Outer Dowsing Offshore Wind

2025 South West England Auk Monitoring

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Acronyms & Definitions

Abbreviations / Acronyms

Abbreviation / Acronym	Description
AEoI	Adverse Effect on Integrity
ANS	Artificial Nesting Structure
EPP	Evidence Plan Process
FFC	Flamborough and Filey Coast
GT R4	The Applicant. The special project vehicle created in partnership between Corio Generation (and its affiliates), Gulf Energy Development and TotalEnergies
HRA	Habitats Regulations Assessment
ODOW	Outer Dowsing Offshore Wind (the Project)
ORCP	Offshore Reactive Compensation Platform
RIAA	Report to Inform Appropriate Assessment
SPA	Special Protected Area

Terminology

Term	Definition
The Applicant	GTR4 Limited (a joint venture between Corio Generation (and its affiliates), TotalEnergies and Gulf Energy Development), trading as Outer Dowsing Offshore Wind
Compensatory Measures	Stage 3 of the Habitats Regulations Assessments (HRA; see Derogation) involves the development of compensation measures for any features which the Report to Inform Appropriate Assessment (RIAA) was unable to conclude no adverse effect on integrity on.
Derogation	Stage 3 of the HRA which is triggered once it is determined that you cannot avoid adversely affecting the integrity of a designated site. Involves assessing if alternative solutions are available to achieve the same goals as the Project, if there are imperative reasons of overriding public interest, and if compensatory measures will be required.
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.
Habitat Regulations Assessment	A process which helps determine likely significant effects and (where appropriate) assesses adverse impacts on the integrity of European conservation sites and Ramsar sites. The process consists of up to four stages of assessment: screening, appropriate assessment, assessment of alternative solutions and assessment of imperative reasons of over-riding public interest (IROPI) and compensatory measures.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Landfall	The location at the land-sea interface where the offshore export cables and fibre optic cables will come ashore.
Outer Dowsing Offshore Wind (ODOW)	The Project.
The Project	Outer Dowsing Offshore Wind including proposed onshore and offshore infrastructure.

Reference Documentation

Document Number	Title
7.1 (REP6-028)	Report to Inform Appropriate Assessment
7.5	Derogation Case
7.6.6 (REP6-052)	Without Prejudice Additional Measures for Compensation of Guillemot and Razorbill

1 Introduction

1.1 Background

1. GT R4 Limited (trading as Outer Dowsing Offshore Wind) hereafter referred to as the 'Applicant', is proposing to develop Outer Dowsing Offshore Wind ("the Project").
2. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm) located approximately 54km from the Lincolnshire coastline, export cables to landfall, Offshore Reactive Compensation Platforms (ORCPs), onshore cables, connection to the electricity transmission network, ancillary and associated development and areas for the delivery of up to two Artificial Nesting Structures (ANS) and the creation of a biogenic reef (if these compensation measures are deemed to be required by the Secretary of State) (see Volume 1, Chapter 3: Project Description (REP5-009) for full details).
3. The Report to Inform Appropriate Assessment (RIAA)(REP6-028) has concluded that there would be no Adverse Effect on Integrity (AEoI) due to displacement to the common guillemot (*Uria aalge*; hereafter 'guillemot'), and razorbill (*Alca torda*) (as individual and seabird assemblage) features of the Flamborough and Filey Coast (FFC) Special Protection Area (SPA) or to the guillemot feature of the Farne Islands SPA both when considering the Project alone and in combination with other plans or projects. Natural England have concluded no AEoI for the Project alone but cannot rule out AEoI for guillemot and razorbill (individually or as an assemblage feature) in-combination with other plans or projects at the FFC SPA and for guillemot in-combination at the Farne Islands SPA.
4. Following consultation with Natural England and other relevant consultees through the Evidence Plan Process (EPP), the Project has however provided a 'without prejudice' derogation case for both guillemot and razorbill in relation to the FFC SPA (and for the assemblage) and for the Farne Islands SPA in relation to guillemot; alongside this, a number of options for Project alone and collaborative compensation measures have been developed. In the event that the Secretary of State determines potential for AEoI and considers that compensation is required, the Project has provided sufficient confidence that compensation measures are available, securable and deliverable.
5. One option being developed for both Project alone and collaborative delivery of compensation for both species is disturbance reduction (with potential for habitat management and predator eradication where appropriate, in addition to disturbance reduction) across a network of colonies in Devon and Cornwall. Potential locations were identified based on a declining population, their proximity to built-up areas or popular tourism areas or if it was likely to experience higher human presence.

6. In 2024 the shortlisted sites were monitored through the breeding season (May to July) in order to capture data on anthropogenic disturbance, and the response to disturbance and any other pressures, including avian disturbance and predation. A summary of these data is presented in Without Prejudice Additional Measures for Compensation of Guillemot and Razorbill (REP6-052). Furthermore, the number of individuals was recorded for each survey, along with data on the number of dependant young present, allowing a measure of productivity to be made. Surveys were repeated during the 2025 breeding season at the same sites as where disturbance monitoring took place in 2024, along with a small number of additional sites that were surveyed in order determine their suitability as sites for implementation of measures or control sites, which may serve as a comparison to assess the effectiveness of measures (Armed Knight, and The Sisters). As such, no surveys were carried out at Cow and Calf or the Ore Stone in 2025.
7. Monitoring during 2025 focussed on the collection of data from accessible sites and as such, the suite of monitored sites differed slightly from those surveyed in 2024. Survey methods were broadly maintained from 2024 into 2025. However, at Berry Head, more intensive productivity monitoring was introduced in order use methods aligning with those published in Walsh *et al.,* 1995 in order to assess guillemot productivity at this site.
8. This document provides a summary of the 2025 breeding season surveys of guillemot and razorbill colonies in the southwest of England.

