

Appendix 1

**Report on Community and Agency Consultations:
West Coast SEA – June 2005**

**Report on Fisheries Industry Consultations:
West Coast SEA – July 2005**

Report on Community and Agency Consultations: West Coast SEA – June 2005

Introduction

Consultations for the preparation of the West Coast SEA report were undertaken during 13-17 June 2005 under the auspices of One Ocean and were planned and co-ordinated by Canning and Pitt Associates, Inc. The consultation team also included the C-NLOPB's Environmental Assessment Officer. A member of the LGL consulting team also attended the two meetings in Rocky Harbour.

This round of SEA consultations involved meetings and discussions with various regional and community level economic organizations and agencies, related interest groups, business operators and other interested individuals, and managers with Parks Canada in Gros Morne. Six separate meetings were held in the following communities: Rocky Harbour (two); Corner Brook; Stephenville (two); and Port aux Basques.

Meetings were organized with the assistance of the four relevant Regional Economic Development Boards (REDBs), Parks Canada managers, the Federation of Newfoundland Indians and representatives of the Viking Trail Tourism Association. In addition to managers and board members from each of the four REDBs, as well as Parks Canada officials, participants in the meetings in each area included representatives from various town councils, local and area-level environmental agencies and interest groups, tourism operators, ACOA managers and others.

A complete list of the agencies and individuals who participated in the first round of meetings may be found below in a later section.

General Procedure for the Meetings

Following general introductions and a short discussion of the purpose of the consultations by Canning and Pitt and One Ocean, Kim Coady - the C-NLOPB's representative - presented an overview which outlined the Board's role and mandate, the purpose and scope of the Strategic Environmental Assessment process and a review of the various environmental components which are expected to be addressed in the SEA Environmental Assessment Report.

Following this, there was a general round table discussion which included comments and questions from participants about various aspects of the SEA process and issues and concerns associated with offshore exploration and development. All of the comments, questions or issues raised by participants were noted and recorded.

The following sections provide a summary of the topics and issues discussed at each meeting location.

Red Ochre Board Meeting

The study team met with representatives of the Red Ochre Regional Economic Development Board in Rocky Harbour. Following the presentation, Board representatives raised asked a number of general questions and noted several concerns.

There were several questions about future oil and gas exploration activities and the SEA process. A Board member asked if potential bidders on any new lease areas know if they contain oil resources. In response, it was noted that some information is available from previous exploration work, but more seismic surveys are need to assess the potential for development. There were also a few questions about the length of time exploration companies can hold onto their lease area. K. Coady responded that potential lease holders are required to undertake a specified amount of investment in order to retain their exploration rights.

One concern noted was the potential effects of future oil and gas development on the area's tourism sector, in particular the "aesthetic" and visual impacts. The Gros Morne area is marketed as a "pristine", natural setting, and some visitors might regard an onshore or offshore oil rig as a visual intrusion on the landscape.

Protection of the area's lobster grounds was also raised. Given the economic value of this fishery, and in light of the decline in cod resources, it would be very important to protect lobster grounds from any negative impacts from future oil and gas activities. The Eastern Arm of Bonne Bay was noted as a particularly sensitive and important area for the region. Various groups have been involved in the DFO Integrated Coastal Zone Management process, but this part of the bay, and other marine areas, are still being studied and assessed. Relevant information from the Coastal Community Resource Inventory should be incorporated into the SEA report, and Eastern Arm should be identified as a special, sensitive area.

Board representatives asked if there were any national environmental groups, e.g., the Sierra Club, represented on the SEA Working Group. It might be useful for the Board to consult with such groups, for example to obtain information and advice about how to manage possible impacts, as well as the "perception" of potential impacts.

Board members said that they may receive comments on or further information for the SEA report from other groups and individuals in their zone. If so, would the Board hold another public meeting in this area? K. Coady said that the Board would have to consider this depending on the circumstances. In any case, when the SEA report is ready, it will be available for further public comment and input. Board representatives said they would undertake to circulate the draft report to its membership.

Parks Canada and Tourism Representatives

Parks Canada managers and a representative of the Viking Trail Tourism Association (VTTA) attended the afternoon meeting in Rocky Harbour.

Following the presentation, there were a few general questions about the SEA process, and also about the CEAA process. Parks Canada managers asked if a Comprehensive Study was triggered only if there is a discovery, and K. Coady explained that a Comprehensive Study could be undertaken for several different reasons.

Parks Canada managers noted that although Bonne Bay is not part of Gros Morne Park, it is deemed to be an “ecologically significant area”, and it is also an important centre for marine-related research activities. Obviously there is a concern that future oil activities might disturb, or have negative impacts on, salt marsh areas and the estuaries within the bay. St. Paul’s inlet is also considered an important area for sea birds, and this area contains the largest tern colony in the province. While the coastline in between Bonne bay and St. Paul’s inlet is not as significant, Parks Canada would not want to see any of this shoreline area polluted by oil activities (i.e., oil spills). Other areas of special interest include the four scheduled salmon rivers within Gros Morne. According to Parks Canada there is also a possible cod grow-out site in Neddy Harbour.

