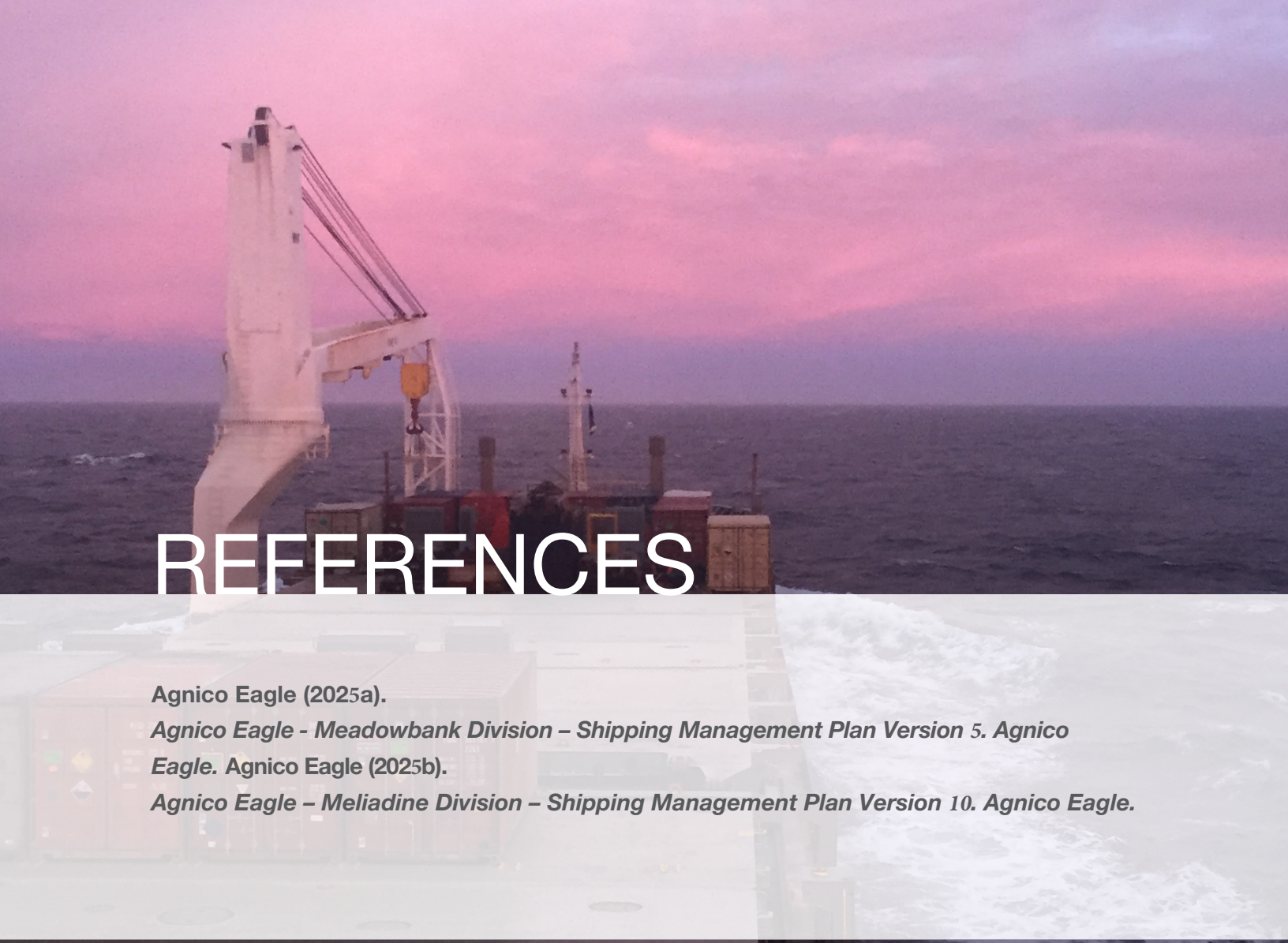


REFERENCES

Agnico Eagle (2025a).
Agnico Eagle - Meadowbank Division – Shipping Management Plan Version 5. Agnico Eagle. Agnico Eagle (2025b).
Agnico Eagle – Meliadine Division – Shipping Management Plan Version 10. Agnico Eagle.

APPENDIX B MARINE MAMMAL MONITORING STANDARD OPERATING PROCEDURE

Meadowbank and Meliadine Projects

Marine Mammal Monitoring

STANDARD OPERATING PROCEDURE SHIP-01

June 3, 2025 Version B.5

Scope of Work: This SOP provides guidance for marine mammal monitoring procedures for shipping companies contracted by Agnico Eagle. Monitoring is conducted to avoid potential effects to marine mammals. The shipping companies are required to record marine mammal observations based on the protocols outlined in this SOP along the shipping route between Hudson Strait and Helicopter Island/Rankin Inlet.

Contacts:

Agnico Eagle
mmso@agnicoeagle.com

CONTENTS

1. PROGRAM DESCRIPTION AND OBJECTIVES

A Marine Mammal Monitoring Standard Operating Procedure (SOP) has been developed to guide onboard monitoring for marine mammals. This SOP satisfies the Meadowbank Mine NIRB Project Certificate No. 008 Condition 40 and the Meliadine NIRB Project Certificate No.006 Condition 82.

The purpose of this SOP is to identify the monitoring procedures for shipping companies contracted by Agnico Eagle to avoid potential effects to marine mammals. This document outlines the following:

- how to avoid or adjust shipping speed near sensitive wildlife habitat along shipping routes;
- how to record observations of marine mammals, which includes whales, pinnipeds (i.e., seals and walruses), and polar bears;
- potential mitigation if marine mammals are observed;
- how to record and report mitigation measures taken, if applicable; and
- how to record and report ship strikes of marine mammals if they occur.

Agnico Eagle will update this SOP as necessary, in response to feedback from the Department of Fisheries and Oceans (DFO), Environment and Climate Change Canada (ECCC) or in response to data collected in the field or scientific advances.

2. MARINE MAMMAL MONITORING

2.1 Overview

The following protocol will be implemented during the Marine Mammal and Seabird Observer (MMSO) program:

- A minimum of one assigned MMSO will be present on-board vessels during all transits;
- The MMSO will conduct marine mammal observations along the shipping route from the bridge during daylight hours and record sightings into the *Marine Mammal Sightings Form* (Attachment A); and
- The shipping contractor will initiate mitigation measures designed to minimize Project impacts on marine mammals, as identified in the Marine Shipping Mitigation Summary Booklet and summarized in Attachment B.

2.2 Training

The captain is responsible to assign an MMSO to the bridge, and to ensure that the MMSO has been trained to identify marine mammals and seabirds.

Training for the assigned MMSOs includes:

- The pre-trip training live webinar, or review of the recorded webinar prior to beginning the MMSO duties. The recorded webinar will also be available on the ship for review as needed;
- Review the Marine Mammal Monitoring SOP (this document), the Marine Shipping Mitigation Summary Booklet, and the Seabird Monitoring SOP (SOP # SHIP-02);
- Review marine mammal identification, including common species provided in Attachment C (Whale ID Guide and Pinniped ID Guide);
- Know how to estimate distances to animals observed; and

- Review how to fill out the *Marine Mammal Sightings Form* (Attachment A) and the *Marine Mammal and Seabird Observer (MMSO) Incident Report Form* (Attachment D).

2.3 Equipment

Bridge staff participating in wildlife monitoring will require the following when conducting surveys:

1. This SOP;
2. Whale ID Guide and Pinniped ID Guide (Attachment C);
3. *Marine Mammal Sightings Form* (Attachment A);
4. *MMSO Incident Report Form* (Attachment D);
5. Binoculars;
6. GPS (only required if unable to get GPS coordinates from the ship); and
7. Clipboard and pencil.

2.4 Marine Mammal Monitoring Methods

Marine mammal surveys are required along the shipping route from Hudson Strait to Helicopter Island/Rankin Inlet, and during the return journey from Helicopter Island/Rankin Inlet through Hudson Strait (Figure 2.4-1). Surveys must be conducted at least once per day, but two surveys per day is preferred.

General environmental and marine mammal sightings information is to be collected and recorded by filling out the form in Attachment A. The protocol outlined in this section are best conducted along a transect line, therefore, it is best to start a marine mammal observation period when the vessel is and will be moving in a straight line for an extended period of time.

2.4.1 Observation Period

- Marine mammal monitoring is required from Hudson Strait to Helicopter Island (Meadowbank) or Rankin Inlet (Meliadine), along the shipping route presented in Figure 2.4-1.
- Conduct a minimum of 1 survey per day; however, 2 surveys per day is preferred.
- Prioritize conducting surveys around Coats Island, Hudson Strait, and/or approaching Helicopter Island/Rankin Inlet.
- MMSO observation periods should last approximately 1.5 hours, but should not last longer than 2 hours to mitigate observer fatigue and eyestrain.
- During dedicated surveys, sightings are only recorded by the MMSO, with no assistance permitted by other crew members.
- For each observation period, document information on the ship's location, travelling speed and direction, environmental conditions on a *Marine Mammal Sightings Form*.

