



Awel y Môr Offshore Wind Farm

Category 5: Reports

RIAA Annex 8: Abundance and Distribution of Red Throated Diver in Gwynt y Môr Offshore Wind Farm and Wider Area

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Abbreviations and acronyms

TERM	DEFINITION
ANOVA	Analysis of Variance
AyM	Awel y Môr Offshore Wind Farm
BACI	Before-After-Control-Impact
CI	Confidence Limits
CV	Coefficient of Variance
DECC	Department of Energy and Climate Change
DCO	Development Consent Order
EIA	Environmental Impact Assessment
GAM	Generalised Additive Model
GLMs	Generalised Linear Models
GyM	Gwynt y Môr Offshore Wind Farm
GyM+2km	Gwynt y Môr Offshore Wind Farm plus 2 km buffer
HRA	Habitats Regulation Assessment
NSIP	Nationally Significant Infrastructure Project
OFTO	Offshore Transmission Owner

TERM	DEFINITION
OFW	Offshore Wind Farm
RTD	Red Throated Diver
SPA	Special Protection Area
TCE	The Crown Estate

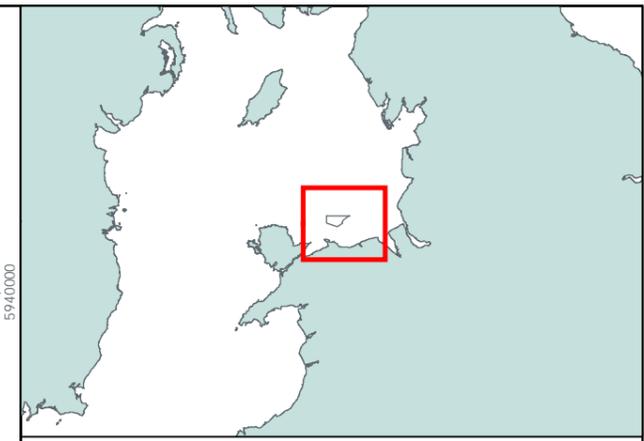
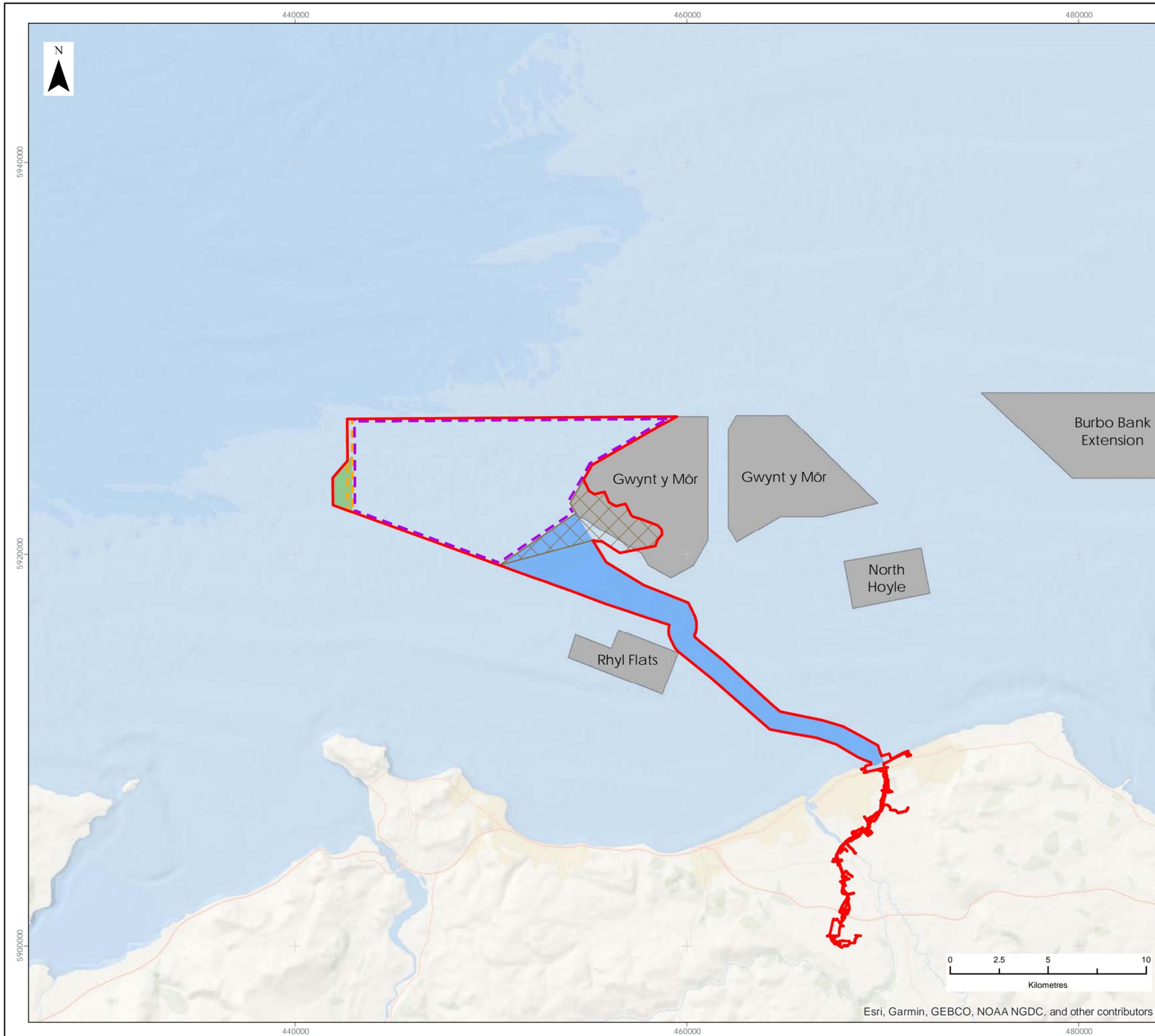
1 Introduction