The VTTA representative noted that there are some boat tour operators involved in whale watching (mostly minke whales), and there are also kayaking activities within Bonne Bay as well as in St. Paul’s Inlet. He also mentioned potential aesthetic and visual impacts from oil activities as a concern, and suggested that these might be minimized if drilling activities occurred outside of the main tourist season. He noted that Gros Morne is a World heritage Site and thus it will be very important to ensure that oil activities do not undermine the region’s reputation as a pristine and scenic area.

Parks Canada managers were asked if there were any plans to establish Marine Protected Areas (MPAs) within the Bonne Bay area. Parks Canada managers noted that several sites, particularly within the East and South Arms of Bonne Bay, are now being considered “special” areas, and at some future time maybe declared MPA’s. It was also noted that DFO is planning to prepare an annotated bibliography for the Bonne Bay area. This research will compile existing data on physical, chemical and biological parameters and collect other baseline data. A student researcher will be hired for this work this summer and it is expected to be completed by March 2006. It was noted that this research would be a good source of data for future, site-specific environmental assessments.

Corner Brook Meeting

The Corner Brook meeting was attended by representatives from Humber Economic Development Board (HEDB), the City of Corner Brook, the Board of Trade and the Humber Arm ACAP.

Following the presentation, there were some general questions about seismic surveys and the data, which the SEA expects to obtain.

The HEDB representative asked what data exists about the potential impacts of seismic operations, and whether there has been any laboratory research on this subject, particularly on lobster. He also asked what the availability of current research on cuttings and discharges from drilling operations. In response, K. Coady outlined the various research that has been undertaken to date.

HEDB's representative suggested that the West Coast area in general would be an ideal place to conduct further research on seismic operations and their effects on lobster. For example, the Centre Of Excellence in Bonne Bay would likely be an ideal agency to undertake any such research.

ACAP's representative asked what happens when an SEA report identifies a data or information gap. She also asked what recommendations might be made in the SEA report regarding any concerns about potential impacts on crab and lobster resources from seismic surveys, and also where the SEA expects to obtain its biological data. In response, K. Coady noted that, in cases where information gaps are identified, a potential operator might be asked, or required, to undertake further research on such topics. With respect to potential mitigations to minimize possible impacts on crab or lobster, she noted that a seismic operator could be asked to avoid certain areas during any "sensitive" periods. As for available biological information, she noted that most of this would come from existing DFO and Environment Canada data sources.

ACAP noted that it plans to undertake an ROV survey in the Bay of Islands this summer. This survey will examine sea-bed conditions at the outfall of the paper mill, undertake some sediment sampling in key locations and also gather information on the fecal problems (due to septic outflows) in the Lark Harbour area.

Port aux Basques Meeting

This meeting was attended by representatives of the Marine and Mountain Zone Corporation, the Town of Channel-Port aux Basques, the Southwest Coast Development Association and HRSDC.

Following the presentation, there were a number of general questions and comments concerning the SEA process, and potential impacts from offshore exploration activities.

These included questions about the Board's jurisdiction over onshore wells and whether or not there has been any interest from exploration companies about lease areas in this part of the West Coast. There was also a few questions and a short discussion about the potential impacts on fisheries habitat from seismic operations.

Stephenville Meeting (Morning Session)

Participants in this meeting included representatives of the Long Range Regional Economic Development Board and the area's Mi'kmag groups.

Following the Board's presentation, the discussion focused on a discussion of aboriginal people's jurisdiction and involvement in land claims' issues, environmental protection and onshore/offshore oil and gas activities.

The two representatives of the area's Mi'kmag residents offered some general comments on land jurisdiction and ownership as these issues pertain to the province's requirement to notify aboriginal peoples about any land development issues. It was noted that these issues are important because of ongoing land claims' discussions with the province. K. Coady responded noting that the Board is aware of its fiduciary responsibilities with respect to First Nations' land claims.

One of the Mi'kmag representatives asked what agencies would be involved once the SEA is completed and other site-specific assessments are undertaken in future, and whether federal agencies would have the final say on these assessments. In response, K. Coady noted described the CEAA process and the fact that the C-NLOPB is considered a federal agency under that process. With respect to any environmental assessments studies undertaken by potential operators, she said that these would be "self assessments", but the CEAA and other federal agencies would determine whether a project could or should proceed.

One of the Mi'kmag representatives noted that, although you can separate the respective federal-provincial jurisdictional responsibilities and areas (e.g., between the high and low water marks) in legislation, these cannot really be separated in the "real" environment.