2.4.2 Observer Position

- Observations will be done from a high location on the vessel and ideally outdoors if possible and will be conducted at the same location each time.
- For marine mammal observations, depending on the weather conditions and safety requirements for the crew, the MMSO will position themselves in the middle of the ship at the front (bow) to observe marine mammals on both the starboard and the port side (Figure 2.4-2).

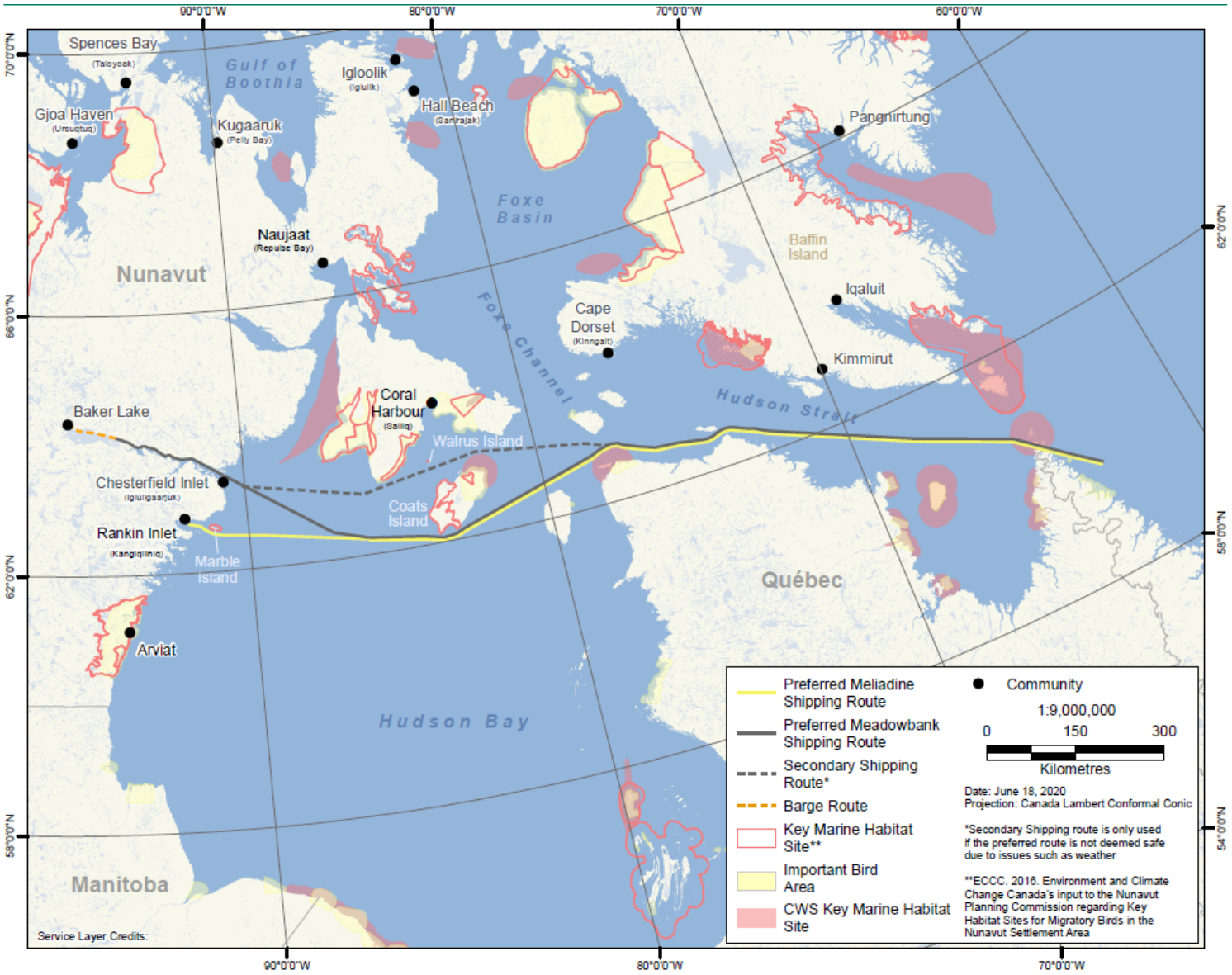


Figure 2.4-1: Shipping Routes During the Open Water Season

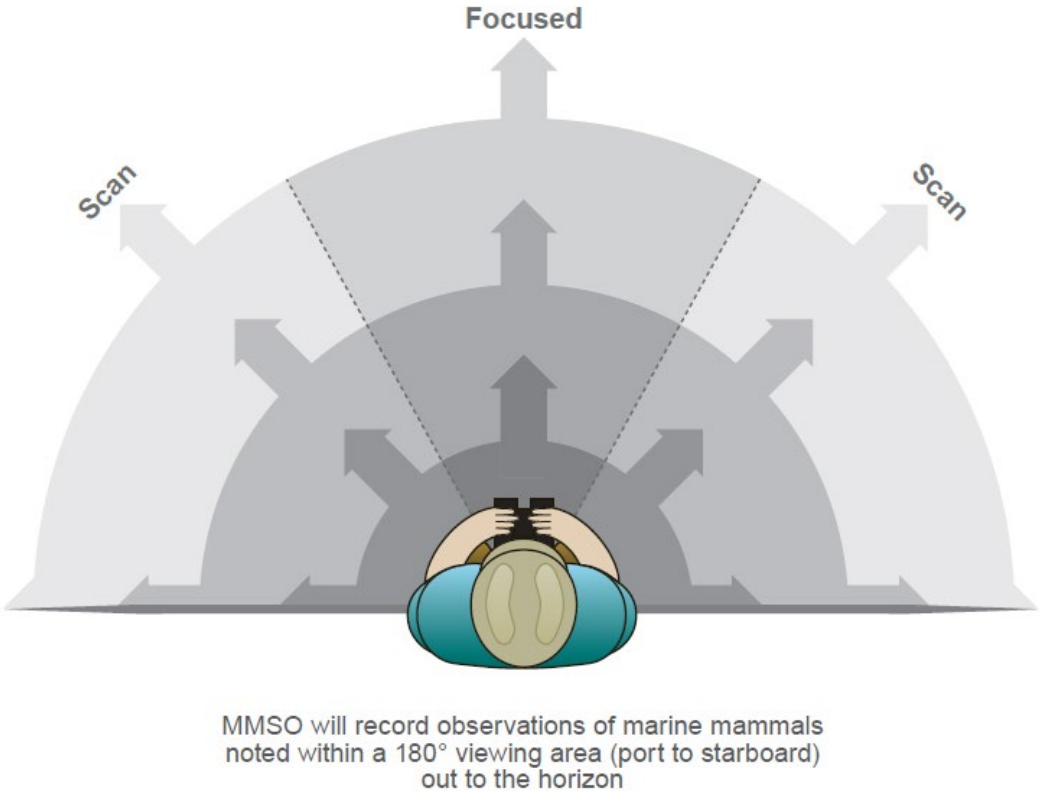


Figure 2.4-2: Illustration of MMSO Position and Observation Field on a Vessel

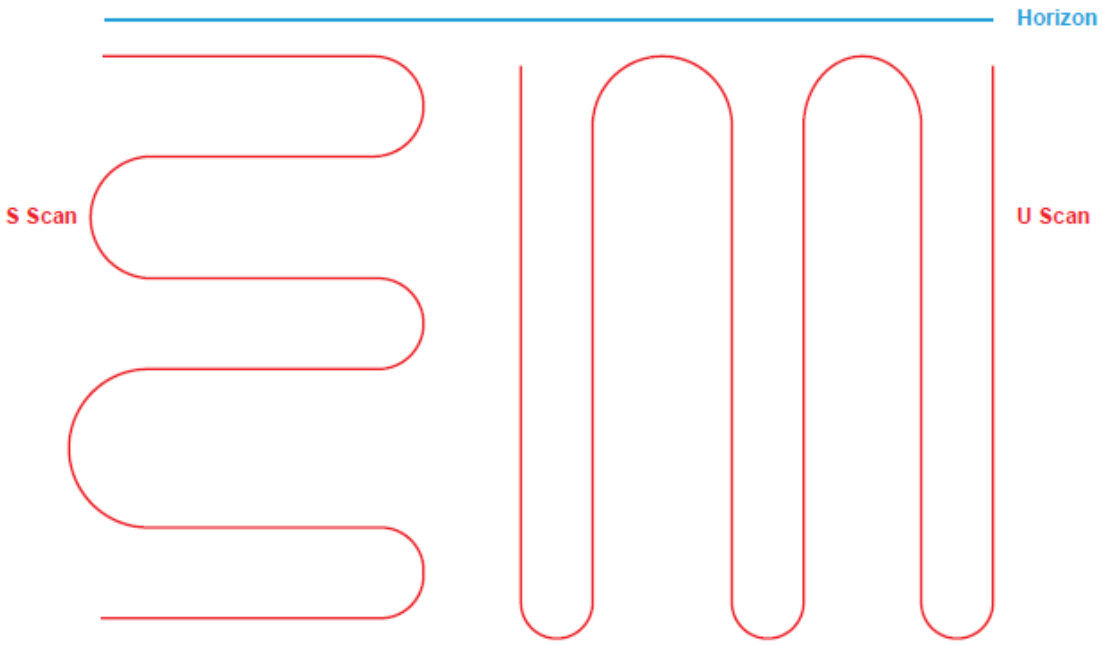
2.4.3 Scan Routine

1. How to Scan for Marine Mammals

- Scan the water from the vessel out to the horizon with the naked eye and use binoculars only to focus on possible sightings.
- Scans should be made from the middle of the vessel and cover the scan area shown in Figure 2.4-2 with a focus on the water ahead and to the side to the moving vessel (e.g., focused scan area in Figure 2.4-2).
- Perform S and U scans (Figure 2.4-3) of the observation field about every 20 seconds looking for whale cues (e.g., blow, back surfacing). The most important aspect of marine mammal observing is to constantly scan the observation field to capture animals that could be located in the peripheral view for brief moments (e.g., surfacing).
- If a whale or pinniped (seal or walrus) is observed, record the sighting on the *Marine Mammal Sightings Form*, as per instructions in Step 2 below.
- Surveys are prioritized when the vessel is moving; however, if the vessel is stationary (e.g., anchored) for a day or portion of a day, then a marine mammal survey will be required while anchored. If this is required, scans should be conducted over the entire scan area in a uniform fashion.

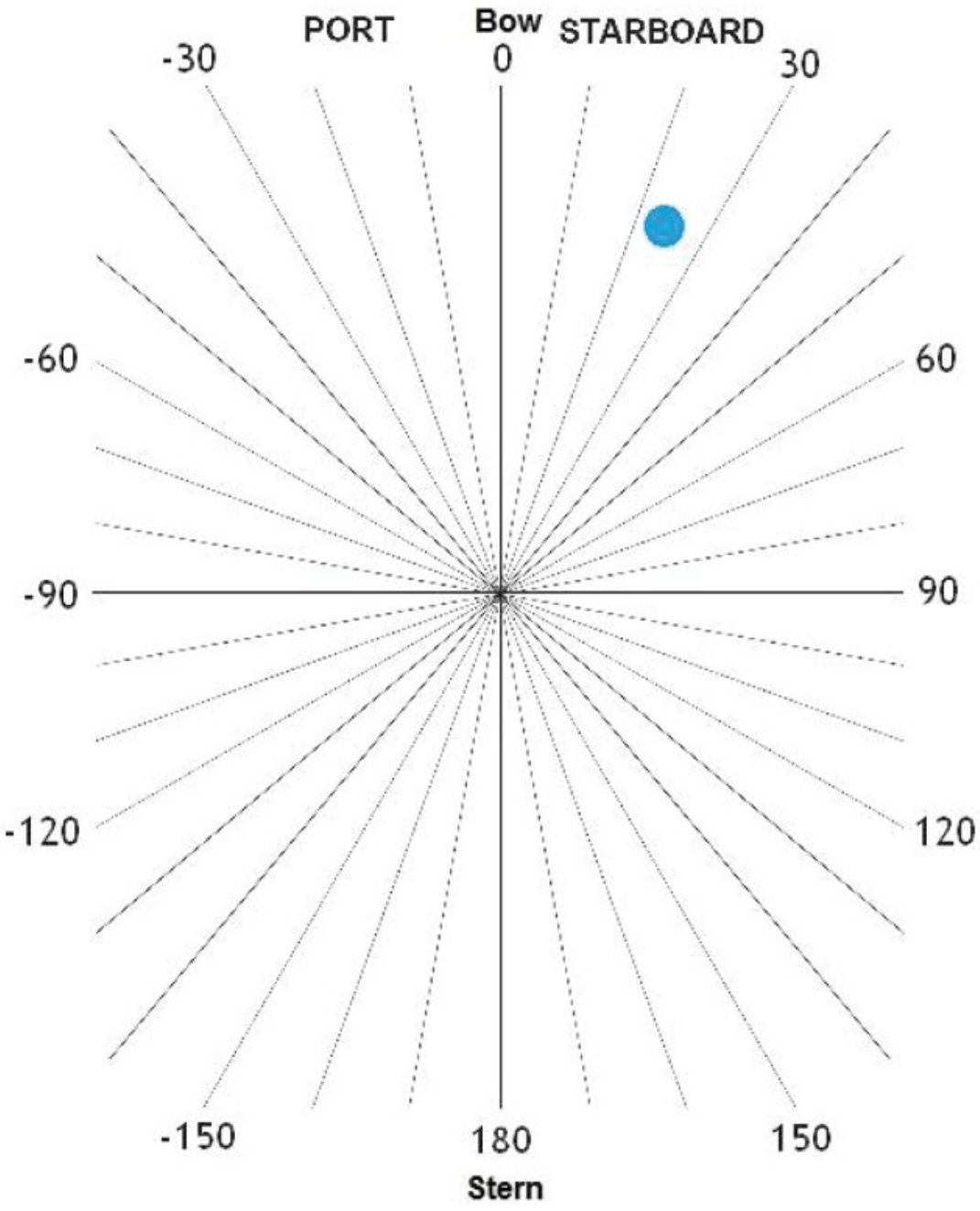
2. What to Do When a Marine Mammal is Observed

- Marine mammals observed during the dedicated marine mammal observational periods will be recorded on the *Marine Mammal Sightings Form*, including:
  - GPS location;
  - Distance to animal from vessel;
  - Angle to animal (Figure 2.4-4 shows how an angle to a marine mammal from the vessel should be estimated);
  - Number of marine mammal individuals;
  - Unknown species – if a species is unknown or if a blow is the only detection of the animal observed, then mark the sighting as unknown or record the general species group (e.g., whale, seal, walrus, polar bear), and provide a description of what was seen (e.g., colour of animal, how many were observed, behaviour, dorsal fin present or absent, etc.); and
  - Behaviour (e.g., travelling, feeding, other).
- Marine mammals in large groups that are close together should be marked as a single sighting.