1.1 Purpose of Document

- 1 This evidence note has been drafted in support of the Report to Inform Appropriate Assessment (RIAA) (application ref: 5.1) for the Awel y Môr OWF (AyM) Development Consent Order (DCO) application. The document has a focus on the evidence to inform the assessment of potential displacement effects from the development of AyM on red throated diver (RTD) *Gavia stellata*.
- 2 It is recognised (as evidenced through the ornithological Expert Topic Group (ETG) meetings for AyM) that there remains a level of uncertainty (and therefore, debate) around the potential level of displacement of RTD from offshore wind development. There are relatively few data points to support the evidence base and occur across a broad geographical range. It is considered likely that levels of displacement will be heavily influenced by quality of the habitat for RTD and dependency of RTD on the habitats in question (and the inter-relationship between these two elements). Therefore, it stands to reason that the best evidence to inform any assessment of displacement of RTD for AyM would be site specific (or analogous site) data.
- 3 AyM lies in an area of water off the Welsh coast that has been relatively well studied with regard to RTD and due to the presence of existing wind farms in the immediate vicinity of AyM, offers the opportunity to elicit some level of evidence on the existing usage of this area and to identify any observable evidence of displacement effects from the existing wind farm projects (principally Gwynt y Môr Offshore Wind Farm (GyM), but also North Hoyle and Rhyl Flats).

1.2 Background

- 4 GyM (a 576MW wind farm) has been operational since June 2015. As part of the Marine Licence requirements for GyM, several ornithological surveys were undertaken during the pre-construction, during-construction and post-construction phases of the project. Presented within this report is a qualitative comparison of the results of the pre-, during- and post-construction surveys to help establish whether there is any observable evidence of any displacement of RTD that could be caused by the construction and operation of GyM. This comparison then provides an appropriate and reasonable proxy for the likely displacement that may be anticipated to occur as a result of the construction of AyM.



