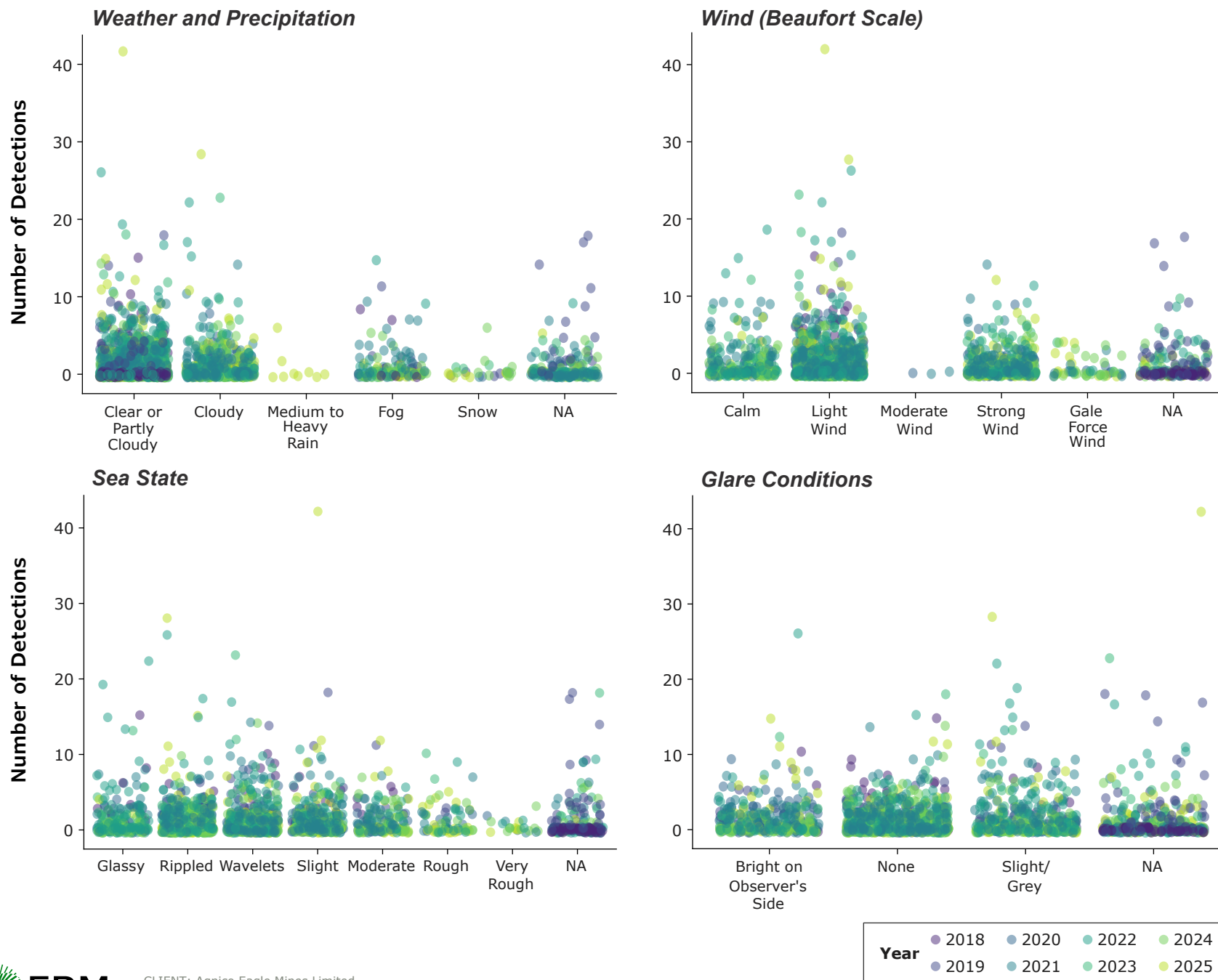


FIGURE 3.3-2 WEATHER VARIABLES SUMMARIZED BY SEABIRD DETECTIONS



The number of seabird detections (groups) during moving vessel surveys in 2025 was higher than in previous years (312 detections in 2025, compared to 125 detections in 2024 and 219 detections in 2023; Table 3.3-3). The average detection rate per transect had been declining since 2022 (3.38 detections per survey in 2022, 2.01 in 2023, 1.30 in 2024) but increased in 2025 (2.69 detections per survey). Additionally, the average number of individuals per detection increased in 2025 to 6.38, compared to 3.98 in 2024, representing an increase of 60% (Table 3.3-3). Increases in both detections and individuals per detection suggest that more seabird groups are being encountered during surveys, and that these groups are larger than in previous years. The higher values observed in 2025 may reflect increased sightings of gregarious species, including Dovekie (*Alle alle*), Common Eider (*Somateria mollissima*), Glaucous Gull (*Larus hyperboreus*), and Razorbill (*Alca torda*). In 2025, the largest group observed consisted of 150 Dovekie, with groups of 50 or more individuals recorded on 10 separate occasions (Appendix F).

### 3.3.2.1 SEABIRD SPECIES OBSERVED

The total number of seabird sightings in 2025 (including surveys without effort recorded) increased from previous years, with a total of 2,430 individual birds (28 different species and an additional 5 unknown species; Table 3.3-4). Across all 8 years of survey effort between 2018 and 2024, 14,377 individual birds belonging to 44 known species and 10 unknown species have been recorded during moving vessel surveys (Table 3.3-4; Figure 3.3-3).

The most common species recorded in 2025 were Dovekie (n = 1,277), Razorbill (n = 326) and Northern Fulmar (n = 311). In 2025, Dovekie had the highest number of individuals recorded since the program began in 2018, accounting for 53% of all seabird sightings this year. Razorbill and Northern Fulmar continue to be two of the most common species recorded, and this has been consistent across all survey years. Razorbill makes up approximately 11% of all observations across all years and Northern Fulmar 18%. No species listed on SARA were recorded during 2025 moving vessel surveys.

Rock Ptarmigan, Red Phalarope, Gadwall, and Bonaparte's Gull were recorded for the first time during surveys in 2025. Rock Ptarmigan, Red Phalarope, and Bonaparte's Gull have ranges that overlap with the sighting locations, and each has historical records of sightings along the shipping routes (Birds Canada n.d.). However, the known range of Gadwall does not extend into the marine Regional Study Area, and no confirmed sightings have been recorded; therefore, this identification is unlikely, and the observation may represent an unidentified duck species (Ridgely et al. 2012; Birds Canada n.d.). Rock Ptarmigan are terrestrial birds in the grouse family, and the species was likely observed on land.

The total number of individuals from unidentified species in 2025 was 22, representing an improvement in species identification compared to previous years (194 in 2024, 280 in 2023, 737 in 2022, and 404 in 2021). There has been a decline in the total number of unidentified species, suggesting that surveyors may be improving their seabird identification skills.

In addition to seabirds recorded during surveys, 2,453 seabirds were recorded incidentally in 2025. These observations comprised of 16 known species and 2 unknown species. Incidental species observations are listed in Appendix H.

TABLE 3.3-4 BIRD SPECIES RECORDED DURING MOVING VESSEL SURVEYS, 2018 TO 2025

Species	Scientific Name	2018	2019	2020	2021	2022	2023	2024	2025	Total
Arctic Tern	<i>Sterna paradisaea</i>	0	0	0	5	0	0	0	0	5
Bald Eagle	<i>Haliaeetus leucocephalus</i>	0	2	0	1	1	1	0	0	5
Black Guillemot	<i>Cephus grylle</i>	137	14	0	6	61	6	1	6	231
Black Scoter	<i>Melanitta americana</i>	0	4	2	4	2	0	0	19	31
Black-legged Kittiwake	<i>Rissa tridactyla</i>	0	12	3	0	0	10	0	2	27
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	0	0	0	0	0	0	0	3	3
Cackling / Canada Goose	<i>Branta hutchinsii/canadensis</i>	0	100	0	15	8	87	0	12	222
Common Eider	<i>Somateria mollissima</i>	4	12	81	76	5	11	3	107	299
Common Loon	<i>Gavia immer</i>	1	32	2	10	5	5	6	2	63
Common Murre	<i>Uria aalge</i>	0	40	3	538	161	2	47	66	857
Dovekie	<i>Alle alle</i>	76	27	19	87	41	15	29	1,277	1,571
Gadwall	<i>Mareca strepera</i>	0	0	0	0	0	0	0	1	1
Glaucous Gull	<i>Larus hyperboreus</i>	91	84	33	77	15	26	56	55	437
Great Cormorant	<i>Phalacrocorax carbo</i>	0	0	8	1	2	0	0	0	11
Great Shearwater	<i>Puffinus gravis</i>	0	0	1	0	1	0	4	2	8
Great Skua	<i>Stercorarius skua</i>	0	0	48	1	2	1	40	6	98
Greater Scaup	<i>Aythya marila</i>	0	0	0	0	0	0	1	6	7
Harlequin Duck <sup>a</sup>	<i>Histrionicus histrionicus</i>	10	0	0	0	0	0	0	0	10
Herring Gull	<i>Larus argentatus</i>	0	288	73	111	178	515	29	117	1,311
Iceland Gull	<i>Larus glaucoides</i>	78	0	4	30	3	8	3	34	160
Ivory Gull <sup>b</sup>	<i>Pagophila eburnea</i>	2	0	0	0	0	0	0	0	2
Leach's Storm-petrel	<i>Oceanodroma leucorhoa</i>	0	8	0	16	5	1	0	3	33