- Sightings of pinnipeds (seals, walrus) hauled-out on land or of a polar bear on land will be recorded with a description in the “Notes” section indicating the animal(s) were observed on land.
- If a marine mammal is counted twice or more in the sightings record, then a note of a re-sighting should be marked.
- When possible, take photographs of marine mammal sightings and record the photo name/number alongside sightings records. These photos must be provided to Agnico Eagle along with the completed datasheets.
- If no marine mammals are observed during a survey period, then the top sections of the *Marine Mammal Sightings Form* must still be completed (including “General Information”, “Vessel Information”, and “Environmental Information”) with “No animals observed” entered into the “Notes” section.
- If a marine mammal sighting is close to the vessel and requires mitigation measures, or if a ship strike occurs, refer to Section 3 of this SOP and complete the *MMSO Incident Report Form* (Attachment D);
- Ensure no cell on the *Marine Mammal Sightings Form* is left blank.



Source: Agnico Eagle 2020.

Figure 2.4-3: Illustration Showing How to Conduct S & U Scanning Techniques



Note: Example shows angle to the animal (blue dot) is approximately 22°.

Source: Agnico Eagle 2020.

Figure 2.4-4: How to Determine Angle to Marine Mammal

2.5 Incidental Marine Mammal Sightings – "Off Effort"

During sailing from Hudson Strait to Helicopter Island/Rankin Inlet, the ship's crew is required to keep watch for marine mammals along the shipping route. This is not part of the MMSO dedicated surveys. Whenever a marine mammal is observed outside of the dedicated survey time, this is called an incidental sighting, or "off-effort". These sightings are recorded on the *Incidental Marine Wildlife Sightings Form* (Attachment E) and provided to Agnico Eagle for reporting. This includes all sightings of whales, seals, walruses, polar bears, and hauled-out animals.

If an incidental sighting is close to the vessel and requires mitigation measures, or if a ship strike occurs, refer to Section 3 of this SOP and complete the *MMSO Incident Report Form* (Attachment D).

3. MITIGATION AND REPORTING

In the event bridge crew observe marine mammals within 100 m of the vessel for Meliadine, and 500 m of the vessel for Meadowbank, refer to the Marine Shipping Mitigation Summary Booklet for recommended responses (e.g., slowing vessel, change direction). Management responses will be documented on the *Marine Mammal Sightings Form* for that observation. In addition, if a ship strike occurred or other incident (e.g., animal appears affected by the vessel), the MMSO must also fill in the *MMSO Incident Report Form* (Attachment D). Mitigation measures are also summarized in Attachment B.

