




F I V E   
ESTUARIES  
OFFSHORE WIND FARM

FIVE ESTUARIES  
OFFSHORE WIND FARM  
PRELIMINARY ENVIRONMENTAL  
INFORMATION REPORT

VOLUME 4, ANNEX 4.9: SEABIRD  
DISTRIBUTIONS RECORDED IN AERIAL  
SURVEYS

Document Reference 004685529-01  
Revision A  
Date February 2023





|                        |   |
|------------------------|---|
| Project                | Five Estuaries Offshore Wind Farm                                     |
| Sub-Project or Package | Preliminary Environmental Information Report                          |
| Document Title         | Volume 4, Annex 4.9: Seabird Distributions Recorded in Aerial Surveys |
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| Revision               | A   |

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| A        | Feb-23 | Final for PEIR          | MacArthur Green | GoBe    | VE OWFL  |



MacArthur  
Green

# Five Estuaries Offshore Wind Farm

## Ornithology Technical Annex 4.9 Seabird distributions recorded in aerial surveys

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**Date:** 22 February 2023

**Tel:** 0141 342 5404

**Web:** [www.macarthurgreen.com](http://www.macarthurgreen.com)

**Address:** 93 South Woodside Road | Glasgow | G20 6NT

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## Document Quality Record

| Version | Status            | Person Responsible | Date       |
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| 0.1     | Draft             | Lindsay Fergusson  | 10/11/2022 |
| 0.2     | Reviewed          | Dr Mark Trinder    | 10/11/2022 |
| 0.3     | Updated           | Lindsay Fergusson  | 14/11/2022 |
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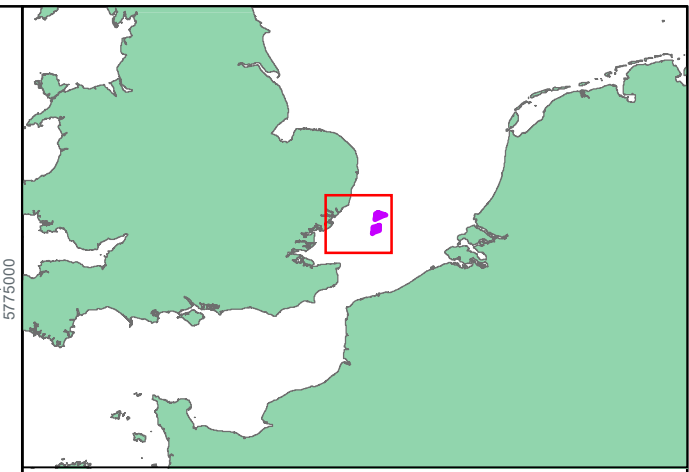
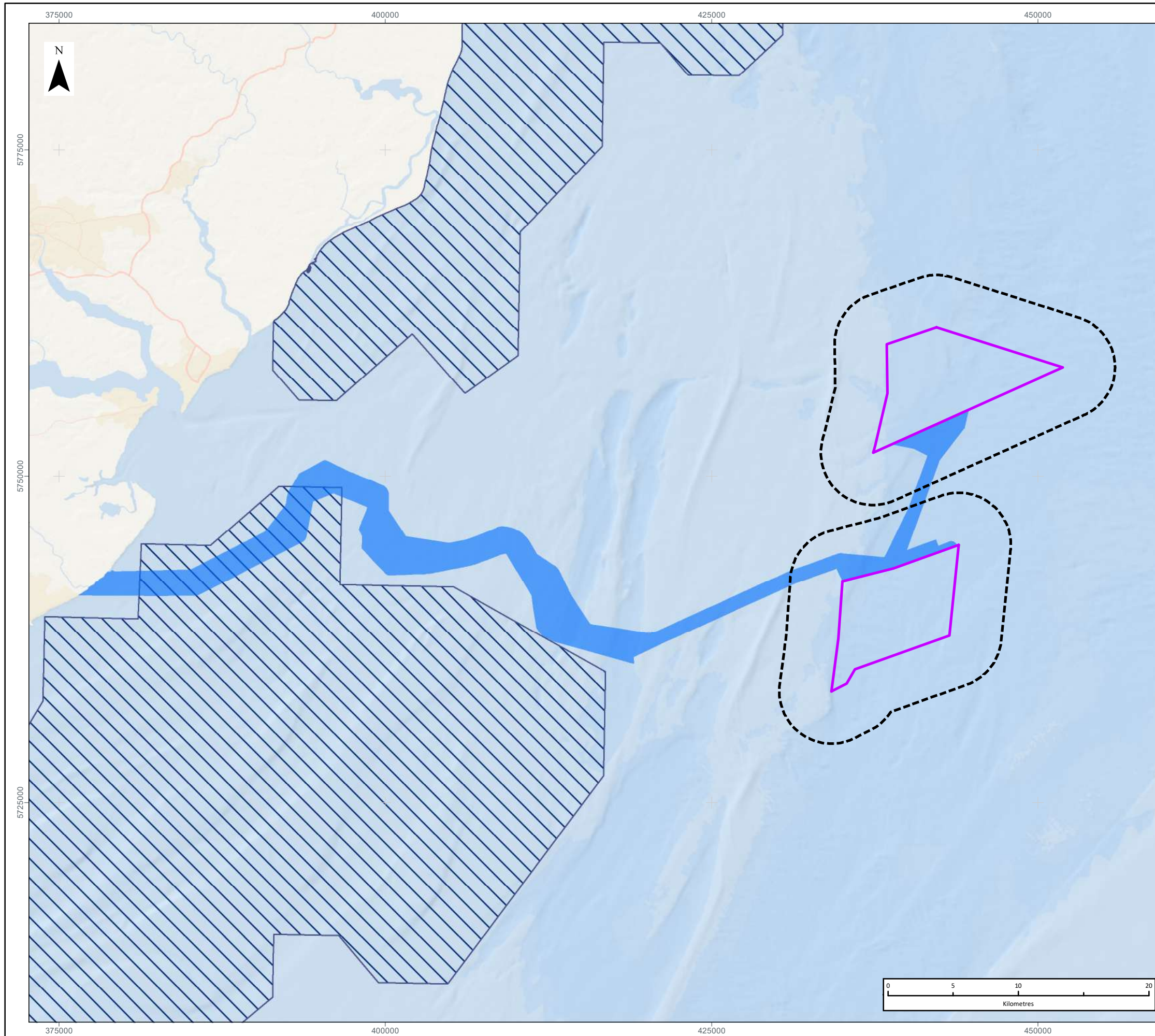
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## 1 INTRODUCTION

This annex provides distribution maps for seabird recorded during the digital aerial surveys of the North and South Five Estuaries sites. Data have been combined across all surveys and are presented by species-specific biological season. Species recorded in low numbers have been combined where appropriate (e.g. small gulls and terns).





**LEGEND**

- Array Areas
- Preferred Offshore Export Cable Route
- Outer Thames Estuary Special Protection Area
- Offshore Ornithology Study Area

Data Source: GoBe, SSE, HIDEF, TCE, JNCC, EEA  
 Contains public sector information licensed under the Open Government Licence v3.0, database right 2023  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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*FIVE ESTUARIES OFFSHORE WINDFARM*