LEGEND

- Order Limits
- Array Area
- Offshore Export Cable Corridor
- Other Wind Farm Infrastructure Zone
- Subsea Infrastructure and Temporary Works Area
- GyM Interlink Zone
- Operational Offshore Wind Farm

Data Source:
Wind Farm data from The Crown Estate

PROJECT TITLE:
AWEL Y MÔR OFFSHORE WINDFARM

FIGURE TITLE:
**AyM project location,
relative to GyM**

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1	01/04/2022	For Issue For RTD Technical Note	BPHB	RM

FIGURE NUMBER:
Figure 1

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Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

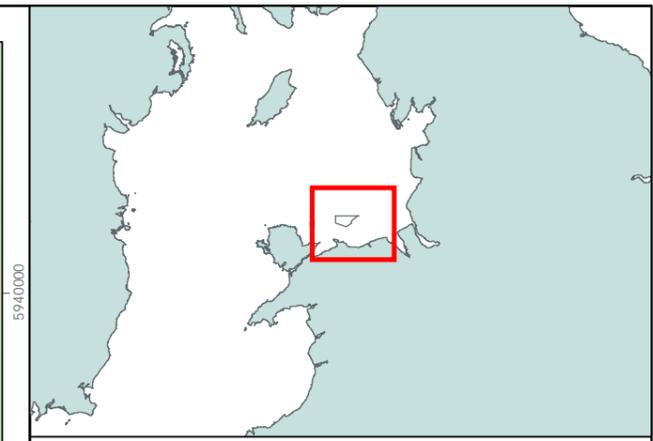
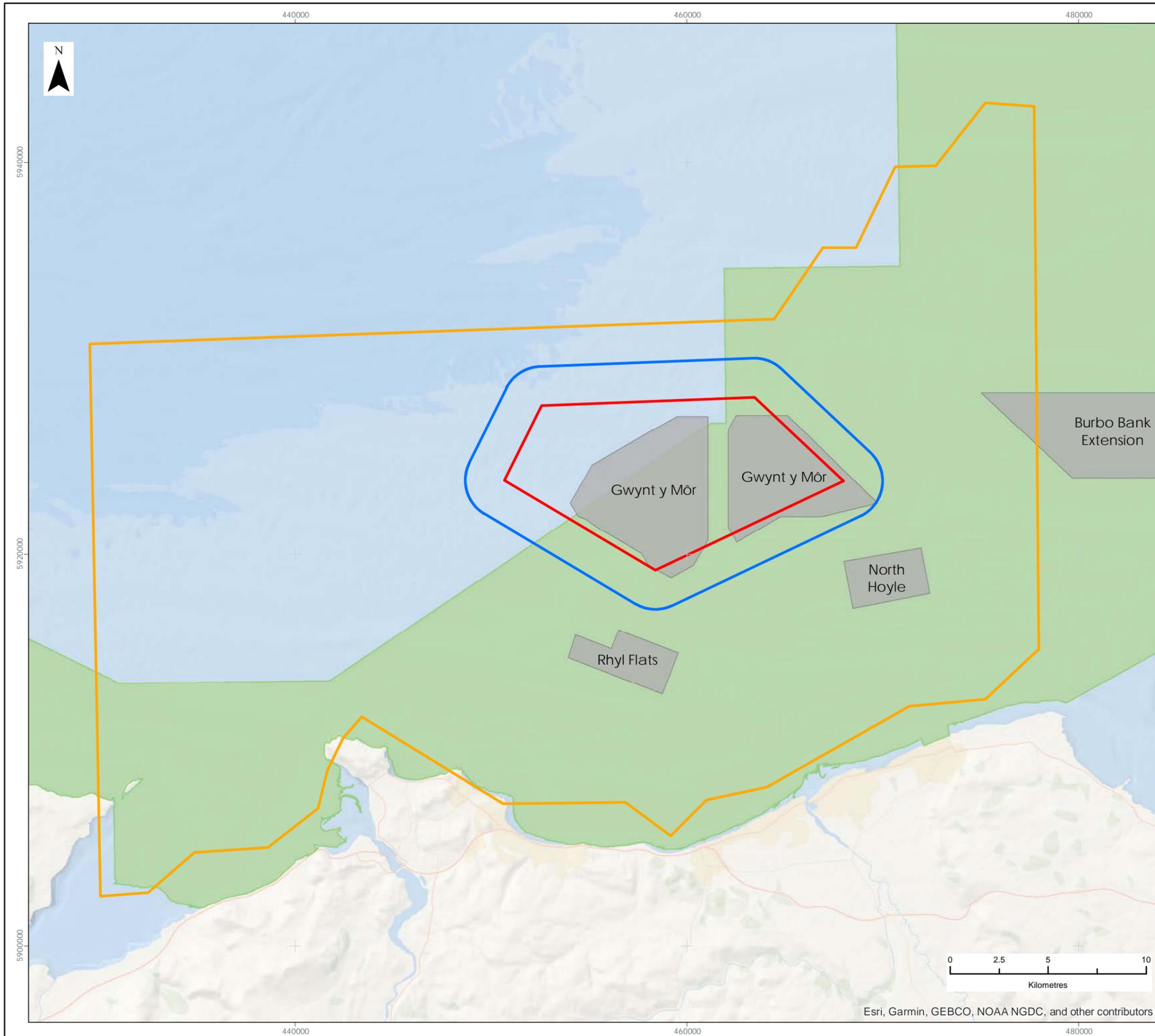
2 Data collection and results