2 Survey methodology

9. Ten sites were monitored through the 2025 guillemot and razorbill breeding season (May to July). Table 3-1Surveys were conducted by specialist ornithologists with survey effort described in Table 3-1. The focus of this monitoring was to collect data on:
   - Disturbance, and the response of the birds to disturbance;
   - Colony size and the productivity of the birds;
   - Vegetation encroachment into suitable habitat, or other incidences of habitat limitation; and
   - Recording observations of predation, and the presence of any predators at colonies.
10. Before commencing monitoring the observer would also note the start and end time on a watch and record the weather conditions (wind force and direction, sunny/overcast, precipitation). Weather conditions are important to record as they have the capacity to influence the observers ability to record data (for example strong winds or heavy rain would make observation and recording more difficult, especially of more distant colonies). In addition, where monitoring anthropogenic disturbance, especially where disturbance from watercraft are a key focus, weather conditions have the capacity to influence the frequency of disturbance and the nature of the disturbance (for example vessels visiting seabird colonies may make closer approaches in calm weather as safety is less of a concern). Weather conditions recorded during surveys where disturbance data were collected are presented in Annex 1. Colonies were zoned in order that disturbance and its impacts could be measured spatially within a colony, as well as between colonies. For disturbance surveys, day-long visits were prioritised for days where there was likely to be a peak for anthropogenic disturbances (bank holidays and weekend days. In addition, evening visits were made to a small number of colonies (Hell's Mouth and North Cornwall 3) to assess levels of disturbance after working hours during the week.

2.1 Disturbance surveys

11. Vantagepoints for each site were scoped in the preliminary 2024 surveys and these were used again for the 2025 surveys. The monitoring approach was the same as was utilised in 2024 (see Without Prejudice Additional Measures for Compensation of Guillemot and Razorbill (REP6-052) for a summary of the methods) with each survey lasting a duration of eight hours. During the survey, the observers watched the colony and surrounding area recording anything which could be perceived as an anthropogenic or natural disturbance. Each disturbance event was noted separately, for example, a group of kayakers, the number of kayakers was noted and recorded as a single disturbance event.
12. The following disturbance stimuli codes were used.

FB – fishing boat	**SP** - stand-up paddleboard	**WD** – walker with dog
SC – sailing craft	**OW** – other watercraft	**UD** – uncontrolled dog
KK – kayak	**W.** – walker	**BW** – birdwatcher

V. – vehicle

BI - other avian aggression

Oth – other (describe)

RP – raptor

MA – mammal

C. – Corvid

WE – weather

13. An approximate duration of each disturbance event was recorded, and an approximate minimum distance between the source of disturbance and each identified zone was estimated. The distance recorded reflected the distance to the zone, rather than to the cliff, therefore a zone higher up the cliff would be further from a pressure on the water than a zone lower down. While disturbance events occurred, the observers recorded the response of birds in each of the predefined zones. The maximum level of disturbance response seen was recorded for each zone using the level of effect described below:

1 – no effect;

2 – Alert: head(s) up by bird(s) at nest sites;

3 – small movement on cliff (<10m; not flying);

4 – flushed off cliffs for <30 seconds; and

5 – flushed off cliffs for >30 seconds.

2.2 Colony size and productivity surveys

14. During each visit, whole colony counts of guillemot and razorbill were made where this could be observed, and where not, plots within the visible extent of the colony were counted. Colonies were also divided into plots, with the number of birds in each plot noted. Plots were defined to allow for simpler monitoring at large colonies such as Berry Head, but also throughout the suite of sites in order that comparisons of productivity between more and less disturbed plots could be made. Plots were delineated using well defined cliff face or other landscape features in order to maintain consistency of plot monitoring between years and between observers. At Berry Head, where more intense monitoring of productivity was implemented, the number and location of eggs and chicks was noted in each of their respective plots. Productivity was expressed as the maximum young seen in a given zone, divided by the number of pairs, derived from the maximum count of adults from that plot multiplied by 0.67, the standard rate used when converting counts of individuals into breeding pairs for auks (Harris *et al.,* 1989, Lloyd 1973, and Lloyd 1976). Wider colony productivity was calculated from the summed data from all of the plots, rather than taking the average of the plot productivities. All monitoring was carried out between May 22nd and July 11th to focus the period between egg laying and fledging.

2.3 Ad hoc data collection

15. Additional to the colony size, productivity and disturbance observers noted the following with regard to predators:

- Species and max number present
- Any response from the colony to the predators presence
- Any attempts to predate either adults, eggs or young

16. Observers also recorded any other potential hindrance to breeding (e.g. where drainage over the cliff makes nesting impossible, or encroachment of vegetation) on each visit.

3 Results

3.1 Survey effort

17. The survey effort for each site is described in Table 3-1, presenting a detailed breakdown of visits, observers, and the type of data collected. A total of 32 surveys were completed across all colonies from May to June 2025. Berry Head visits occurred more frequently, averaging a visit every three days, whereas the other sites were visited at minimum three times over the breeding period. Long and Short Island visit was a reconnaissance trip for potential future monitoring for compensation. Note that *ad hoc* disturbance data were collected while visiting some colonies to collect population and productivity data, as well as during the dedicated disturbance monitoring visits.
18. No monitoring data were collected for Cow and Calf and Ore Stone. These are offshore colonies, and they could not be surveyed clearly from a land-based vantage point. Furthermore, The Mouls and Gulland rock were monitored for disturbance only, as these colonies were too far from land to monitor population or productivity. The Berry Head colony was also visibly restricted, as the whole colony was not visible from the vantage point.
19. The Applicant will consider the need to address these monitoring restrictions in future surveys. However, drones and boat-based surveys cannot efficiently monitor colony productivity (REP6-052). These monitoring methods can capture colony size, but they are not effective tools to measure seabird productivity. Boat-based surveyors and drones are not able to accurately measure productivity, as eggs are not visible using these methods. Furthermore, practical barriers, including battery life, surveyor welfare, and potential disturbance to the colony, prevent the deployment of boats and drones for an extended survey period.
20. As stated in REP6-052, the use of trail cameras to monitor disturbance and responses is being considered collaboratively with Cornwall Wildlife Trust and the University of Exeter and the Torbay Coast and Countryside Trust at Berry Head. Remote cameras can be an effective tool for monitoring disturbance at offshore colonies or colonies that are not accessible from land-based vantage points.

Table 3-1 Details of surveys carried out at each site.

