



Environmental Imaging Solutions

**Ornithological and Marine Fauna Aerial Survey Results of
Lease Area OCS-A 0512**

Equinor

Quarterly Report: February 2018 to April 2018

APEM Ref: P00002032

Issued July 2018

Laura Jervis, Simon Warford, Julia Robinson Wilmott, Stuart Clough, Roger Buisson

Client: Equinor
Address: 120 Long Ridge
Stamford
Connecticut
CT 06902
USA

Project reference: P00002032

Date of issue: July 2018

Project Director: Stuart Clough

Project Manager: Laura Jervis

Key Contributors: Roger Buisson, Simon Warford, Julia Robinson Wilmott
(Normandeau Associates), Bethany Goddard

APEM Inc.
2603 NW 13th Street, #402
Gainesville FL 32609

Tel: 01244 520 460
Fax: 01244 533 741

Registered in England No. 2530851

Revision and Amendment Register

Version Number	Date	Section(s)	Page(s)	Summary of Changes	Approved by
1.0	07-17-2018	All	All	Creation	LJ
1.1	07-23-2018	All	All	Review prior to issue to client	RB
1.2	07-25-2018	All	All	Draft for client review	LJ
2.0	06-06-2019	All	All	Amendments following client review	LJ

Contents

1. Executive Summary	1
2. Introduction	2
3. Summary of Surveys	3
4. Quality Control Results	5
5. Abundance and Distribution	6
5.1 Avian Abundance.....	7
5.2 Non-Avian Abundance	9
5.3 Spatial Distribution.....	10
6. Species Accounts	14
6.1 White-winged Scoter.....	14
6.2 Black Scoter.....	14
6.3 Long-tailed Duck.....	14
6.4 Red-throated Loon.....	14
6.5 Common Loon	14
6.6 Species Unknown - Loon	14
6.7 Northern Fulmar.....	14
6.8 Northern Gannet	15
6.9 Species Unknown – Cormorant.....	15
6.10 Murre / Razorbill	15
6.11 Black-legged Kittiwake.....	15
6.12 Bonaparte's Gull	15
6.13 Herring Gull.....	15
6.14 Lesser Black-backed Gull	16
6.15 Great Black-backed Gull	16
6.16 Species Unknown – Small Gull	16
6.17 Species Unknown - Tern.....	16
6.18 Bottlenose Dolphin.....	16
6.19 Harbour Porpoise.....	16

6.20	Species Unknown – Marine Mammal	16
6.21	Ocean Sunfish	16
7.	Shipping Observations	17
8.	Plans for Future Surveys	17
9.	General Conclusions	17
9.1	February 2018	17
9.2	March 2018	18
9.3	April 2018	18
Appendix I	Species List in Taxonomic Order	19

List of Figures

Figure 1	Flight lines and image capture points of the aerial imagery at Lease Area OCS-A 0512 plus 4 km (2.5 mile) Buffer	3
Figure 2	Distribution of all birds, marine fauna, and human artifacts recorded in the February 2018 survey of Lease Area OCS-A 0512.....	11
Figure 3	Distribution of all birds, marine fauna, and human artifacts recorded in the March 2018 survey of Lease Area OCS-A 0512.....	12
Figure 4	Distribution of all birds, marine fauna, and human artifacts recorded in the April 2018 survey of Lease Area OCS-A 0512.....	13

List of Tables

Table 1	Date and start and end time (Coordinated Universal Time) for each flight for the February 2018 to April 2018 surveys.....	4
Table 2	Weather conditions recorded for completed surveys to date: February 2018 to April 2018	4
Table 3	Image number and coverage for February 2018, March 2018, and April 2018	4
Table 4	The number of blank images, the number of blank images that went to QC, and the results of the QC	5
Table 5	The number of individuals that were found during QC.....	5
Table 6	Total number of individuals of the avian species recorded during February 2018, March 2018, and April 2018 surveys of the Lease Area OCS-A 0512 plus 4 km buffer. 7	7
Table 7	Total number of individuals of the non-avian species recorded during February 2018, March 2018, and April 2018 surveys of the Lease Area OCS-A 0512 plus 4 km buffer.	9
Table 8	Currently planned provisional survey windows for the remaining surveys..	17

1. Executive Summary

- Aerial surveys of Equinor's Lease Area OCS-A 0512 in the New York Bight were conducted in February 2018, March 2018, and April 2018 using APEM Inc.'s (hereafter referred to as APEM) high-resolution camera system to capture digital still imagery.
- Images collected have been analyzed by APEM Inc. and quality assured by Normandeau Associates (hereafter referred to as Normandeau). Raw counts of all species and incidental observations recorded during the surveys are presented here.
- A total of 37 birds, two large bony fish, and one marine mammal were recorded in the Survey Area in February 2018. The most abundant group recorded was alcids (n=12), followed by loons (n=10), gulls (n=7), ducks (n=4), gannets (n=4), large bony fish (n=2), and mammals (n=1).
- A total of 308 birds and 12 marine mammals were recorded in the Survey Area in March 2018. The most abundant group recorded was alcids (n=213), followed by gulls (n=44), loons (n=38), mammals (n=12), ducks (n=11), gannets (n=1), and fulmars, (n=1).
- A total of 262 birds were recorded in the Survey Area in April 2018. The most abundant group recorded was alcids (n=159), followed by gulls (n=32), cormorants (n=31), gannets (n=28), loons (n=11), and terns (n=1).
- No individuals listed as Endangered (Federally listed as Threatened or Endangered, and New York State listed as Endangered) were recorded.