2.1 Survey design

- 5 The study area for the purpose of this evidence note aligns with the study area used for the GyM monitoring. It is therefore defined as the GyM array area and surrounding 2 km buffer (GyM+2km), and the wider Colwyn Bay area (NW5) (Figure 2).
- 6 The GyM pre-construction monitoring was undertaken in 2010/11, during-construction monitoring was undertaken in 2012/13, and post-construction monitoring was undertaken in 2016/17, 2017/18 and 2018/19.

2.1.1 Displacement and BACI effect analysis

- 7 All aerial survey data was gathered using high resolution digital grid surveys using the Before-After-Control-Impact (BACI) design as reviewed and agreed by Natural Resources Wales in June 2016 (APEM Method Statement 2016, draft v1.3).
- 8 High resolution digital images were collected at a 3 cm ground sampling distance resolution that allowed the accurate identification of RTD. The GyM+2km surveys were flown on a systematic grid of 500 m separation, whilst NW5 surveys were flown using a larger grid size of 1,250 m.



LEGEND

- Gwynt y Môr Wind Farm Area
- Gwynt y Môr Wind Farm 2km Buffer
- NW5 Survey Area (Colwyn Bay)
- Operational Offshore Wind Farm
- Liverpool Bay SPA

Data Source:
Wind Farm data from The Crown Estate

PROJECT TITLE:
AWEL Y MÔR OFFSHORE WINDFARM

FIGURE TITLE:
**Location of GyM, 2km
buffer area and NW5 survey area**

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FIGURE NUMBER:
Figure 2

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2.2 Survey results

- 9 Table 1 presents the count of RTD recorded along with the estimated abundance within the survey areas in each survey month. See Appendix A for confidence limits and precision coefficients of variance for each survey count.