			Data collected	
Date	Obs	Site	Colony	Disturbance
27-May	RI	Armed Knight	✓	✓
17-Jun	RI	Armed Knight	✓	✓
24-Jun	RI	Armed Knight	✓	✓
03-Jul	RI	Armed Knight	✓	✓
08-Jul	RI	Armed Knight	✓	✓
22-May	MD	Berry Head	✓	✓
26-May	MD	Berry Head	✓	✓
29-May	FL	Berry Head	✓	✓
02-Jun	JB	Berry Head	✓	✓
04-Jun	JB	Berry Head	✓	✓

			Data collected	
08-Jun	JB	Berry Head	✓	✓
10-Jun	JB	Berry Head	✓	✓
13-Jun	JB	Berry Head	✓	✓
15-Jun	JB	Berry Head	✓	✓
17-Jun	JB	Berry Head	✓	✓
19-Jun	JB	Berry Head	✓	✓
24-Jun	JB	Berry Head	✓	✓
31-May	RI	Gulland Rock		✓
22-Jun	RI	Gulland Rock		✓
23-Jun	RI	Gulland Rock		✓
30-Jun	RI	Gulland Rock		✓
23-May	RI	Hells Mouth	✓	✓
30-May	RI	Hells Mouth	✓	✓
25-Jun	RI	Hells Mouth	✓	✓
11-Jul	RI	Hells Mouth	✓	✓
31-May	FL	Long and Short Island		-
25-May	FL	The Mouls		✓
14-Jun	RI	The Mouls		✓
24-Jun	FL	The Mouls		✓
23-May	RI	North Cliffs 3	✓	✓
30-May	RI	North Cliffs 3	✓	✓
11-Jun	RI	North Cliffs 3	✓	✓
01-Jun	RI	North Cornwall 2	✓	✓
19-Jun	RI	North Cornwall 2	✓	✓
28-May	RI	North Cornwall 3	✓	✓
06-Jun	RI	North Cornwall 3	✓	✓
26-Jun	RI	North Cornwall 3	✓	✓
02-Jul	RI	North Cornwall 3	✓	✓
10-Jul	RI	North Cornwall 3	✓	✓
11-Jul	FL	North Cornwall 3	✓	✓
22-May	RI	The Sisters	✓	✓
09-Jun	RI	The Sisters	✓	✓
22-Jun	RI	The Sisters	✓	✓
25-Jun	FL	The Sisters	✓	✓

3.2 Summary of key pressures

21. Disturbance events at the suite of sites were categorised into disturbance from vessels (watercrafts) and avian predators (or those perceived to be predators). The key pressures across all monitored sites are presented in Table 3-2, and the detailed breakdown of the disturbances observed, frequency and the number of disturbance responses are presented in Table 3-3 for anthropogenic pressures and Table 3-4 for avian disturbances.

Table 3-2 Key pressures identified across the suite of sites.

Site	Pressure
Berry Head	Vessel proximity (kayaks, jet-ski, private boats, fishing boats) and Avian predation or perceived threat (gulls and corvids)
Gulland Rock	Vessel proximity (nine of 12 disturbances were from RIBs, with four present at one point). No avian disturbance or predation noted
North Cliffs 3/ Hell's mouth	Low levels of both vessel-based (three occasions) and avian (two occasions) disturbance
North Cornwall 2	Avian disturbance key, with 14 disturbances in three visits. Low levels of vessel-based disturbance
North Cornwall 3	Avian disturbance key, with 11 disturbances in three visits. No anthropogenic disturbance recorded
The Mouls	Vessel proximity (31 disturbances in total, mainly from RIBs and other tour vessels). Very low levels of avian disturbance or predation noted
The Sisters	Very low levels of disturbance noted, with just one avian disturbance observed
Armed Knight	Very low levels of disturbance, with single events of both vessel based and avian disturbance noted

22. The level of anthropogenic disturbance was recorded throughout the 2025 breeding season. All instances of anthropogenic disturbance were caused by watercrafts. The number of vessels, and the number resulting in a flushing response are presented in Table 3-3.

Table 3-3 Level of anthropogenic disturbance, with number of flushing responses across the suite of sites

Site	Number of vessels	Total with flushing responses	Minutes of observation	Frequency of disturbance
Berry Head	40	18	2,312	1 disturbance every 58 minutes
North Cliffs 3	3	0	1,265	1 disturbance every 422 minutes
North Cornwall 2	4	0	1,270	1 disturbance every 318 minutes
North Cornwall 3	0	0	1,120	0
The Mouls	31	15	1,132	1 disturbance every 37 minutes
The Sisters	0	0	780	0
Armed Knight	1	0	870	1 disturbance every 870 minutes
Gulland Rock	12	4	1,110	1 disturbance every 93 minutes

23. Disturbance events caused by avian predators were also recorded, with notes on the nature of disturbance and the level of response observed by guillemot and razorbill. The level of predator pressure (number of events), the number that elicited a flushing response, and the periods of observation are presented in Table 3-4.

Table 3-4 Level of avian disturbance across the suite of sites.

Site	Number of events	Total with flushing responses	Minutes of observation	Frequency of disturbance
Berry Head	12	6	2,312	1 disturbance every 193 minutes
North Cliffs 3	2	0	1,265	1 disturbance every 633 minutes
North Cornwall 2	14	7	1,270	1 disturbance every 91 minutes
North Cornwall 3	11	5	1,120	1 disturbance every 102 minutes
The Mouls	4	3	1,132	1 disturbance every 283 minutes
The Sisters	1	0	780	1 disturbance every 780 minutes
Armed Knight	1	1	870	1 disturbance every 870 minutes
Gulland Rock	0	0	1,110	0

24. Combining both anthropogenic and avian disturbance allows the overall levels of disturbance to be assessed. This information can then be used to determine which sites are being disturbed most frequently, as presented in Table 3-5.