Following this, there was a general discussion on various aspects of the SEA process. One participant asked what was driving this SEA process; for example, did this mean that there is now an increased interest in this region from exploration and oil development companies? K. Coady explained that the SEA process is part of the Board's "normal" land issuance procedures, which it undertakes before offering up new lease areas for potential exploration activities.

Another participant asked if there were any areas in the province where, following an environmental assessment report, the Board has recommended that the area not be explored for oil and gas resources? K. Coady noted that the Board has not yet prevented an area from being developed for extraction, however in some cases it has placed various restrictions on exploration activities (e.g., seismic programs).

In response to a question as to whether the SEA would attempt to deal with the issue of climate change, it was noted that this issue would be considered at a later stage in the assessment process.

There were some final questions about the overall SEA consultation process. One participant asked if there would be any further consultations or meetings with local and area groups once the SEA report is completed, and how the Board planned to get the report to the general public. K. Coady responded that the SEA consultation process would involve additional meetings with fisheries industry participants and that the draft SEA report would be made available for further public review and comment.

Stephenville: Evening Session (Long Range Regional Economic Development Board)

The evening meeting with full Board of the LRREDB the involved a general discussion of the SEA process, and the public consultation process. Board members suggested that it would be useful to consult with various Harbour Authorities in Bay St. George (e.g., the port of Harmon and Cape St. George). K. Coady noted that representatives of these local agencies would likely participate in the consultations with fisheries industry participants planned for July.

The Chair of the LRREDB suggested that other groups in this area might wish to comment on the SEA report, and also that his Board might offer further input when it has had a chance to read the report. The meeting ended with a short discussion of the potential economic benefits to the area from future oil and gas development activities.

List of Persons Involved in the SEA Community and Agency Consultations

Rocky Harbour Sessions

Colleen Kennedy, Chair, Red Ochre Board, Rocky Harbour
Jennifer Payne, Red Ochre Board member, Parson's Pond
Sean St. George, Executive Director, Red Ochre Board, Parson's Pond
Peter Deering, Parks Canada, Rocky Harbour
Tom Knight, Parks Canada, Rocky Harbour
Bob Hicks, President, VTTA, Rocky Harbour

Stephenville Sessions

Calvin White, LRREDB Chair, Flat Bay
Ian Stewart, LRREDB member, Ramea
Roger Hulan, LRREDB member, Stephenville
Cynthia Downey, LRREDB member, Stephenville Crossing
Terri Blanchard, LRREDB Administrative Assistant, Stephenville
Michael Tobin, Stephenville Town Council, Stephenville
Blaine Marks, Stephenville Town Council, Stephenville
Mark Tierney, ACOA, Stephenville
Lorraine Sheehan, Women's Centre, Stephenville
Litty MacDonald, Aboriginal People, Bay St. George
Beverly Kirby, Community Education Network, Stephenville
Catherine Fenwick, Association Regionale de la Colionest [?], Port au Port Peninsula
Len Muisse, LRREDB Co-ordinator, Stephenville
Debbie Coughlin, LRREDB, Stephenville
Bert Alexander, Ktaqamkuk Mi'kmag Alliance, Western Newfoundland
Frank Russell, Mi'kmag People, Port au Port
Ryan Crocker, The Georgian, Stephenville

Corner Brook Session

William A. Lundrigan, Board of Trade, Corner Brook
Paul Hunt, Humber Economic Development Board, Corner Brook
Mike Dotter, City of Corner Brook
Tara Martin, ACAP Humber Arm, Corner Brook

Port aux Basques Session

Gerard Merrigan, Executive Director, MMZ Corporation, Channel-Port aux Basques

Doreen Hardy, MMZ Corporation, Channel-Port aux Basques

Cheryl Reynolds, Town of Channel-Port aux Basques, Channel-Port aux Basques

Rita Anderson, Southwest Coast Development Association, Channel-Port aux Basques

Dwight Kettle, HRSDC, Channel-Port aux Basques

Natalie Musseau, The Gulf News, Channel-Port aux Basques

Report on Fisheries Industry Consultations: West Coast SEA - July 2005

Introduction

Fisheries consultations for the preparation of the West Coast SEA Environmental Assessment report were undertaken during 20-21 July 2005 under the auspices of One Ocean and were planned and coordinated by Canning and Pitt Associates, Inc. and One Ocean. The SEA consultation team also included the C-NLOPB's Environmental Assessment Officer and a representative of LGL Consultant's Ltd.

These SEA fisheries consultations involved discussions with FFAWU officials and individual fishers. Three separate meetings were held in the following communities: Hawke's Bay, Corner Brook and Stephenville.

Meetings were organized with the assistance of Guy Perry, Staff Representative, and Jason Spingle, Science Co-ordinator, with the FFAWU's office in Corner Brook, the Union's Staff Representative for the area north of Trout River and the chairs of relevant Fishers Committees in the three areas. The Executive Director of the North of Fifty Association also helped organize the meeting in Hawke's Bay.