Species	Scientific Name	2018	2019	2020	2021	2022	2023	2024	2025	Total
Least Sandpiper	<i>Calidris minutilla</i>	0	5	1	0	0	0	0	0	6
Long-tailed Duck	<i>Clangula hyemalis</i>	3	4	0	14	7	0	12	0	40
Long-tailed Jaeger	<i>Stercorarius longicaudus</i>	1	6	0	1	5	0	2	0	15
Manx Shearwater	<i>Puffinus puffinus</i>	0	3	0	122	6	0	0	3	134
Northern Fulmar	<i>Fulmarus glacialis</i>	43	153	300	391	678	607	150	311	2,633
Parasitic Jaeger	<i>Stercorarius parasiticus</i>	0	0	14	25	7	24	1	8	79
Peregrine Falcon	<i>Falco peregrinus</i>	0	3	1	3	0	0	0	0	7
Pomarine Jaeger	<i>Stercorarius pomarinus</i>	1	7	48	1	24	12	7	6	106
Razorbill	<i>Alca torda</i>	0	0	2	63	235	184	726	326	1,536
Red Phalarope	<i>Phalaropus fulicarius</i>	0	0	0	0	0	0	0	2	2
Red-breasted Merganser	<i>Mergus serrator</i>	0	0	2	5	4	1	0	0	12
Rock Ptarmigan	<i>Lagopus muta</i>	0	0	0	0	0	0	0	1	1
Ruddy Turnstone	<i>Arenaria interpres</i>	0	1	0	0	0	2	0	0	3
Sabine's Gull	<i>Xema sabini</i>	3	1	5	0	0	0	20	0	29
Snow Goose	<i>Chen caerulescens</i>	0	542	10	1	32	0	0	0	585
Snowy Owl	<i>Bubo scandiacus</i>	0	1	0	7	0	0	2	2	12
Sooty Shearwater	<i>Ardenna grisea</i>	0	0	2	9	15	0	0	0	26
Surf Scoter	<i>Melanitta perspicillata</i>	0	0	0	0	0	7	4	0	11
Thayer's Gull	<i>Larus thayeri</i>	0	5	1	0	0	0	1	0	7
Thick-billed Murre	<i>Uria lomvia</i>	141	228	90	800	84	0	1	7	1,351
White-winged Scoter	<i>Melanitta deglandi</i>	0	0	5	3	0	0	0	2	10
Wilson's Storm-petrel	<i>Oceanites oceanicus</i>	23	8	0	23	4	179	0	22	259
Unknown bird	NA	0	87	0	101	2	15	15	0	220

Species	Scientific Name	2018	2019	2020	2021	2022	2023	2024	2025	Total
Unknown duck	NA	27	76	3	73	40	0	39	0	258
Unknown falcon	NA	0	1	2	2	0	0	0	3	8
Unknown goose	NA	0	0	0	6	1	43	30	0	80
Unknown gull	NA	34	48	152	108	234	0	85	7	668
Unknown hawk	NA	0	2	0	1	0	79	2	0	84
Unknown jaeger	NA	0	3	0	0	0	143	4	2	152
Unknown murre	NA	0	0	43	113	460	0	19	6	641
Unknown ptarmigan	NA	0	0	0	0	0	0	0	4	4
Unknown sandpiper	NA	6	0	0	0	0	0	0	0	6
<b>Total</b>		<b>681</b>	<b>1,807</b>	<b>958</b>	<b>2,850</b>	<b>2,328</b>	<b>1,984</b>	<b>1,339</b>	<b>2,430</b>	<b>14,377</b>

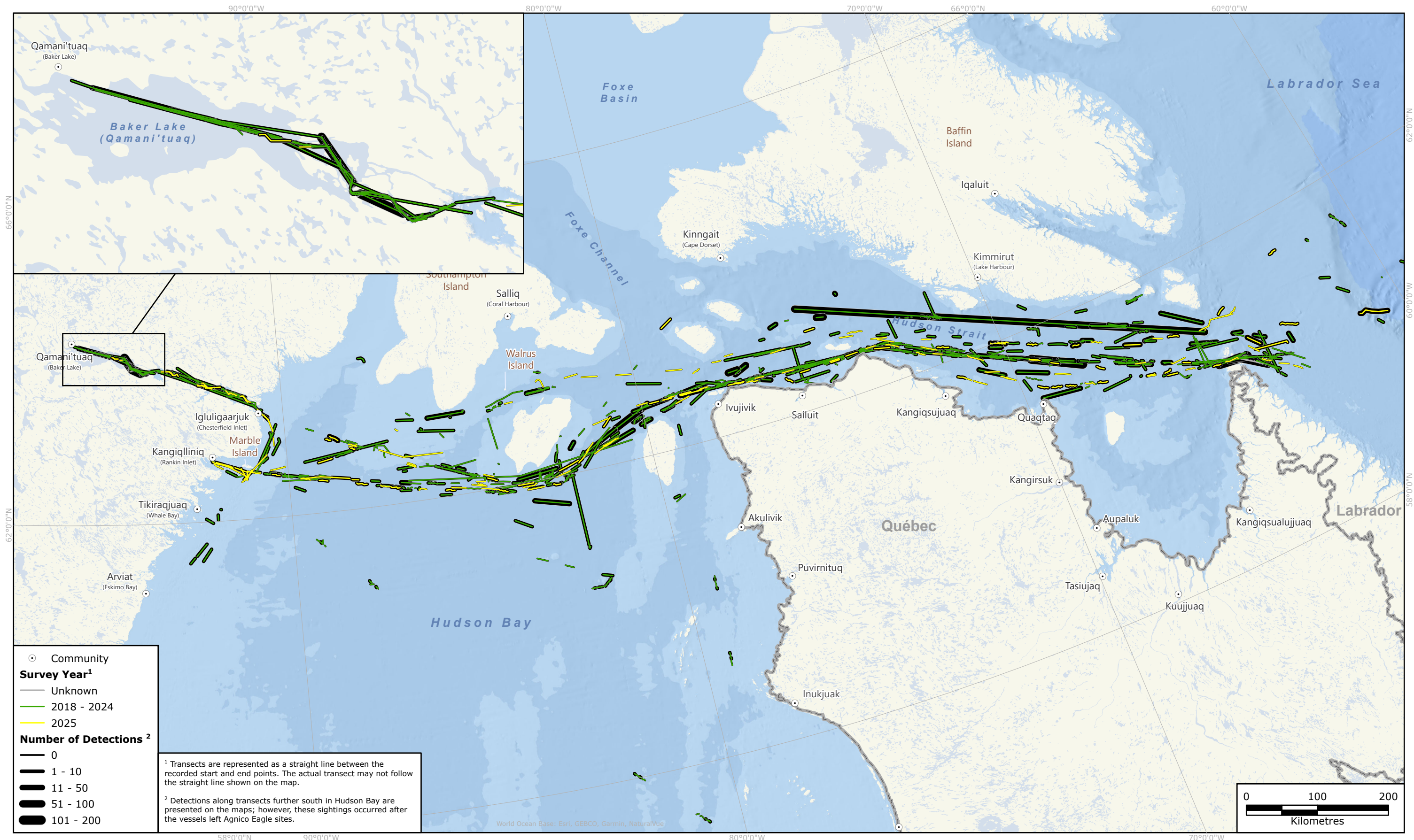
Notes:

NA = not applicable

<sup>a</sup> Species listed as Special Concern on Schedule 1 of the federal *Species at Risk Act* (2002).

<sup>b</sup> Species listed as Endangered on Schedule 1 of the federal *Species at Risk Act* (2002).

FIGURE 3.3-3 SEABIRD DETECTIONS DURING MOVING VESSEL SURVEYS, 2018 TO 2025



### 3.3.2.2 DISTANCE ANALYSIS: SEABIRD DETECTION AND DENSITY ESTIMATES

Distance analysis was conducted for moving vessel surveys for each separate year between 2019 and 2025 and for all years combined (2018 to 2025). No distance model was fit independently for 2018, due to a low number of surveys. Distance analysis accounts for the fact that animals are more likely to be seen when they are closer to the observer, and the analysis involves two steps, namely model fitting for detectability curve and density estimates, as described below.

Model fitting was mostly consistent across years, indicating that the detectability curve was the same between years of the study (according to AIC rankings and detectability estimates; Appendix G). The best model fits across years were hazard-rate functions, represented by the lowest AID ( $\Delta AIC = 0$ ). The model suggests that detection remains high at closer distances (i.e., birds are just as likely to be detected between 0 and 100 m of an observer) but drops off steeply as distance increases beyond 100 m (Table 3.3-5).

