map and explain why you consider the area(s) pristine. (*Indicate on map and enter map code*)

MAP SAPP_##

<i>Chart #</i>	<i>Map Code</i>	<i>Reason why area is considered pristine</i>
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____

21. 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...)?**

- Yes.....1
- No.....2
- Not Sure....3

If yes, please draw the approximate boundary of the area(s) on the map and explain why you consider the area(s) important, and for which species, and time of year. (*Indicate on map and enter map code*)

MAP SAOP_##, SAOH_##

<i>Chart #</i>	<i>Map Code</i>	<i>Species</i>	<i>Year</i>	<i>Month(s)</i>	<i>Reason of importance</i>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Species Name _____

Interview Code: TII _____

e. If yes, can you indicate these changes on the map and tell me when they occurred? (Write year(s) and indicate on map)

MAP spp_AH_##, spp_AP_##_c

Chart #	Map Code	Time Period	Comment
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____

Now, we are going to discuss a few questions concerning Historic Annual Abundance for _____.

f. Have there been changes in abundance for this species over the last few decades? If yes, please describe them. (Use dates as much as possible. e.g. Use boats if necessary.)

Yes.....1

No.....2 (If No, proceed to i)

Not Sure....3

Comments:

g. Was there a peak in abundance?

Yes.....1

No.....2 (If No, proceed to i)

Not Sure....3

Species Name _____

Interview Code: TII _____

h. *If yes*, when was the peak? _____ (year(s))
Comments:

Now, we are going to discuss a few questions concerning Seasonal Abundance for

_____.

i. Currently, in which month(s) of the year does the high abundance occur?

(circle months, for appropriate areas)

Refer to MAP. spp_AP_## or spp_AH_##

<i>Chart #</i>	<i>Map Code</i>	<i>Months</i>
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec

j. Are your observations based on:

1. When you are fishing?
2. Your observations throughout the year?
3. Other?

Comments:

Species Name _____

Interview Code: TII _____

k. Overall, has the high abundance always occurred at the same time of the year over the last few decades?

Yes.....1 (If Yes, proceed to m)

No.....2

Not Sure....3

Comments:

l. If No, when was/were the change(s) and in what month(s) was the high abundance? (enter years, circle months)

Refer to MAP. spp_AH_## or spp_AP_##_c

Chart #	Map Code	Time Period	Months
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Comments:

Species Name _____

Interview Code: TII _____

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Spawning areas [BLUE]

We would now like to ask you a series of questions about the spawning areas of _____ in the areas that you are most familiar with. Again, we will be asking you about where these areas are located, when you see them and any changes that you have seen over time. So first, we'll start with current spawning areas:

p. Do you know of any spawning areas for _____?

Yes.....1

No.....2 (If No, proceed to ff)

Not Sure....3

q. If yes, can you show me these areas? (Indicate on map with map codes)

MAP spp_SP_##

<i>Chart #</i>	<i>Map Code</i>	<i>Time Period</i> <i>(Optional)</i>	<i>Comment</i>
_____	_____	-	_____
_____	_____	-	_____
_____	_____	-	_____
_____	_____	-	_____
_____	_____	-	_____
_____	_____	-	_____
_____	_____	-	_____
_____	_____	-	_____

r. Currently, in which month(s) of the year does spawning occur in these areas?
(circle months)

<i>Chart #</i>	<i>Map Code</i>	<i>Month</i>
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Species Name _____

Interview Code: TII _____

_____	_____	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
_____	_____	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
_____	_____	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
_____	_____	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
_____	_____	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
_____	_____	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
_____	_____	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

We would now like to discuss any Changes that you may have observed in relation to Spawning Areas. We will begin with changes in the abundance of spawners:

s. Have there been changes in the abundance of spawners over the last few decades?

Yes.....1

No.....2 (*If No, go to w*)

Not Sure....3

t. If yes, please describe the changes over the last few decades.
(*If necessary refer to boats to establish time periods.*)

u. Was there a peak in the annual abundance of spawners over the last few decades?

Yes.....1

No.....2 (*If No, proceed to w*)

Not Sure....3

v. *If yes, when was the peak?* _____ (year (s))

Now lets move on to talk about Changes in the Seasonal Timing of Spawning, e.g. spawning may have occurred earlier or later in the year.

Species Name _____

Interview Code: TII _____

w. Over the last few decades, has spawning always occurred at the same time of year ?