2. Introduction

APEM and Normandeau were contracted by Equinor to provide monthly aerial digital survey data of the Lease Area OCS-A 0512 from November 2017 until October 2018.

The aims and objectives of the work required by Equinor were to assess the abundance and distribution of primarily birds present in the Lease Area OCS-A 0512, and also to gather information on other marine fauna such as marine mammals, sharks, rays, and turtles. These surveys will provide the baseline information required for conducting impact assessments and will meet the U.S. Bureau of Ocean Energy Management's (BOEM's) regulatory requirements for environmental review of Wind Energy Areas.

The Survey Area referred to herein comprises of the Lease Area OCS-A 0512 (its proposed turbine array footprint) plus a 4 km (2.5 miles) buffer surrounding it. The Survey Area data in this report represent the total number of birds, other marine fauna, and incidental occurrences recorded across all images (including those that may fall outside the proposed Lease Area OCS-A 0512 plus buffer region).

To meet the objectives of the project, images were captured using a grid-based survey design with a 1.5 cm ground sampling distance (GSD). Images were analyzed by APEM and quality assurance was undertaken by Normandeau.

This is the second of three quarterly progress reports to summarise the information collected following the completion of three aerial surveys of Lease Area OCS-A 0512: February 2018, March 2018, and April 2018.

The following information is provided in Section 3:

- The number of surveys conducted to date; and
- The dates, start and end times, and weather conditions.

The following information is provided in Section 4, 5, and 6:

- The number of birds and non-avian fauna species / taxonomic group;
- Maps showing the locations of birds and actual survey route; and
- The status of data processing, error checking, and analysis.

Shipping information recorded visually from the aircraft or captured in the imagery has been provided in Section 7.

For surveys that have not yet been undertaken (July 2018 to October 2018), the currently planned provisional survey windows have been provided in Section 8.

A Quarterly Report summarising the data collected November 2017 to January 2018 has been previously submitted in draft format and is pending finalisation.

The reports that are remaining as part of the requirements of Equinor and BOEM are:

- Third Quarterly Report to summarise data collected from the completed surveys: May 2018, June 2018, and July 2018;
- Annual Report to provide detailed information comprising the full 12 months of aerial survey data collected November 2017 to October 2018 inclusive.

3. Summary of Surveys

Surveys have been undertaken for February 2018 until April 2018 inclusive.

The aerial digital survey captured images along 28 lines spaced approximately 0.8 km across-track and 0.6 km along-track between image nodes within the Lease Area OCS-A 0512 plus 4 km buffer (Figure 1). Data collected were 1.5 cm GSD digital still images using a GPS-linked bespoke flight management system to ensure the tracks were flown with a high degree of accuracy.