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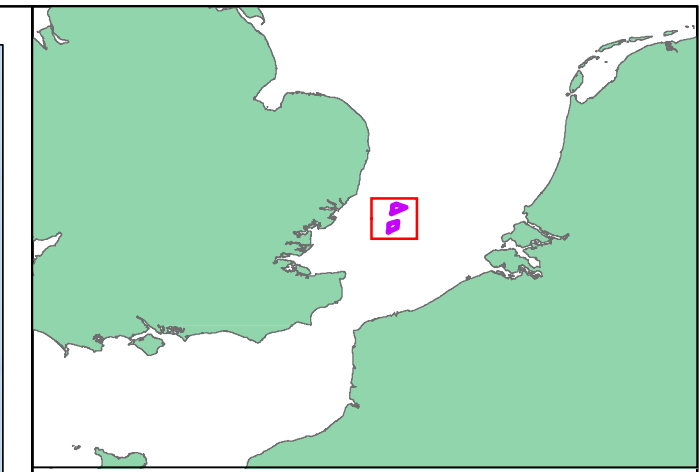
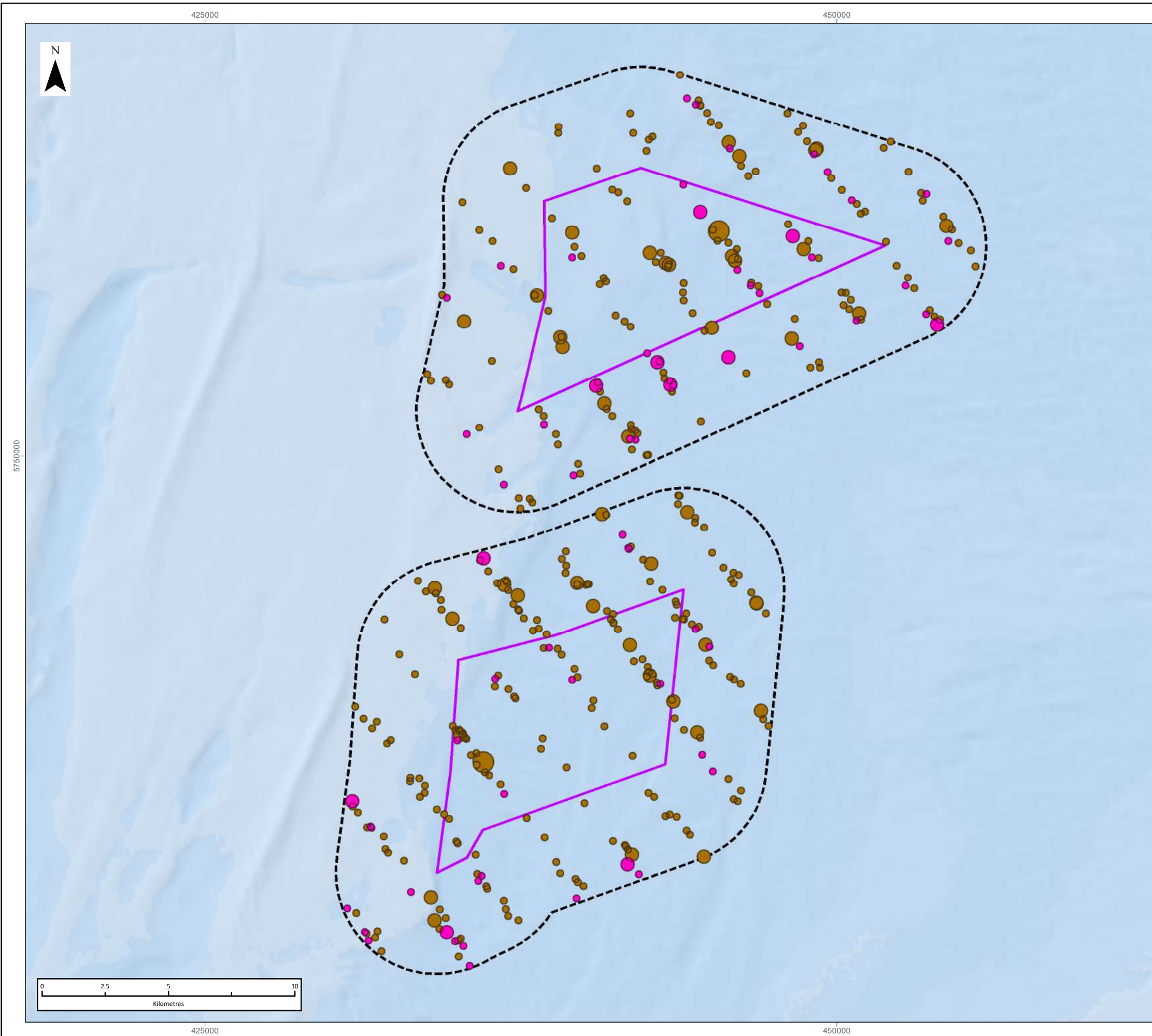
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**DRAWING NUMBER:**  
**2.4.1**

SCALE: 1:300,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N







**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Auk Species Observations by Season

- Breeding
- Non-breeding

Auk Species Observations by Count

- 1
- 2 - 5
- 6 - 12

Data Source: GoBe, SSE, HIDEF, TCE, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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*FIVE ESTUARIES OFFSHORE WINDFARM*

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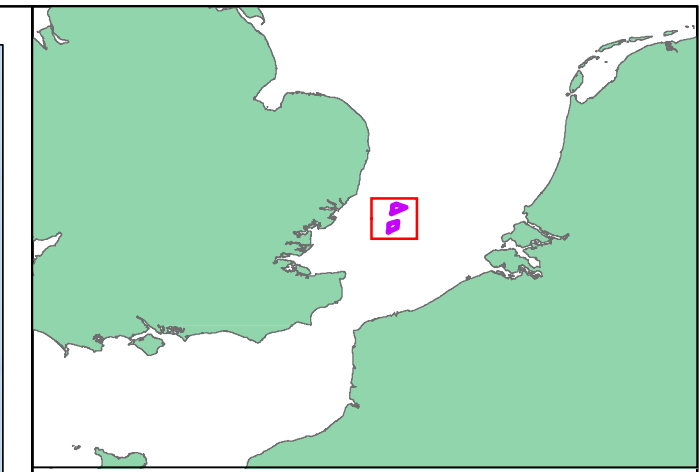
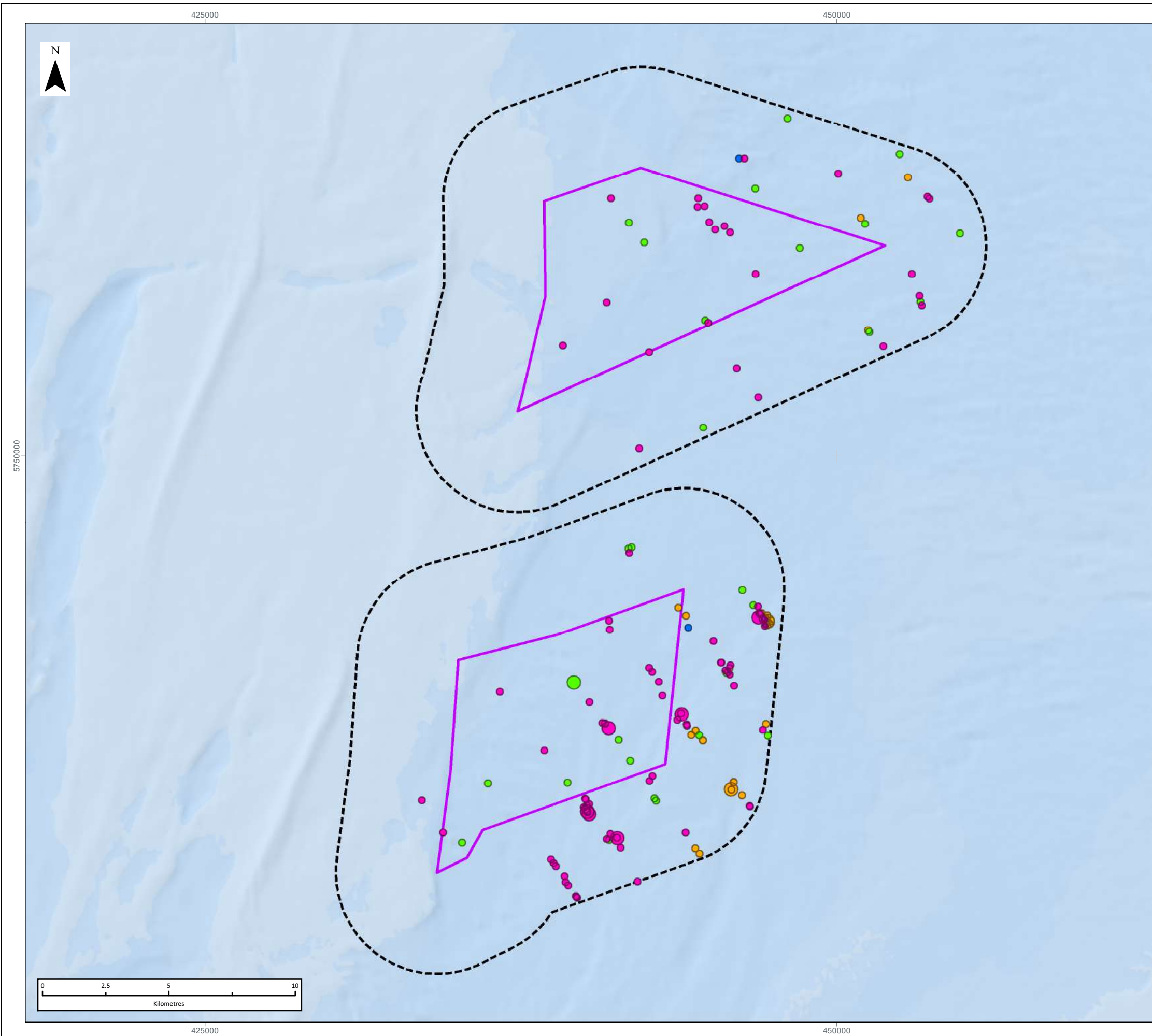
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DRAWING NUMBER:  
**2.4.2**

SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N







**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Fulmar Observations by Season

- Spring Migration
- Breeding
- Autumn Migration
- Winter

Fulmar Observations by Count

- 1
- 2 - 5

Data Source: GoBe, SSE, HIDEF, TCE, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:  
*FIVE ESTUARIES OFFSHORE WINDFARM*