Table 3-5 Combined disturbance across the suite of sites

Site	Number of events	Total with flushing responses	Minutes of observation	Frequency of disturbance
Berry Head	52	24	2,312	1 disturbance every 45 minutes
North Cliffs 3	5	0	1,265	1 disturbance every 253 minutes
North Cornwall 2	18	7	1,270	1 disturbance every 71 minutes
North Cornwall 3	11	5	1,120	1 disturbance every 102 minutes
The Mouls	35	18	1,132	1 disturbance every 33 minutes
The Sisters	1	0	780	1 disturbance every 780 minutes
Armed Knight	2	1	870	1 disturbance every 435 minutes
Gulland Rock	12	4	1,110	1 disturbance every 93 minutes

3.3 Summary of Colony Counts and Productivity Monitoring

25. Maximum counts of both guillemot and razorbill at each colony are presented in Table 3-6, and estimates of productivity (chicks per pair, with pairs being determined by multiplying counts of individuals by 0.67) for each colony where this could be assessed are presented in Table 3-7 for guillemot and Table 3-8 for razorbill. An estimate of productivity across the suite of surveyed sites is presented in Table 3-9

Table 3-6 Maximum counts of guillemot and razorbill across the surveyed sites

Site	Max count of guillemot	Max count of Razorbill	Notes
North Cliffs 3	No count	No count	Too dangerous to access vantage point
North Cornwall 2	147	48	
North Cornwall 3	103	64	
Berry Head	827	No birds	Whole colony not counted as not visible from the VP
Long and Short Island	No count	No count	Reconnaissance visit only
Gulland Rock	No count	No count	Disturbance data only (colony too far from land to monitor productivity or population)
The Mouls	No count	No count	Disturbance data only (colony too far from land to monitor productivity or population)
Armed Knight	650	71	
Hells Mouth	119	4	
The Sisters	1379	80	
Total counted	3225	267	

Table 3-7 Guillemot productivity across the surveyed sites. Note that the numbers presented here as maximum counts are sums of plot counts and therefore may not align with whole colony counts presented elsewhere.

Site	Plot number	Max count of guillemot	Max pairs	Max young observed	Max plot productivity
North Cornwall 2	1	101	67.67	0	0.00
	2	33	22.11	1	0.05
					Site productivity = 0.01
North Cornwall 3	2	67	44.89	16	0.36
	3	38	25.46	6	0.24
					Site productivity = 0.31
Berry Head	1	102	68.34	15	0.22
	2	108	72.36	15	0.21
	3	352	235.84	37	0.16
	4	271	181.57	24	0.13
					Site productivity = 0.16
Armed Knight	1	131	87.77	12	0.14
	2	210	140.7	17	0.12
	3	220	147.4	24	0.16
	4	26	17.42	2	0.11
	5	28	18.76	0	0.00

Site	Plot number	Max count of guillemot	Max pairs	Max young observed	Max plot productivity
					Site productivity = 0.13
Hells Mouth	1	66	44.22	9	0.20
	2	71	47.57	7	0.15
					Site productivity = 0.17
The Sisters	1	179	119.93	33	0.28
					Site productivity = 0.28

Table 3-8 Razorbill productivity across the surveyed sites

Site	Plot number	Max count of Razorbill	Max pairs	Max young observed	Max plot productivity
North Cornwall 2	1	33	22.11	5	0.23
	2	13	8.71	6	0.69
					Site productivity = 0.35
North Cornwall 3	1	17	11.39	0	0
	2	35	23.45	7	0.30
	3	18	12.06	1	0.08
					Site productivity = 0.17
Armed Knight	1	7	4.69	0	0.00
	2	10	6.7	0	0.00
	3	16	10.72	0	0.00
	4	2	1.34	0	0.00
	5	29	19.43	3	0.15
					Site productivity = 0.07
Hell's Mouth	2	4	2.68	1	0.37
					Site productivity = 0.37
The Sisters	1	9	6.03	1	0.17
					Site productivity = 0.17

Table 3-9 Overall productivity across the surveyed sites

	Max pairs	Max chicks	Max productivity
Guillemot	2003	218	0.11
Razorbill	193	15	0.12

3.4 Colony Summaries

26. Sections 3.4.1 to 3.4.8 summarise the colony and disturbance data collected at each site.

3.4.1 Armed Knight

Colony results

27. Colony data collected at the Armed Knight colony are summarised in Table 3-10. The colony decreased in size over the course of the 2025 breeding season but with over 200 birds and at least 10 chicks present on July 8th, it is likely that the colony did not fail completely, although productivity for the colony is likely to have been extremely low.

Table 3-10 Colony data from the Armed Knight

Date	Species	Colony Count	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 1 Chicks	Plot 2 Chicks	Plot 3 Chicks	Plot 4 Chicks	Plot 5 Chicks
27-May	Guillemot	650										
17-Jun	Guillemot	614	130	210	220	26	28	12	17	24	2	0
24-Jun	Guillemot	568	131	202	198	20	17	10	9	22	0	0
3-Jul	Guillemot	398	98	109	168	17	6	6	6	10	0	0
8-Jul	Guillemot	234	63	189	76	0	6	2	6	2	0	0
27-May	Razorbill	71										
17-Jun	Razorbill	63	7	9	16	2	29	0	0	0	0	3
24-Jun	Razorbill	57	6	10	13	1	27	0	0	0	0	2
3-Jul	Razorbill	41	4	6	5	0	26	0	0	0	0	2
8-Jul	Razorbill	8	2	0	0	0	6	0	0	0	0	0

Key Pressures

28. This site was not fully surveyed for disturbance as the purpose of visits to this site was to determine colony size and productivity, and to assess suitability of the location as a control site (i.e. in order to provide context to any changes in colony size and productivity at sites where disturbance reduction or other measures have been deployed). However, data on disturbances was collected during colony monitoring visits. The disturbance data are presented in Table 3-11, and show that disturbance levels were very low, from both anthropogenic and avian sources. Data collected that indicate very low productivity despite a lack of disturbance suggest that this site may not be a useful control for the disturbance reduction measures. However, determining the cause of the low productivity may allow for measures to be implemented at this site to the benefit of the breeding auks and to increase the overall compensation contribution across the Devon and Cornwall sites.

Table 3-11 Disturbance summary for the Armed Knight

Date	Duration of observation (minutes)	Number of anthropogenic disturbances	Number of avian disturbances	Number of anthropogenic disturbances with flushing response	Number of avian disturbances with flushing response
27-May	120	0	0	0	0
17-Jun	270	1	0	0	0
24-Jun	120	0	0	0	0
3-Jul	180	0	0	0	0
8-Jul	180	0	1	0	1
Total	870	1	1	0	1

3.4.2 Berry Head

Colony results

29. Colony data (i.e. plot counts rather than full colony counts, as the full colony was not visible from the vantage point) collected at Berry Head are summarised in Table 3-12. The data show how the colony size decreased steadily over the course of the breeding season, leading to abandonment by June 24th.