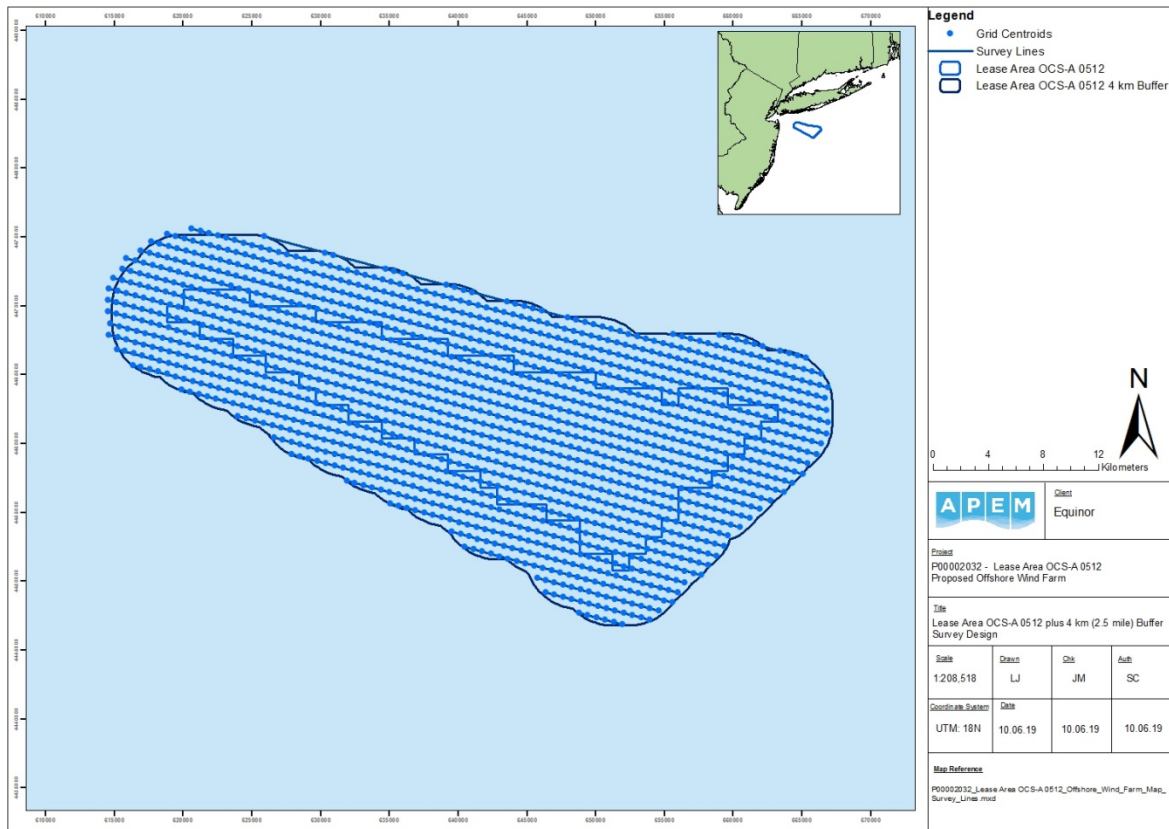


Figure 1 Flight lines and image capture points of the aerial imagery at Lease Area OCS-A 0512 plus 4 km (2.5 mile) Buffer

No health and safety issues were reported during the surveys.

The date, start and end times of the surveys are provided in Table 1, and a summary of the weather conditions that were recorded are provided in Table 2.

Coverage was estimated to be at least 10% generated from approximately 12,200 images (Table 3).

Table 1 Date and start and end time (Coordinated Universal Time) for each flight for the February 2018 to April 2018 surveys

Survey	Date	Flight Number	UTC Start Time (HH:MM)	UTC End Time (HH:MM)
Survey 4	02-17-18	1	12:48	16:36
		2	18:09	20:46
Survey 5	03-06-18	1	13:45	16:35
		2	18:57	21:23
Survey 6	04-20-18	1	12:32	15:50
		2	18:42	21:44

Table 2 Weather conditions recorded for completed surveys to date: February 2018 to April 2018

Survey	Date	Sea State	Turbidity	Wind Speed (knots) / Direction	Cloud Cover	Visibility (km)	Air Temp (°F)
Survey 4	02-17-18	1 - 3	1	15 - 20 / N or NE	5 - 15	> 10 km	28 - 34
Survey 5	03-06-18	1 - 2	1	Calm - 6 / NE	0 - 20	> 10 km	33 - 37
Survey 6	04-20-18	2 - 4	1 - 2	20 - 25 / N or NW	0 - 10	> 10 km	32 - 44

Table 3 Image number and coverage for February 2018, March 2018, and April 2018

Survey	Image Number	Coverage (%)
Survey 4	12,176	12.95
Survey 5	12,176	12.95
Survey 6	12,180	12.96

4. Quality Control Results

APEM analyzed the images to enumerate birds to species level, and to enumerate any other non-avian marine fauna. Normandeau provided quality assurance (QA) of the data to check for missed animals in 10% of images recorded as empty and also quality assured 20% of the bird species identification undertaken by APEM (and 100% of Listed species). Normandeau identified 100% of the species of non-avian marine fauna including marine mammals, sharks, rays, turtles. Birds and marine fauna identified from the images were ‘snagged’ (i.e. located within the images) and categorised usually to species, but sometimes to the species grouping. The results of the QA are provided in Tables 4 and 5. The agreement exceeded 99% for every survey.

Table 4 The number of blank images, the number of blank images that went to QC, and the results of the QC

Survey	Blank Images	Blank Images QC'd	Image Number QC'd Not Blank	Agreement (%)
Survey 4	12,190	1,219	0	100.00
Survey 5	11,936	1,194	1	99.92
Survey 6	12,043	1,205	2	99.75

Table 5 The number of individuals that were found during QC

Survey	Order Found by QC	Number of individuals
Survey 5	Avian	1
Survey 6	Avian	1
	Ray	1

5. Abundance and Distribution

Data reported are raw counts of animals that have not yet been subject to extrapolation for population estimates. Design-based population estimates will be provided in the annual report following the completion of the October 2018 survey.

Species Latin names are provided in Appendix 1 Species List in Taxonomic Order.

5.1 Avian Abundance

For February 2018, March 2018, and April 2018, totals of 37, 308, and 262 birds were recorded respectively (Table 6). Birds mostly comprised of murre / razorbill (n=384 in total across February 2018, March 2018, and April 2018). Thereafter common loon (n=49) was the most abundant followed by Bonaparte’s gull (n=38), northern gannet (n=33), unknown cormorant species (n=31), herring gull (n=23), black-legged kittiwake (n=15), black scoter (n=9), red-throated loon (n=9), white-winged scoter (n=4), great black-backed gull (n=3), unknown small gull species (n=3), and long-tailed duck (n=2). One unknown loon species, one northern fulmar, one lesser black-backed gull and one unknown tern species were also recorded.

Table 6 Total number of individuals of the avian species recorded during February 2018, March 2018, and April 2018 surveys of the Lease Area OCS-A 0512 plus 4 km buffer.