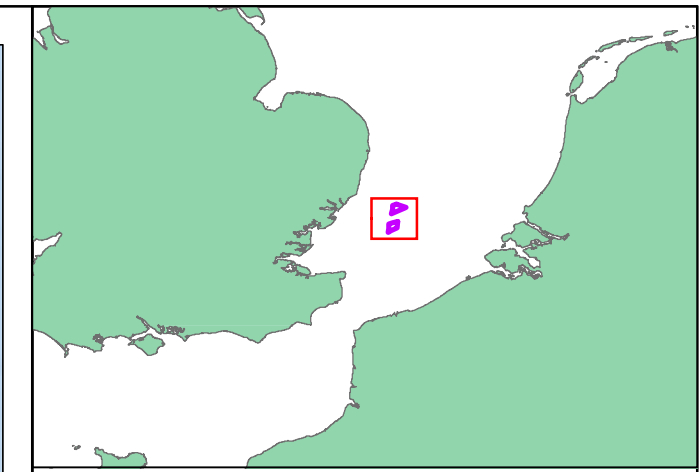
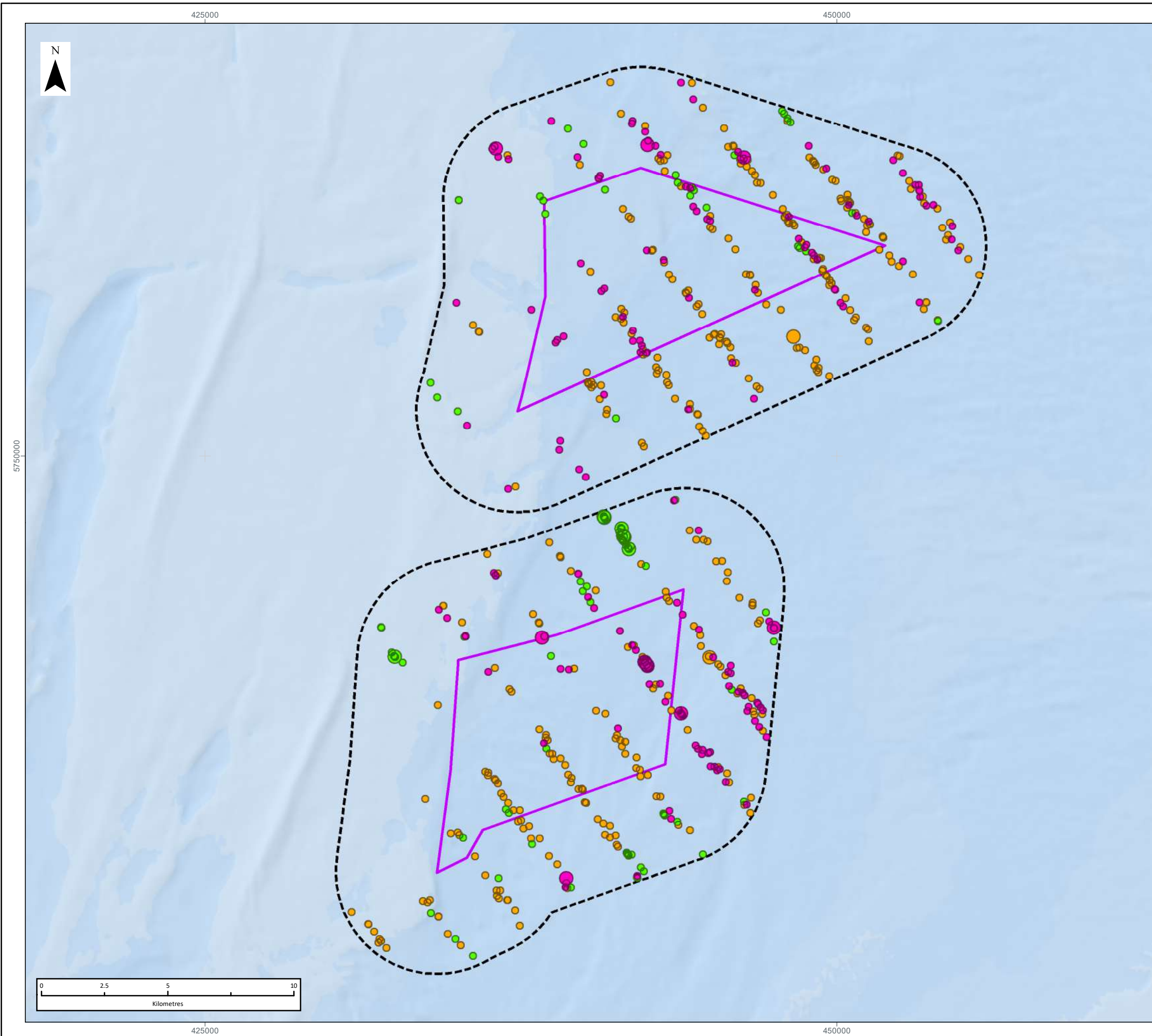
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DRAWING NUMBER:  
**2.4.3**

SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N





**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Gannet Observations by Season

- Spring Migration
- Breeding
- Autumn Migration

Gannet Observations by Count

- 1
- 2 - 5

Data Source: GoBe, SSE, HIDEF, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:  
*FIVE ESTUARIES OFFSHORE WINDFARM*

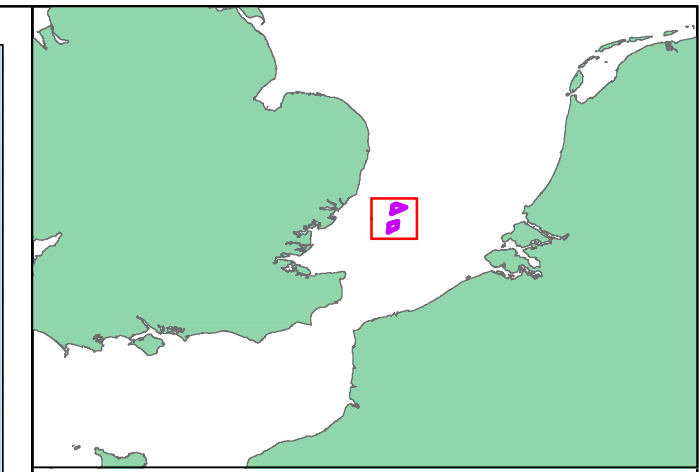
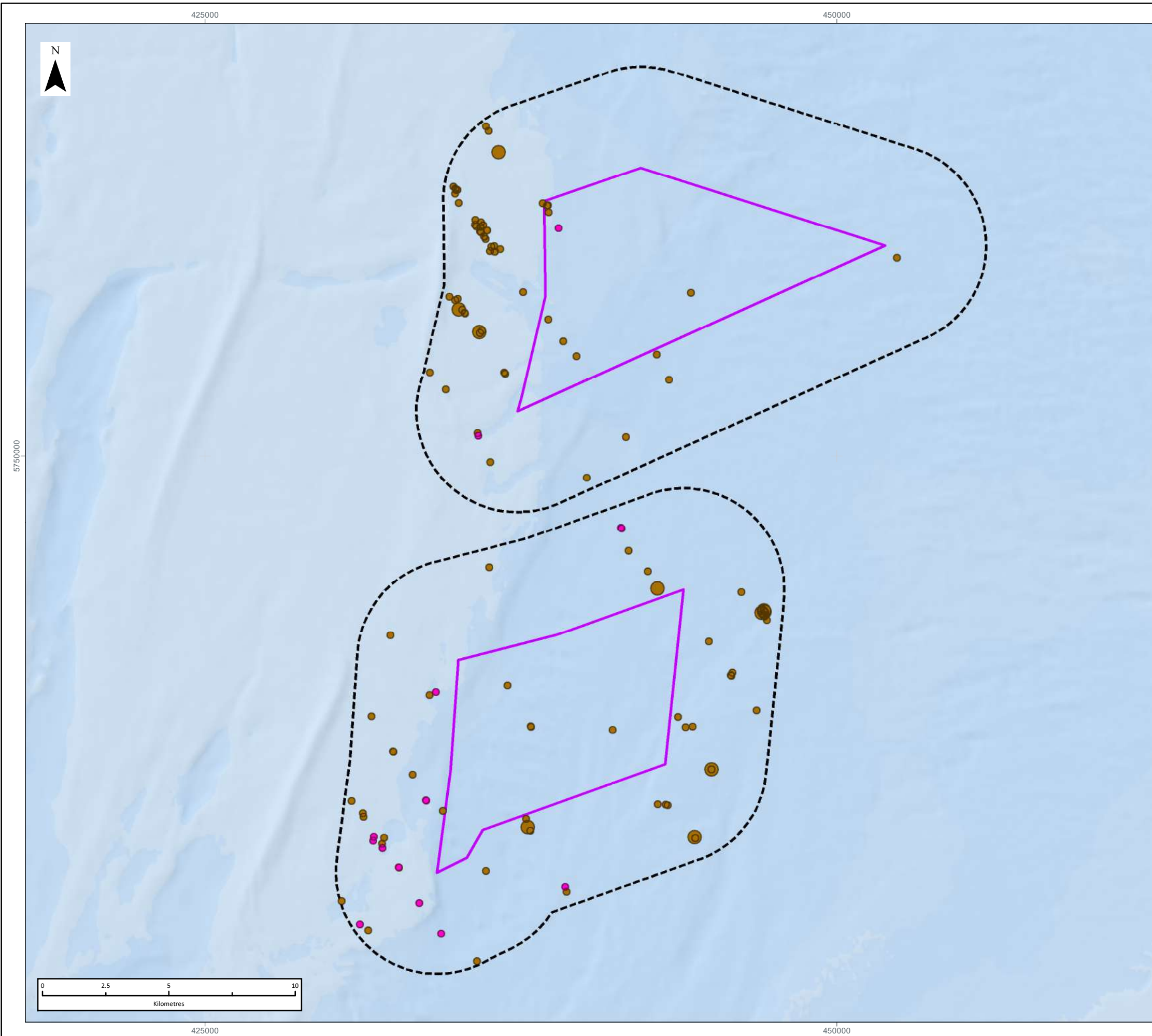
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DRAWING NUMBER:  
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SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N





**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Great Black-backed Gull Observations by Season

- Breeding
- Non-breeding

Great Black-backed Gull Observations by Count

- 1
- 2 - 5

Data Source: GoBe, SSE, HIDEF, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:  
*FIVE ESTUARIES OFFSHORE WINDFARM*