Yes.....1 (If Yes, proceed to y)

No.....2

Not Sure....3

Comments:

x. If no, when was the change(s) and in what month(s) did spawning occur? (enter years, circle months)

Refer to MAP. spp_SP_##

Chart #	Map Code	Time period	Month
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D

And now we would like to talk about any Changes that you may have observed in the Geographic Location of the spawning area

y. Have there been changes in the geographic distribution of existing spawning areas over the last few decades?

Yes.....1

No.....2 (If No, proceed to aa)

Not Sure....3

Comments: _____

Species Name _____

Interview Code: TII _____

z. If yes, can you please draw these changes on the map and tell me when they occurred? (Write year(s) and indicate on map)

MAP. spp_SH_##, spp_SP_##_c

Chart #	Map Code	Time period	Month (Optional)
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D

aa. Over the last few decades are there spawning areas that no longer exist?

Yes.....1

No.....2 (If No, proceed to cc)

Not Sure....3

bb. If yes, please draw an approximate boundary of the area on the map and describe when it was a spawning location. (Indicate on map with map codes)

MAP. spp_SH_##

Chart #	Map Code	Time Period	Comment
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____
_____	_____	_____ - _____	_____

Species Name _____

Interview Code: TII _____

Nursery areas [GREEN]

We would like to talk about nursery areas for _____ in the areas that you are most familiar with. Nursery areas are areas where young, or immature animals aggregate. Amongst other things these areas may provide protection from predators and a good food source (If asked you can say it may also be related to water temperature, water movement).

ff. Have you seen [enter this species] _____ less than _____ [see table 1 for size at maturity]? (Circle yes or no)

Yes.....1

No.....2 (If No, proceed to qq, Page 38; **Migratory routes.**)

Not Sure.....3

gg. If yes, are they in specific areas that are different or distinct from adults?

Yes.....1

No.....2

Not Sure....3

Comments:

hh. Are the immature _____ present at times that are different or distinct from adults?

Yes.....1

No.....2 (If no, proceed to ii)

Not Sure....3

Comments:

The areas where we find immature _____ (insert species name) we call nursery areas.

Species Name _____

Interview Code: TII _____

ii. Can you please outline on the map where these nursery areas are located and when they are present in this area? *Circle month(s)*

MAP. spp_NP_##

Chart #	Map Code	Month
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

We would now like to talk about any changes that you may have observed in nursery areas over the last few decades.

jj. Continuing to talk about _____ size _____ (*insert species name*), are there areas where you once saw immature _____ (*insert species name*) but don't see them anymore?

Yes.....1

No.....2 (*If No, proceed to ll*)

Not Sure....3

kk. *If yes*, can you please outline on the map where you used to see these immature _____ (*insert species name*) and when (include year(s), months)?

MAP. spp_NH_##

Chart #	Map Code	Time period	Month
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D
_____	_____	_____ - _____	J F M A M J J A S O N D

Species Name _____

Interview Code: TII _____

ll. Have there been changes in the abundance of immature _____ over the last few decades?

Yes.....1

No.....2 (If No, proceed to nn)

Not Sure....3

If Yes, please tell me when and in which month(s) the changes in abundance of immature _____ occurred. (enter years, circle months)

spp_NH_## or spp_NP_##

Chart #	Map Code	Time Period	Month (Optional)
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Comments:

mm. If so, when was the peak? _____ (year(s))

Finally we would like to ask you three questions about Other Features and Species that may be associated with these Nursery Areas.

nn. Are there specific habitat characteristics, such as currents and bottom type that define these nursery areas?

Yes.....1

No.....2

Not Sure....3

Refer to MAP. spp_NP_##, spp_NH_##spp_NP_##_c

If Yes, please list:

Chart #	Map Code	Comment
_____	_____	_____

Species Name _____

Interview Code: TII _____

pp. Do you know what the relationship is between these species? [E.g. predator, prey, competitor, co-exist, etc...]

Yes.....1

Refer to MAP. spp_NP_##

No.....2

Not Sure....3

Chart #	MapCode	Species	Species	Time Period	Comment
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____
_____	_____	_____	_____	-	_____

Migration routes [ORANGE]

Our final set of questions concerning _____ is about the migration routes, if any, of this species, in the areas that you are most familiar with.

qq. Do you know of any migratory routes for this species?

Yes.....1

No.....2 (If no, proceed to Section V, page43.)

Not Sure....3

Species Name _____

Interview Code: TII _____

rr. Please draw the route(s) on the map. During which months of the year is this route taken?
(circle season)

MAP. spp_MP_##

Chart #	Map Code	Month
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Comments:

Now that we have established the current migration routes of _____, we would like to ask you a few questions about how this may have changed over time, first in terms of the timing of the migration route, and then in the location of the migration.

ss. Has the timing of migration changed over the past few decades?