2.2.1 GyM+2km

- 10 Pre-construction data recorded only a single RTD in the GyM+2km area (carried out during February 2011).
- 11 Low numbers were also recorded during construction year surveys with only two individuals recorded in the GyM+2km area in December 2012.
- 12 During the post-construction surveys, the mean count for RTD within the GyM+2km area was a count of three and the maximum count was a count of six (estimated abundance of 33 individuals based on the November 2017 (winter) survey). These are higher than both the estimate made during the pre-construction phase survey when a count of one (estimated abundance of eight individuals) were calculated to be present, and the estimate made during-construction phase surveys when a count of two (estimated abundance of nine individuals) were calculated. See Appendix A for confidence limits and precision coefficients of variance for each survey count.
- 13 There appears to have been an increase of RTD between the pre- and post-construction phase surveys of the GyM+2km area (increase from a count of one to six (or three when using post-construction mean)); however, given that RTD numbers across the wider NW5 region increased over the monitoring period, it was perceived that there may still be some displacement effect – i.e. the numbers of birds within the array area and buffer may still be lower than they would have been in the counterfactual scenario where GyM was not constructed.

- 14 To address this concern, additional modelling was carried out using an ANOVA approach and this found no evidence of any displacement effect even when accounting for the increase in population across the NW5 region (APEM, 2019). However, due to the low numbers of RTD observed, the modelling results had limited power to quantify statistically significant displacement effects. It is however relevant and important to note that RTD were present within the array area before, during and after construction, and that RTD were present within the 2 km buffer before, during, and after construction.

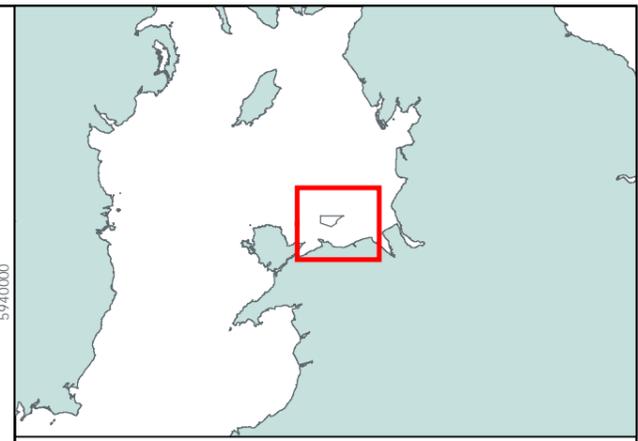
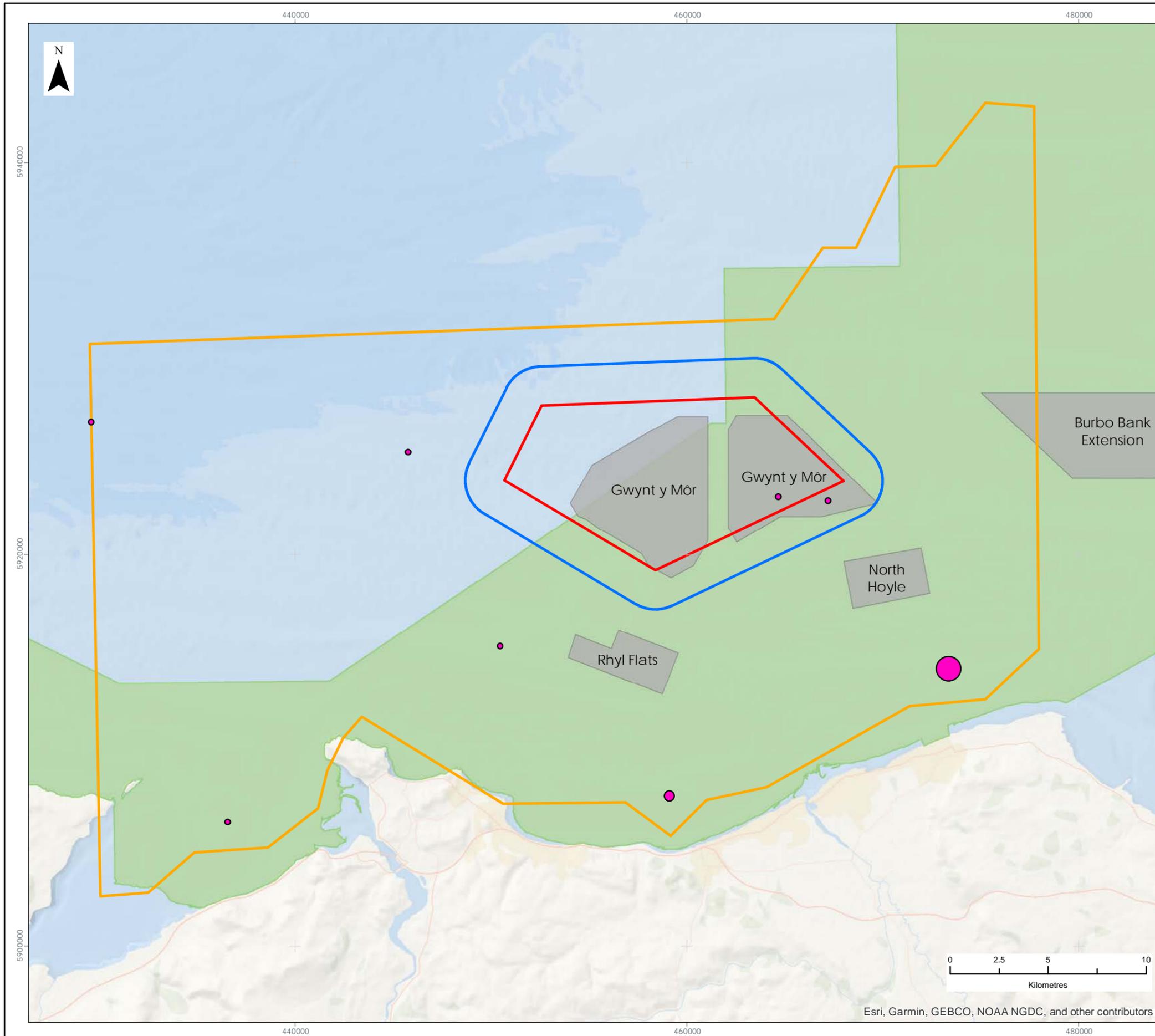
2.2.2 NW5 (Colwyn Bay)