DRAWING TITLE:  
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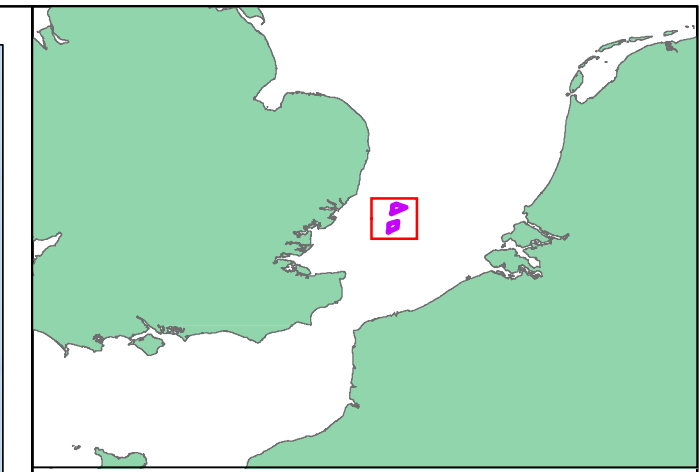
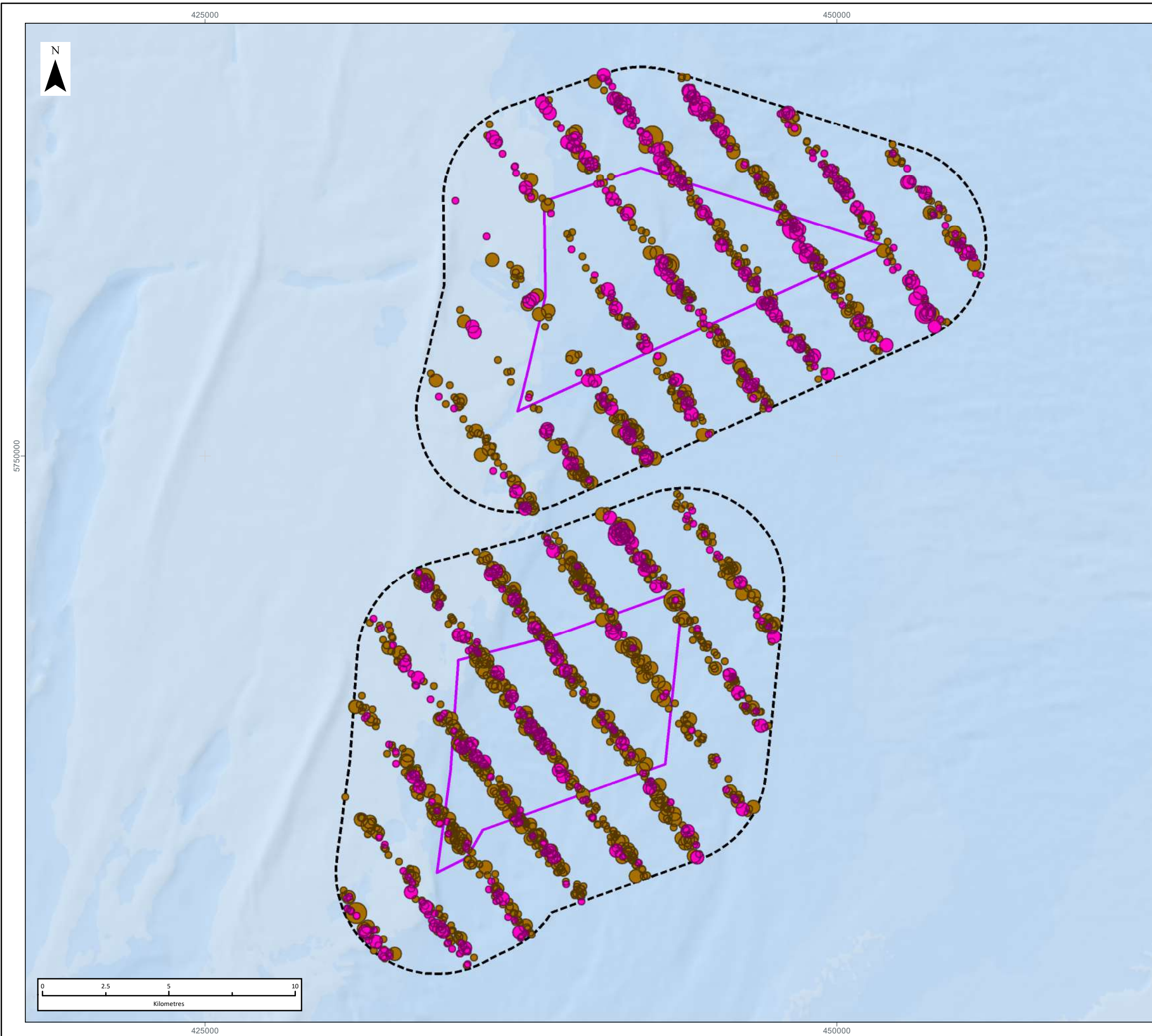
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DRAWING NUMBER:  
**2.4.5**

SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N







**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Guillemot Observations by Season

- Breeding
- Non-breeding

Guillemot Observations by Count

- 1
- 2 - 5
- 6 - 12

Data Source: GoBe, SSE, HIDEF, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:  
*FIVE ESTUARIES OFFSHORE WINDFARM*

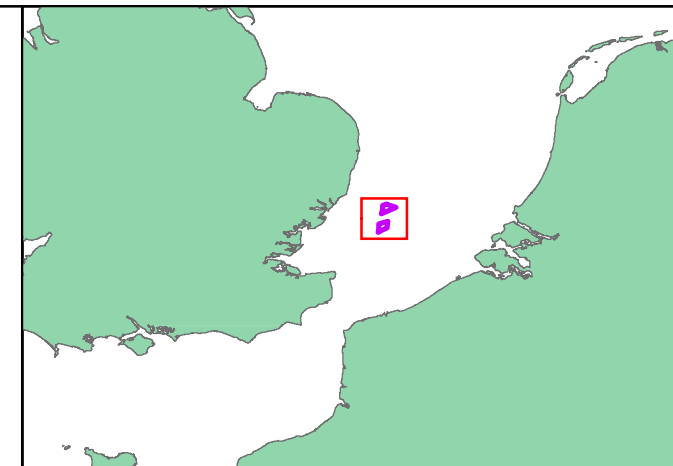
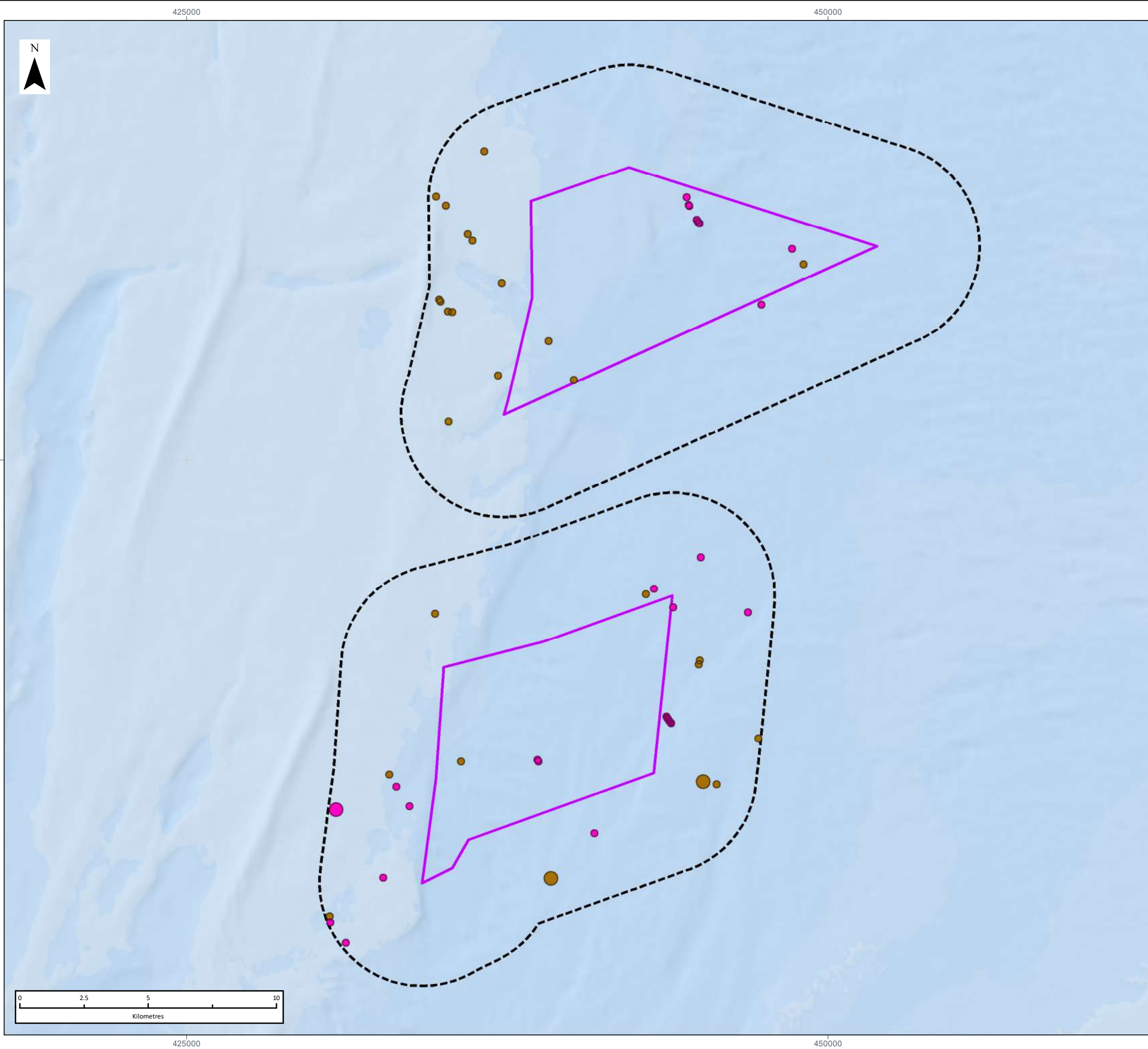
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DRAWING NUMBER:  
**2.4.6**

SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N





**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Herring Gull Observations by Season

- Breeding
- Non-breeding

Herring Gull Observations by Count

- 1
- 2 - 5

Data Source: GoBe, SSE, HIDEF, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

**PROJECT TITLE:**  
*FIVE ESTUARIES OFFSHORE WINDFARM*

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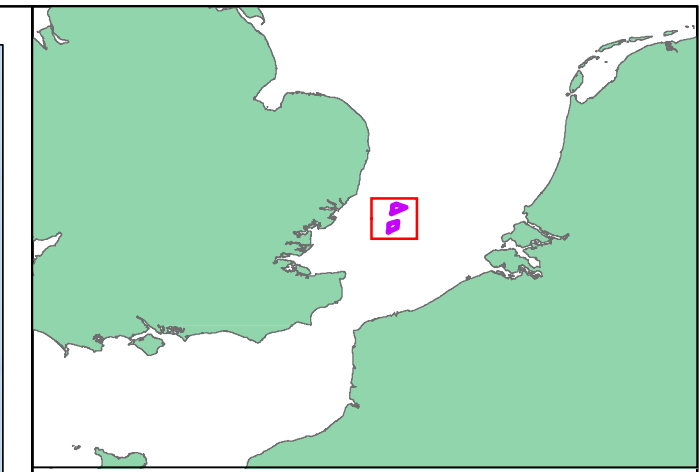
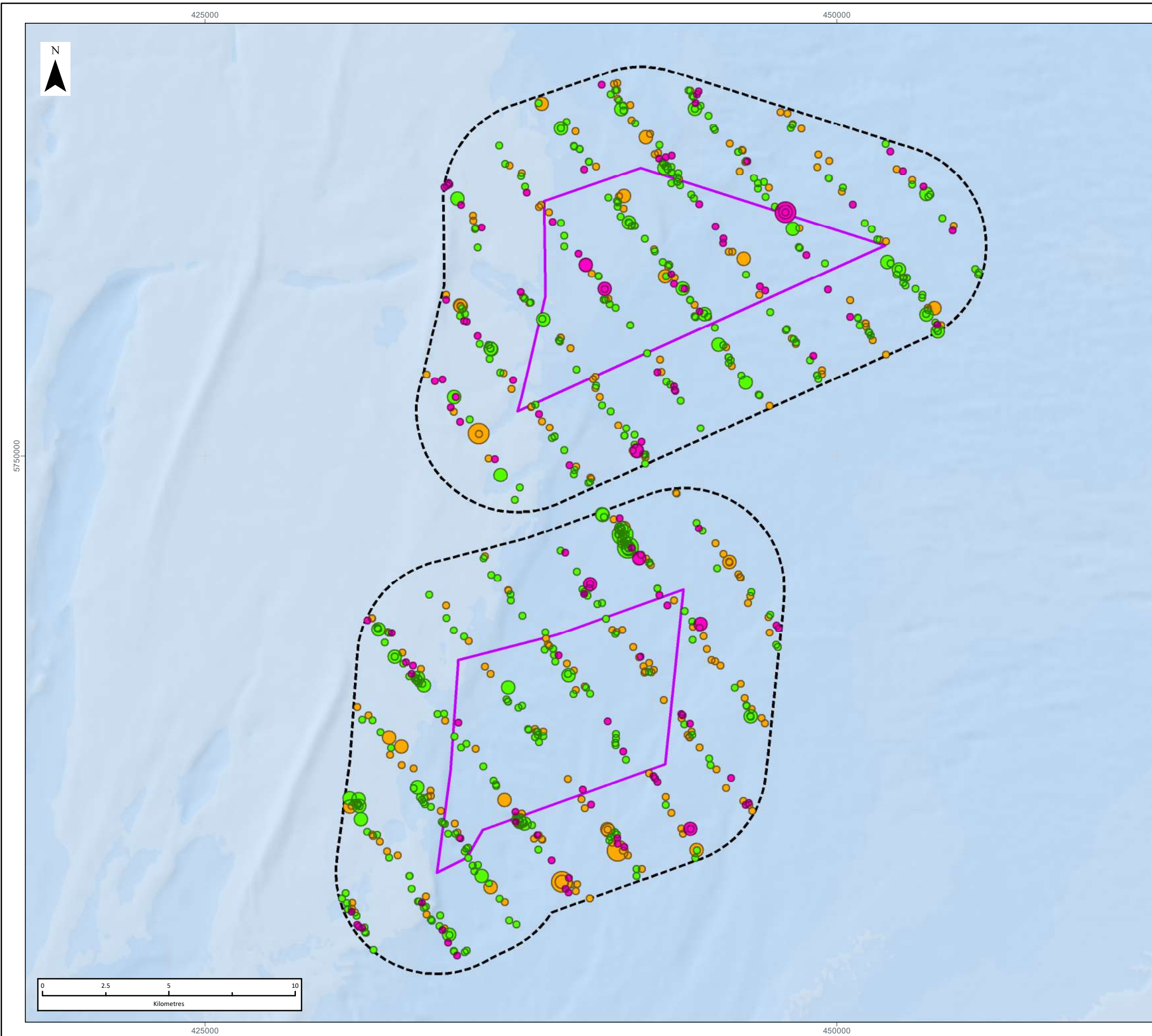
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**DRAWING NUMBER:**  
**2.4.7**

SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N







**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Kittiwake Observations by Season

- Spring Migration
- Breeding
- Autumn Migration

Kittiwake Observations by Count

- 1
- 2 - 5
- 6 - 12

Data Source: GoBe, SSE, HIDEF, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:  
*FIVE ESTUARIES OFFSHORE WINDFARM*

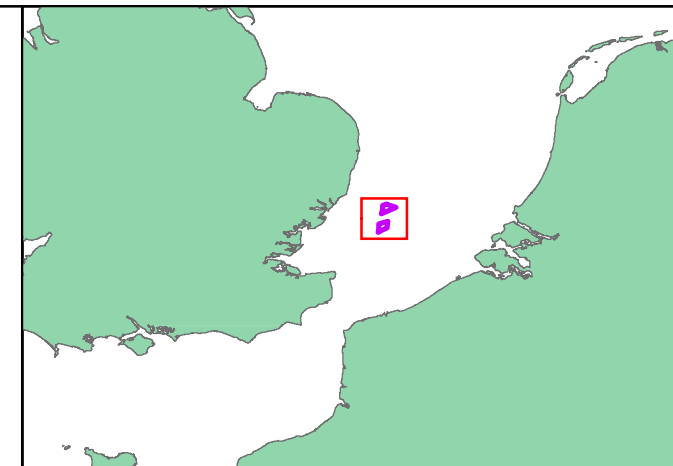
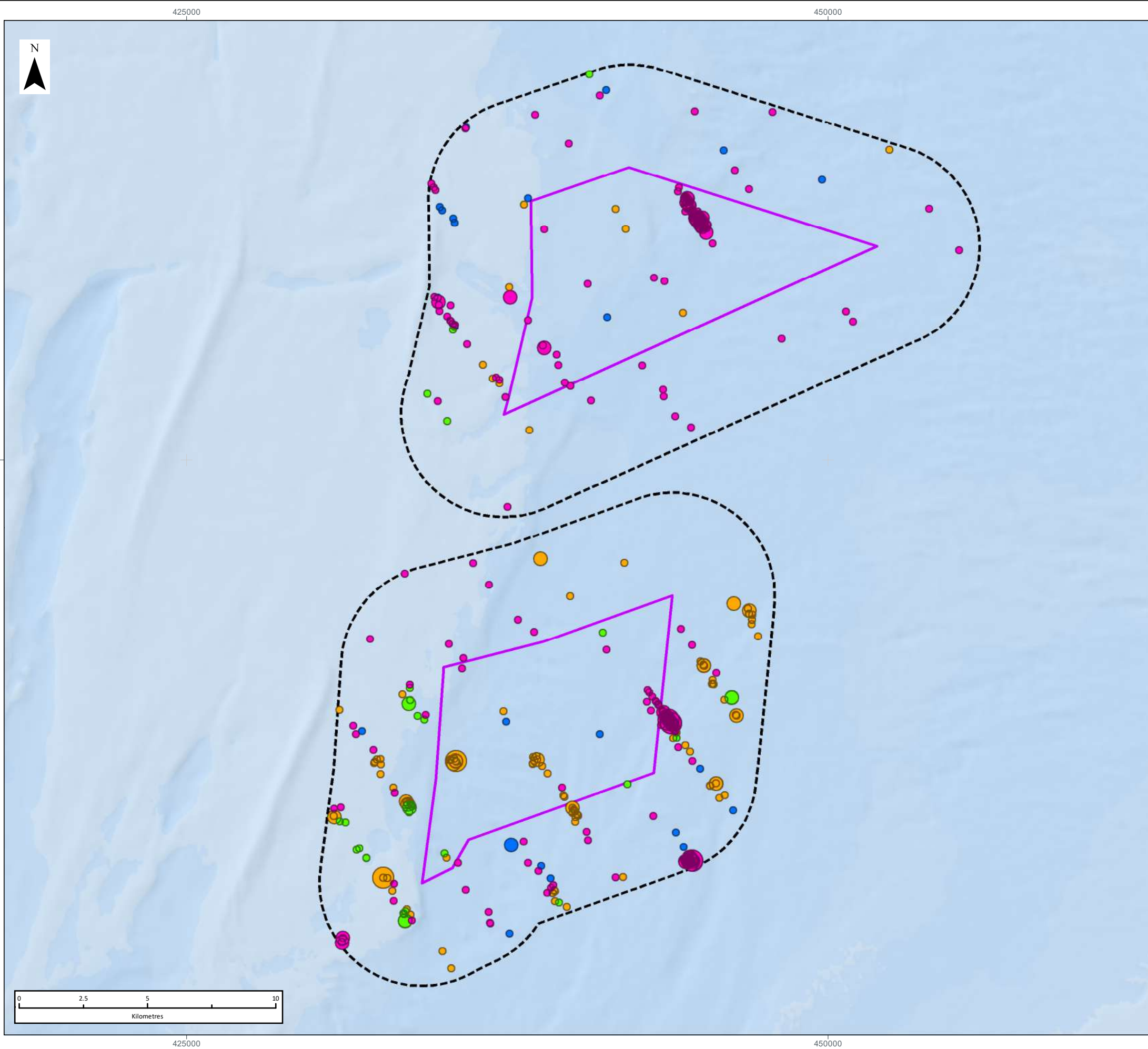
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DRAWING NUMBER:  
**2.4.8**

SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N





**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Lesser Black-backed Gull Observations by Season

- Spring Migration
- Breeding
- Autumn Migration
- Winter

Lesser Black-backed Gull Observations by Count

- 1
- 2 - 5
- 6 - 12

Data Source: GoBe, SSE, HIDEF, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:  
*FIVE ESTUARIES OFFSHORE WINDFARM*

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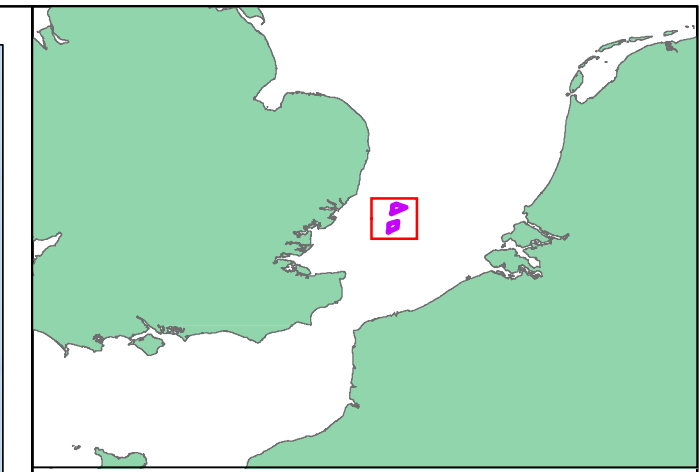
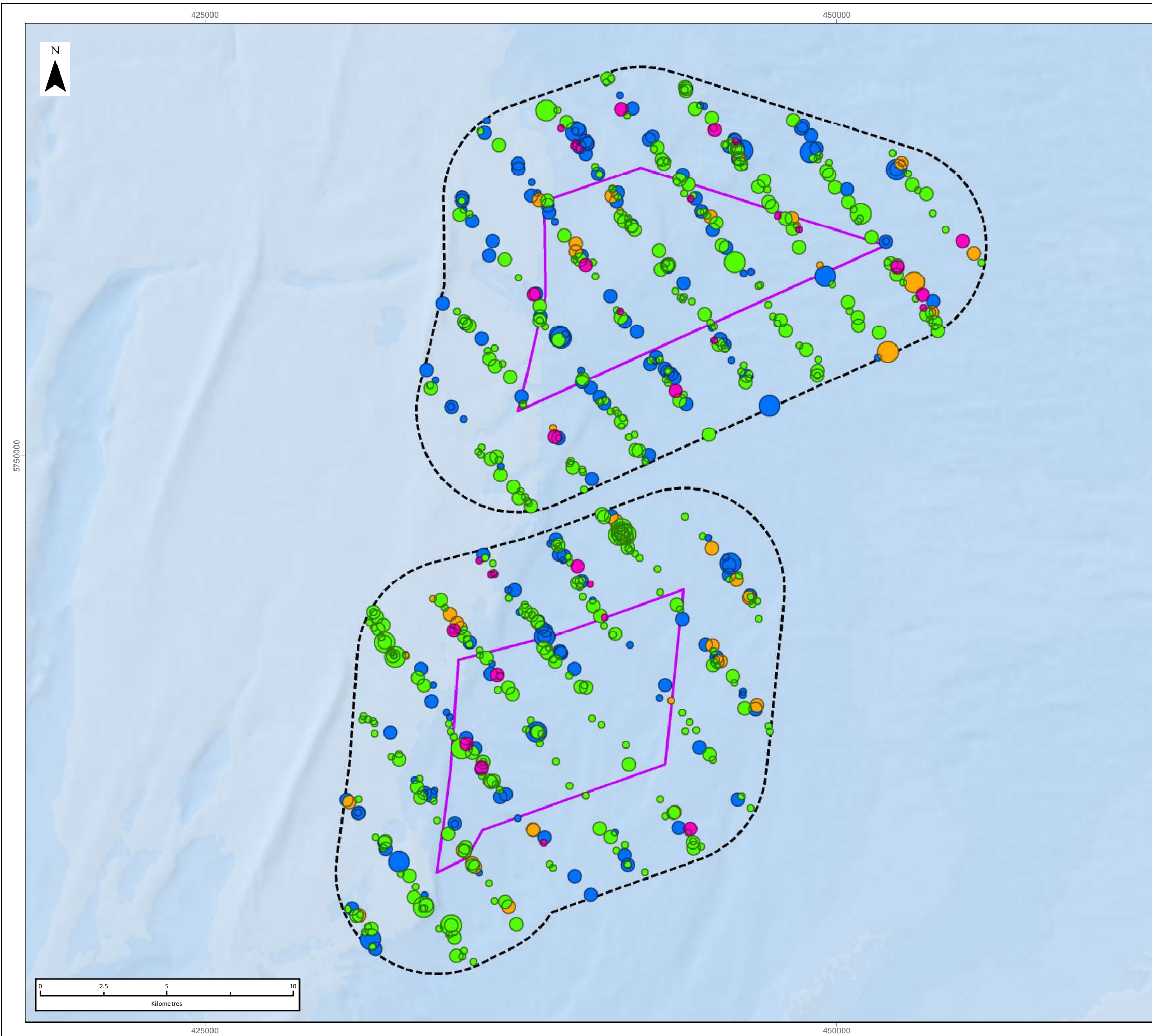
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DRAWING NUMBER:  
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SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N







**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Razorbill Observations by Season

- Spring Migration
- Breeding
- Autumn Migration
- Winter

Razorbill Observations by Count

- 1
- 2 - 5
- 6 - 12

Data Source: GoBe, SSE, HIDEF, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:  
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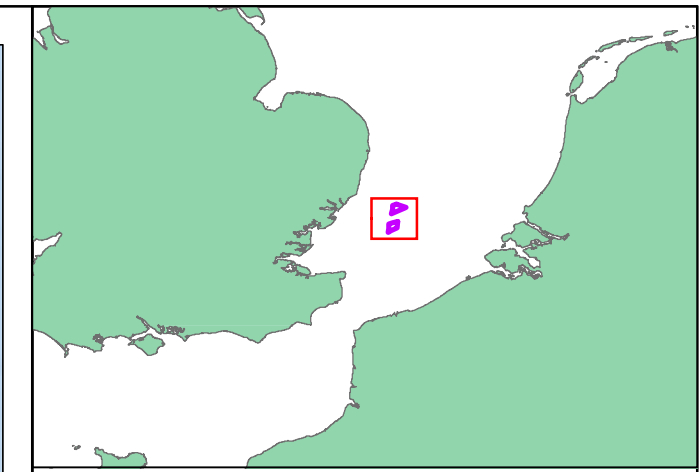
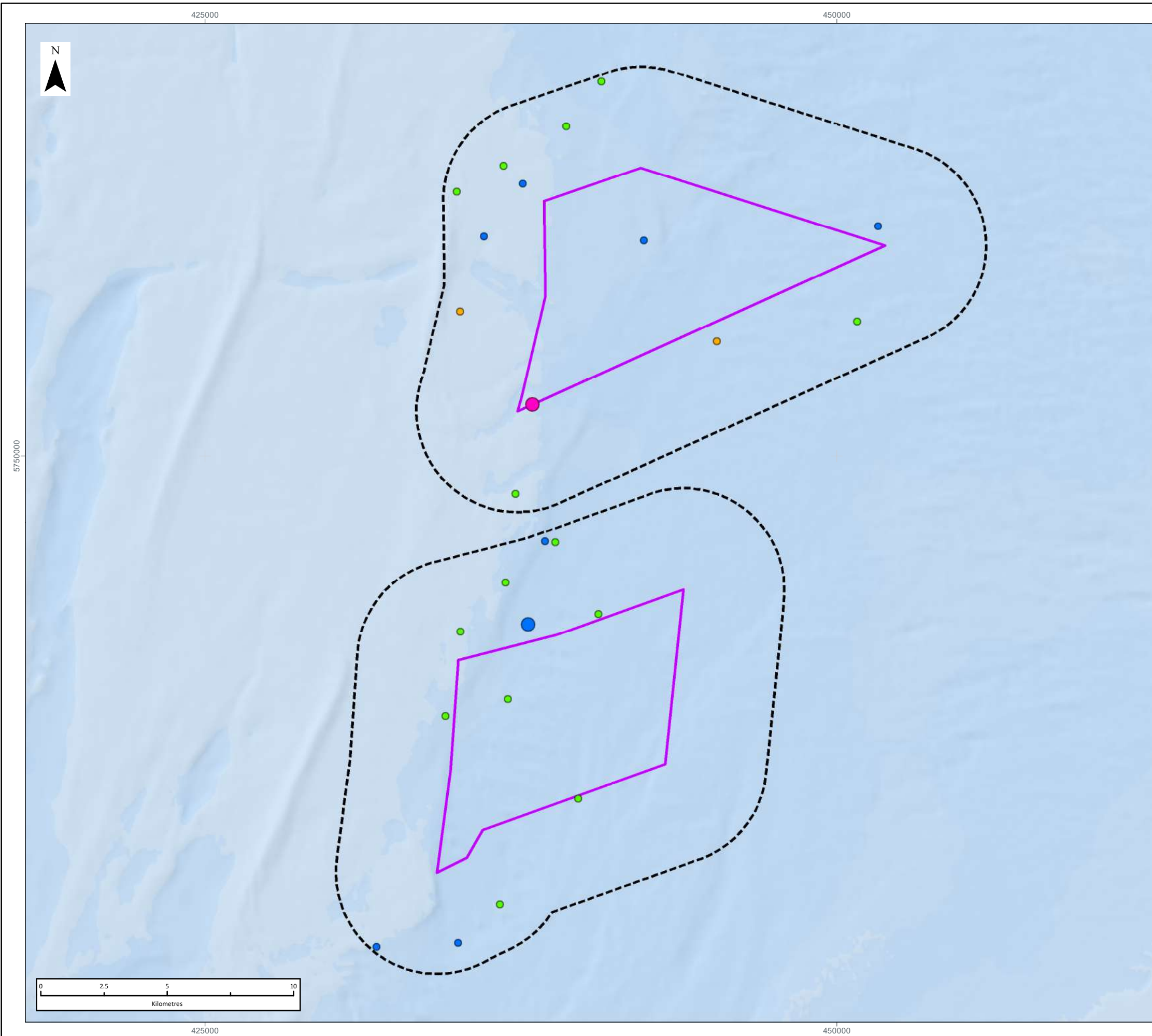
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DRAWING NUMBER:  
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SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N