A complete list of the FFAWU and fisher representatives who participated in these SEA consultations are listed above.

General Procedure for the Meetings

Following general introductions and a short discussion of the purpose of the consultations by Canning and Pitt and One Ocean, Kim Coady - the C-NLOPB's representative - presented an overview of the Board's role and mandate, the purpose and scope of the Strategic Environmental Assessment process and a review of the various environmental components which are expected to be addressed in the SEA Environmental Assessment Report.

Following this, there was a general round table discussion which included comments and questions from participants about various aspects of the SEA process, offshore exploration and development and issues and concerns about potential impacts on fishing activities and fisheries resources. All of the comments, questions or issues raised by participants were noted and recorded.

The next section presents a summary of the issues, topics and concerns raised at each meeting.

Hawke's Bay Meeting

Following the presentation several general points issues were raised and discussed. These included questions about the number of seismic surveys undertaken in the past several decades, which agency decides what areas are offered for exploration and the fact that some of the lines proposed for a 2005

survey go beyond the lease area in question (Parcel 1069). K. Coady explained the Board's rights issuance procedures, and explained the reason why one of the lines in the planned 2005 Ptarmigan survey extend beyond the lease area.

Fishers asked if there are policies and procedures in place that would ensure fishers were protected in the event of a spill, or whether they might be compensated if they were displaced from a good fishing area in which an oil rig was operating. In response, team members explained the provisions in place for oil spill compensation and noted that the "safety area" from which fishing activities might be excluded would be very small.

Fishers asked several questions about seismic technology and how it operates, and there was also some discussion of the difference between the SEA process and the more site-specific assessment process associated with an Environmental Assessment for a seismic survey. Fishers noted that would expect to be consulted further if a survey was being considered with their area.

With respect to special, or potentially sensitive, areas in this part of the study area, there was a relatively lengthy discussion of the nearshore area between Port aux Choix and Bellburns. A deep-water area relatively close to shore just off Port aux Choix known locally as "The Hole" is considered to be a very sensitive fisheries resource zone, and a very productive fishing area. Fishers noted that, given the convergence of sea-bed contour lines in that area in conjunction with water current patterns along the West Coast, a large and diverse number of mature and immature fish species (cod, capelin, etc.) tend to congregate in the Hole, and many of them tend to over-winter there as well. In the past, many of the larger fishing vessels have harvested shrimp in this area, and have had very good catches on shrimp grounds just a few miles from the shore.

According to fishers, DFO has been considering the Hole as a candidate for a Marine Protected Area. Fishers have recommended that otter trawlers be excluded from this area and that it be reserved for just pots and hook and line gears.

A portion of the coastal zone close to the shore between approximately Bellburns and River of Ponds was also cited as a special area. Fishers noted that, as is the case in the Hole, many fish species congregate in the deep water close to shore along this part of the coast. It is a particularly good herring spawning area, and this species generally spawns here in May during the lobster season. Bad Bay just north of the community of River of Ponds, and La Fontaine Point just a short distance south of that community, were noted as particularly productive fishing and spawning locations. Fishers noted that these two areas are especially prolific given the nutrients in the fresh water that flows into the coastal area from the River of Ponds.

Two other areas were also noted as special or sensitive fisheries resource locations. These include the East Arm of Bonne Bay, and the large cod spawning area off Cape St. George.

In their concluding comments, participants indicated their concern about the potential, or unknown, effects of seismic operations on various fish species, and noted that they would like to see more research

on any such effects. R. Hedderson mentioned anecdotal evidence of halibut being scared away from some fishing grounds after a survey undertaken a few years ago. He also noted that fishers had asked that a previous seismic operation (2003) be delayed until after the cod spawning season. M. Murphy mentioned that One Ocean has asked ESRF to make catch and catchability research a high priority for studies now being planned by that agency for 2006.

Corner Brook Meeting

Following the opening presentation, and in response to maps showing the 2001 and 2002 fish harvesting locations within the study area, there was a discussion of the lack of geo-referenced data for vessels < 34'. In her presentation, K. Coady had noted that this SEA study was somewhat different than others that the Board has undertaken in the past few years in that many of the lease areas touch the shoreline. As such, any subsequent site-specific Environmental Assessment studies would probably require more detailed information on the location of coastal and nearshore fishing activities and gear locations.

J. Spingle, the FFAWU's Science Co-ordinator, responded that the availability of positional data for the coastal area should not be a significant problem. He stated that most of the < 34' vessels generally fish cod within 6 miles of the shore and other species, such as lobster, are taken very close to the coast. As such, one can assume that much of the coastal, inshore area along the West Coast out to say 6 miles is heavily fished. In addition, he noted, some of the data that would be required are presently collected through the Dockside Monitoring Program. This includes information on the number of vessels, species landed and the pattern of monthly landings.