Table 3-12 Colony data from Berry Head

		Plot 1		Plot 2		Plot 3		Plot 4	
Date	Species	Adults	Chicks	Adults	Chicks	Adults	Chicks	Adults	Chicks
22-May	Guillemot	76	0	90	0	252	0	209	0
26-May	Guillemot	102	6	99	3	347	6	254	0
29-May	Guillemot	96	3	108	4	352	3	271	3
2-Jun	Guillemot	66	3	93	2	263	5	171	3
4-Jun	Guillemot	97	8	76	5	295	15	176	5

		Plot 1		Plot 2		Plot 3		Plot 4	
8-Jun	Guillemot	88	13	90	13	280	36	174	17
10-Jun	Guillemot	88	15	71	15	250	37	200	24
13-Jun	Guillemot	69	14	72	8	235	21	158	16
15-Jun	Guillemot	60	8	58	3	206	18	127	13
17-Jun	Guillemot	49	1	57	1	246	8	150	6
19-Jun	Guillemot	12	2	4	0	146	7	75	7
24-Jun	Guillemot	0	0	0	0	0	0	0	0

Key Pressures

30. The disturbance data collected at Berry Head are summarised in Table 3-13. Anthropogenic disturbance is a key pressure at this very popular site, which also had incidences of avian pressure/predation. It is possible that anthropogenic pressure at this site facilitates avian predation (see Section 4: Discussion).

Table 3-13 Disturbance summary from Berry Head

Date	Duration of observation (minutes)	Number of anthropogenic disturbances	Number of avian disturbances	Number of anthropogenic disturbances with flushing response	Number of avian disturbances with flushing response
22/5/2025	180	5	2	0	0
26/05/2025	360	1	1	0	0
29/05/2025	150	2	0	0	0
2/6/2025	160	3	0	0	0
4/6/2025	135	1	1	0	0
8/6/2025	360	7	0	3	0
10/6/2025	165	3	1	3	1
13/06/2025	140	0	0	0	0
15/06/2025	370	16	3	11	3
17/06/2025	142	2	2	1	2
19/06/2025	120	0	2	0	0
24/06/2025	30	0	0	0	0
Total	2312	40	12	18	6

3.4.3 Gulland Rock

Colony results

31. Colony counts were not carried out at Gulland Rock due to the distance between the vantage point and the colony, and also due to the fact that the whole colony could not be seen from the vantage point.

Key Pressures

32. The disturbance data collected at Gulland Rock are summarised in Table 3-14, and show low levels of anthropogenic disturbance, with no avian disturbance or predation noted. This is in contrast to the 68 disturbance events noted at this site in 2024, 44 of which were related to watercraft and 24 of which were related to avian disturbance. This shows that disturbance of both kinds (i.e. avian and anthropogenic) may be variable from one year to the next, and the incidence of low rates of disturbance in 2025 should not mean that the site should not be considered as a viable option for management. Given this variability, monitoring the success of a measure aiming for a reduction in disturbance should consider long term reductions rather than making judgements based on single years of data.

Table 3-14 Disturbance summary from Gulland Rock

Date	Duration of observation (minutes)	Number of anthropogenic disturbances	Number of avian disturbances	Number of anthropogenic disturbances with flushing response	Number of avian disturbances with flushing response
31-May	390	5	0	2	0
23-Jun	360	2	0	0	0
30-Jun	360	5	0	2	0
Total	1110	12	0	4	0

3.4.4 North Cliffs 3/ Hell's mouth

Colony results

33. Results from the colony monitoring carried out at Hells Mouth/North Cliffs 3 are presented in Table 3-15. The colony was abandoned at some point between June 11th and June 25th. No fledged young were noted, and it is likely that productivity from the colony was extremely low.

Table 3-15 Colony data from the North Cliffs 3/Hell's Mouth colony

Date	Species	Colony Count	Plot 1 Adults	Plot 2 Adults	Plot 1 Eggs	Plot 1 Chicks	Plot 2 Eggs	Plot 2 Chicks
23-May	Guillemot	49	33	16	9	0	3	0
30-May	Guillemot	111	40	71	12	0	15	0
11-Jun	Guillemot	119	66	53	0	9	0	7
25-Jun	Guillemot	0	0	0	0	0	0	0
23-May	Razorbill	0	0	0	0	0	0	0
30-May	Razorbill	2	0	2	0	0	1	0
11-Jun	Razorbill	4	0	4	0	0	0	1

				Plot 1		Plot 2		
25-Jun	Razorbill	0	0	0	0	0	0	0

Key Pressures

34. The disturbance data collected at the North Cliffs 3/Hells Mouth colony are summarised in Table 3-16. Very low levels of both anthropogenic disturbance and avian disturbance/predation were observed. This is in contrast to the 29 disturbance events noted at this site in 2024, 5 of which were related to watercraft and 24 of which were related to avian disturbance. As previously discussed, this shows that disturbance of both kinds (i.e. avian and anthropogenic) may be variable from one year to the next, and the incidence of low rates of disturbance in 2025 should not mean that the site should not be considered as a viable option for management. Given this variability, monitoring the success of a measure aiming for a reduction in disturbance should consider long term reductions rather than making judgements based on single years of data.

35.

Table 3-16 Disturbance summary from the North Cliffs 3/Hell's Mouth colony

Date	Duration of observation (minutes)	Number of anthropogenic disturbances	Number of avian disturbances	Number of anthropogenic disturbances with flushing response	Number of avian disturbances with flushing response
23-May	330	0	0	0	0
30-May	425	1	0	0	0
11-Jun	420	2	2	0	0
25-Jun	90	0	0	0	0
Total	1265	3	2	0	0

3.4.5 North Cornwall 2

Colony results

36. Results from the colony monitoring carried out at North Cornwall 2 are presented in Table 3-17. The colony was abandoned at some point before June 19th. No fledged young were noted, and it is likely that productivity from the colony was extremely low.