**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

Red-throated Diver Observations by Season

- Spring Migration
- Breeding
- Autumn Migration
- Winter

Red-throated Diver Observations by Count

- 1
- 2 - 5

Data Source: GoBe, SSE, HIDEF, EEA  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

PROJECT TITLE:  
*FIVE ESTUARIES OFFSHORE WINDFARM*

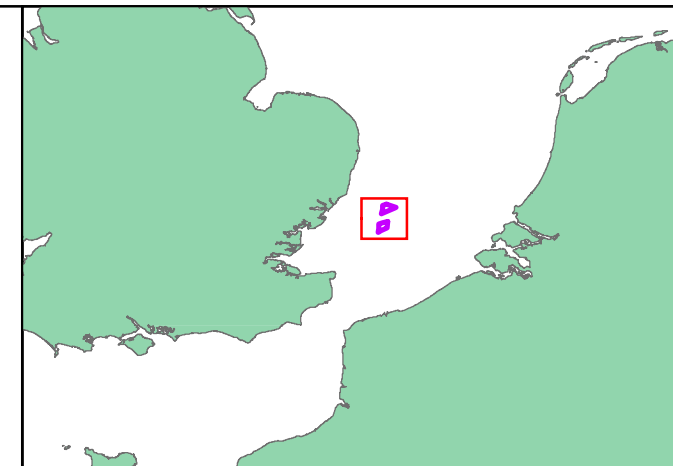
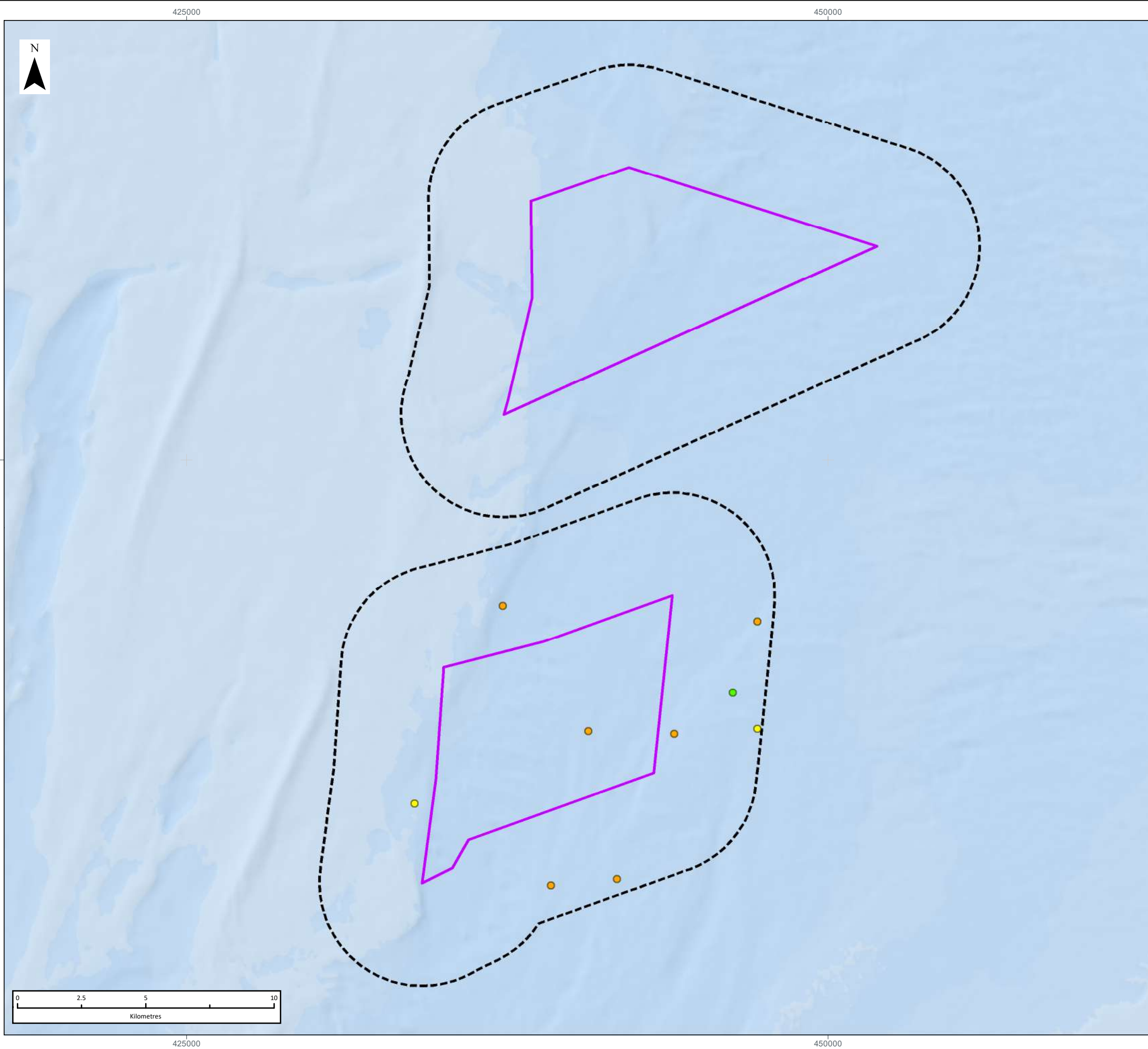
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DRAWING NUMBER:  
**2.4.11**

SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N





**LEGEND**

- Array Areas
- Offshore Ornithology Study Area
- Arctic Skua Observations by Season
  - Autumn Migration
- Great Skua Observations by Season
  - Spring Migration
  - Autumn Migration
- Observations by Count
  - 1

Data Source: GoBe, SSE, HIDEF, TCE, EEA  
 database right 2023  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