With respect to the appropriate time to conduct future seismic surveys, one fisher said that the best time would be in the late summer early fall. It was noted that the region's crab fisheries are generally over by mid-July, and most of the other species fisheries – with the possible exception of halibut - are over by the end of that month. While there are herring and mackerel fishing activities taking place in the fall, this would not be a significant problem for survey vessels since most of these catches are by mobile gears.

In response to the usefulness of information on special or sensitive fishing and resource areas in this part of the study area, a number of specific locations were noted and discussed as areas that might be affected by oil-related activities.

One fisher who usually fishes the area between the Bay of Islands and Port au Port Bay noted that the inshore area between the outer portion of Port au Port Bay up to Shag Island is a very good lobster spawning area, and very dense kelp grounds provide an excellent habitat for lobster. Lobster fishing grounds in the area between Long Point and Shag Island generally yield very large females.

Another fisher noted that, within LFA 13B, there is a lobster nursery area in a small cove close to Shoal Point located just above North Head (located on the north side of the mouth of the Bay of Islands), and there is another nursery area closer to Trout River within LFA 14A. Fishers from the Bay of Islands, and from Trout River to the north, have voluntarily agreed not to fish these two areas. The co-ordinates of these two lobster nursery areas are: [Elaine Lynch 637-4308]

Mention was also made again of the cod spawning area off of Cape St. George. As noted, fishing does not occur in that area during the period 1 April – 15 June.

Following this there was a general discussion about potential impacts from oil and gas activities, and also about some of the fisheries research and data which might be collected in future during a site-specific environmental assessment study or as part of other data gathering programs which potential exploration companies or operators might be required to undertake in their environmental assessment process, or monitoring programs.

Fishers expressed their concerns about possible impacts of seismic operations on crab resources, or on other fish species resulting from the release of toxic materials, such as drill cuttings. Fishers are also concerned about potential oil spills and effects on fishing and fisheries resources. It was noted, for example, that spilled oil coming onshore would be disastrous for the lobster fishing and kelp grounds in the Long Point-Shag Island area. (It was also noted that fishers would not like to see any drilling in this area.). The FFAWU's Science Co-ordinator suggested that, given the "contained" area of the Gulf of St. Lawrence, an oil spill off the province's West Coast would likely have a more significant impact on the fisheries than one which occurred in an offshore area of the Grand Banks. Given the proximity of the lease areas to the coast (as well as prevailing wind) spilled oil would quite likely reach shoreline areas. Fishers also asked about economic compensation in the event of an oil spill.

Another fisher asked if any research has been undertaken to determine whether seismic noise has any negative effects on herring and mackerel. In response, K. Coady and J. Christian both spoke to this matter indicating the various research studies that have been undertaken in Atlantic Canada to assess the effects of seismic operations on crab, as well as on finfish species in other regions such as the North Sea. The FFAWU's Science Co-ordinator noted that he has read a number of studies on the potential impacts of seismic operations on various fish species. Considering this research, he said it does not appear that seismic operations have any significant impacts on halibut, crab or lobster. Another fisher agreed with this conclusion, but he remained concerned about the potential effects on fisheries resources from the release of toxins and drill cuttings into the marine environment, as well as the negative effects of a potential oil spill at some point in the future.

If at some point oil companies undertake marine environmental research as part of their plans to develop production facilities, the FFAWU suggests that some of this research should be focused on topics and issues that would help expand and enhance knowledge about the region's fisheries environment. As such, this would include the acquisition of research data on such things as cod larvae and recruitment, the abundance and timing of larvae and other oceanographic data such as water temperatures and currents, among others. Research might also be undertaken to identify areas where cod overwinter. The FFAWU and DFO are currently involved in a research initiative designed to increase knowledge on this matter. This research project involves the placement of hydrophones on the 4R/3PN line and on the 3PN/3PS line and is designed to gather information on the migration of cod using a sample of 300 tagged fish.

Stephenville Meeting

The meeting in Stephenville involved fishers from both sides of Bay St. George, as well as fisher representatives based in Port au Port Bay. (Fishers from the Codroy Valley-Port aux Basques area were also expecting to attend the meeting but were not able to do so because they were still busy with their cod fisheries.) Because there have been several seismic surveys in this part of the SEA study area, as well as drilling of a number of onshore and offshore oil wells, fishers from the area are relatively familiar with potential interactions between the fisheries and oil industry activities.