If bridge crew determine a ship strike of a marine mammal has occurred, complete the *Marine Mammal Sightings Form* and indicate that the observation was the result of a ship strike. If the ship strike is a marine mammal the ship's captain is to report the strike to Agnico Eagle (contact listed at the top of this SOP) as soon as practical and within 24 hours.

In addition, as per *Marine Mammal Regulations* s.39, the captain must also report a strike to the DFO minister, including the following information:

- the date, time and location of the incident;
- the species of marine mammal involved in the incident;
- the circumstances of the incident;
- the size and type of vehicle and, if applicable, the type of fishing gear involved in the incident;
- the weather and sea conditions at the time of the incident;
- the observed state of the marine mammal after the incident; and
- the direction of travel of the marine mammal after the incident, to the extent that it can be determined.

DFO Contact Information:

- Central and Arctic, Nunavut – Iqaluit: 1-867-979-8000.

4. END OF TRIP REPORTING REQUIREMENTS

The following information will be submitted to the Agnico Eagle Environment Team (contact information provided at the top of this SOP) after each shipping trip for collation into a database:

1. Spatial file of the shipping route;
2. Completed *Marine Mammal Sightings Forms*;
3. Completed *MMSO Incident Report Forms* (if required); and
4. Photographs taken of sightings.

5. RECOMMENDED GUIDES

Reeves et al. 2002. *National Audubon Society's Guide to marine Mammals of the World.*

Additional Recommended Training/Practice*: http://www.dfo-mpo.gc.ca/species-especes/mammals-mammiferes/identification-guide/index-eng.html*.

ATTACHMENT A MARINE MAMMAL SIGHTINGS FORM

Marine Mammal Sightings Form (circle options that are *italicized* as appropriate)

General Information					
Date (DD/MMM/YYYY)		**Observer Name**		**Height of Eye (m)**	
Vessel Information					
Company/Agency		**Vessel Type**		**Vessel Heading (compass)**	
Vessel Name		**Vessel Activity**	*Moving* *Stationary*	**Vessel Speed (kt)**	
Environmental Information					
Weather	*Clear* *Partly Cloudy* *100% Cloud* *Fog* *Rain* *Snow*			**Sea State (0-9)**	
Beaufort Wind Force	*Calm* *Light Wind* *Strong Wind* *Gale Force Wind* *Stormy*			**Wave Height (m)**	
Wind Direction (deg.)		**Glare Conditions**	*None* *Slight Grey* *Bright*	**Visibility (km)**	

Survey Information							
Transect Start	**Local Time (24 hr)**		**Latitude (DD)**			**Longitude (DD)**	
Transect End	**Local Time (24 hr)**		**Latitude (DD)**			**Longitude (DD)**	
Observer Location	***Outdoors***	***Indoors***	**Observation Side**	***Starboard***	***Port***	***Bow***	
Notes							

Marine Mammal Sighting Information

Time of Sighting	Distance to Sighting (m)	Angle to Sighting (deg.)	Sighting Coordinates			Species	Count	Age (Adult/Young)	Sex (M/F/UNK)	Re-Sighting (Y/N)	Behaviour (Travel, Feeding, Other)	Mitigation Required?	Photo Number	Comments/Notes
			WPT	Latitude (DD)	Longitude (DD)									

ATTACHMENT B MARINE SHIPPING MITIGATION SUMMARY

General Guidance on the Water

Vessels maintain > 500 meters from aggregations of seabirds and marine mammals on the water*

Whales Always Have Right-of-Way

Vessel Operation: Maintain straight course, constant speed, avoid erratic behavior

As per **Marine Mammal Regulations s.7(3)**, maintain a minimum of 100 m from marine mammals at all times

What to do if a Marine Mammal Approaches the Vessel

Option 1

Reduce its speed and, if possible, cautiously move away from the animal

Option 2

if it is not possible for the ship to move away from or detour around a stationary marine mammal or group of marine mammals, the ship will reduce its speed and wait until the animal(s) move to the side and remain at least 100 m (Meliadine) or 500 m (Meadowbank)

Option 3

If animals appear to be trapped or disturbed by ship movements, the ship will mitigate disturbance (e.g., stoppage of movement) until the animal(s) has moved away

*** The two projects have slightly different guidance on setbacks:**
Meadowbank – Maintain 500 m away from feeding marine mammals and aggregations of seabirds and marine mammals
Meliadine – Maintain 300 m from feeding marine mammals.
Meliadine – Maintain 100 m away at all times.

ATTACHMENT C MARINE MAMMAL ID GUIDES

COMMON WHALE ID GUIDE

Narwhal

Size: 4 - 5 m

Body: Small head, stocky body, short/round flippers, tusk

Dorsal Fin: No

Colour: Mottled black and white, grey or brownish

Beluga

Size: 4 - 5 m

Body: Stout body, small head, short, broad paddle-shaped flippers

Dorsal Fin: No

Colour: Adults white, calves brown/grey

Bowhead Whale

Size: up to 19 m

Body: Large and rotund

Dorsal Fin: No

Colour: Black/brown, white lower jaw

Blow: Bushy V-shaped

Fluke: Shows fluke when diving

Fin Whale

Size: up to 23m

Body: Streamlined and long

Dorsal Fin: hooked

Colour: Grey body, white lower jaw right-side only

Blow: Tall and straight

Fluke: Rarely shows fluke

Orca/ Killer Whale

Size: 7-9 m

Body: Long rounded body

Dorsal Fin: Tall dorsal fin

Colour: Black-and-white, saddle patch (grey area) behind dorsal fin, white underside

COMMON PINNIPED ID GUIDE

Walrus

Size: 2.5 - 3m

Body: large, blubbery, long tusks

Head: Large thick neck, dark mouth with whiskers

Colour: Dark brown

Harbour Seal

Size: 2m

Body: Medium size, spindle shaped body

Head: like dog, heart-shaped snout

Colour: Blue-grey with dark spots/speckles

Hooded Seal

Size: 2.5 m

Body: Large, robust

Head: Broad head short narrow snout, males of “hood” they inflate

Colour: Black head, silver/grey fur, dark patches

Harp Seal

Size: 1.5 - 2 m

Body: Medium size, robust

Head: Small head, pointy snout

Colour: Light grey, harp-shaped black patch on back, black face

Bearded Seal

Size: 2 - 2.5 m

Body: Large, robust

Head: Small head, short snout, long whiskers

Colour: Dark brown/grey with dark rings/spots

ATTACHMENT D MMSO INCIDENT REPORT FORM

AGNICO EAGLE

Marine Mammals and Seabird Observer (MMSO) Incident Report

Project Information			
Client: Agnico Eagle		**Date:**	
Project Name (circle one): *Meadowbank* *Meliadine*		**General Location:**	
Latitude (DD):		**Longitude (DD):**	
Vessel Contractor Information			
Vessel Contractor Name:		**Site Supervisor or Captain:**	
Vessel Name/Type:		**MMSO Name:**	
General Weather Conditions (throughout the day):	**Wind (knots)**:		
	Sea State:		
	Swell Height (m):		
	Temperature (°C):		
	Notes:		
Time Start/Time End MMSO Duties (HH:MM):	**Start:**	**End:**	

Record of Vessel-Animal Collisions/Interactions in Water

Species	**Number of Individuals**	**Time (HH:MM)**	**Location**		**Visibility (m)/ Sea State**	**Comments**
			Latitude (DD)	**Longitude (DD)**		

Record of Bird on Deck

Species	**Number of Individuals**	**State of Bird (injured, stranded, or dead)**	**Time (HH:MM)**	**Visibility (m)/ Sea State**	**Comments**

Mitigation Log

Time (UTC; HH:MM)	**Was Mitigation Implemented?**	**Location**		**Rationale for Implementation**
		Latitude (DD)	**Longitude (DD)**	

ATTACHMENT E INCIDENTAL MARINE WILDLIFE SIGHTINGS FORM

AGNICO EAGLE

Incidental Marine Wildlife Sightings Form

(1 form per observation; PLEASE PRINT; circle options provided in *italics* as appropriate)