Group	Species	Feb-18				Mar-18				Apr-18		
		Flying	Sitting	Diving	Total	Flying	Sitting	Diving	Total	Flying	Sitting	Total
Duck	White-winged Scoter	-	-	-	-	4	-	-	4	-	-	-
	Black Scoter	-	2	-	2	-	7	-	7	-	-	-
	Long-tailed Duck	2	-	-	2	-	-	-	-	-	-	-
Loon	Red-throated Loon	1	1	-	2	2	1	-	3	2	2	4
	Common Loon	-	8	-	8	1	33	-	34	1	6	7
	Species Unknown - Loon	-	-	-	-	-	1	-	1	-	-	-
Fulmar	Northern Fulmar	-	-	-	-	-	1	-	1	-	-	-
Gannet	Northern Gannet	2	1	1	4	-	1	-	1	10	18	28
Cormorant	Species Unknown - Cormorant	-	-	-	-	-	-	-	-	31	0	31
Alcid	Murre* / Razorbill	-	12	-	12	11	201	1	213	8	151	159
Gull	Black-legged Kittiwake	-	-	-	-	12	3	-	15	-	-	-
	Bonaparte's Gull	1	-	-	1	7	3	-	10	14	13	27
	Herring Gull	3	-	-	3	10	7	-	17	3	-	3

Group	Species	Feb-18				Mar-18				Apr-18		
		Flying	Sitting	Diving	Total	Flying	Sitting	Diving	Total	Flying	Sitting	Total
	Lesser Black-backed Gull	-	-	-	-	-	-	-	-	-	1	1
	Great Black-backed Gull	1	1	-	2	-	-	-	-	1	-	1
	Species Unknown - Small	-	1	-	1	-	2	-	2	-	-	-
Tern	Species Unknown - Tern	-	-	-	-	-	-	-	-	-	1	1
Total Birds		10	26	1	37	47	260	1	308	70	192	262

*Note: Murre refers to either Common Murre or Thick-billed Murre.

5.2 Non-Avian Abundance

For February 2018, March 2018, and April 2018, totals of one, 12, and zero marine mammals were recorded respectively (Table 7). Marine mammals mostly comprised of harbour porpoise (n=10 in March 2018). One bottlenose dolphin was recorded in February 2018 and two unknown marine mammal species were recorded in March 2018. Two ocean sunfish were also recorded in February 2018.

Table 7 Total number of individuals of the non-avian species recorded during February 2018, March 2018, and April 2018 surveys of the Lease Area OCS-A 0512 plus 4 km buffer.

Group	Species	Feb-18			Mar-18			Apr-18		
		Surfacing	Submerged	Total	Surfacing	Submerged	Total	Surfacing	Submerged	Total
Marine Mammal	Bottlenose Dolphin	1	-	1	-	-	-	-	-	-
	Harbour Porpoise	-	-	-	2	8	10	-	-	-
	Species Unknown	-	-	-	-	2	2	-	-	-
Total Mammals		1	0	1	2	10	12	0	0	0
Large Bony Fish	Ocean Sunfish	-	2	2	-	-	-	-	-	-
Total Large Bony Fish		0	2	2	0	0	0	0	0	0

5.3 Spatial Distribution

Figures 2, 3, and 4 shows the location of all birds and marine fauna recorded throughout the Survey Area during February, March, and April 2018 respectively.

In the previous three months of surveys; 467 birds and 5 marine mammals, 517 birds and 29 marine mammals, and 178 birds and seven marine mammals were recorded in November 2017, December 2017, and January 2018 respectively. Generally fewer birds and other marine fauna were recorded in the subsequent three months with totals of 37 birds, two large bony fish and one marine mammal in February 2018, 308 birds and 12 marine mammals in March 2018, and 262 birds in April 2018. However the number of murre / razorbills recorded during February to April was greater (n=384 in total) in comparison to the previous quarterly surveys: November to January (n=165 in total). Few birds were recorded overall in February with no notable occurrences in the distribution. A greater number of murre / razorbills were recorded in March which was distributed throughout the entire survey area with the majority toward the eastern half. In April murre / razorbills were mostly distributed in the eastern half of the survey area. A greater number of northern gannets were recorded in April in comparison to February and March, and were mostly distributed in the western half of survey area.