Following the presentation on the SEA process, questions focused mainly on potential effects of seismic survey operations on fisheries resources. One fisher asked about what research has been done to identify possible effects on crab and lobster resources, and another asked about research on the scaring of cod (and other fish species) by seismic noise, physical effects on their hearing capability or the long term effects on fish stocks. Several fishers commented that there was a noticeable drop in lobster and scallop catches in Port au Port Bay following seismic surveys in that area during the mid-1990s; however it was noted that these changes might also have been due to relatively heavy fishing effort in subsequent years. The Board's Environmental Assessment Officer as well as the SEA consultants noted and described the various research studies that have been undertaken both in the North Sea and in Atlantic Canada.

With respect to any possible effects on mackerel from offshore oil activities, the FFAWU's Science Coordinator noted that the West Coast mackerel fishery has been very good in the past few years, and that the 2004 quota (75,000 tonnes – PQ and NL combined) for this species was taken.

List or Persons Involved in the SEA Fisheries Industry Consultations

FFAWU

Jason Spingle, Science Co-ordinator, Corner Brook
Guy Perry, Staff Representative, Corner Brook
Roland Hedderson, Staff Representative, [community)

North of Fifty Association

Vachon Noel, Executive Director, Flowers Cove

Fisher Representatives

Lumis Way, Green Island Cove
Eugene Caines, Port aux Choix
Alan Sheppard, Lark Harbour
Wayne Tucker (FFAWU Inshore Council), Meadows
Rex King, Stephenville
Jack Duffy, Stephenville
Jeffrey Leroy, Fox Island River
Gus Hynes, Fox Island River
Jack Harris, Jeffreys

Other

Len Muise, Chair, Natural Resources Committee, Long Range REDB, Stephenville

Appendix 2

Coastal Aerial Surveys¹ for Tern and Gull Colonies
Conducted in mid June 2001 (north of Bay of Islands) and
2002 (south of Bay of Islands)
by Canadian Wildlife Service.

SPECIES	LATITUDE	LONGITUDE	NUMBER
Tern species	49.862310000	-57.815020000	5
Tern species	50.625700000	-57.317000000	6
Tern species	48.248520000	-58.820060000	9
Tern species	48.696830000	-58.678900000	10
Common Eider	48.870840000	-58.593240000	Small 1-100 Ind
Tern species	51.163600000	-56.812500000	20
Tern species	48.208333000	-58.866667000	25
Tern species	50.789200000	-57.276800000	30
Common Eider	48.887850000	-58.679640000	Small 1-100 Ind
Tern species	50.819100000	-57.201900000	35
Tern species	51.027800000	-56.962100000	35
Tern species	51.289500000	-56.772100000	35
Tern species	50.895400000	-57.278400000	40
Tern species	51.006100000	-56.958600000	45
Tern species	50.922800000	-57.104700000	50
Tern species	48.450000000	-58.516667000	50
Tern species	48.646850000	-58.672210000	50
Common Eider	49.230000000	-58.345000000	Small 1-100 Ind
Tern species	51.160400000	-56.827200000	65
Tern species	48.501370000	-58.416360000	70
Tern species	51.177000000	-56.816400000	80
Tern species	51.284200000	-56.765700000	90
Tern species	50.622700000	-57.162800000	100
Tern species	51.162900000	-56.819000000	100
Tern species	49.840450000	-57.777930000	100
Tern species	49.827240000	-57.786990000	105
Tern species	50.883800000	-57.128200000	130
Tern species	50.918100000	-57.123700000	150
Tern species	50.931900000	-57.018800000	150
Tern species	48.497500000	-58.430800000	150
Tern species	48.558000000	-58.727740000	210
Tern species	49.069630000	-58.324130000	425
Tern species	50.800900000	-57.222600000	1000
Tern species	49.853760000	-57.787740000	1100
Tern species	49.853610000	-57.787860000	1200
Black-legged Kittiwake	48.466700000	-59.270000000	large (501-1000 ind)
Herring Gull	49.075680000	-58.324130000	large (501-1000 ind)
Black-legged Kittiwake	49.250000000	-58.333333000	large (501-1000 ind)
Ring-billed Gull	50.718200000	-57.331500000	Medium 101-500 Ind
Ring-billed Gull	50.722900000	-57.320200000	Medium 101-500 Ind
Great Black-backed Gull	50.727200000	-57.313900000	Medium 101-500 Ind
Great Black-backed Gull	50.839200000	-57.104600000	Medium 101-500 Ind
Herring Gull	50.839300000	-57.096700000	Medium 101-500 Ind
Ring-billed Gull	50.839300000	-57.096700000	Medium 101-500 Ind
Herring Gull	50.885300000	-57.149500000	Medium 101-500 Ind
Herring Gull	50.891900000	-57.288000000	Medium 101-500 Ind
Herring Gull	50.900600000	-57.283600000	Medium 101-500 Ind
Herring Gull	50.919300000	-57.179400000	Medium 101-500 Ind
Great Black-backed Gull	50.919300000	-57.179400000	Medium 101-500 Ind