General Information			
Vessel Name		**Date**	
Observer Name		**Local Time (24 hr)**	
Vessel Information			
Ship Speed (kt)		**Ship Heading (compass)**	
Latitude (decimal degrees)		**Longitude (decimal degrees)**	
Environmental Information			
Beaufort Wind Force		**Visibility (km)**	
Wind Direction			
Observation Information			
Species[1]		**ID Reliability**	*Positive / Probable / Maybe*
Distance from vessel when first seen (m)		**How close did the animal get to the vessel (m)?**	
Number of Individuals	*Best Estimate:* **OR** *Maximum/Minimum:*		
Behaviour	**Mammals:** *Swimming* *Diving* *Feeding*		
	Dead *Resting on land* *Resting on ice* *Other:*		
	Birds: *Flying* *Feeding* *Resting on ocean surface*		
	Resting on land *Escape Ship - Flying* *Escape Ship - Diving* *Dead*		
	Other (describe):		
Other notes (e.g., physical descriptions, distinctive behaviours, drawing)		**Position & Travel Relative to Ship [draw arrow]**	 **OR** *Variable Travel Directions*
Was this observation the result of a SHIP STRIKE?		*Yes* *No* *If yes, fill out "MMSO Incident Report"*	
Mitigation Action Taken			
Yes *No*			
If yes, describe mitigation actions (e.g., change in course or speed) and result (e.g., maintained a buffer of x metres from wildlife)	**ACTION:** **RESULT:**		

[1] *Refer to list of species in the ID Guides*

APPENDIX C SEABIRD MONITORING STANDARD OPERATING PROCEDURE

Meadowbank and Meliadine Projects

Seabird Monitoring

STANDARD OPERATING PROCEDURE SHIP-02

June 3, 2025 Version C.4

Scope of Work: This SOP provides guidance for seabird monitoring procedures for shipping companies contracted by Agnico Eagle. Monitoring is conducted to avoid potential effects to seabirds. The shipping companies are required to record seabird observations based on the protocols outlined in this SOP along the shipping route between Hudson Strait and Helicopter Island/Rankin Inlet.

Contacts: **Agnico Eagle**
mmso@agnicoeagle.com

CONTENTS

1. PROGRAM DESCRIPTION AND OBJECTIVES

A Seabird Monitoring Standard Operating Procedure (SOP) has been developed to guide onboard monitoring for seabirds. This SOP satisfies the Meadowbank Mine NIRB Project Certificate No. 008 Condition 40 and the Meliadine NIRB Project Certificate No.006 Condition 82.

The purpose of this SOP is to identify the monitoring and mitigation procedures for shipping companies contracted by Agnico Eagle to avoid potential effects to seabirds, as per the Marine Mammal and Seabird Monitoring (MMSO) program. This document outlines the following:

- How to avoid or adjust shipping speed near sensitive wildlife habitat along shipping routes;
- How to record observations of seabirds;
- Potential mitigation if large groups of seabirds are observed;
- How to record and report mitigation measures taken, if applicable; and
- How to record and report ship strikes of seabirds, if they occur.

Agnico Eagle will update this SOP as necessary, in response to feedback from Environment and Climate Change Canada (ECCC) or in response to data collected in the field or scientific advances.

2. SEABIRD MONITORING

2.1 Overview

The following protocol will be implemented during the Marine Mammal and Seabird Observer (MMSO) program:

- A minimum of one assigned MMSO will be present on-board vessels during all transits;
- The MMSO will conduct seabird observations along the shipping route from the bridge during daylight hours and record sightings into the *Seabird Sightings Form* (Attachment A); and
- The shipping contractor will initiate mitigation measures designed to minimize Project impacts on seabirds, as identified in the Marine Shipping Mitigation Summary Booklet (e.g., remain 500 m from bird colonies on land, remain 2 km from Marble Island, remain 500 m from large aggregations of seabirds on water).

2.2 Training

The captain is responsible to assign an MMSO to the bridge, and to ensure that the MMSO has been trained to identify marine mammals and seabirds.

Training for the assigned MMSOs includes:

- The pre-trip training live webinar, or review of the recorded webinar prior to beginning the MMSO duties. The recorded webinar will also be available on the ship for review as needed;
- Review the Seabird Monitoring SOP (this document), the Marine Shipping Mitigation Summary Booklet, and the Marine Mammal Monitoring SOP (SOP #SHIP-01);
- Review how to fill out the *Seabird Sightings Form* (Attachment A) and the *Marine Mammal and Seabird Observer (MMSO) Incident Report Form* (Attachment B);
- Review seabird identification, including common species provided in Attachment C; and
- Know how to estimate distances to animals observed.

2.3 Equipment Checklist

Bridge staff participating in wildlife monitoring will require the following:

1. This SOP;
2. *Seabird Sightings Form* (Attachment A);
3. Seabird ID Guide (Attachment C);
4. *MMSO Incident Report Form* (Attachment B);
5. Binoculars;
6. GPS (only required if unable to get GPS coordinates from the ship); and
7. Clipboard and pencil.

2.4 Seabird Monitoring Methods

Seabird surveys are required along the shipping route from Hudson Strait to Helicopter Island/Rankin Inlet, and during the return journey from Helicopter Island/Rankin Inlet through Hudson Strait (Figure 2.4-1). Surveys must be conducted a minimum of once daily, but three times per day is preferred.

General environmental and seabird sightings information is to be collected and recorded by filling out the *Seabird Sightings Form* (Attachment A). The protocol outlined in this section are best conducted along a transect line, therefore, it is best to start a seabird observation period when the vessel is and will be moving in a straight line for an extended period of time.

2.4.1 Observation Period

- Seabird monitoring is required from Hudson Strait to Helicopter Island (Meadowbank) or Rankin Inlet (Meliadine), along the shipping route presented in Figure 2.4-1.
- If possible, attempt to prioritize conducting surveys around Coats Island, when passing near the shore entering Hudson Bay, and/or approaching Helicopter Island/Rankin Inlet.
- If the vessel is moving (preferred), use methods in Section 2.4.3; if vessel is not moving (stationary), use the methods in Section 2.4.4 below.
- For moving vessel:
  - Conduct three surveys per day: one morning, one afternoon, and one evening.
  - Each seabird survey period will be conducted during **six consecutive five-minute periods** (total of 30 minutes each session). Take a short break at the end of each five-minute period to record the vessel's position and any conditions (ship speed, direction, weather, etc.) that may have changed since the last five-minute survey period.
  - Each five-minute survey should be dedicated to surveying for seabirds only and should be completed regardless if birds are present or not.
- For each observation period, document information on the ship's location, travelling speed and direction, environmental conditions on a *Seabird Sightings Form* (one form per observation period).

2.4.2 Observer Position

- Observations should be done from a high location on the vessel, when possible, at a location as close to the port or starboard edge of the platform as possible to increase the detection of seabirds.
- All surveys should be conducted at the same location each time.