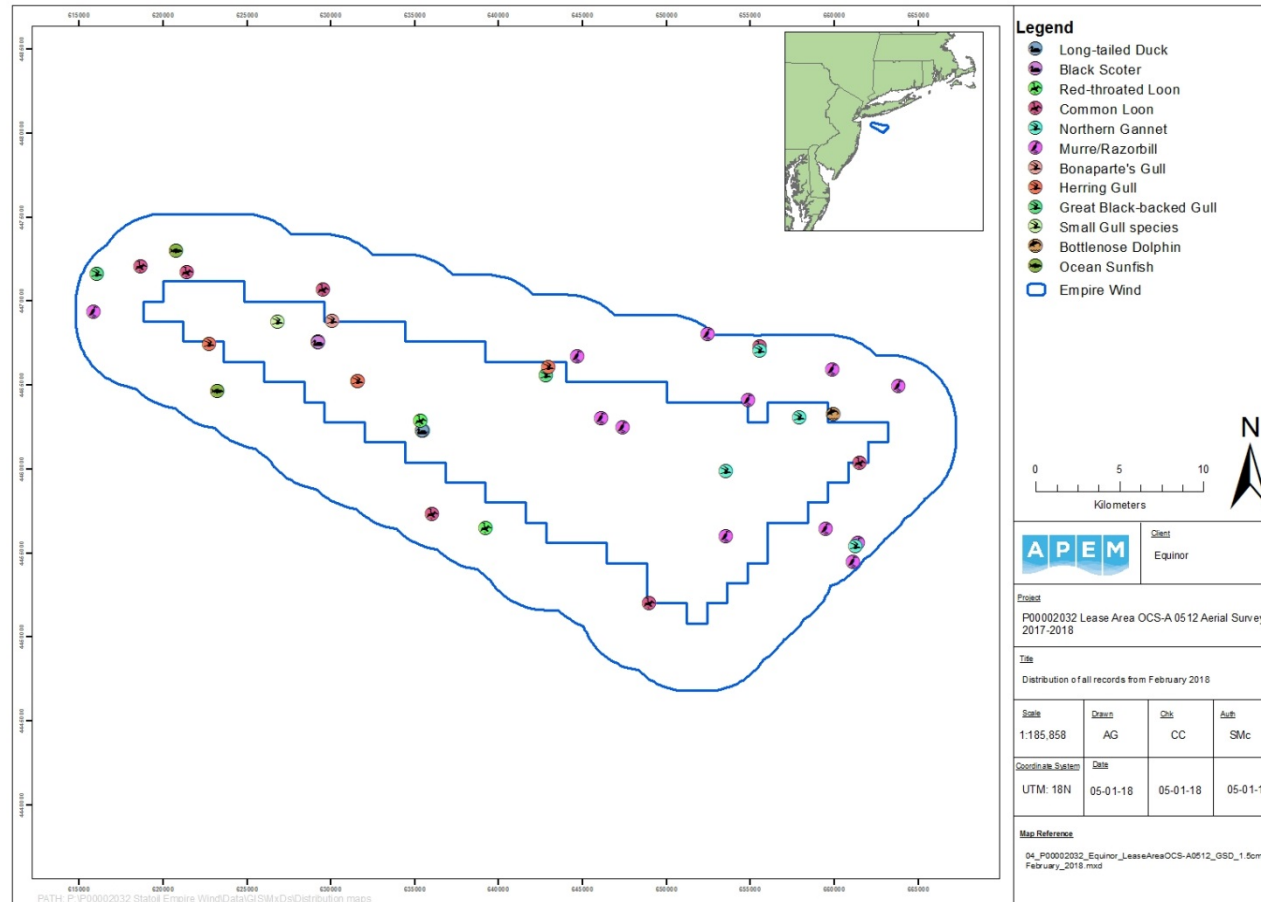


Figure 2 Distribution of all birds, marine fauna, and human artifacts recorded in the February 2018 survey of Lease Area OCS-A 0512.

Note: Individuals may appear to overlap if they are in close proximity to each other.