Table 3-17 Colony data from North Cornwall 2

					Plot 1		Plot 2	
Date	**Species**	**Colony Count**	**Plot 1**	**Plot 2**	**Eggs**	**Chicks**	**Eggs**	**Chicks**
26-May	Guillemot	142	92	33	21	0	7	1
1-Jun	Guillemot	147	101	31	36	0	12	0

					Plot 1		Plot 2	
19-Jun	Guillemot	0	0	0	0	0	0	0
1-Jun	Razorbill	48	33	13	2	0	3	2
19-Jun	Razorbill	0	0	0	0	0	0	0
13-Jun	Guillemot	57	39	17	0	0	0	0
26-May	Razorbill	42	31	10	2	6	0	5
13-Jun	Razorbill	1	0	0	0	0	0	0

Key Pressures

37. The disturbance data collected at the North Cornwall 2 colony are summarised in Table 3-18. Very low levels of both anthropogenic disturbances were observed, with avian disturbance/predation a key pressure. In 2024, anthropogenic disturbance was the key pressure, with 37 disturbance events noted, compared to just four examples of avian disturbance. This shows that disturbance of both kinds (i.e. avian and anthropogenic) may be variable from one year to the next, and the incidence of low rates of disturbance in 2025 should not mean that the site should not be considered as a viable option for management. Given this variability, monitoring the success of a measure aiming for a reduction in disturbance should consider long term reductions rather than making judgements based on single years of data.

Table 3-18 Disturbance summary from North Cornwall 2

Date	Duration of observation (minutes)	Number of anthropogenic disturbances	Number of avian disturbances	Number of anthropogenic disturbances with flushing response	Number of avian disturbances with flushing response
26-May	420	0	3	0	2
1-Jun	360	2	10	0	5
13-Jun	190	0	1	0	0
19-Jun	300	2	0	0	0
Total	1270	4	14	0	7

3.4.6 North Cornwall 3

Colony results

38. Results from the colony monitoring carried out at North Cornwall 3 are presented in Table 3-19. The colony was abandoned by razorbill at some point between July 2nd and July 10th. Guillemot showed a very similar pattern during this period and although the colony had not abandoned by July 10th, only two adult birds were present on this date. No fledged young were noted, and it is likely that productivity from the colony was extremely low.

Table 3-19 Colony data for North Cornwall 3

Date	Species	Colony Count	Plot 1	Plot 2	Plot 3	Plot 1		Plot 2		Plot 3	
						Eggs	Chicks	Eggs	Chicks	Eggs	Chicks
28-May	Guillemot	103	0	65	38	no data	no data	12	0	no data	no data
6-Jun	Guillemot	102	0	67	35	no data	no data	6	16	no data	no data
26-Jun	Guillemot	81	0	61	20	0	0	0	9	0	6
2-Jul	Guillemot	50	0	45	5	0	0	0	3	0	1
10-Jul	Guillemot	2	0	2	0	0	0	0	0	0	0
28-May	Razorbill	61	16	27	18	no data	no data	5	0	no data	no data
6-Jun	Razorbill	64	17	35	12	no data	no data	0	7	no data	no data
26-Jun	Razorbill	15	1	8	6	0	0	0	0	0	1
2-Jul	Razorbill	6	0	2	4	0	0	0	0	0	1
10-Jul	Razorbill	0	0	0	0	0	0	0	0	0	0

Key Pressures

39. The disturbance data collected at the North Cornwall 3 colony are summarised in Table 3-20. No anthropogenic disturbance was observed, with avian disturbance/predation a key pressure. This is similar to the pattern, but not the scale shown in 2024. Monitoring in 2024 detected 69 incidences of avian disturbance, and 7 of anthropogenic disturbance.This shows that disturbance of both kinds (i.e. avian and anthropogenic) may be variable from one year to the next, and the incidence of low rates of disturbance in 2025 should not mean that the site should not be considered as a viable option for management. Given this variability, monitoring the success of a measure aiming for a reduction in disturbance should consider long term reductions rather than making judgements based on single years of data.

Table 3-20 Disturbance summary from North Cornwall 3

Date	Duration of observation (minutes)	Number of anthropogenic disturbances	Number of avian disturbances	Number of anthropogenic disturbances with flushing response	Number of avian disturbances with flushing response
28-May	420	0	4	0	1
6-Jun	390	0	6	0	4
26-Jun	310	0	1	0	0
Total	1120	0	11	0	5

3.4.7 The Mouls

Colony results

40. Colony counts were not carried out at The Mouls due to the distance between the vantage point and the colony, also because the whole colony could not be seen from the vantage point.

Key pressures

41. The disturbance data collected at The Mouls are summarised in Table 3-21. Anthropogenic disturbance is a key pressure at this very popular site, which also had incidences of avian pressure/predation. It is possible that anthropogenic pressure at this site facilitates avian predation (see Section 4: Discussion). The pattern observed in 2025 is the same as that seen in 2024, with high levels of anthropogenic disturbance and low levels of avian disturbance.

Table 3-21 Disturbance summary from The Mouls

Date	Duration of observation (minutes)	Number of anthropogenic disturbances	Number of avian disturbances	Number of anthropogenic disturbances with flushing response	Number of avian disturbances with flushing response
25-May	366	0	3	0	3
14 - Jun	360	8	1	4	0
24 - Jun	406	23	0	11	0
Total	1132	31	4	15	3

3.4.8 The Sisters

Colony results

42. Results from the colony monitoring carried out at The Sisters are presented in Table 3-22. Full colony counts were not made across the duration of the breeding season but the presence of apparently very stable numbers of both guillemot and razorbill in the monitored plots up to June 25th suggests that this colony may have had relatively high productivity.

Table 3-22 Colony data from The Sisters

Date	Species	Colony Count	LHS island	RHS island	Plot 1	Eggs	Chicks
22-May	Guillemot	1291	68	1223	191	33	0
9-Jun	Guillemot	1379	81	1298	179	28	33
22-Jun	Guillemot	no data	no data	no data	179	1	32
25-Jun	Guillemot	no data	no data	no data	181	0	30
22-May	Razorbill	44	10	34	9	1	0
9-Jun	Razorbill	80	32	48	6	0	1
22-Jun	Razorbill	no data	no data	no data	6	0	1
25-Jun	Razorbill	no data	no data	no data	8	0	1

Key pressures

43. This site was not fully surveyed for disturbance as the purpose of visits to this site was to determine colony size and productivity, and to assess suitability of the location as a control site (i.e. in order to provide context to any changes in colony size and productivity at sites where disturbance reduction or other measures have been deployed). However, data on disturbances was collected during colony monitoring visits. This colony was not surveyed in 2024.