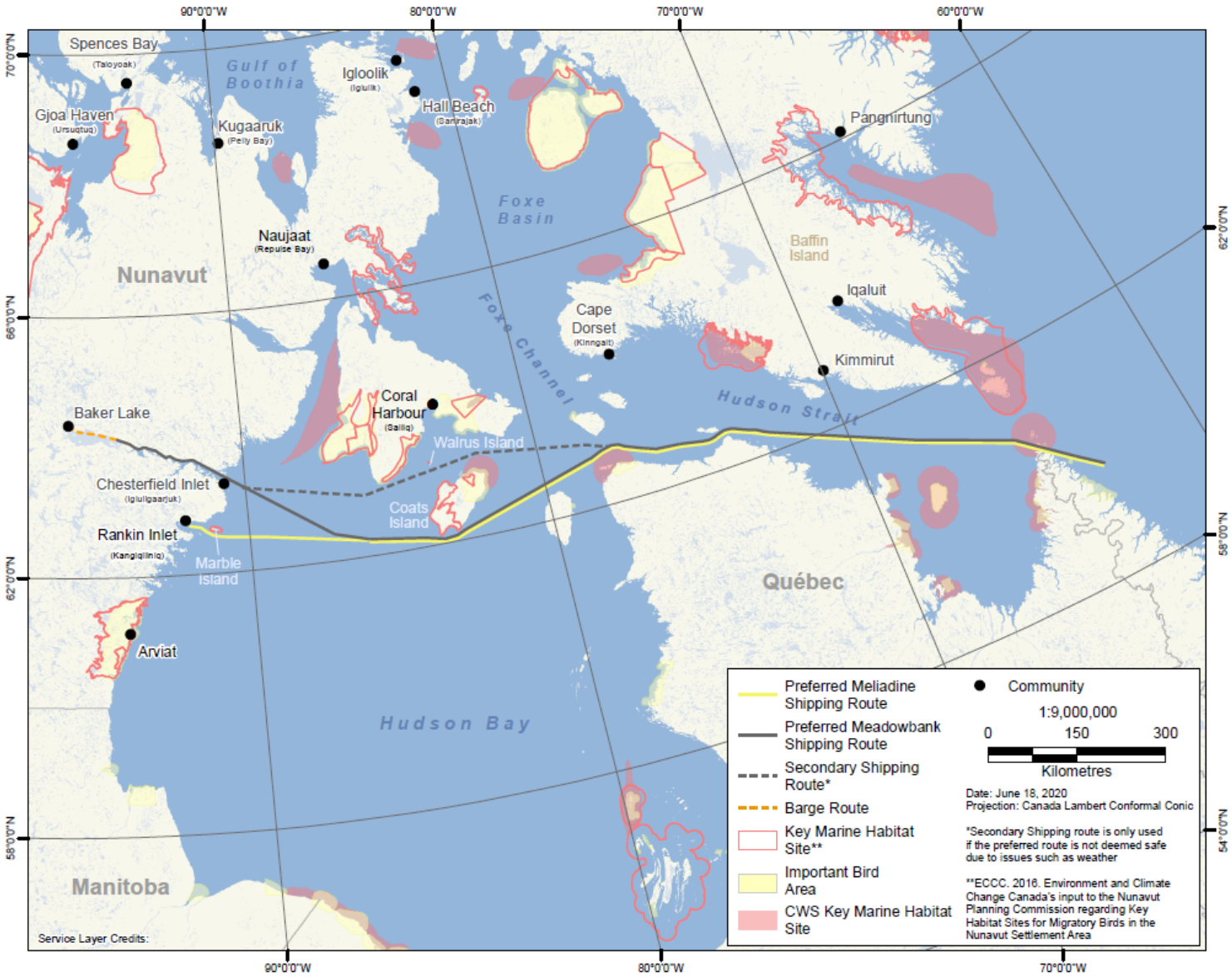


Figure 2.4-1: Shipping Routes During the Open Water Season

2.4.3 Survey Methods – Moving Vessel

- Conduct 3 dedicated surveys per day: one morning, one afternoon, and one evening.
- Each survey lasts 30 min, made up of ***6 separate 5-min observation periods***, beginning in Hudson Strait (see Figure 2.4-2).
- Look forward from the side of the vessel, scanning at a 90° angle from either the port or starboard side depending where the observer is located.
- The transect width within which seabirds are recorded is 300 m from the side of the vessel (see Figure 2.4-3).
- Begin all five-minute surveys by conducting a snapshot survey of birds in flight – i.e., an initial count of all birds seen flying (Section 2.4.3.1).
- Scan ahead regularly (e.g., every minute) to spot birds that may dive as the vessel approaches.
- All birds observed within the 300 m transect, whether flying or on the water, or on sea ice or land, are recorded and are considered in-transect sightings. (Figure 2.4-3).
- Use Figure 2.4-3 (A to E, or T) to record the distance to each bird or flock of birds (to the center of the flock). Ensure to record birds/group of birds only once.
- Birds observed outside the 300 m transect are also recorded if this does not affect observations within the 300 m transect. Distance categories “E” and “T” in Figure 2.4-3 are both considered not in transect.
- Binoculars and spotting scopes can be used to confirm species identification and other details as necessary.
- When a survey period cannot be done because of poor visibility (i.e., when the entire width of the 300 m transect is not visible), the extent of visibility should be noted on the *Seabird Sightings Form*.
- If no birds are observed during a five-minute survey period, “no seabirds observed” must be noted in the “Notes” on the *Seabird Sightings Form*.
- For each observation period crew will document information on the ship’s location, travelling speed and direction, environmental conditions and the details of the wildlife observation (species, behaviour, distance from ship, etc.) on a *Seabird Sightings Form*.
- Attachment C (Common Seabird ID Guide) summarizes general species groups and individual species that are most likely to be observed and is meant to provide a cheat-sheet for only the most common species – other species may occur and Bird ID book can be used. Note that recording a general species group or “unknown species” with a description of the bird in the comments column is better than an incorrect species identification.
- When possible, take photographs of seabird sightings and record the photo name/number alongside sightings records. These photos must be provided to Agnico Eagle along with the completed datasheets
- Ensure no cell on the *Seabird Sightings Form* is left blank.

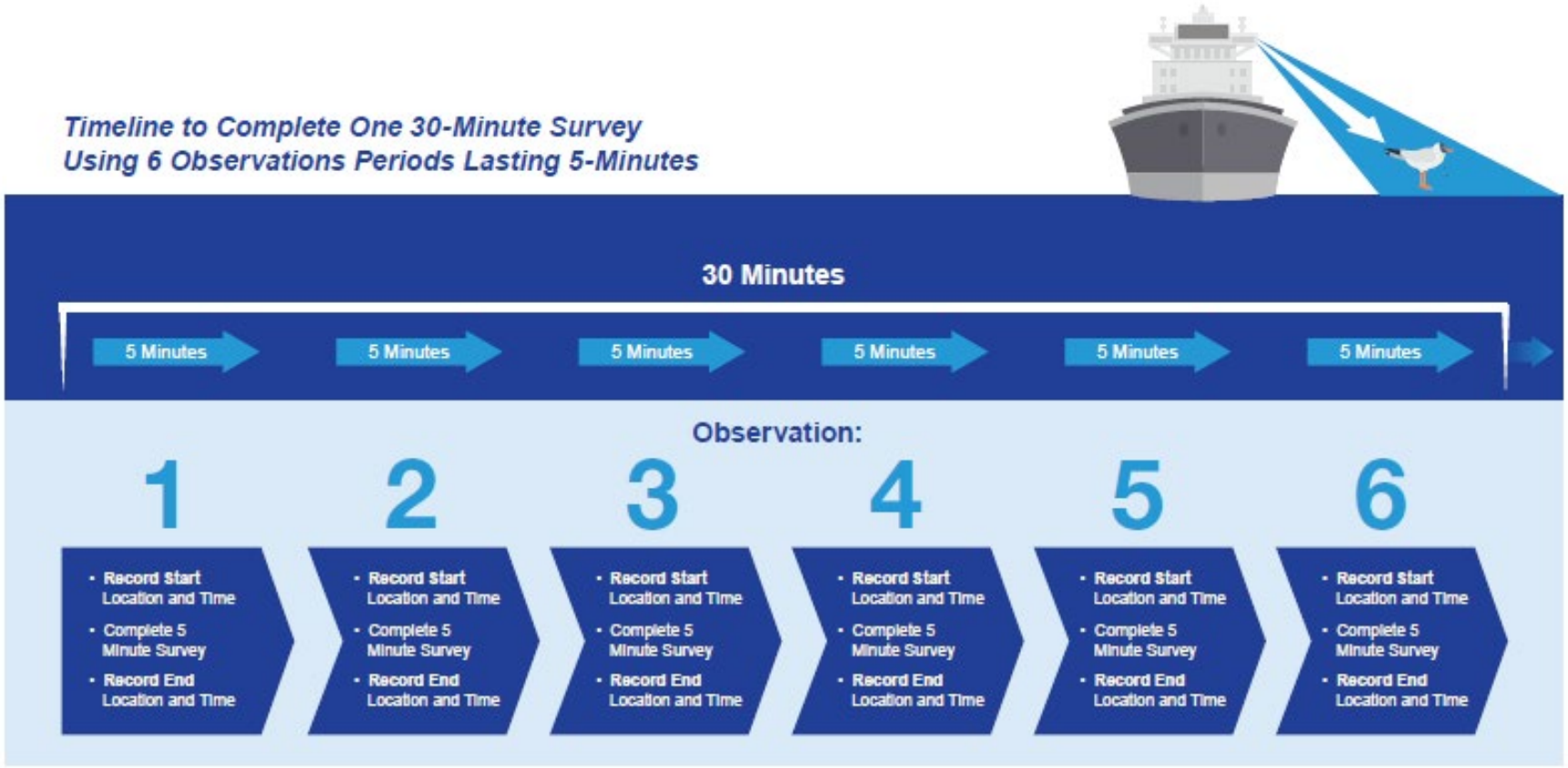
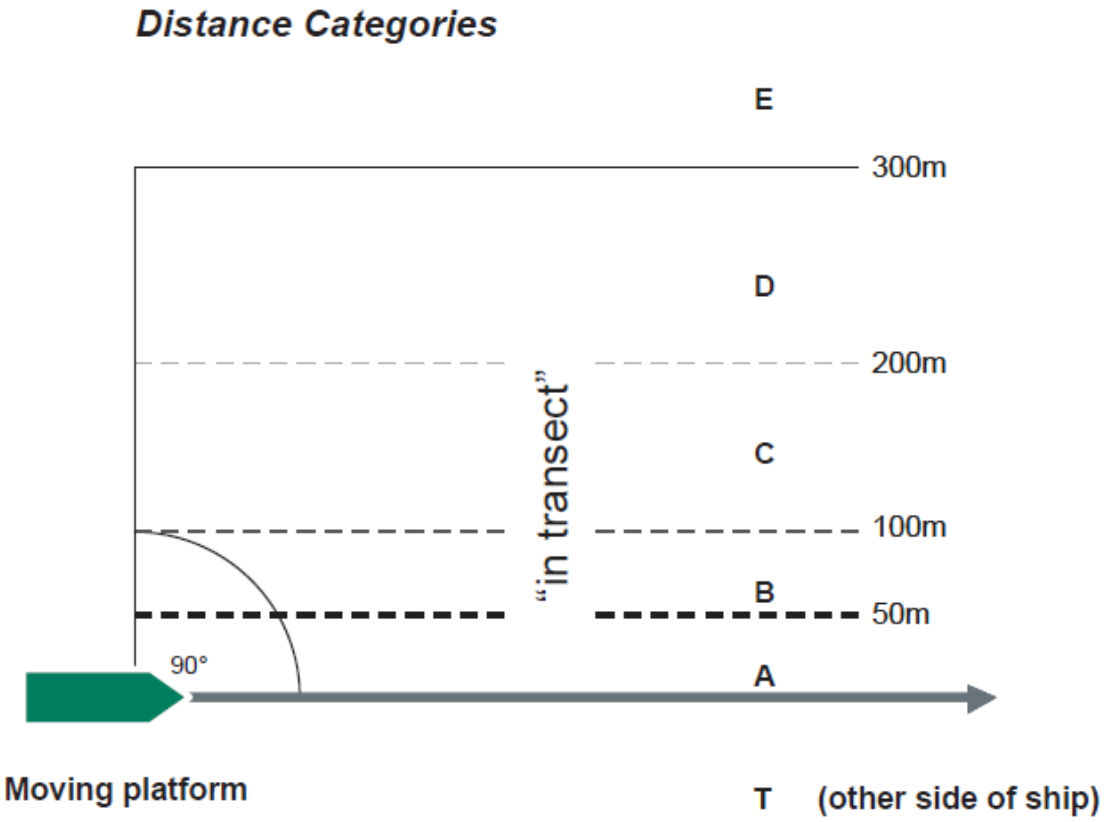