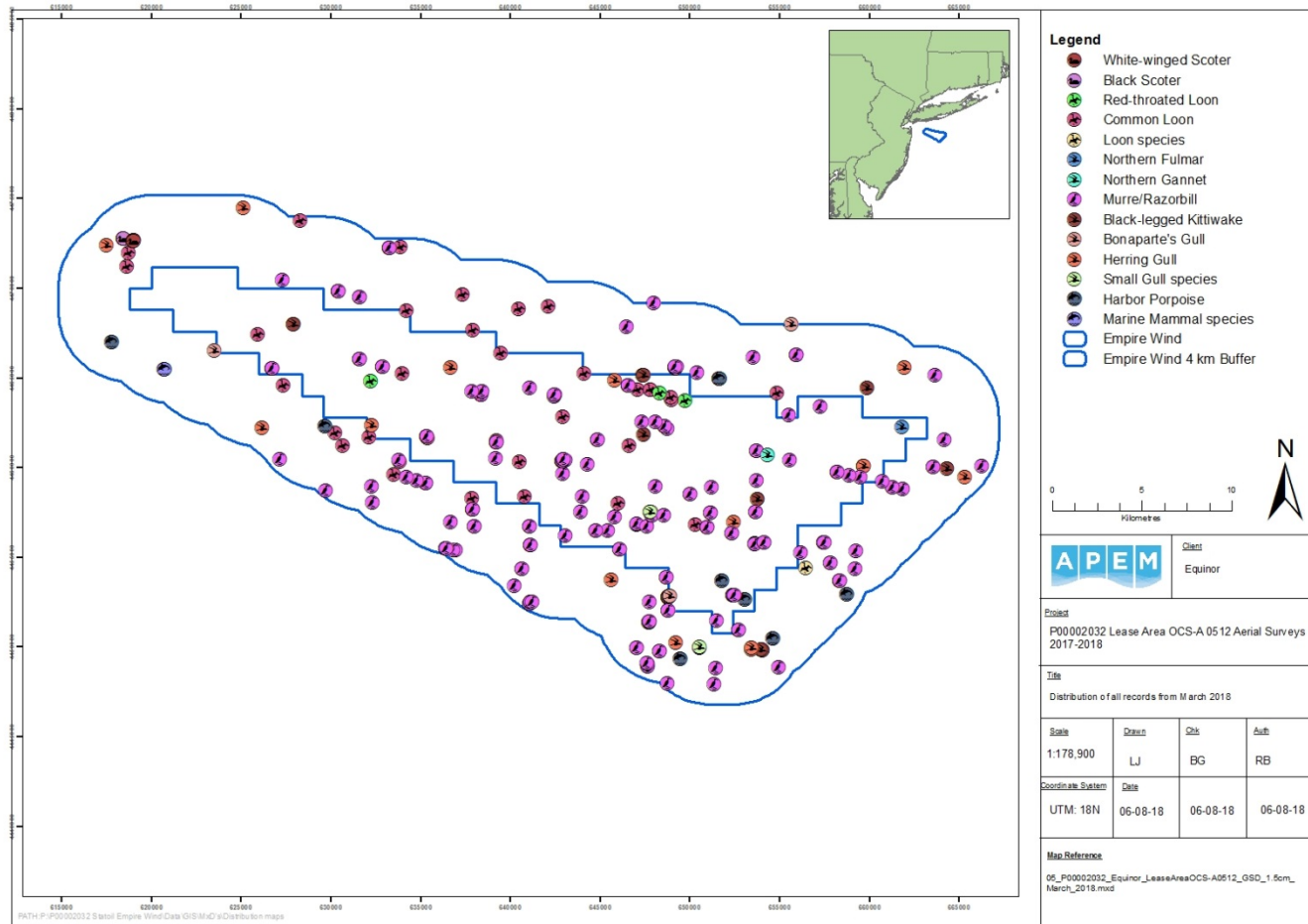


Figure 3 Distribution of all birds, marine fauna, and human artifacts recorded in the March 2018 survey of Lease Area OCS-A 0512.

Note: Individuals may appear to overlap if they are in close proximity to each other.

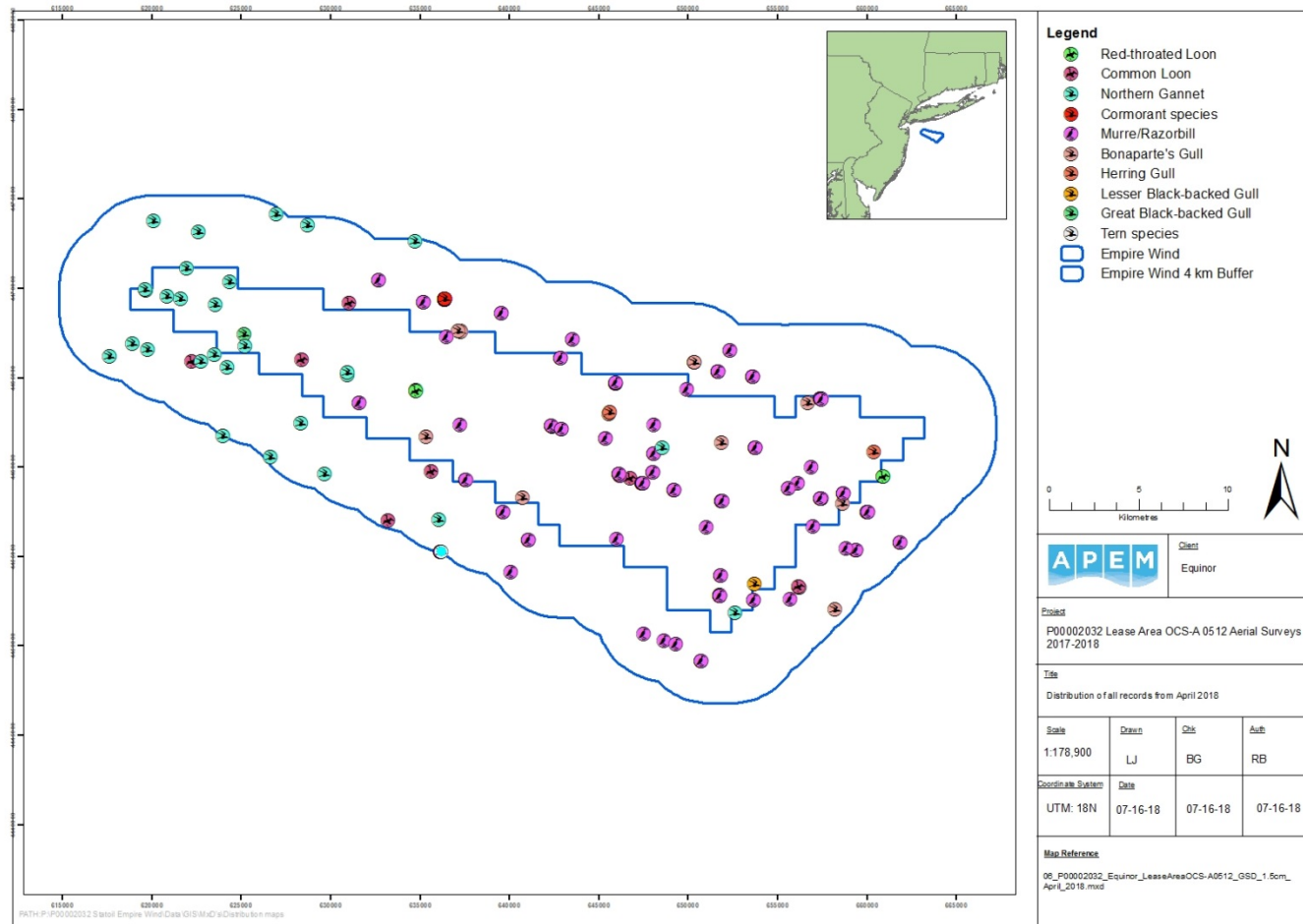


Figure 4 Distribution of all birds, marine fauna, and human artifacts recorded in the April 2018 survey of Lease Area OCS-A 0512.