**TABLE 3.3-5 TOP AKAIKE'S INFORMATION CRITERION-RATED DISTANCE MODELS, MOVING VESSEL SURVEYS, 2019 TO 2025**

Model Key and Adjustment	Detection Estimate <sup>a</sup>	Detection SE <sup>b</sup>	$\Delta AIC^c$
Hazard rate (all adjustments)	0.441	0.013	0.000
Uniform with cosine adjustment	0.424	0.009	18.368
Uniform with polynomial adjustment	0.412	0.021	20.789

Notes:

$\Delta AIC$  = difference (delta) in AIC; AIC = Akaike's Information Criterion; SE = standard error

<sup>a</sup> The detection estimate represents the average probability of detection. A higher detection estimate indicates that there is a greater probability of detecting an object at a given distance.

<sup>b</sup> Standard error (SE) is a measure of variability where values indicate the statistical accuracy of the detection estimate.

<sup>c</sup> Values provide relative rankings between models fit with the same data, where the lowest AIC-ranked model is considered the best fit to the data.

Detectability estimates (i.e., the probability of detecting a bird within 300 m of the observer) were also consistent between years, ranging from a low of 0.317 in 2020 to a high of 0.497 in 2022, with 2025 estimates consistent with 2023 estimates (0.449 detection estimate in 2025 and 0.441 in 2023; Table 3.3-6). A higher detection estimate indicates that seabirds are more likely to be seen and recorded, even if they are a greater distance away from the ship/observer. The detectability estimate itself is not a key result, but consistency in estimates indicates that data are similar across years.

The second part of distance sampling is to estimate the density of seabirds, accounting for the lower detectability with greater distance. Predicted seabird densities varied across years, with 2025 recording the highest seabird density for all years (4.419 birds per km<sup>2</sup> in 2025; Table 3.3-6). In 2025, seabird density estimates increased by approximately 331% relative to 2024, contrasting with the 76% decline between 2023 and 2024. The differences in estimated density reflect variability in the effort and number of birds detected between years.

**TABLE 3.3-6 DETECTION AND DENSITY ESTIMATES BY YEAR (2019 TO 2025) DURING MOVING VESSEL SURVEYS**

Year	Detection Estimate <sup>a</sup>	Detections 95% CIs <sup>b</sup>	Density (Birds/km <sup>2</sup> )	Density 95% CIs <sup>a</sup>
All Years	0.441	0.416-0.466	1.478	1.397-1.564
2019	0.322	0.256-0.388	1.866	0.991-3.513
2020	0.317	0.239-0.395	1.178	0.663-2.093
2021	0.432	0.391-0.473	1.243	0.527-2.928
2022	0.497	0.441-0.553	1.181	1.055-1.323
2023	0.441	0.358-0.524	4.210	3.486-5.086
2024	0.424	0.336-0.512	1.026	0.833-1.264
2025	0.449	0.387-0.511	4.419	3.850-5.072

% = percent; CI = Confidence Interval; km<sup>2</sup> = square kilometre

<sup>a</sup> The detection estimate represents the average probability of detection. A higher detection estimate indicates that there is a greater probability of detecting an object at a given distance.

<sup>b</sup> Values indicate the range within which 95% of the samples fall.

Variability in the number of birds detected is driven by several elements, including random occurrence of large flocks (e.g., groups of 100 to 200 birds), observer experience, local habitat variation near islands or channels, and time of day. These are differences in the number of birds encountered/recorded, rather than true differences in regional bird abundance. Therefore, the density estimate for all years of data together is considered the most accurate (Table 3.3-6).

### 3.3.3 STATIONARY VESSEL SEABIRD OBSERVATIONS 2019 TO 2025

Analyses of stationary survey data included only on-effort sightings and did not use re-sightings of the same birds. Table 3.3-7 summarizes sample sizes for stationary vessel surveys (points), detections (groups), and individuals (total number of birds). Stationary vessel survey sample sizes include only those with recorded temporal effort.

The number of seabird detections during stationary vessel surveys in 2025 was higher than in 2024 but remained close to the overall average from previous years (n = 68 in 2025; mean value of 73 and median value of 68 from 2019 to 2025; Table 3.3-7). The number of seabird detections per survey in 2025 was 0.51, and this value has been declining since 2022, with a slight increase from 2024 to 2025 (2.17 detections per survey in 2022, 0.87 in 2023, and 0.26 in 2024).

In 2025, the average number of individuals per detection was 3.59, compared to 4.34 in 2024 (Table 3.3-7). The average number of individuals per detection has decreased approximately 60% from a high of 8.94 in 2021 (Table 3.3-7). This indicates that during stationary surveys, seabirds have been recorded in smaller group sizes since 2021 and that both fewer seabirds and smaller groups of birds are being observed. The observed decrease in the average detection also aligns with when the survey methods changed to six 5-minute interval surveys, which suggests that this survey method may result in lower detection rates.

**TABLE 3.3-7 SEABIRD SURVEY SAMPLE SIZES AND DETECTION AVERAGES DURING STATIONARY SURVEYS, 2018 TO 2025**

Year	Stationary Vessel Surveys				
	Points	Detections	Individuals	Average Individual/ Detection	Average Detection/ Point
2018	5	0 <sup>a</sup>	0 <sup>a</sup>	-	-
2019	14	17	19	1.12	1.21
2020	90	81	318	3.93	0.90
2021	111	141	1,261	8.94	1.27
2022	29	63	263	4.17	2.17
2023	122	106	564	5.32	0.87
2024	136	35	152	4.34	0.26
2025	134	68	244	3.59	0.51

Note:

Dashes (-) indicate none observed.

<sup>a</sup> Locations were not given for 2018 stationary vessel data. Therefore, these observations were not used in the analysis.

### 3.3.3.1 SEABIRD SPECIES OBSERVED

Between 2019 and 2025, a total of 4,501 individuals from 34 known species and 10 unknown species were recorded during stationary vessel surveys (Table 3.3-8; Figure 3.3-4). Nearly 28% of records were from 2021 alone (n = 1,268 individuals), while 2023 made up an additional 22% of the observations (n = 1,010). In 2025, 369 individuals were recorded. Among the 369 individuals in 2025, 15 species were identified, and an additional 3 unidentified species. The most common species recorded in 2025 during stationary surveys were Surf Scoter (n = 110), Northern Fulmar (n = 105), and Iceland Gull (n = 55). Surf Scoter was recorded for the first time during stationary surveys in 2025; however, they were first observed in 2023 during moving vessel surveys. Red Phalarope was also observed for the first time during stationary surveys and was also recorded for the first time during moving transect surveys. Conversely, there was 1 observation of Herring Gull in 2025, which contrasts with previous years where more than 200 Herring Gull had been recorded in 2023 and 2024 (Table 3.3-8).

### 3.3.3.2 DISTANCE ANALYSIS: SEABIRD DETECTION ESTIMATE

Detection estimates indicate the relative likelihood that a seabird will be detected within the survey area (i.e., within 300 m from the observer), if it is there, considering lower detectability when birds are farther from the observer. A higher detection estimate indicates that seabirds are more likely to be seen and recorded, even if they are a greater distance from the ship/observer. Density estimates could not be calculated for stationary surveys, as stationary effort requires repeated surveys at the same locations. While several of the stationary vessel surveys were conducted at anchor, the sample size is currently too small for modelling.

TABLE 3.3-8 BIRD SPECIES RECORDED DURING STATIONARY SEABIRD SURVEYS, 2019 TO 2025

Species	Scientific Name	2019	2020	2021	2022	2023	2024	2025	Total
American Crow	<i>Corvus brachyrhynchos</i>	0	1	0	0	3	0	8	12
Arctic Tern	<i>Sterna paradisaea</i>	0	1	0	0	0	0	0	1
Black Guillemot	<i>Cephus grylle</i>	1	4	17	48	0	4	0	74
Black Scoter	<i>Melanitta Americana</i>	2	0	9	8	0	0	2	21
Black-legged Kittiwake	<i>Rissa tridactyla</i>	0	8	0	0	0	0	0	8
Cackling/Canada Goose	<i>Branta hutchinsii/ canadensis</i>	0	25	447	90	181	17	0	760
Common Eider	<i>Somateria mollissima</i>	0	8	3	11	0	0	27	49
Common Loon	<i>Gavia immer</i>	0	0	2	2	0	1	1	6
Common Murre	<i>Uria aalge</i>	0	0	20	2	0	5	2	29
Common Raven	<i>Corvus corax</i>	0	0	0	0	0	14	0	14
Dovekie	<i>Alle alle</i>	0	0	0	17	0	0	0	17
Glaucous Gull	<i>Larus hyperboreus</i>	4	18	6	16	0	0	9	53
Great Cormorant	<i>Phalacrocorax carbo</i>	0	0	1	0	0	0	1	2
Great Skua	<i>Stercorarius skua</i>	0	0	2	0	0	0	0	2
Greater Scaup	<i>Aythya marila</i>	0	0	0	0	2	1	0	3
Herring Gull	<i>Larus argentatus</i>	6	64	41	64	406	290	1	872
Iceland Gull	<i>Larus glaucoides</i>	0	0	2	19	1	0	55	77
Leach's storm-Petrel	<i>Oceanodroma leucorhoa</i>	0	1	1	0	0	0	10	12
Long-tailed Duck	<i>Clangula hyemalis</i>	0	0	0	2	0	0	0	2
Northern Fulmar	<i>Fulmarus glacialis</i>	2	170	147	45	48	7	105	524
Parasitic Jaeger	<i>Stercorarius parasiticus</i>	0	0	0	1	0	0	0	1
Peregrine Falcon	<i>Falco peregrinus</i>	3	5	0	0	0	0	1	9