Yes.....1

No.....2 (If No, proceed to tt)

Not Sure....3

If Yes, please tell me when and in which month(s) migration occurred/changed. (enter years, circle months)

Refer to MAP. spp_MP_##

Chart #	Map Code	Time Period	Month (Optional)
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Species Name _____

Interview Code: TII _____

_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____ - _____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

tt. Have there been changes in the route over the last few decades?

Yes.....1

No.....2 (If No, proceed to vv)

Not Sure....3

uu. If yes, please provide details and draw boundaries of the previous route(s).

Chart #	Map Code	Month	MAP. spp_MH_##
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	

Finally we would like to ask you three questions about Other Features and Species that may be associated with these Migration Routes.

vv. Are there specific habitat characteristics, such as currents and bottom type that define these migratory routes?

Yes.....1

No.....2

Not Sure....3

Refer to MAP. spp_MP_##, sppMH_##, spp_MP_##_c

Chart #	Map Code	Comment
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

SECTION V: BIRDS [LIGHT BLUE]

Thank you for taking the time to go through these detailed questions. We would now like to talk with you about seabirds, which are also an important part of the marine ecosystem. We are going to start with a picture show!

23. I'm going to show you a series of photos. Can you tell me whether you are familiar with these particular species (*circle Yes or No*) and if so, what name do you use for them? (*The proper names are given for the interviewer's information and can be relayed to the interviewee after they have given their answer.*)

- | | | |
|--------------------------------------|------------|----------|
| a) <i>Atlantic Puffin</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| b) <i>Greater Shearwater</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| c) <i>Northern Gannett</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| d) <i>Great Black-Backed</i>
Gull | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| e) <i>Northern Fulmar</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| f) <i>Leach's Storm-</i>
Petrel | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| g) <i>Herring Gull</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| h) <i>Common Murre</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |

- | | | |
|--|------------|----------|
| i) <i>Double-Crested
Cormorant</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| | | |
| j) <i>Dovekie</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| | | |
| k) <i>Sooty Shearwater</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| | | |
| l) <i>Black-Legged
Kittiwake</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| | | |
| m) <i>Ivory Gull</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| | | |
| n) <i>Black Guillemot</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| | | |
| o) <i>Common Tern</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| | | |
| p) <i>Harlequin Duck</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |
| | | |
| q) <i>Roseate Tern</i> | Local Name | Comments |
| Yes 1 | | |
| No 2 | _____ | _____ |

24.

- a) Are there areas that you would consider to be important for specific birds in your region?
 Yes.....1
 No.....2 (If No, proceed to Question 24)
 Not Sure....3

If yes, please map these areas and comment on why you consider them important.

MAP. BA_##

<i>Chart #</i>	<i>Map Code</i>	<i>Species</i>	<i>Comments</i>
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____
_____	_____	_____	_____ _____ _____

b) At what times of year are these areas important for the birds?

Refer to MAP. BA_##

<i>Chart #</i>	<i>Map Code</i>	<i>Species</i>	<i>Months</i>
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

c) Have these important areas changed in the past?

Yes.....1

No.....2

Not Sure....3

Refer to MAP. BA_##

<i>Chart #</i>	<i>Map Code</i>	<i>Species</i>	<i>When</i>
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?
_____	_____	_____	5 10 20 30 years (circle)?

Comments: _____

25.

- a) What kinds of problems do seabirds cause for you and your work and during which activities? *(No problems, proceed to SECTION VI, Page 49)*

MAP. BP_##

<i>Chart#</i>	<i>Map Code</i>	<i>Species (Point to photos)</i>	<i>Problem</i>	<i>Activity</i>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

- b) In what times of year do these problems occur (circle)?

Refer to MAP. BP_##

<i>Species</i>	<i>Problem</i>	<i>Month</i>
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

26. What do you see as the most important issues regarding seabirds in your area?

Species Name _____

Interview Code: TII _____

SECTION VI: OTHER SPECIES (E.G. MARINE MAMMALS, SEA TURTLES, ETC.)

[BLACK]

We would now like to ask you a few questions about other species that may be important players in the inshore ecosystem, such as marine mammals and migratory species such as squid, sea turtles, or swordfish, in the areas with which you are most familiar.