Note: Individuals may appear to overlap if they are in close proximity to each other.

6. Species Accounts

6.1 White-winged Scoter

Four white-winged scoters (classified as two females and two males) were recorded flying in March in a group in the western region of the proposed windfarm buffer.

6.2 Black Scoter

Black scoters were recorded in February and March. These comprised of two sitting in February, and seven sitting black scoters were recorded sitting in March (recorded as two females and five males). In February the two individuals were recorded sitting together in the western half of the windfarm boundary. In March the seven individuals were recorded sitting together in the western half of the proposed windfarm 4 km buffer region.

6.3 Long-tailed Duck

Two flying long-tailed ducks, recorded as one male and one female, were recorded in February in the centre of the proposed windfarm boundary.

6.4 Red-throated Loon

Red-throated loons were recorded in February, March, and April. These comprised of one flying and one sitting in February, two flying and one sitting in March, and two flying and two sitting in April. In February the one of the two individuals was recorded in the centre of the windfarm boundary, and the second individual was recorded in a similar region just outside of the proposed windfarm boundary in the 4 km buffer. In March the three individuals were recorded in the centre region of the proposed windfarm boundary. In April a single individual was recorded in the centre region of the windfarm, with three further individuals recorded together along the eastern boundary of the proposed windfarm.

6.5 Common Loon

Common loons were recorded in February, March, and April. These comprised of eight sitting February, one flying and 33 sitting in March, and one flying and six sitting in April. In February, March and April common loons were recorded scattered throughout the proposed windfarm and buffer regions.

6.6 Species Unknown - Loon

A single individual classified as unknown loon species was recorded in March sitting just outside of the eastern proposed windfarm boundary.

6.7 Northern Fulmar

A single northern fulmar was recorded in March sitting in the north eastern region on the proposed windfarm.

6.8 Northern Gannet

Northern gannets were recorded in February, March, and April. These comprised of two flying, one sitting, and one diving in February, one sitting in March, and 10 flying and 18 sitting in April (two were classified as second winter). In February and March individuals were recorded in the eastern half of the proposed windfarm and buffer region. In April individuals were recorded mostly in the western half of the proposed windfarm and buffer region.

6.9 Species Unknown – Cormorant

Thirty-one individuals classified as unknown cormorant species were recorded flying in April along the northern region of the proposed windfarm 4 km buffer.

6.10 Murre / Razorbill

Murre / razorbills were recorded in February, March, and April. These comprised of 12 sitting in February, 11 flying, 201 sitting, and one diving in March, and eight flying and 151 sitting in April. In February individuals were mostly recorded in the eastern half of the proposed windfarm and buffer region. In March individuals were recorded throughout the area, with the majority in the eastern half of the windfarm and buffer region. In April individuals were mostly recorded in the eastern half of the proposed windfarm and buffer region.

6.11 Black-legged Kittiwake

Fifteen black-legged kittiwakes were recorded in March comprising of 12 flying and three sitting individuals, the majority of individuals were recorded in the eastern half of the proposed windfarm region.

6.12 Bonaparte's Gull

Bonaparte's gulls were recorded in February, March, and April. These comprised of one flying in February, seven flying and three sitting in March, and 14 flying and 13 sitting in April. In February the single individual was flying along the northern proposed windfarm boundary. In March individuals were mostly recorded in the south eastern region of the proposed windfarm 4 km buffer. In April individuals were recorded scattered throughout the proposed windfarm and buffer.

6.13 Herring Gull

Herring gulls were recorded in February, March, and April. These comprised of three flying in February (one was classified as third winter and one was classified as first winter), 10 flying and seven sitting in March (one was classified as fourth winter), and three flying in April. In February individuals were recorded in the western half of the proposed windfarm region. In March individuals were recorded scattered throughout the proposed windfarm and buffer. In April individuals were recorded in the north eastern region of the proposed windfarm.

6.14 Lesser Black-backed Gull

A single lesser black-backed gull was recorded sitting in April in the southern corner of the proposed windfarm.

6.15 Great Black-backed Gull

Great black-backed gulls were recorded in February and April. These comprised of one flying and one sitting in February, and one flying in April. In February one individual was recorded in the western corner of the proposed windfarm 4 km buffer, and one individual was recorded along the northern boundary of the proposed windfarm. In April one individual was recorded in the western corner of the proposed windfarm.

6.16 Species Unknown – Small Gull

Individuals classified as unknown small gull species were recorded in February and March. These comprised of one sitting in February, and two sitting in March. In February one individual was recorded in the western corner of the proposed windfarm. In March one individual was recorded in the southern boundary of the windfarm and one was recorded just outside of the proposed windfarm boundary located in the 4 km buffer region.

6.17 Species Unknown - Tern

A single individual classified as unknown tern species was recorded in April along the southern proposed windfarm buffer boundary.

6.18 Bottlenose Dolphin

A single bottlenose dolphin was recorded in February in the eastern corner of the proposed windfarm 4 km buffer.

6.19 Harbour Porpoise

Two surfacing and eight submerged harbour porpoise were recorded in March scattered throughout the windfarm and buffer region.