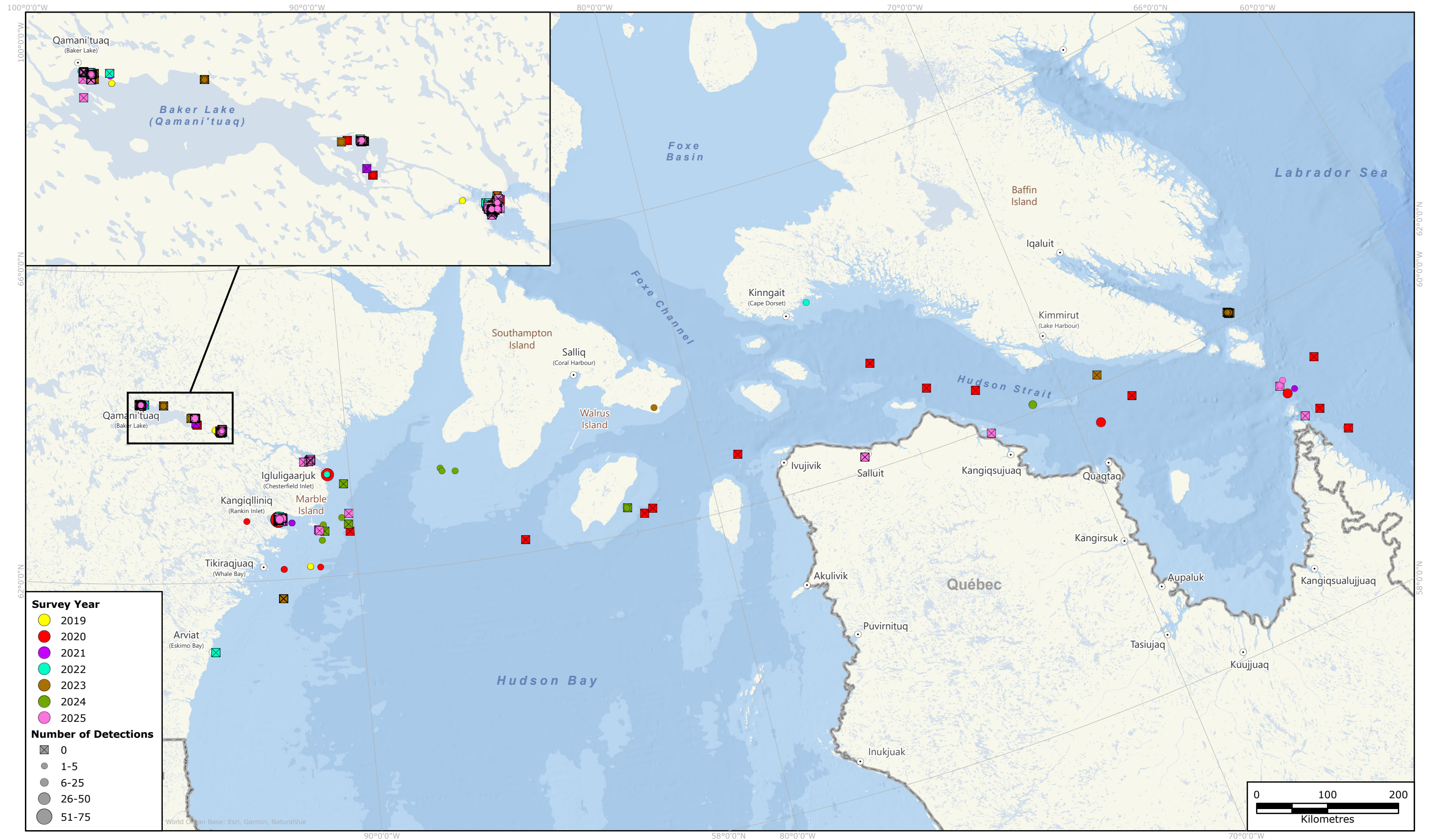
Species	Scientific Name	2019	2020	2021	2022	2023	2024	2025	Total
Pomarine Jaeger	<i>Stercorarius pomarinus</i>	1	4	5	1	0	0	0	11
Razorbill	<i>Alca torda</i>	0	3	0	7	2	58	5	75
Red Phalarope	<i>Phalaropus fulicarius</i>	0	0	0	0	0	0	6	6
Red-breasted Merganser	<i>Mergus serrator</i>	0	0	1	1	0	0	0	2
Sandhill Crane	<i>Grus canadensis</i>	0	1	0	0	0	0	0	1
Snow Goose	<i>Chen caerulescens</i>	0	176	419	182	117	0	0	894
Snowy Owl	<i>Bubo scandiacus</i>	0	1	0	0	0	0	0	1
Surf Scoter	<i>Melanitta perspicillata</i>	0	0	0	0	0	0	110	110
Thick-billed Murre	<i>Uria lomvia</i>	0	17	0	3	0	0	0	20
White-winged Scoter	<i>Melanitta deglandi</i>	0	2	0	0	0	0	0	2
Wilson's storm-Petrel	<i>Oceanites oceanicus</i>	0	0	2	0	0	1	0	3
Unknown bird	NA	1	0	35	0	2	9	0	47
Unknown duck	NA	0	0	48	23	160	75	0	306
Unknown falcon	NA	0	2	0	0	0	0	0	2
Unknown goose	NA	0	0	0	7	25	0	0	32
Unknown gull	NA	4	17	59	206	16	27	15	344
Unknown hawk	NA	0	0	1	0	0	0	0	1
Unknown jaeger	NA	0	0	0	0	12	5	0	17
Unknown murre	NA	0	6	0	9	35	0	0	50
Unknown ptarmigan	NA	0	0	0	0	0	16	3	19
Unknown sandpiper	NA	0	2	0	0	0	0	8	10
<b>Total</b>		<b>24</b>	<b>536</b>	<b>1,268</b>	<b>764</b>	<b>1,010</b>	<b>530</b>	<b>369</b>	<b>4,501</b>

Note:

NA = not applicable



FIGURE 3.3-4 SEABIRD DETECTIONS DURING STATIONARY VESSEL SURVEYS, 2019 TO 2025



Stationary vessel surveys have limited model fitting capabilities due to lower sample size, compared to moving vessel surveys. Distance models were run for individual years from 2020 to 2025 and for all years combined (2019 through 2025), although very little data was collected in 2019.

The three key model selections were fit to estimate how quickly detectability changes with distance from the observer. Of the three model selection functions, hazard-rate models performed the best by AIC rating for all years of data combined (Table 3.3-9). However, the detection estimates for the hazard-rate model was low (0.046) and associated with a high standard error (SE = 0.119), which indicated uncertainty in the model's fit. Whereas the half-normal model had a higher detection estimate (0.060) and the lowest standard error (SE = 0; Table 3.3-9).

Therefore, the half-normal model was selected as the most representative model, because it provided the most stable detection estimate. The half-normal model estimates that detection decreases gradually with greater distance from the observer. Although the model fitting was less consistent for the stationary vessel data, compared to the moving vessel surveys, detection estimates for stationary vessel surveys were consistent between years (Table 3.3-10).

**TABLE 3.3-9 TOP AKAIKE'S INFORMATION CRITERION-RATED DISTANCE MODELS, STATIONARY VESSEL SURVEYS, 2019 TO 2025**

Model Key and Adjustment	Detection Estimate <sup>a</sup>	Detection SE <sup>b</sup>	$\Delta$ AIC <sup>c</sup>
Hazard rate with polynomial adjustment	0.046	0.119	0.000
Uniform with cosine adjustment	0.041	0.008	0.40
Half-normal with cosine adjustment	0.060	0.007	8.24

Notes:

$\Delta$ AIC = difference (delta) in AIC; AIC = Akaike's Information Criterion, SE = standard error

<sup>a</sup> The detection estimate represents the average probability of detection. A higher detection estimate indicates that there is a greater probability of detecting an object at a given distance.

<sup>b</sup> Standard error (SE) is a measure of variability where values indicate the statistical accuracy of the detection estimate.

<sup>c</sup> Values provide relative rankings between models fit with the same data, where the lowest AIC ranked model is considered the best fit to the data.