Table 3-23 Disturbance summary from The Sisters

Date	Duration of observation (minutes)	Number of anthropogenic disturbances	Number of avian disturbances	Number of anthropogenic disturbances with flushing response	Number of avian disturbances with flushing response
22-May	420	0	0	0	0
9-Jun	360	0	1	0	0
Total	780	0	1	0	0

4 Discussion

4.1 Colony data

44. During the 2025 breeding season, colony data were collected for guillemots at seven sites and razorbills at six sites, with productivity data gathered at six and five sites, respectively. Colony sizes were broadly similar between the two years of survey at sites where detailed counts were carried out in both years, showing only slight changes for both species. The differences between colonies where data were collected in both 2024 and 2025 are presented in Table 4-1.

Table 4-1 Comparison of colony data between 2024 and 2025

	2024		2025		Trend	
Site	Guillemot	Razorbill	Guillemot	Razorbill	Guillemot	Razorbill
North Cornwall 3	115	98	103	64	10% Decrease	35% Decrease
North Cornwall 2	76	77	147	48	93% Increase	37% Decrease
Berry Head (plots)	483	26	827	0	71% Increase	100% Decrease

45. As with 2024, productivity across the sites monitored was extremely low, and the productivity rates presented in Table 3-7 to Table 3-9 should be considered as overestimates. The calculations were based upon the maximum number of chicks seen (regardless of their age and therefore likelihood of fledging) and therefore potentially substantially overestimate the number of chicks fledged from any given site. Although (low) productivities have been presented for each site, these colonies may have been abandoned. For example, at Berry Head, the colony appeared to be abandoned by June 24th, with no birds seen either on the cliff or on the water during that visit. A gradual reduction in numbers was noted in visits before that date. Given that no fledged young were noted on any visit, and the colony became empty across a short period of time relatively early in the season (fledging in guillemot is generally not well coordinated and takes place from mid-June to late July where birds reed successfully), the colony at Berry Head was considered to be mostly abandoned, apart from the very small numbers of chicks that were noted by National Trust staff on June 8th and 9th. The productivity rates determined from both 2024 and 2025 are compared to national rates from Horswill and Robinson (2015) in Table 4-2.

Table 4-2 Comparison of productivity across the suite of sites in 2024 and 2025 with the national average

	2024	2025	National average
Guillemot	0.11	0.11	0.67
razorbill	0.02	0.12	0.57

46. The occurrence of low productivity over both the 2024 and 2025 breeding seasons confirms that the low productivity recorded in 2024 is likely to be real and not a result of monitoring effort or methods. This also means that the Project's calculations of available compensation across the suite of sites, which were based in part on the low levels of productivity noted in 2024, are based on sound evidence and that the levels of available compensation calculated are correct and representative of the actual amount of benefit available to the colonies. Calculation of the compensation potential from each site is discussed in Annex 2 of 7.7.6 Without Prejudice Additional Measures for Compensation of Guillemot and Razorbill.

4.2 Disturbance data

47. Disturbance data were collected at eight colonies and as with 2024, anthropogenic disturbance was generally seaward and generated through close approach from vessels such as tourist boats or kayaks. Avian disturbance (and predation) was a major factor at some colonies and predation may have been exacerbated by disturbance. At thriving auk colonies, avian predators struggle to access the colony as ledges are full and well defended, giving predators little opportunity to land (Isle of May Reserve Manager, pers comms). At smaller colonies, or where disturbance has led flushing, space to land becomes available giving corvids an access point. At North Cornwall 2 carrion crows were observed landing among breeding guillemots and pulling incubating birds off the egg and then off the ledge by the tail. The crows were then able to access the unprotected egg which was then eaten on site. Observers have suggested that this behaviour was carried out by a small number of crows and as such, control of this predation may bring substantial benefits to these impacted colonies.
48. Over the two years where disturbance has been monitored, vectors of disturbance have broadly remained consistent on a site-by-site basis, as presented in Table 4-3. This allows specific and targeted disturbance reduction measures to be implemented at each colony with confidence that the key vector of disturbance is being addressed. However, at some sites the key vector of disturbance changed (e.g. North Cornwall 3, where anthropogenic disturbance dominated in 2024 but was not noted in 2025). This suggests that monitoring and adaptive management strategies implemented across the suite of sites should consider the potential for vectors of disturbance to change.

Table 4-3. Comparison of key vectors of disturbance at each colony where disturbance was monitored in 2024 and 2025

	Key disturbance	
	2024	2025
North Cliffs 3	Avian, with low levels of anthropogenic disturbance	Low levels of both avian and anthropogenic disturbance

	Key disturbance	
North Cornwall 2	Avian, with low levels of anthropogenic disturbance	Avian, with low levels of anthropogenic disturbance
North Cornwall 3	Anthropogenic, with low levels of avian disturbance	Only avian disturbance noted
Berry Head	Anthropogenic, with high levels of avian disturbance as well	Anthropogenic, with low levels of avian disturbance
Gulland Rock	Anthropogenic, with low levels of avian disturbance	Only anthropogenic disturbance noted
The Mouls	Anthropogenic, with low levels of avian disturbance	Anthropogenic, with low levels of avian disturbance

49. The frequency and intensity of disturbance (both anthropogenic and avian) is likely to be an important factor in whether disturbance impacts breeding birds. Data from 2025 surveys have allowed the frequency of disturbance to be compared through a calculation of minutes between each disturbance. Using this metric the colonies at The Mouls, Berry Head and North Cornwall 2 were disturbed most frequently, with disturbances occurring every 33, 45, and 71 minutes at these sites respectively.
50. Intensity of disturbance can be inferred through the percentage of disturbance events that result in birds being flushed from the cliff. Disturbance intensity was relatively high at several sites, with The Mouls, Berry Head and North Cornwall 3 recording disturbance intensities of 51%, 46% and 45% respectively.
51. Through both of these metrics it is clear that disturbance is particularly high at The Mouls and Berry Head, and that a reduction in this disturbance would be likely to benefit the colony.

4.3 Factors limiting colony success

52. It seems likely that additional factors may also be in play in terms of limiting breeding performance at the colonies surveyed. All land-based colonies surveyed in 2025 effectively failed, or at least abandoned well before the end of the chick rearing period, with counts at zero by mid to late June for North Cornwall 2 (June 19th) Berry Head (June 24th) Hell's Mouth (June 25th) and North Cornwall 3 (July 11th). The two island-based colonies (The Mouls and The Sisters) fared differently. The Armed Knight colony declined through the survey period but still had over 200 individuals on territory by July 11th. As such it is highly likely that birds fledged from this colony. The Sisters showed a stable trend throughout the survey period, with effectively full occupation on June 25th, a date by which three of the four land-based colonies had abandoned. The trends from each of the monitored colonies can be seen in Figure 1.