Herring Gull	50.919800000	-57.109700000	Medium 101-500 Ind
Ring-billed Gull	51.101400000	-56.885500000	Medium 101-500 Ind
Ring-billed Gull	51.136900000	-56.856300000	Medium 101-500 Ind
Herring Gull	51.160900000	-56.838700000	Medium 101-500 Ind
Ring-billed Gull	51.308900000	-56.734200000	Medium 101-500 Ind
Ring-billed Gull	51.308900000	-56.736500000	Medium 101-500 Ind
Ring-billed Gull	48.450000000	-58.516667000	Medium 101-500 Ind
Herring Gull	48.561300000	-59.235330000	Medium 101-500 Ind
Great Black-backed Gull	48.870840000	-58.593240000	Medium 101-500 Ind
Herring Gull	48.870840000	-58.593240000	Medium 101-500 Ind
Cormorant species	48.870840000	-58.593240000	Medium 101-500 Ind
Herring Gull	49.081600000	-58.302880000	Medium 101-500 Ind
Herring Gull	49.106660000	-58.238220000	Medium 101-500 Ind
Ring-billed Gull	49.163780000	-58.147230000	Medium 101-500 Ind
Cormorant species	49.250000000	-58.333333000	Medium 101-500 Ind
Herring Gull	49.283333000	-58.300000000	Medium 101-500 Ind
Cormorant species	49.283333000	-58.300000000	Medium 101-500 Ind
Ring-billed Gull	49.933333000	-57.833333000	Medium 101-500 Ind
Herring Gull	49.933333000	-57.833333000	Medium 101-500 Ind
Caspian Tern	51.177000000	-56.816400000	possible
Herring Gull	50.727200000	-57.313900000	Small 1-100 Ind
Herring Gull	50.752400000	-57.243800000	Small 1-100 Ind
Great Black-backed Gull	50.752400000	-57.243800000	Small 1-100 Ind
Common Eider	50.753700000	-57.247200000	Small 1-100 Ind
Common Eider	50.825400000	-57.159400000	Small 1-100 Ind
Common Eider	50.840900000	-57.294600000	Small 1-100 Ind
Great Black-backed Gull	50.891900000	-57.288000000	Small 1-100 Ind
Great Black-backed Gull	50.895400000	-57.278400000	Small 1-100 Ind
Common Eider	50.895400000	-57.278400000	Small 1-100 Ind
Great Black-backed Gull	50.900600000	-57.283600000	Small 1-100 Ind
Common Eider	50.923000000	-57.139600000	Small 1-100 Ind
Common Eider	50.924100000	-57.172900000	Small 1-100 Ind
Ring-billed Gull	51.006100000	-56.958600000	Small 1-100 Ind
Herring Gull	51.015800000	-56.933700000	Small 1-100 Ind
Common Eider	51.018400000	-56.930100000	Small 1-100 Ind
Great Black-backed Gull	51.029600000	-56.969400000	Small 1-100 Ind
Common Eider	51.149200000	-56.838400000	Small 1-100 Ind
Great Black-backed Gull	51.152900000	-56.841700000	Small 1-100 Ind
Great Black-backed Gull	51.160900000	-56.838700000	Small 1-100 Ind
Great Black-backed Gull	51.160900000	-56.838700000	Small 1-100 Ind
Great Black-backed Gull	51.164000000	-56.810300000	Small 1-100 Ind
Great Black-backed Gull	51.308900000	-56.734200000	Small 1-100 Ind
Black-legged Kittiwake	49.939890000	-57.784930000	Small 1-100 Ind
Great Black-backed Gull	49.939890000	-57.784930000	Small 1-100 Ind
Herring Gull	49.939890000	-57.784930000	Small 1-100 Ind
Great Black-backed Gull	49.936290000	-57.829600000	Small 1-100 Ind
Herring Gull	49.936290000	-57.829600000	Small 1-100 Ind
Ring-billed Gull	49.936290000	-57.829600000	Small 1-100 Ind
Cormorant species	49.936290000	-57.829600000	Small 1-100 Ind
Great Black-backed Gull	47.875760000	-59.403540000	Small 1-100 Ind
Herring Gull	47.875760000	-59.403540000	Small 1-100 Ind
Cormorant species	48.066667000	-59.133333000	Small 1-100 Ind