27. Are there any other species that you know about, such as marine mammals, sea turtles or migratory species (E.g. squid, other fish, tuna, swordfish, etc...)? [LIST TO BE REFERRED TO FOR MAPPING] (PLEASE RANK THE LIST FOLLOWING ITS COMPLETION) (If the participant begins to discuss grey seals, explain to them that we already have completed a thorough study on grey seals)

Yes.....1

No.....2 (If No, proceed to Section VII, Page 51)

Not Sure....3

a. If applicable, please draw on the map indicating the areas of occupation (e.g. feeding grounds) and/or the direction & timing (*months*) of migration. During which months of the year do you see _____?

MAP. spp_OSP_## (areas and vectors)

Chart #	Map Code	Month
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
_____	_____	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Species Name _____

Interview Code: TII _____

Comments:

b. Over the time period in which you have observed _____, have you noticed any changes in their migration route and/or area of occupation?

Yes.....1

No.....2 (If No, proceed to d)

Not Sure....3

c. If yes, please draw arrows on the map indicating changes in the direction and timing (months) of migration and/or areas of occupation (E.g. feeding grounds).

MAP. spp_OSP_##_c

<i>Chart #</i>	<i>Map Code</i>	<i>Time Period</i>	<i>Month(s)</i>	<i>Comment</i>
_____	_____	_____ - _____	_____	_____
_____	_____	_____ - _____	_____	_____
_____	_____	_____ - _____	_____	_____
_____	_____	_____ - _____	_____	_____
_____	_____	_____ - _____	_____	_____
_____	_____	_____ - _____	_____	_____
_____	_____	_____ - _____	_____	_____
_____	_____	_____ - _____	_____	_____

d. Over the time period in which you have observed these species, have you noticed any changes in abundance?

Yes.....1

No.....2 (If No, proceed to Section VII, Page 51)

Not Sure....3

Comments: _____

[EXTRA SHEETS ARE AVAILABLE IF THERE ARE MORE SPECIES TO BE DESCRIBED]

SECTION VII: MARINE PLANTS [LIGHT GREEN]

In our last section about the ecology of the inshore ecosystem and the areas that you are most familiar with, we would like to discuss marine plants. Marine plants are also important components of the inshore marine ecosystem. We would like to focus first on eel grass since in some areas along the Atlantic coastline there have been recent losses of eel grass beds. The next few questions are on eel grass distribution.

28. This is the plant that we call 'eelgrass' (*see photos provided*) – is this also what you call eelgrass in your area?

Yes.....1

No.....2

Not sure....3

If *No*, what do you call it? _____

29. Does eelgrass grow in the areas you fish now?

Yes.....1

No.....2 (*If No, proceed to Question 30*)

Not sure....3

30. If yes, can you please draw the areas where eelgrass is found?

<i>Chart #</i>	<i>Map Code</i>	<i>Comment</i>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

MAP. EGP_##

31. Are there areas, where there used to be eelgrass but there isn't anymore?

Yes.....1

No.....2 (*If No, proceed to Question 33*)

Not Sure....3

32. If yes, can you show me these areas on the map? (*Indicate map codes*)

MAP. EGH_##

<i>Chart #</i>	<i>Map Code</i>	<i>Comment</i>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

33. Do you associate eelgrass with any particular species?

Yes.....1

No.....2 (*If No, proceed to Question 34*)

Not Sure....3

Comments: (ask them to explain the relationship if they can, e.g, provision of cover for immature fish, provision of food)

Species Name _____

Interview Code: TII _____

34. Are you familiar with any of these other plants? If so, we would like to continue and ask you a few more questions. (*Show the pictures of the marine plants and list the ones that the respondent is familiar with. Use this list for the next questions*)

Yes.....1

No.....2 (*If No, proceed to Section VIII, Page 55*)

Not Sure....3

[Please List and Rank]

Comments:

35. So now thinking about other marine plants this is what we call _____ (see photos provided). Is this also what you call _____ in your area? (*note: only show photos of plants identified in Q. 34, and start with the top ranked marine plant*)

Yes.....1

No.....2

Not sure....3

If No, what do you call it? _____

36. Does _____ grow in the areas you fish now?

Yes.....1

No.....2 (*If No, proceed to Question 38*)

Not sure....3

Species Name _____

Interview Code: TII _____

37. If yes, can you please draw the areas where _____ is found?

MAP. spp_ ##

Chart #	Map Code	Comment
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

38. Are there areas, where there used to be _____ but there isn't anymore?

Yes.....1

No.....2 (If No, proceed to Question 40)

Not Sure....3

39. If yes, can you show me these areas on the map? (Indicate map codes)

MAP. spp_ ##

Chart #	Map Code	Comment
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

40. Do you associate _____ with any particular species?

Yes.....1

No.....2

Not Sure....3

Comments: (ask them to explain the relationship if they can, e.g, provision of cover for immature fish, provision of food)