The detection estimate for all years of data combined decreased with the addition of 2025 data (Table 3.3-10). The detection estimate for stationary vessel surveys is roughly 92% lower than the detection estimate for moving vessels, which suggests that seabirds are less likely to be detected during stationary vessel surveys, compared to moving vessel surveys. The data indicates that both detections and the number of birds recorded per survey were lower for stationary surveys, compared to moving surveys (2.69 detections per survey in moving surveys compared to 0.51 in stationary surveys; Table 3.3-3 and Table 3.3-7).

**TABLE 3.3-10 DETECTION ESTIMATES FOR STATIONARY VESSEL SURVEYS BY YEAR BETWEEN 2020 AND 2025**

Year	Detection Estimate <sup>a</sup>	Detection 95% CIs <sup>b</sup>
All Years	0.046	-0.186-0.279
2020	0.079	0.061-0.098
2021	0.112	0.086-0.138
2022	0.065	0.042-0.089
2023	0.099	0.090-0.107
2024	0.065	0.045-0.086
2025	0.036	-0.015-0.088

**Notes:**

% = percent; CI = Confidence Interval

<sup>a</sup> The detection estimate represents the average probability of detection.

<sup>b</sup> Values indicate the range within which 95% of the samples fall.

The detection estimate for stationary vessel surveys in 2025 was lower than in previous years, with declining detection rates per survey since 2023 (Table 3.3-10). However, there does not appear to be a pattern between the detection estimate, survey effort, or the average number of detections per survey. This variation in effort and detection estimates suggests that the detection estimates may be driven by a lack of detection data. The lower detection estimates observed in stationary surveys may be naturally lower than in moving vessel surveys, meaning seabirds are more difficult for the MMSO crew members to detect on stationary vessels, compared to moving vessels.

### 3.4 MARINE WILDLIFE OBSERVATIONS—BAKER LAKE

To satisfy Term and Condition 36 of Meadowbank Mine PC No. 004, a local area marine wildlife monitor is required onboard all vessels transporting fuel or materials for the mine between Helicopter Island and Baker Lake.

Community members have been recording observations of marine wildlife since 2008, apart from 2020 and 2021 due to health and safety restrictions in place related to the COVID-19 pandemic. Groupe Desgagnés and Woodward had their MMSOs record sightings of marine mammals and seabirds when possible while travelling during those 2 years. The vessel companies continued to conduct some surveys in 2025; survey effort and results from these surveys are included in Sections 3.2 and 3.3 and summarized in Section 3.4.1. Agnico Eagle remains committed to meet compliance with Term and Condition 36 of Meadowbank Mine PC No. 004 and continues to seek out monitors from the Chesterfield Inlet each year.

In 2025, local wildlife monitors were on the vessels for a total of 49 days and collected incidental observations in July, August, and October on the Tuvaq W. between Helicopter Island and Baker Lake. Table 3.4-1 summarizes the number of days an observer was recording sightings while on the vessels between 2008 and 2025. In 2025, there were 434 separate sightings of birds (a total of 2,701 individuals; Figure 3.4-1) and no marine mammals were observed. There were, however, 5 incidental observations of muskox on land (*Ovibos moschatus*; 112 individuals).

**TABLE 3.4-1 INCIDENTAL SURVEY EFFORT BY LOCAL WILDLIFE MONITORS BETWEEN HELICOPTER ISLAND AND BAKER LAKE, 2008 TO 2025**

<b>Year</b>	<b>Survey Dates</b>	<b>Total Number of Days Surveyed</b>
2008 <sup>a</sup>	18–31 July; 2–8 August	8
2009	19–22 August; 26–31 August; 3–7 September	14
2010	18–27 October	10
2011	28–31 July; 6–7 August	6
2012	6–7 August	2
2013	13–19 August; 9–16 October	15
2014	6–10 October	5
2015	9–22 July; 23 July – 5 August; 13–21 October	37
2016 <sup>a</sup>	26–31 July; 2–13 October	18
2017 <sup>a</sup>	July; October	-
2018 <sup>a</sup>	-	19 <sup>c</sup>
2019	19–24 September	6
2020	27–28 July; 9–10 August; 12 August; 15 August; 18 August	7
2021 <sup>b</sup>	28 July; 5–6 October; 10 October; 18 October	5
2022	21–27 July; 4–8 August; 16–23 October	22
2023	28 July – 9 August; 18–19 August; 7–9 October	27
2024	1–12 August; 17 August – 2 September; 22–29 October	37
2025	24–31 July; 1–5 August; 9–22 August; 9–30 October	49

Notes:

Groupe Desgagnés = Groupe Desgagnés, Inc.; Woodward = Woodward Group of Companies

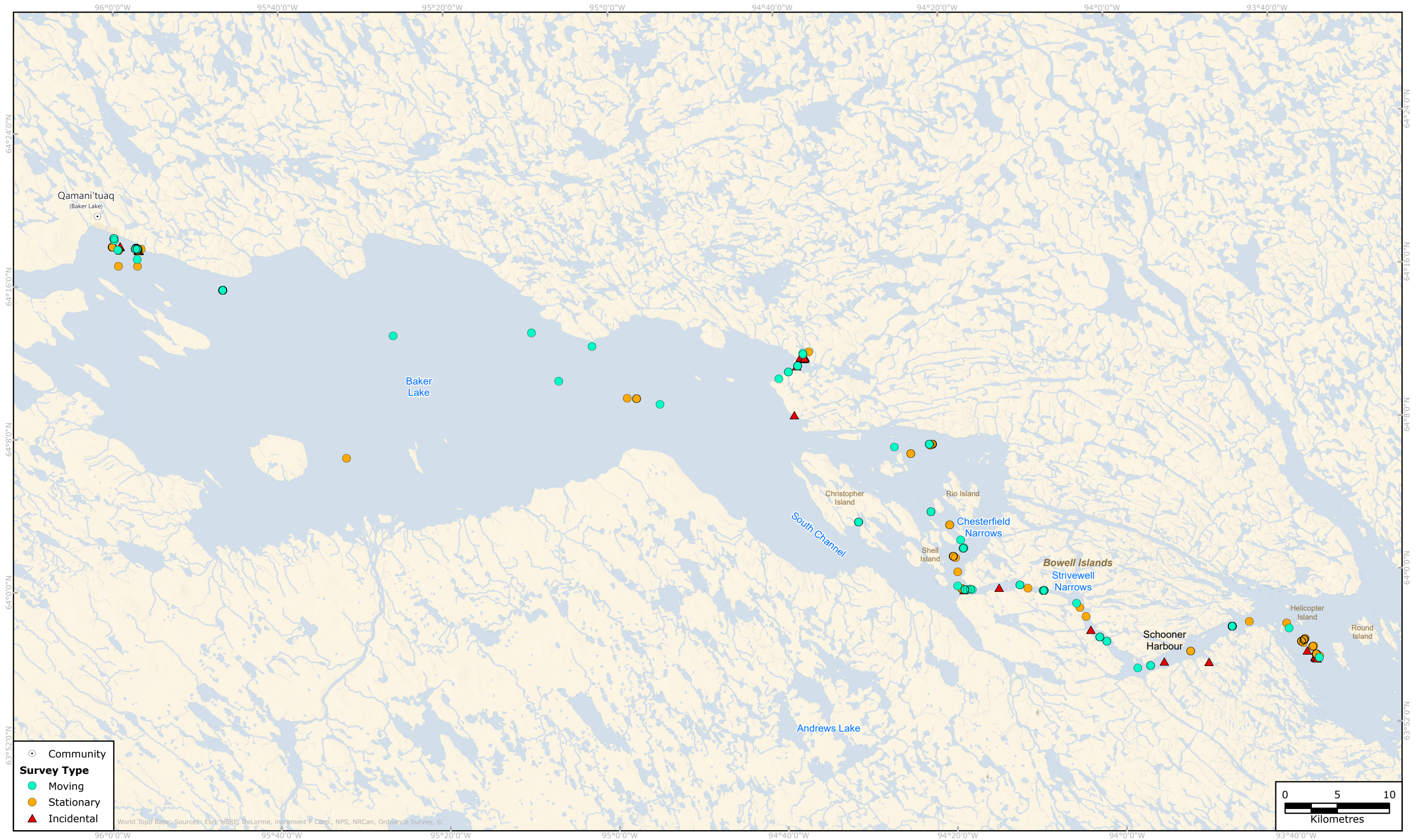
During 2020 and 2021, surveys were conducted by Groupe Desgagnés and Woodward vessel crew members rather than community members.

<sup>a</sup> Specific dates were not provided for these years—only months, or approximate dates, number of hours surveyed, or dates where observations occurred were provided. A best estimate of number of days surveyed is therefore provided for these years (2008, 2016, 2017, and 2018).

<sup>b</sup> All surveys conducted on the barge while travelling between Helicopter Island and Baker Lake were seabird survey transects; no marine mammal transects were completed on the barge in 2021.

<sup>c</sup> No dates were provided for 2018; however, it was noted that 153 hours of surveys were completed. Therefore, it was assumed that surveys were conducted 8 hours per day, for a total of 19 survey days. However, it is important to note that this is an estimate based on the number of hours surveyed.