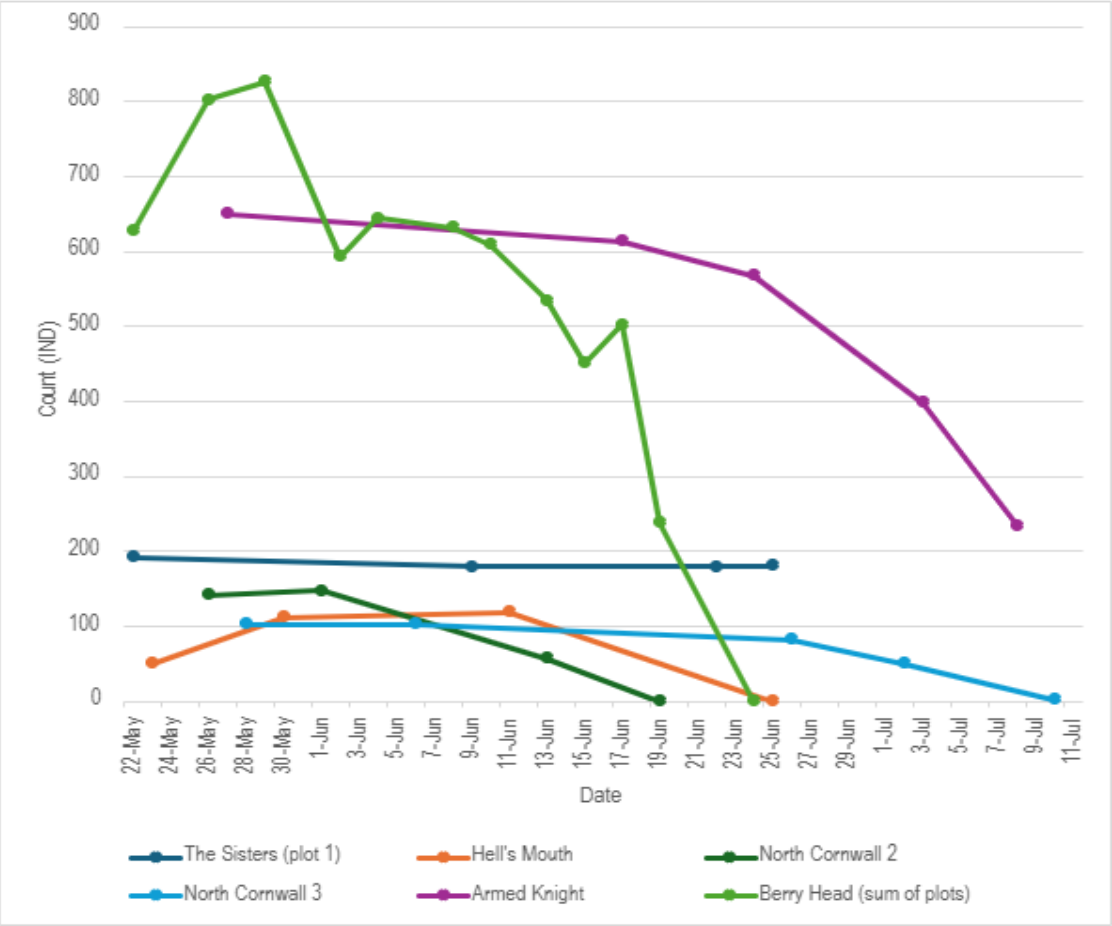

Figure 1. Trends in counts of individuals at 6 monitored sites

53. This difference in colony success suggests that other limiting factors are influencing the land-based colonies, and the fact that island colonies fared better than land-based colonies suggest that a pressure from the land is acting on these colonies. An obvious option here is predation from land-based predators such as rats, as these may struggle to access the island colonies. If the Project is to draw the fullest benefit from the suite of sites in Devon and Cornwall, the occurrence and influence of land based predators could be investigated, this should also be considered in terms of the control sites (i.e. the Armed Knight and The Sisters). While these sites were suitable for observation of disturbance and suitable for monitoring of plots, the suitability of the outputs of productivity monitoring as controls for sites where measures are implemented should be assessed. If different pressures such as predation from land-based predators are acting on mainland colonies and not island colonies, then these sites should not be considered to be valid control sites.

5 References

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6 Annex 1. Weather data from surveys where disturbance data were collected.

Table 6-1. Weather data from surveys where disturbance data were collected.

Date	Site	Wind force	Wind direction	Precipitation
27-May	Armed Knight	4	W	None
17-Jun	Armed Knight	3	NW	None
24-Jun	Armed Knight	4	W	None
3-Jul	Armed Knight	4	SE	None
8-Jul	Armed Knight	2	N	None
22-May	Berry Head	4	N	None
26-May	Berry Head	6	W	Light rain
29-May	Berry Head	4	W	None
2-Jun	Berry Head	2	SE	None
4-Jun	Berry Head	2	W	None
8-Jun	Berry Head	4	W	None
10-Jun	Berry Head	3	W	Light rain
13-Jun	Berry Head	3	SW	None
15-Jun	Berry Head	4	W	None
17-Jun	Berry Head	1	NW	None
19-Jun	Berry Head	2	E	None
24-Jun	Berry Head	2	NW	None
31-May	Gulland	2	W	None
23-Jun	Gulland	5	W	Showers
30-Jun	Gulland	1	SW	None
23-May	Hells Mouth	3	W	None
30-May	Hells Mouth	2	W	None
25-Jun	Hells Mouth	3	W	None
11-Jul	Hells Mouth	1	SE	None
25-May	Mouls	5	W	None
14-Jun	Mouls	3	SW	None
24-Jun	Mouls	4	W	None
1-Jun	North Cornwall 2	4	W	None
19-Jun	North Cornwall 2	3	SE	None
28-May	North Cornwall 3	3	W	None
6-Jun	North Cornwall 3	5	W	None
26-Jun	North Cornwall 3	4	W	None
22-May	Sisters	2	NW	None
9-Jun	Sisters	3	W	None