**PROJECT TITLE:**  
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 2019 to 2021**

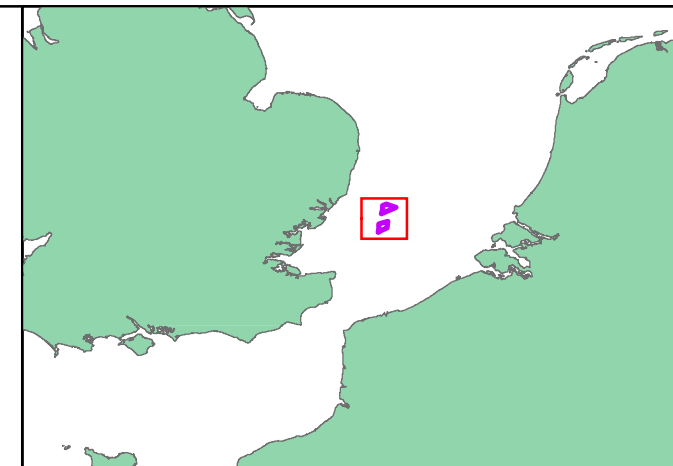
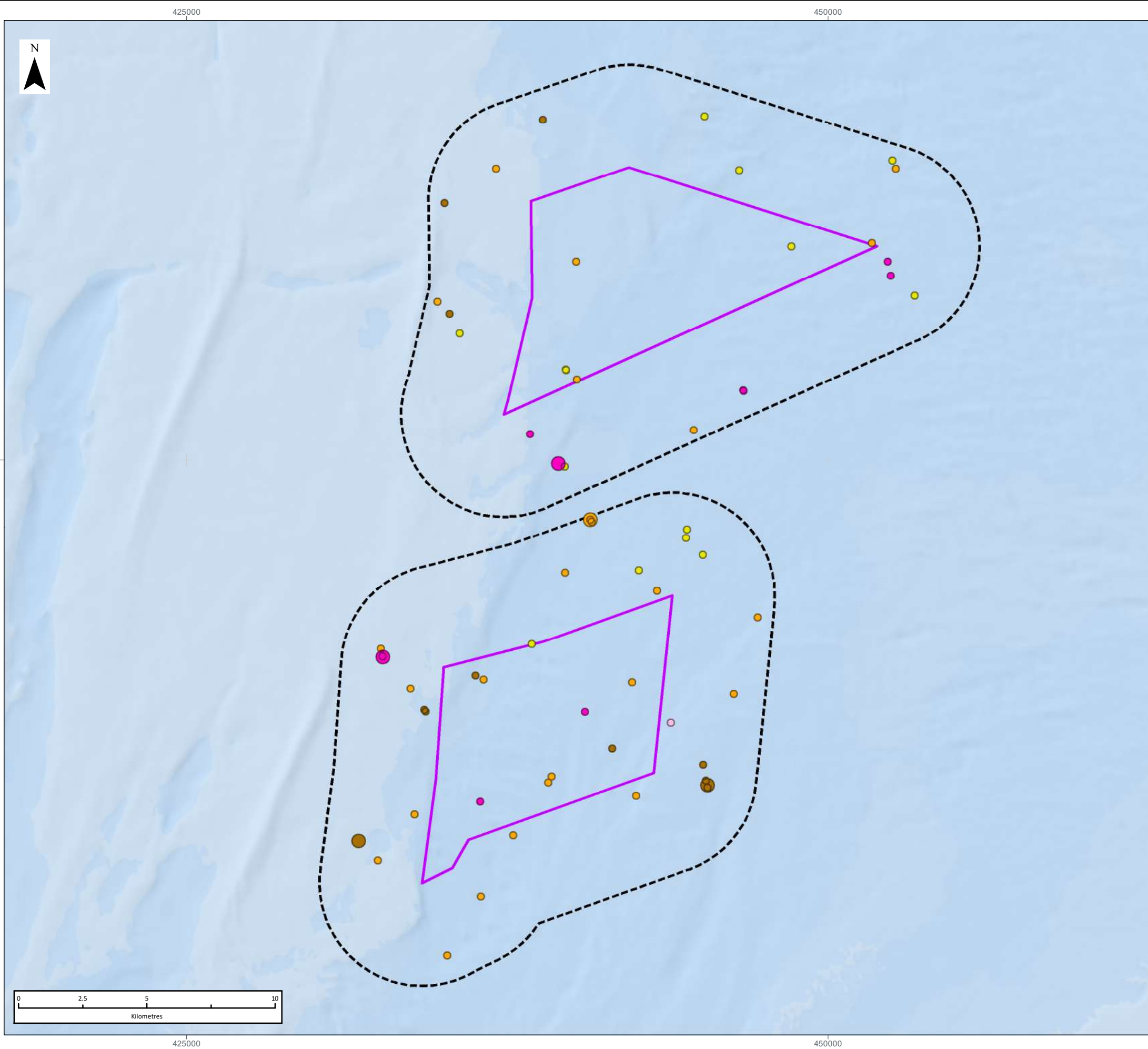
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SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N







**LEGEND**

- Array Areas
- Offshore Ornithology Study Area

**Black-headed Gull Observations by Season**

- Breeding
- Non-breeding

**Common Gull Observations by Season**

- Breeding
- Non-breeding

**Little Gull Observations by Season**

- Non-breeding

**Observations by Count**

- 1
- 2 - 5

Data Source: GoBe, SSE, HIDEF, TCE, EEA  
 database right 2023  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

**PROJECT TITLE:**  
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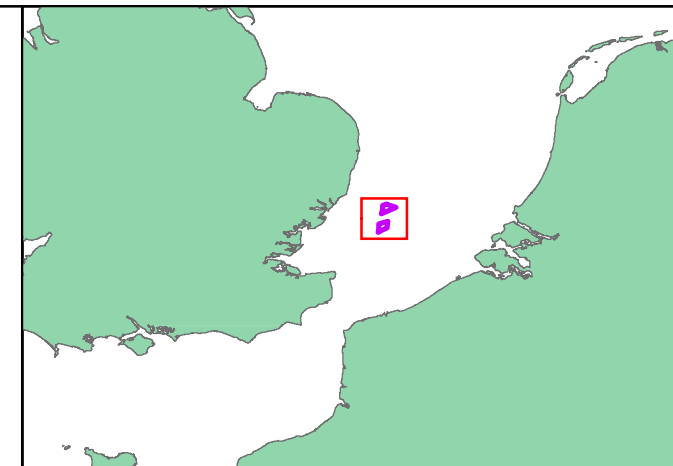
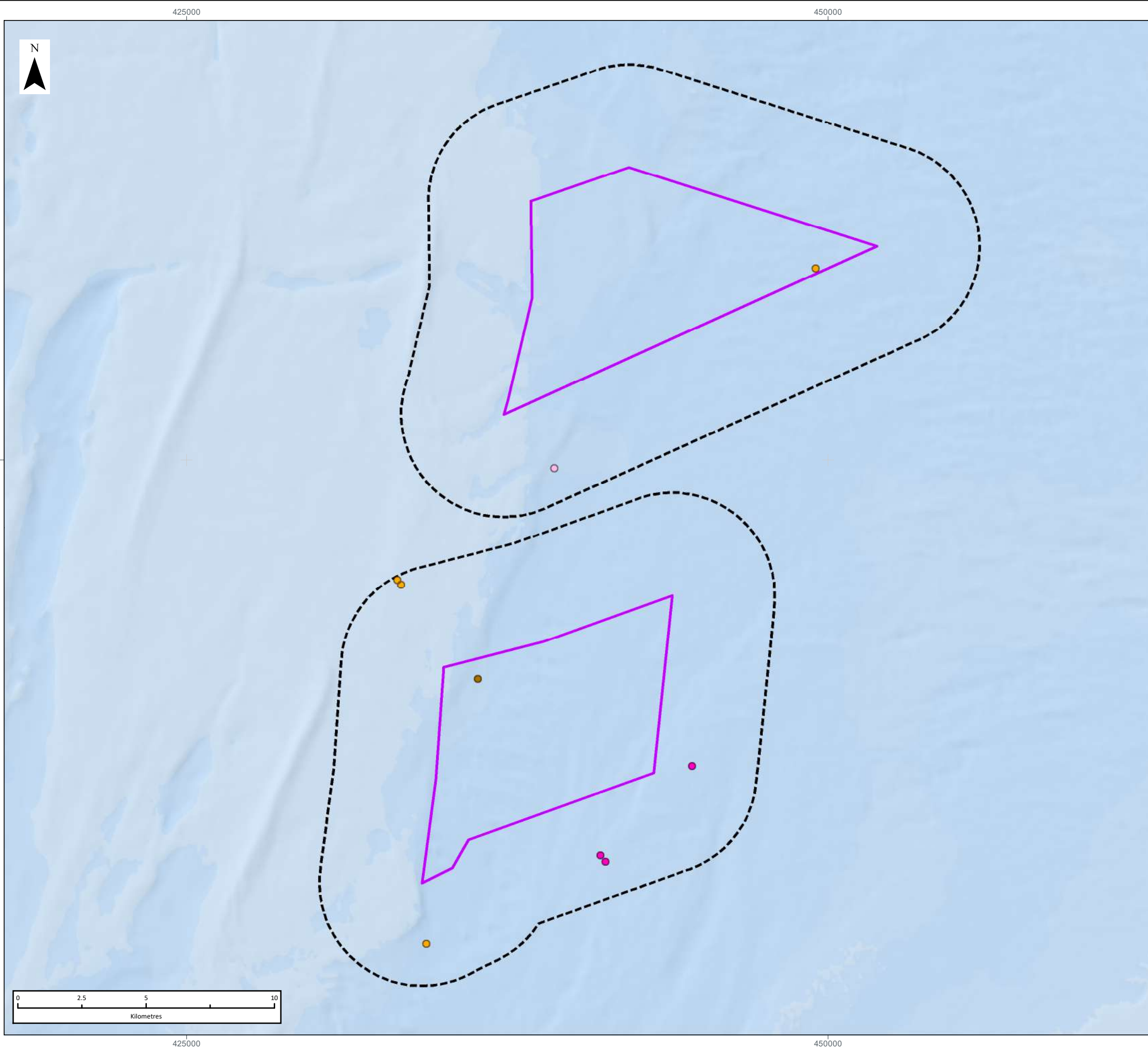
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**DRAWING NUMBER:**  
**2.4.13**

SCALE: 1:155,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM31N





**LEGEND**

- Array Areas
- Offshore Ornithology Study Area
- Common Tern Observations by Season
- Breeding
- Autumn Migration
- Sandwich Tern Observations by Season
- Breeding
- Non-breeding
- Observations by Count
- 1

Data Source: GoBe, SSE, HIDEF, TCE, EEA  
 database right 2023  
 Basemap: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

**PROJECT TITLE:**  
*FIVE ESTUARIES OFFSHORE WINDFARM*

**DRAWING TITLE:**  
**Tern Species Observations:  
 2019 to 2021**

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ESTUARIES  
OFFSHORE WIND FARM



PHONE  
EMAIL  
WEBSITE  
ADDRESS

COMPANY NO

0333 880 5306

[fiveestuaries@rwe.com](mailto:fiveestuaries@rwe.com)

[www.fiveestuaries.co.uk](http://www.fiveestuaries.co.uk)

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Whitehill Way, Swindon, SN5 6PB  
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