FIGURE 3.4-1 SEABIRD OBSERVATIONS FROM WILDLIFE MONITORING SURVEYS BETWEEN HELICOPTER ISLAND AND BAKER LAKE, 2025



Tables 3.4-2 and 3.4-3 summarize marine mammal and seabird observations by the local wildlife monitors onboard contractor vessels transporting fuel for the Meadowbank Complex between Helicopter Island and Baker Lake between 2008 and 2019 and from 2022 to 2025. Observations made by Groupe Desgagnés and Woodward crew members in 2020 and 2021 are also included.

**TABLE 3.4-2 MARINE MAMMALS OBSERVED BY LOCAL WILDLIFE MONITORS BETWEEN HELICOPTER ISLAND AND BAKER LAKE, 2008 TO 2025**

Year	Month	Number of Days Surveyed	Seals	Polar Bears ( <i>Ursus maritimus</i> ) <sup>c</sup>
2008	August	2	2	3
2008	July	1	-	-
2009	August	2	6	-
2009	September	1	2	-
2010	October	1	1	-
2020 <sup>a</sup>	August	4	1	-
2021 <sup>a</sup>	July	NA <sup>b</sup>	-	-
2022	August	34	-	-
2022	September	16	-	-
2022	October	4	-	-
2023	July	4	-	-
2023	August	11	1	-
2023	October	12	-	-
2024	August	27	1	-
2024	September	2	-	-
2024	October	8	-	-
2025	July	8	-	-
2025	August	19	-	-
2025	October	22	-	-

Notes:

Groupe Desgagnés = Groupe Desgagnés, Inc.; NA = not applicable; Woodward = Woodward Group of Companies

Dashes (-) indicate none observed.

Marine mammals were only observed during wildlife monitoring surveys on the barge in 2008, 2009, 2010, and 2020. No other marine mammals were recorded during surveys between 2011 and 2019. During 2020 and 2021, surveys were conducted by Groupe Desgagnés and/or Woodward vessel crew members rather than community members.

(continued on next page)

## Notes (completed):

<sup>a</sup> Groupe Desgagnés and Woodward vessel crew member survey effort and observations between Helicopter Island and Baker Lake are included in this table, as there was no local monitoring during those years. Sightings by vessel crew members during other years are not included in this table but are included in Section 3.2 and summarized in Section 3.4.1.

<sup>b</sup> No surveys were conducted on the barge travelling between Helicopter Island and Baker Lake in 2021 due to crew requirements and the majority of transits occurring during dark hours; however, 25 stationary surveys for marine mammals were conducted while the vessel was at anchor at Helicopter Island.

These results are presented in Section 3.2.2 of the report and not summarized in this table.

<sup>c</sup> Species listed as Special Concern on Schedule 1 of the federal *Species at Risk Act* (2002).

**TABLE 3.4-3 SEABIRDS OBSERVED BY LOCAL WILDLIFE MONITORS BETWEEN HELICOPTER ISLAND AND BAKER LAKE, 2008 TO 2025**

Year	Month	Number of Days Surveyed	Gulls/Terns	Loons	Snow Geese	Waterfowl	Other Seabird	Eagle/Falcon	Unknown Birds and Other
2008	July	1	-	1	-	-	-	-	-
2008	August	2	1+ <sup>a</sup>	1	-	-	-	-	-
2009	August	2	1+	-	1+	1+	-	3	-
2009	September	1	1+	3	1,000+	5	-	1	-
2010	October	1	-	-	-	-	-	-	-
2011	July	1	-	-	-	2	-	-	-
2011	August	1	1+	-	-	-	-	-	-
2012	August	1	24	-	-	-	-	-	-
2013	August	2	10+	1	15+	-	-	-	10+
2013	October	1	6	-	12	-	-	-	2
2014	October	1	-	-	-	-	-	-	-
2015	July	1	-	2+	-	-	-	-	-
2015	August	1	-	-	-	-	-	-	-
2015	October	1	-	-	-	-	-	-	-
2016	July	1	14	-	-	-	-	-	2+
2016	October	1	32	1	-	-	-	-	53
2017	July	1	65	-	-	3	-	-	-
2018	August	1	-	-	-	-	-	-	-
2019	September	1	85	-	540	270	-	4	3
2020 <sup>c</sup>	July	2	1	-	-	2	-	-	-
2020 <sup>c</sup>	August	2	8	-	-	-	6 <sup>b</sup>	-	-
2021 <sup>c</sup>	July	1	30	-	-	-	-	-	-

Year	Month	Number of Days Surveyed	Gulls/ Terns	Loons	Snow Geese	Waterfowl	Other Seabird	Eagle/ Falcon	Unknown Birds and Other
2021 <sup>c</sup>	October	8	14	-	-	24	-	-	28
2022	July	34	75	1	-	1	-	-	-
2022	August	16	33	-	-	-	-	-	4
2022	October	4	-	-	-	-	-	-	-
2023	July	1	28	2	-	-	-	-	-
2023	August	24	182	2	-	57	-	1	4
2023	October	71	122	-	-	-	-	5	260
2024	August	27	416	57	-	291	5	18	61
2024	September	2	35	4	-	40	-	4	-
2024	October	8	75	-	-	40	-	-	92
2025	July	8	232	12	-	12	-	3	7
2025	August	19	657	26	-	598	-	4	27
2025	October	22	222	-	50	4	1	5	841

## Notes:

Dashes (-) indicate none observed.

<sup>a</sup> The number of individuals observed was often not recorded—only the species seen. In these cases, 1+ is entered in the table, as the number observed is unknown.

<sup>b</sup> Includes northern fulmar, petrel, cormorant, and jaeger.

<sup>c</sup> Groupe Desgagnés and Woodward vessel crew member survey effort and observations between Helicopter Island and Baker Lake are included in this table, as there was no local monitoring during those years.

Sightings by vessel crew members during other years are not included in this table but are included in Section 3.3 and summarized in Section 3.4.1.

### 3.4.1 GROUPE DESGAGNÉS AND WOODWARD OBSERVATIONS—BAKER LAKE

In addition to community wildlife observers, the shipping companies continued to record marine wildlife sightings while vessels were at anchor near Helicopter Island or while travelling between Helicopter Island and Baker Lake to supplement the community observer effort. Results of surveys are presented in Sections 3.2 and 3.3 and summarized below. Incidental observations made by MMSOs are summarized in this section.

For marine mammals, 37 stationary surveys were completed at Helicopter Island, and 31 stationary surveys between Helicopter Island and Baker Lake in 2025 (Figure 3.2-1); however, no marine mammals were observed during the surveys. The vessel companies did not complete any moving vessel surveys in 2025 between Helicopter Island and Baker Lake, except for the Tuvaq W., which had a local monitor onboard recording observations. There was one incidental sighting by the vessel MMSOs of a harbour porpoise in August.

For seabirds, 63 stationary surveys were completed while anchored at Helicopter Island, 61 of which had survey effort data recorded. Across those 61 surveys, a total of 44.9 hours of survey time was recorded, with each survey lasting an average of 0.74 hours. During the stationary surveys, including those without full survey effort, a total of 29 individual seabirds were recorded (4 different species; included in Section 3.3).

In addition to the stationary surveys, 1 moving transect survey for seabirds was completed between Helicopter Island and Baker Lake. The survey had sufficient spatial data to calculate spatial effort, which was completed onboard the Tuvaq W. Spatial effort for this survey was 9.75 km. During the moving transect survey, 8 individual seabirds (3 different species) were observed (listed in Section 3.3). An additional 84 incidental sightings were recorded (1,569 individuals) by MMSOs on the Atlantic Beech Tug. Incidental seabird sightings were recorded between July 18 and October 27, 2025. The most frequently observed species were Herring Gull (55 sightings; 154 individuals), Snow Goose (11 sightings; 1,130 individuals), and Rock Ptarmigan (4 sightings; 220 individuals; Appendix H). Incidental observations occurring between Helicopter Island and Baker Lake are also included in Appendix H.

## 4. CONCLUSIONS

Overall, vessels have been successful in following mitigation measures and avoiding any interactions with marine mammals or seabirds, as there have been no ship strikes recorded to date. In addition, survey effort and quality of data collected by the MMSOs for the mines have improved since 2019. The marine mammal survey effort in 2025 illustrated continued improvements since 2019.

Attention to recording all data (i.e., positions and times) is required to ensure all survey effort is included in the summary of the surveys. It is likely that the enhanced training for vessel crew members over the last 6 years helped improve the number of surveys completed, as well as the quality of data collected. The seabird survey effort in 2025 illustrated that the vessel captains and crew have increased their understanding of the MMSO Program requirements of completing the 5-minute interval surveys.