Figure 2.4-2: Seabird Survey Methodology using Six Consecutive 5-Minute Observation Periods



Extracted from Gjerdrum et al. 2012

Figure 2.4-3: Seabird Observations using a 90° Scan up to 300 m from the Vessel

2.4.3.1 Tips for Recording Birds

If the species of seabird cannot be identified, please ensure to indicate the species group (e.g., gull, puffin-like seabird) as described in the Common Seabird ID Guide (Attachment C), and provide a description of the bird in the comments column of the *Seabird Sightings Form*.

Birds on the Water

- All birds observed on the water are recorded throughout the five-minute survey period. If birds in the transect fly off the surface of the water as the vessel approaches, use binoculars to help count them, and record these birds as being on the water. Ensure not to record twice as flying birds during a snapshot survey.

Large Groups of Birds

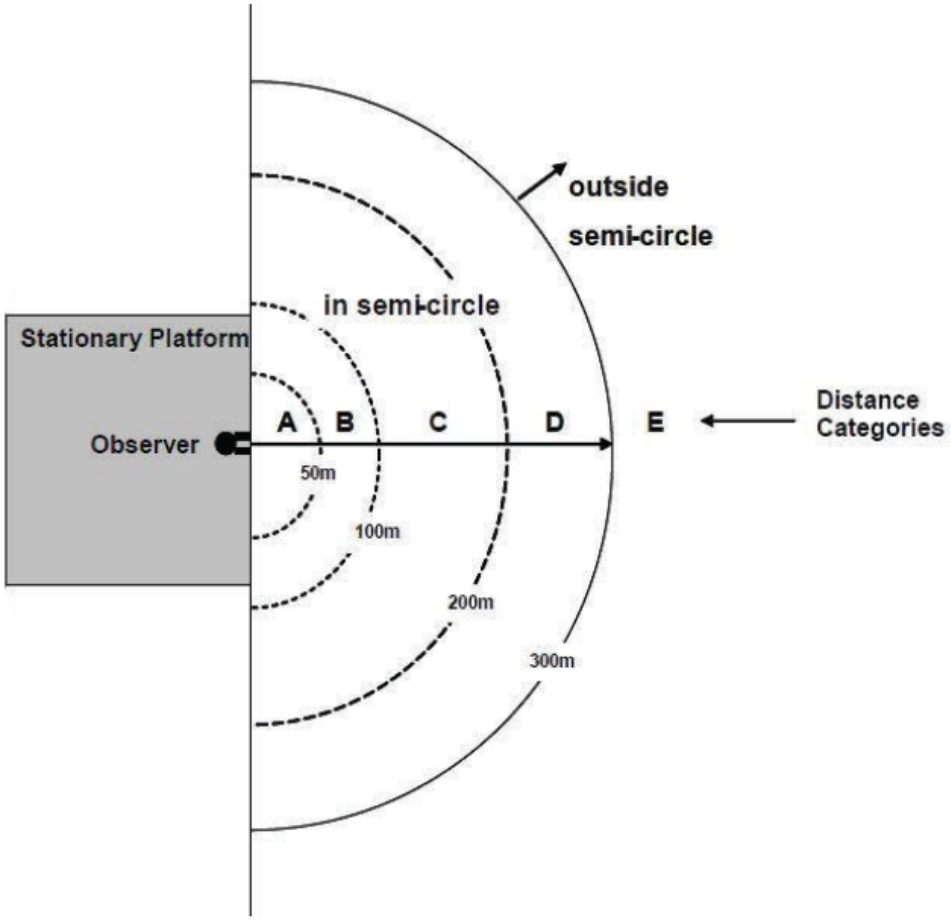
- If it is not practical to estimate distance to each bird or flock of birds, record whether the birds were observed in or out of transect. If it is not practical to note which birds are on the water and which are in flight use the following guidelines:
  - If the majority of the birds are in the air, they can be recorded as flying.
  - If birds appear first on the water and then fly away as the vessel approached, or they continuously move between the water and air, recorded them being as on the water.

Birds that Follow the Vessel

- To avoid double counting birds, once a bird is recorded in-flight it is not subsequently recorded again if it follows the ship.

2.4.4 Survey Methods – Stationary Vessel

- If the vessel is stationary (e.g., anchored) for a day or portion of a day, then a seabird survey will be required every hour while anchored. A minimum of one survey per day should be conducted.
- Surveys when the vessel is stationary are conducted from the bow (front) of the vessel.
- The length of each scan will depend on the number of birds present at the time of the scan (e.g., it may only last a few seconds if there are no birds present).
- Surveys while the vessel is stationary (e.g., on standby or anchored) are done using counts of birds within a 300 m “semi-circle” area from the vessel, scanning through a 180° arc (Figure 2.4-4).
- All seabirds on water and in flight that are observed within 300 m are recorded. If seabirds are visible beyond 300 m, they are recorded as outside of the 300 m semi-circle.
- The distance to seabirds (inside and outside the 300 m area) from the observer is estimated and recorded for all birds, using Figure 2.4-4 (A to E).
- Binoculars and spotting scopes can be used to confirm species identification and other details as necessary.
- If no birds are observed during the survey, “no seabirds observed” must be noted on the *Seabird Sightings Form*.



Source: extracted from Gjerdrum et al. 2012

Figure 2.4-4: Seabird Survey Using an 180º Scan from the Bow, Surveying an Area 300 m from a Stationary Observer

2.5 Incidental Seabird Sightings – "Off Effort"

During sailing between Hudson Strait and Helicopter Island/Rankin Inlet, the ship's crew is required to keep watch for groups of seabirds along the shipping route. This is in addition to the MMSO dedicated surveys. Whenever a group of seabirds is observed outside of the dedicated survey time, this is called an incidental sighting, or "off-effort" sighting. These sightings are recorded on the *Incidental Marine Wildlife Sightings Form* (Attachment D) and provided to Agnico Eagle for reporting. This includes sightings of large groups of seabirds on water, colonies of seabirds on land, or large flocks of seabirds flying.

If an incidental sighting is close to the vessel and requires mitigation measures, or if a ship strike occurs, refer to Section 3 of this SOP and complete the *MMSO Incident Report Form* (Attachment B).

3. MITIGATION AND COLLISION REPORTING

In the event bridge crew observe large groups of seabirds requiring mitigation or management measures, recommended responses are outlined in Table 3-1. Mitigation responses will be documented on the *Seabird Sightings Form* in the "Comments" column for that observation.

Table 3-1: Recommended Shipping Mitigation Responses for Seabirds

Observation	Management Response
Seabirds	
Marble Island	2 km
Colonies and aggregations of seabirds (on water or land) during Project shipping transiting through Hudson Strait, Hudson Bay, and Chesterfield Inlet	500 m setback

If bridge crew determine a ship strike of a group of seabirds has occurred, they will complete the *MMSO Incident Report Form* (Attachment B), and indicate on the *Seabird Sightings Form* that the observation was the result of a ship strike. In the event of a suspected ship strike with birds on the water, the water will be scanned for any evidence of injured or deceased birds. In the event of a suspected ship strike with birds flying into the vessel, the MMSO will be tasked with immediately scanning the water and with undertaking a systematic walk-through to search the vessel deck for dead, stranded or injured birds.