SECTION VIII: LOCAL KNOWLEDGE EXPERTS

As you know, you were identified by fishermen that we interviewed by telephone as being especially knowledgeable about your local fishing grounds. We would now like to ask you if you would identify such experts. So,

41. Other than yourself, could you please tell me if there is anyone, either currently fishing or retired, who you consider to be especially knowledgeable about the local fishing ground?

a) Name of Most Knowledgeable _____
[prompt for initials and/or nick(local)names]

b) Would you tell me, is this person currently fishing _____ or retired _____
(check the response category indicated)?

c) What port does (or did) this person fish out of? _____

d) What community does this person live in? _____

42. Are there any other persons currently fishing or retired from fishing who you think are very knowledgeable about the fishing ground? (print the names mentioned in the space provided and in the order in which they are mentioned)

a) 2nd Person Named _____

b) How about this person, are they currently fishing _____ or retired _____?

c) What port does (or did) this person fish out of? _____

d) What community does this person live in? _____

43.

a) 3rd Person Named _____

b) How about this person, are they currently fishing _____ or retired _____?

c) What port does (or did) this person fish out of? _____

d) What community does this person live in? _____

44. Others _____

Now, I am going to ask some questions about how you know these fishermen. There will be a list of possibilities. Some of them are pretty similar, please choose as many as you feel apply.

45. Would you tell me, how have you come to know _____?
(Name of Most Knowledgeable)

46. Do you know him (or her).. *(circle as many as indicated)* Yes No Unsure
- a) as a friend? 1 2 3
 - b) as an immediate relative? 1 2 3
 - c) as someone you fished with? 1 2 3
 - d) by their good fishing reputation? 1 2 3
 - e) by their success at fishing? 1 2 3
 - f) by their leadership within the fishing community? 1 2 3
 - g) as a person who adopts new fishing techniques and approaches? 1 2 3
 - h) as a person who is knowledgeable about or who participates in fisheries science? 1 2 3

Comments _____

47. Similarly, how have you come to know _____?
(2nd Person Named)

48. Do you know him (or her). *(circle as many as indicated)*..... Yes No Unsure
- a) as a friend? 1 2 3
 - b) as an immediate relative? 1 2 3
 - c) as someone you fished with? 1 2 3
 - d) by their good fishing reputation? 1 2 3
 - e) by their success at fishing? 1 2 3
 - f) by their leadership within the fishing community? 1 2 3
 - g) as a person who adopts new fishing techniques and approaches? 1 2 3
 - h) as a person who is knowledgeable about or who participates in fisheries science? 1 2 3

Comments _____

49. Similarly, how have you come to know _____?
(3rd Person Named)

50. Do you know him (or her).. <i>(circle as many as indicated)</i>	Yes	No	Unsure
a) as a friend?	1	2	3
b) as an immediate relative?	1	2	3
c) as someone you fished with?	1	2	3
d) by their good fishing reputation?	1	2	3
e) by their success at fishing?	1	2	3
f) by their leadership within the fishing community?	1	2	3
g) as a person who adopts new fishing techniques and approaches?	1	2	3
h) as a person who is knowledgeable about or who participates in fisheries science?	1	2	3

Comments _____

SECTION IX: CLOSING QUESTIONS

Before we finish, we have two more questions; we would like to find out what you think about this kind of research and we would like to give you the opportunity to make any further comments.

51. Do you think that the use of fishermen’s knowledge will improve fisheries science.

Yes.....1 No.....2 Not Sure.....3

52. Do you have any questions, comments, or suggestions?

Thank you for your time.

We will be sending a summary report of the mapping of fishermen’s knowledge, once we have completed the research project [*probably in Spring 2007*]. We would like to acknowledge the efforts of your contribution to this work.

Can we include your name in the acknowledgements for this report or any report related to this project? As discussed at the beginning of the interview, we will ensure that your name will not be associated directly with the information that you provide.

Yes.....1
No.....2

Time Interview Completed: _____

Please note Total Number of Sections:

How many maps? _____
Section IV : Species information section(s)? _____
Section VI : Other Species information section(s)? _____
Section VII : Other Marine Plants section(s)? _____
Extra Comments pages? _____

Sections Not Completed and can be Reused:

CHECK LIST

_____ **Maps have label & Interview code**

_____ **Interview code on every page**

_____ **Page number on every additional page**

_____ **Species Name on each additional page for Section IV**

_____ **Species Name on each additional page for Section VI**

_____ **Species Name on each additional page for Section VII**