Agnico Eagle will continue to improve vessel crew member training in the following five areas:

1. The training given to the vessel's crew MMSOs will be reviewed every year to prepare crew members for the shipping season.
2. The seabird surveys were primarily completed in six consecutive 5-minute periods, following the ECSAS protocol. Updated datasheets helped emphasize the correct data collection protocol in 2025. Training for the MMSOs will again focus on this aspect of the methodology in 2026.
3. Data entry improved for marine mammal surveys, however, incomplete data entry (i.e., data entry fields for survey effort left blank) continues to occur. In 2025, only 4% of marine mammal survey data were missing information such as start or end times or positions. This percentage is the lowest observed to date and was a decrease compared to all previous years of the program. For seabird surveys, 58 (50%) of moving vessel surveys were missing spatial effort. Temporal effort was missing from 43 moving vessel surveys in 2025 (25%) and from 41 (23%) stationary surveys, which is a decline from 2024's efforts. Although reporting of seabird survey spatial effort decreased in 2025, and several surveys still lack the effort data required for statistical analysis, the trend has become more consistent overall since the start of the program in 2018. Agnico Eagle will continue to emphasize the importance of complete data collection and continue to encourage all MMSOs to complete the data entry fields.
4. Species identification while at sea can be challenging. Agnico Eagle has been providing species identification sheets to the vessels used to monitor marine mammals and seabirds since 2020, and additional aids (e.g., species identification posters) were provided in recent years. Agnico Eagle will continue to work with the shipping companies to provide relevant aids, as needed.
5. Agnico Eagle will continue to inform the vessels' captains and crew of specific mitigation measures to use to manage interactions with marine mammals and birds.

## 5. REFERENCES

2022. *Species at Risk Act*, SC. 2002, c. 29.
- Agnico Eagle (Agnico Eagle Mines Limited). 2025a. *Agnico Eagle- Meadowbank Complex – Shipping Management Plan 2025 (Version 5)*. March 2025.
- Agnico Eagle. 2025b. *Agnico Eagle – Meliadine Gold Mine – Shipping Management Plan 2025 (Version 10)*. March 2025.
- Agnico Eagle. 2025c. “Marine Mammal and Seabird Management and Monitoring Plan.” Appendix B of the *Meadowbank Complex Shipping Management Plan*. April 2022.
- Agnico Eagle. 2025d. “Marine Environmental Management Plan.” Appendix D of the *Meliadine Gold Mine Shipping Management Plan*. March 2022.
- Akaike, H. 1973. “Information Theory as an Extension of the Maximum Likelihood Principle.” In *Proceedings of the Second International Symposium on Information Theory*, edited by B.N. Petrov and F. Csaki. 267–281. Budapest, Hungary: Akademiai Kiado.
- Birds Canada. n.d. *NatureCounts: A conservation data platform*. Retrieved from: <https://naturecounts.ca/nc/default/explore.jsp> (accessed January 20, 2026).
- Buckland, S.T., D.R. Anderson, and K.P. Burnham. 2001. *Introduction to Distance Sampling: Estimating Abundance of Biological Populations*. Oxford, UK: Oxford University Press.
- Burnham, K.P., and D.R. Anderson. 2004. “Multimodel Inference: Understanding AIC and BIC in Model Selection.” *Sociological Methods & Research* 33, 261–304.
- COSEWIC (Committee on the Status of Endangered Wildlife in Canada). 2004. *COSEWIC Assessment and Update Status Report on the Beluga Whale Delphinapterus leucas*. Ottawa, ON. Accessed February 2024. Retrieved from: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/beluga-whale.html> (accessed February 27, 2026).
- Gjerdrum, C., D.A. Fifield, and S.I. Wilhelm. 2012. *Eastern Canada Seabirds at Sea (ECSAS) Standardized Protocol for Pelagic Seabird Surveys from Moving and Stationary Platforms*. Technical Report Series Number 515, Canadian Wildlife Service.
- Miller, D.L., E. Rexstad, L. Thomas, L. Marshall, and J.L. Laake. 2019. “Distance Sampling in R.” *Journal of Statistical Software* 89(1): 1–28.
- NIRB (Nunavut Impact Review Board). 2018. *Project Certificate NIRB [No.: 004]*. Issued December 2018 by the Nunavut Impact Review Board (assigned to Agnico Eagle Mines Limited).
- NIRB. 2020. *Project Certificate NIRB [No.: 008]*. Issued February 2020 by the Nunavut Impact Review Board (assigned to Agnico Eagle Mines Limited).
- NIRB. 2022. *Project Certificate NIRB [No.: 006]*. Issued March 2022 by the Nunavut Impact Review Board (assigned to Agnico Eagle Mines Limited).
- R Core Team. 2021. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing. Vienna, Austria.

- Reinhart, N.R., S.M.E. Fortune, P.R. Richard, and C.J.D. Matthews. 2014. "Rare Sightings of White-beaked Dolphins (*Lagenorhynchus albirostris*) off South-eastern Baffin Island, Canada." *Marine Biodiversity Records* (7): 1-5.
- Ridgely, R. S., T. F. Allnutt, T. Brooks, D. K. McNicol, D. W. Mehlman, B. E. Young, J. R. Zook, and BirdLife International (2012). "Digital Distribution Maps of the Birds of the Western Hemisphere." Version 5.0. *BirdLife International/NatureServe*. Accessed January 2026. Retrieved from: <https://wildlife-species.canada.ca/bird-status/info-info-eng.aspx?sY=2019&sL=e&sM=p1&sB=AMCR&sD=7224&sDoc=1206&RS=6>.
- Vesseltracker. 2025. *Fleet AIS Account*. Accessed December 2025. Retrieved from: <http://www.vesseltracker.com>.

# APPENDIX A      SHIPPING MANAGEMENT PLAN SUMMARY BROCHURE— MEADOWBANK AND MELIADINE





AGNICO EAGLE

# SHIPPING MANAGEMENT PLAN

Meadowbank and Meliadine

# SHIPPING MANAGEMENT PLAN SUMMARY

This document summarizes the information found in the Agnico Eagle Shipping Management Plans for Meadowbank and Meliadine (Agnico Eagle 2025a; 2025b) into a single convenient package for review and as a reference document. It is expected that all bridge crew on all vessels supplying Meadowbank and Meliadine review this document and have it available on the bridge of the vessel while under way.

The Meadowbank division has implemented a vessel-based Marine Mammal and Seabird Observer (MMSO) program since 2010, and the Meliadine division since 2016. These programs will continue to be implemented during all routine project-shipping activities, in accordance with Meadowbank Mine NIRB Project Certificate No. 004 Condition 36 and Meliadine NIRB Project Certificate No. 008 Condition 40.



The NIRB conditions require Agnico Eagle to include in its contracts that ships must remain mindful of marine areas having a high density of marine mammals and birds. Agnico Eagle's NIRB Project Certificates include conditions to ensure the mitigation measures and monitoring programs outlined in this summary document are conducted by shipping companies; thus, shipping companies are required to review and become familiar with the information summarized in this document.

## GENERAL GUIDELINES FOR OPERATION OF VESSELS

The Shipping Management Plans include Mitigation, Management, Monitoring and Reporting requirements:

**1. Mitigation:** Standard operation of the vessel.

Avoidance of seabird colonies and marine mammal haul-outs on shore

Vessel operation – maintain straight course, constant speed, avoid erratic behaviour