6.20 Species Unknown – Marine Mammal

Two individuals classified as unknown marine mammal species were recorded in March in the western corner of the proposed windfarm 4 km buffer.

6.21 Ocean Sunfish

Two ocean sunfish were recorded in February in the western corner of the proposed windfarm 4 km buffer.

7. Shipping Observations

Five tankers (with an easterly bearing) were observed visually from the aircraft on the 17th February 2018. No vessels were recorded visually from the aircraft on the 6th March 2018. One cargo vessel (with a north-westerly bearing) was observed visually from the aircraft on the 20th April 2018.

No vessels were recorded in the imagery in February, March, or April.

8. Plans for Future Surveys

Table 8 provides the currently planned survey windows for the remaining four surveys: July 2018 to October 2018 inclusive. It is important to note that these windows are provisional weather-permitting and dependent upon resource and equipment allocation schedules.

Table 8 Currently planned provisional survey windows for the remaining surveys

Survey Number	Survey Month	Provisional Window
Survey 9	July	07-23-18 to 07-27-18
Survey 10	August	08-12-18 to 08-17-18
Survey 11	September	09-22-18 to 09-27-18
Survey 12	October	10-16-18 to 10-22-18

9. General Conclusions

Overall, the abundance and the number of species of birds and non-avian marine fauna recorded during February to April were lower in comparison to the previous three months of surveys: November to January. However the number of murre / razorbill recorded during February to April was greater in comparison to November to January.

General conclusions for each survey February to April are provided below.

9.1 February 2018

A total of 37 birds, two large bony fish, and one marine mammal were recorded in the Survey Area in February 2018. The most abundant group recorded was alcids (n=12), followed by loons (n=10), gulls (n=7), ducks (n=4), gannets (n=4), large bony fish (n=2), and mammals (n=1).

A total of 10 birds (27%) were recorded in flight during this survey. These consisted of long-tailed ducks (n=2), red-throated loon (n=1), northern gannet (n=2), Bonaparte's gull (n=1), herring gull (n=3), and great black-backed gull (n=1). There were 26 birds recorded as sitting (70%) and one bird recorded as diving (3%).

A single marine mammal (a bottlenose dolphin), and two large bony fish, both ocean sunfish were recorded in February 2018.

9.2 March 2018

A total of 308 birds and 12 marine mammals were recorded in the Survey Area in March 2018. The most abundant group recorded was alcids (n=213), followed by gulls (n=44), loons (n=38), mammals (n=12), ducks (n=11), gannets (n=1), and fulmars, (n=1).

A total of 47 birds (15%) were recorded in flight during this survey. These consisted of white-winged scoters (n=4), red-throated loon (n=2), common loon (n=1), murre / razorbill (n=11), black-legged kittiwakes (n=12), Bonaparte's gull (n=7), and herring gull (n=10). There were 260 birds recorded as sitting (84%) and one bird recorded as diving (<1%).

Marine mammals were recorded in March 2018 comprising of 10 harbour porpoise and two unknown marine mammal species.

9.3 April 2018

A total of 262 birds were recorded in the Survey Area in April 2018. The most abundant group recorded was alcids (n=159), followed by gulls (n=32), cormorants (n=31), gannets (n=28), loons (n=11), and terns (n=1).

A total of 70 birds (27%) were recorded in flight during this survey. These consisted of unknown cormorant species (n=31), Bonaparte's gull (n=14), northern gannets (n=10), murre / razorbill (n=8), herring gull (n=3), red-throated loon (n=2), great black-backed gull (n=1), common loon (n=1). There were 192 birds recorded as sitting (73%).

No other marine fauna was recorded in April 2018.

Appendix I Species List in Taxonomic Order

Common Name	Scientific Name	Family	Class
Long-tailed Duck	<i>Clangula hyemalis</i>	Anatidae	Aves
Surf Scoter	<i>Melanitta perspicillata</i>	Anatidae	Aves
White-winged Scoter	<i>Melanitta fusca</i>	Anatidae	Aves
Black Scoter	<i>Melanitta americana</i>	Anatidae	Aves
Red-throated Loon	<i>Gavia stellata</i>	Gaviidae	Aves
Common Loon	<i>Gavia immer</i>	Gaviidae	Aves
Northern Gannet	<i>Morus bassanus</i>	Sulidae	Aves
Common Murre	<i>Uria aalge</i>	Alcidae	Aves
Thick-billed Murre	<i>Uria lomvia</i>	Alcidae	Aves
Razorbill	<i>Alca torda</i>	Alcidae	Aves
Black-legged Kittiwake	<i>Rissa tridactyla</i>	Laridae	Aves
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	Laridae	Aves
Herring Gull	<i>Larus argentatus</i>	Laridae	Aves
Lesser Black-backed Gull	<i>Larus fuscus</i>	Laridae	Aves
Great Black-backed Gull	<i>Larus marinus</i>	Laridae	Aves
Common Dolphin	<i>Delphinus delphis</i>	Delphinidae	Mammalia
Bottlenose Dolphin	<i>Tursiops truncatus</i>	Delphinidae	Mammalia
Harbour Porpoise	<i>Phocoena phocoena</i>	Phocoenidae	Mammalia
Ocean Sunfish	<i>Mola mola</i>	Molidae	Actinopterygii