In addition, as vessel strikes with marine birds often occur at night due to birds being attracted to vessel lights, the MMSO will also be tasked with undertaking opportunistic walk-throughs of the deck in the mornings. All birds found injured, stranded or dead on each vessel will be documented in accordance with the *Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada* (ECCC-CWS 2017) on the *Incident Report Form* (Attachment B).

All records of bird collisions will be provided to Canadian Wildlife Service (CWS) on a weekly basis, as vessel communications allow (i.e., as internet connections allow). Immediate reporting will be required in the event that multiple bird collisions occur (involving more than five individuals) and the incidents appear related (i.e., similar time period, location, and weather conditions). In this instance, the regional Environment and Climate Change Canada (ECCC) Wildlife Enforcement Officer (contact information provided below) will be contacted to provide advice on the implementation of adaptive management techniques to attempt to reduce the likelihood of collisions occurring in the future.

If a seabird and vessel collision occurs, contact:

- ECCC Wildlife Enforcement: ec.dalfnord-wednorth.ec@canada.ca

4. END OF TRIP REPORTING REQUIREMENTS

The following information will be submitted to the Agnico Eagle Environment Team (contact information provided at the top of this SOP) after each shipping trip for collation into a database:

1. Spatial file of the shipping route;
2. Completed *Seabird Sightings Form*s;
3. Completed *MMSO Incident Report Form* (if required); and
4. Photographs taken of sightings.

5. REFERENCES AND RECOMMENDED GUIDES

ECCC. 2016. *Environment and Climate Change Canada's input to the Nunavut Planning Commission regarding Key Habitat Sites for Migratory Birds in the Nunavut Settlement Area*. Revised May 2016. 140 pp.

Gjerdrum et al. 2012. *Eastern Canada Seabirds at Sea (ECSAS) Standardized Protocol for Pelagic Seabird Surveys from Moving and Stationary Platforms*.

Latour, P. B., J. Leger, J. E. Hines, M. L. Mallory, D. L. Mulders, H. G. Gilchrist, P. A. Smith, and D. L. Dickson. 2008. *Key Migratory Bird Terrestrial Habitat Sites in the Northwest Territories and Nunavut*. Canadian Wildlife Service Occasional Paper Number 114. Canadian Wildlife Service: Ottawa, ON.

Mallory, M. L. and A. J. Fontaine. 2004. *Key Marine Habitat Sites for Migratory Birds in Nunavut and the Northwest Territories*. Canadian Wildlife Service Occasional Paper Number 109. Canadian Wildlife Service: Ottawa, ON.

Sibley. 2016. *Field Guide to the Birds of Eastern North America: Second Edition.*

ATTACHMENT A SEABIRD SIGHTINGS FORM

AGNICO EAGLE

Seabird Sightings Form (circle options that are *italicized* as appropriate)

Survey Type (*circle one*):	***Moving Vessel***	***Stationary Vessel***			
General Information					
Date (DD/MM/YYYY)		**Observer Name**		**Height of Eye (m)**	
Vessel Information					
Company/Agency		**Vessel Type**		**Vessel Heading**	
Vessel Name		**Vessel Activity**	*Moving Stationary*	**Vessel Speed (kt)**	
Environmental Information					
Weather	*Clear Partly Cloudy 100% Cloud Fog Rain Snow*			**Sea State (0-9)**	
Beaufort Wind Force	*Calm Light Wind Strong Wind Gale Force Wind Stormy*			**Wave Height (m)**	
Wind Direction (Deg)		**Glare Conditions**	*None Slight Grey Bright*	**Visibility (km)**	
Survey Information					
Observer Location	*Outdoors Indoors*	**Observation Side**	*Starboard Port Bow*		
Notes:					

5-min Survey #1 of 6 Start	**Local Time (24 hr)**		**Latitude (DD)**		**Longitude (DD)**	

Species	**Count**	**Observation Type (Fly or Water)**	**In Transect (Y/N)**	**Distance Zone (A,B,C,D,E)**	**Behaviour (escape flight, rafting, other)**	**Flight Direction (Deg)**	**Age (Adult/ Young)**	**Plumage (breeding/ non-breeding/molt)**	**Comments**

5-min Survey #1 of 6 End	**Local Time (24 hr)**		**Latitude (DD)**		**Longitude (DD)**	

5-min Survey #2 of 6 Start	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

Species	Count	Observation Type (Fly or Water)	In Transect (Y/N)	Distance Zone (A,B,C,D,E)	Behaviour (escape flight, rafting, other)	Flight Direction (Deg)	Age (Adult/ Young)	Plumage (breeding/ non-breeding/molt)	Comments

5-min Survey #2 of 6 End	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

5-min Survey #3 of 6 Start	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

Species	Count	Observation Type (Fly or Water)	In Transect (Y/N)	Distance Zone (A,B,C,D,E)	Behaviour (escape flight, rafting, other)	Flight Direction (Deg)	Age (Adult/ Young)	Plumage (breeding/ non-breeding/molt)	Comments

5-min Survey #3 of 6 End	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

5-min Survey #4 of 6 Start	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

Species	Count	Observation Type (Fly or Water)	In Transect (Y/N)	Distance Zone (A,B,C,D,E)	Behaviour (escape flight, rafting, other)	Flight Direction (Deg)	Age (Adult/ Young)	Plumage (breeding/ non-breeding/molt)	Comments

5-min Survey #4 of 6 End	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

5-min Survey #5 of 6 Start	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

Species	Count	Observation Type (Fly or Water)	In Transect (Y/N)	Distance Zone (A,B,C,D,E)	Behaviour (escape flight, rafting, other)	Flight Direction (Deg)	Age (Adult/ Young)	Plumage (breeding/ non-breeding/molt)	Comments

5-min Survey #5 of 6 End	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

5-min Survey #6 of 6 Start	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

Species	Count	Observation Type (Fly or Water)	In Transect (Y/N)	Distance Zone (A,B,C,D,E)	Behaviour (escape flight, rafting, other)	Flight Direction (Deg)	Age (Adult/ Young)	Plumage (breeding/ non-breeding/molt)	Comments

5-min Survey #6 of 6 End	Local Time (24 hr)		Latitude (DD)		Longitude (DD)	

ATTACHMENT B MMSO INCIDENT REPORT FORM

AGNICO EAGLE

Marine Mammals and Seabird Observer (MMSO) Incident Report

Project Information			
Client: Agnico Eagle		**Date:**	
Project Name (circle one): *Meadowbank* *Meliadine*		**General Location:**	
Latitude (DD):		**Longitude (DD):**	
Vessel Contractor Information			
Vessel Contractor Name:		**Site Supervisor or Captain:**	
Vessel Name/Type:		**MMSO Name:**	
General Weather Conditions (throughout the day):	**Wind (knots)**:		
	Sea State:		
	Swell Height (m):		
	Temperature (°C):		
	Notes:		
Time Start/Time End MMSO Duties (HH:MM):	**Start:**	**End:**	

Record of Vessel-Animal Collisions/Interactions in Water

Species	**Number of Individuals**	**Time (HH:MM)**	**Location**		**Visibility (m)/ Sea State**	**Comments**
			Latitude (DD)	**Longitude (DD)**		

Record of Bird on Deck

Species	**Number of Individuals**	**State of Bird (injured, stranded, or dead)**	**Time (HH:MM)**	**Visibility (m)/ Sea State**	**Comments**

Mitigation Log

Time (UTC; HH:MM)	**Was Mitigation Implemented?**	**Location**		**Rationale for Implementation**
		Latitude (DD)	**Longitude (DD)**	

ATTACHMENT C COMMON SEABIRD ID GUIDE

COMMON SEABIRD ID GUIDE

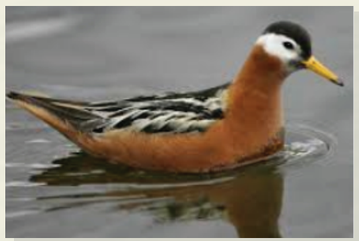
AGNICO EAGLE

Small Seabirds

Red Phalarope

Size: L 8.5” WS 17” WT 1.9 oz (55 g)

Body: Very small, shorebird-like seabird



Red-necked Phalarope

Size: L 7.75” WS 15” WT 1.2 oz (35 g)

Body: Very small, shorebird-like seabird

Puffin-like Seabirds

Atlantic Puffin

Size: L 12.5” WS 21” WT 13 oz (380 g)

Body: Small, stocky, bright bill, black and white plumage

DCs:
- Colourful bill
- Black band around neck while flying

Razorbill

Size: L 17” WS 26” WT 1.6 lbs

Body: Medium, long tail, black and white plumage

DCs:
- Large, thick bill
- Long- pointed tail
- Dark rump

Thick-billed Murre

Size: L 18” WS 28” WT 2.1 lbs

Body: Medium, stocky; black and white plumage

DCs:
- Short bill
- Pure white belly
- Larger head than Common