Great Black-backed Gull	48.208333000	-58.866667000	Small 1-100 Ind
Ring-billed Gull	48.208333000	-58.866667000	Small 1-100 Ind
Great Black-backed Gull	48.450000000	-58.516667000	Small 1-100 Ind
Herring Gull	48.508370000	-58.969370000	Small 1-100 Ind
Great Black-backed Gull	48.508370000	-58.969370000	Small 1-100 Ind
Great Black-backed Gull	48.561300000	-59.235330000	Small 1-100 Ind
Black Guillemot	48.870840000	-58.593240000	Small 1-100 Ind
Black-legged Kittiwake	48.870840000	-58.593240000	Small 1-100 Ind
Great Black-backed Gull	49.022670000	-58.475580000	Small 1-100 Ind
Great Black-backed Gull	49.081600000	-58.302880000	Small 1-100 Ind
Great Black-backed Gull	49.075680000	-58.324130000	Small 1-100 Ind
Great Black-backed Gull	49.106660000	-58.238220000	Small 1-100 Ind
Herring Gull	49.120120000	-58.233360000	Small 1-100 Ind
Great Black-backed Gull	49.120120000	-58.233360000	Small 1-100 Ind
Herring Gull	49.123770000	-58.237320000	Small 1-100 Ind
Great Black-backed Gull	49.123770000	-58.237320000	Small 1-100 Ind
Herring Gull	49.163780000	-58.147230000	Small 1-100 Ind
Great Black-backed Gull	49.163780000	-58.147230000	Small 1-100 Ind
Great Black-backed Gull	49.230000000	-58.345000000	Small 1-100 Ind
Herring Gull	49.230000000	-58.345000000	Small 1-100 Ind
Great Black-backed Gull	49.220860000	-58.322130000	Small 1-100 Ind
Herring Gull	49.220860000	-58.322130000	Small 1-100 Ind
Herring Gull	49.233333000	-58.333333000	Small 1-100 Ind
Herring Gull	49.250000000	-58.333333000	Small 1-100 Ind
Great Black-backed Gull	49.250000000	-58.333333000	Small 1-100 Ind
Great Black-backed Gull	49.283333000	-58.300000000	Small 1-100 Ind
Great Black-backed Gull	49.933333000	-57.833333000	Small 1-100 Ind
Common Eider	50.917900000	-57.130500000	Small 1-100 Ind 1-100 Ind
Tern species	47.843000000	-59.268500000	unknown
Black-legged Kittiwake	48.494670000	-59.244930000	Very large > 1000 ind

¹*Date source – Conservation Data Centre*

Appendix 3

Average Abundance and Diversity of Shorebirds Species Present at Coastal Sites in the Study Area

Average abundance and diversity of shorebirds species present at coastal sites in the Study Area.

SITE	DATE	SEPL	PIPL	BBPL	RUTU	WHIM	SPSA	GRYE	PESA	WRSA	LESA	SBDO	SESA	SAND	Average No. of Individ.	Average No. of Spp.
Eddies Cove East	Jul-Sep	16.0	0.0	3.6	18.4	2.5	3.2	93.1	3.0	39.9	4.5	4.6	43.2	6.0	0.0	5.6
Eddies Cove East	Oct-Nov	1.0	0.0	8.7	6.7	0.0	0.0	16.3	0.0	52.0	3.0	1.0	13.0	26.5	3.3	1.7
Flat Bay Spit	Jul-Sep	132.3	8.0	100.0	11.5	2.0	3.7	92.8	1.0	55.0	40.0	6.3	221.0	32.5	768.4	9.8
Stephenville Crossing	Jul-Sep	29.1	0.1	24.2	2.6	0.1	3.0	19.9	1.1	10.1	21.3	0.8	38.5	0.1	153.5	6.9
Stephenville Crossing	Oct-Nov	0.7	0.0	24.0	3.7	0.0	0.0	7.2	3.3	71.8	4.3	0.0	39.5	67.7	219.0	6.6
Picadilly Head Beach	Aug-Sep	6.0	0.0	14.6	0.0	0.0	0.0	29.0	0.0	0.0	3.5	2.0	2.3	0.3	59.3	4.6
St-Paul's Inlet	Jul-Sep	13.7	0.0	16.0	11.3	4.3	0.4	13.4	1.0	64.0	7.9	2.9	44.4	1.5	180.0	7.5
St-Paul's Inlet	Sep-Nov	0.9	0.0	2.6	0.0	0.0	0.0	1.4	0.0	33.9	0.0	0.0	5.4	0.3	44.4	2.5
Piccadilly Lagoon	Oct	7.3	0.0	9.3	5.7	2.2	0.2	7.4	0.5	48.9	3.9	1.5	24.9	0.9	112.2	5.0
Parson's Pond	Aug	26.2	0.0	4.3	0.2	0.0	0.3	4.2	1.0	5.0	2.7	0.0	16.0	0.0	59.8	5.3
Parson's Pond	Nov	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	6.0	0.0	0.0	0.0	0.0	6.3	1.3
Sandy Point	Jul-Sep	3.0	0.0	21.8	12.5	9.5	3.7	25.4	1.0	6.0	19.5	1.0	8.5	5.7	81.3	5.4
Point au Mal	Jul-Aug	73.7	0.0	14.0	2.0	0.0	1.0	8.5	0.0	15.0	5.0	0.0	40.5	0.0	127.7	5.0

Source: Conservation Data Centre.