**2. Management:** What to do when you see a marine mammal or seabird.

Avoidance of marine mammals and seabirds on the water

What to do if a marine mammal approaches the vessel

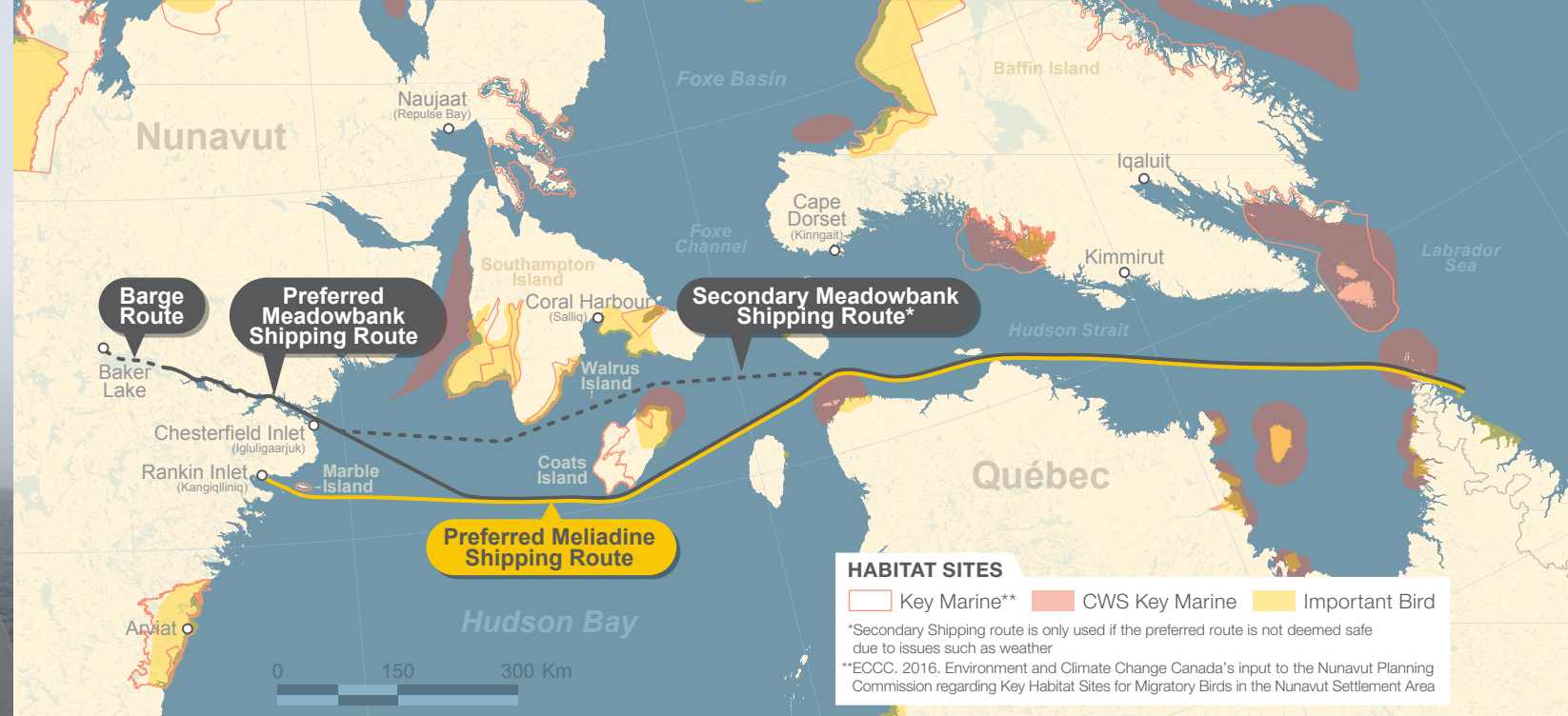
**3. Monitoring:** The Marine Mammal and Seabird Observation Program.

Monitoring for marine mammals and seabirds

**4. Reporting:** Monitoring data sent to Agnico Eagle. How to report collisions or incidents to Agnico Eagle and the government.

Monitoring data sent to Agnico Eagle

What to do if there is a collision with a marine mammal



Ship captains and crew should review the following mitigation measures and be familiar with guidelines around marine mammals and seabirds, as well as navigational options for vessel maneuvers when encountering marine mammals and seabirds. Mitigation and management measures are summarized from the Shipping Management Plans for Meadowbank and Meliadine.

1. General navigational requirements while travelling through Hudson Strait to Helicopter Island or Rankin Inlet, include the following:

- a. Ships will, when possible, maintain a straight course and constant speed, and avoid erratic behaviour;
- b. Marine mammals will be given right of way as safe navigation allows;
- c. The ship will not be operated in such a way as to separate an individual member(s) of a group of marine mammals from other members of the group;
- d. Ships will maintain the required setback distances around marine mammals and seabirds on land;

**Avoiding Marine Mammals and Seabird Colonies on Land**

Maintain a setback distance of >500 m from colonies of seabirds and marine mammals on shore



**Avoiding Marine Mammals on Sea Ice**

Do not approach within 300 m of a walrus or polar bear observed on sea ice



- e. Ships will use a routing south of Coats Island as the primary shipping route;
- f. Ships travelling for the Meliadine project will remain at least 2 km from Marble Island to avoid disturbing seals, walrus and marine birds that might be in the vicinity; and

g. Ships will maintain the required setback distances around marine mammals and seabirds in the water.

**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 100 m to 500 m (Meadowbank) from the ship prior to resuming speed

**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 from the immediate area

**\* 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.

- 2. As part of shipping companies' standard operating procedures, ship crews will monitor for marine mammals and seabirds from Hudson Strait to the lightering point near Helicopter Island (Meadowbank) or Rankin Inlet (Meliadine).
- 3. The ship's Master will be notified if there is a concern of the ship striking a marine mammal.
- 4. Ship personnel will make a decision if actions are required to avoid a possible collision by implementing management measures, if safe to do so.
- 5. If a collision occurs, the appropriate people will be contact and the incident will be documented.

# MARINE MAMMAL MANAGEMENT AND MONITORING PROGRAM

The Marine Mammal Management and Monitoring Plan (MMMMP) was developed for the Project to meet commitments made during the Nunavut Impact Review Board (NIRB) hearings related to Marine Shipping. The MMMMP was designed to provide protocols for conducting a vessel-based Marine Mammal and Seabird Observer (MMSO) program during all routine shipping activities along the shipping route.

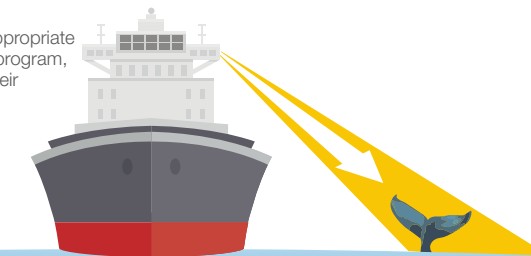
A Marine Mammal and Seabird Observer (MMSO) will be assigned by the captain prior to departure. The role of the MMSO is to record and report on marine mammals and seabird sightings during shipping activities along the shipping routes, and to advise the ship's crew on the location of observed marine mammals and if any action is recommended based on mitigation measures. MMSO and other crew members are also encouraged to collect incidental sightings (i.e., observations of marine mammals or seabirds NOT during dedicated monitoring) during their voyage and to report it to Agnico Eagle in addition to the MMSO data. Standard monitoring and data collection protocols for marine mammals and seabirds will be provided to the crew in the form of Standard Operating Procedures (SOPs) and in-person or online training.



## THE MARINE MAMMAL AND SEABIRD OBSERVATION (MMSO) PROGRAM

1. Ship crews (the assigned MMSO) will monitor for marine mammals and seabirds from Hudson Strait to the lightering point near Helicopter Island (Meadowbank) or Rankin Inlet (Meliadine)
2. The ship's Master will be notified if there is a concern of the ship striking a marine mammal
3. Ship personnel will make a decision if actions are required to avoid a possible collision

\*It is the responsibility of captains to ensure that appropriate crew members have been trained on the MMSO program, conduct the MMSO while underway and report their findings to Agnico Eagle.



## HOW OFTEN DOES THE MMSO SURVEY?

**Marine Mammal Monitoring:** Conduct at least 1 dedicated survey per day (attempt 2), lasting 1.5 to 2 hrs beginning in Hudson Strait

### Seabird Monitoring:

- Conduct 3 dedicated surveys per day (morning, afternoon, evening)
- Each survey lasts 30 min, made up of **6 separate 5-min observation periods**, beginning in Hudson Strait

**Incidental Sightings:** While traveling from Hudson Strait to Rankin Inlet/Helicopter Island, look for marine mammals incidentally to avoid collisions and record incidental sightings



# REPORTING

Data collected by the MMSOs must be submitted annually by Agnico Eagle to the Government of Nunavut and other applicable regulators (e.g., Environment and Climate Change Canada (ECCC) - Canadian Wildlife Service (CWS)) regarding the location, behaviour, abundance, and species observed as well as any interactions with Project vessels during shipping activities along the shipping route. Therefore, data and ship tracks must be submitted to Agnico Eagle within 2-3 weeks of completion of the voyage.

## VESSEL OPERATORS REPORT THE FOLLOWING INFORMATION ANNUALLY TO AGNICO EAGLE

### Vessel Information:

- Name
- Dates of Transit
- Track log from Montreal to Agnico Eagle site
- General description of cargo

### Track Information:

- A GPS track of the vessel route

### MMSO Information:

- All data sheets collected by MMSO
- A record of any Management – avoidance of marine mammals or seabirds
- All incidental sightings of marine mammals or seabirds collected during the voyage (i.e., not during the dedicated MMSO surveys)

## IF A COLLISION OCCURS

### Report all collisions to Agnico Eagle:

Sara Savoie: Work: +1 (819) 759-3555 x 4603212 Cell: +1 (819) 856-9349  
 Robin Allard: Cell: +1 (819) 860-1414



### If a Marine Mammal and Vessel Collision Occurs Contact DFO:

Central and Arctic, Nunavut – Iqaluit: +1 (867) 979-8000



### Captain must report the following information (as per Marine Mammal Regulations s.39):

- Date, time and location of the incident;
- Species of marine mammal involved in the incident;
- Circumstances of the incident;
- Size and type of vehicle;
- Weather and sea conditions at the time of the incident;
- Observed state of the marine mammal after the incident; and
- Direction of travel of the marine mammal after the incident, to the extent that it can be determined.

### Agnico Eagle Contact:

[mmso@agnicoeagle.com](mailto:mmso@agnicoeagle.com)

### If a Seabird and Vessel Collision Occurs Contact:

ECCC Wildlife Enforcement: [ec.dalfnord-wednorth.ec@canada.ca](mailto:ec.dalfnord-wednorth.ec@canada.ca)