- 15 In order to allow the GyM+2km area results to be compared with the wider local 'population' a total of nine surveys of the NW5 area were carried out: one during pre-construction (2011), one during construction (2013) and seven during post-construction.
- 16 RTD were present in all nine surveys. Table 1 presents the counts of individuals recorded along with the estimated abundance of RTD within NW5 in each survey month. See Appendix A for confidence limits and precision coefficients of variance for each survey count.
- 17 Peak population estimates decreased from pre-construction to first year post-construction surveys with 458 estimated across NW5 in 2010/11 and 198 estimated across NW5 in 2016/17. However, an increase was observed during the 2017/18 post-construction surveys (abundance of 932 individuals in March 2018) but decreased again to below pre-construction levels during the 2018/19 post-construction surveys (abundance of 254 individuals in March 2019). Whilst this supports the understanding that numbers of RTD can fluctuate inter-annually, it is relevant and important to note that during these periods RTD were consistently recorded within 4 km and 10 km of the GyM array with one year having considerably more RTD than recorded pre-construction.

Table 1: Raw counts (count) and abundance estimates for RTD observed in the survey areas for all construction phases of GyM monitoring.

PHASE	MONTH	AREA	COUNT	ABUNDANCE ESTIMATE
Pre-construction	January '11	NW5	11	458
	February '11	GyM+2km	1	8
During-construction	December '12	GyM+2km	2	9
	February '13	NW5	8	405
Post-construction	February '17	NW5	6	198
	March '17	GyM+2km	1	6
	July '17	GyM+2km	0	-
	November '17 (autumn)	GyM+2km	0	-
		NW5	0	-
	November '17 (winter)	GyM+2km	6	33
	January '18	GyM+2km	1	6
		NW5	2	53
February '18	GyM+2km	0	-	
Post-construction	March '18	NW5	54	932
	July '18	GyM+2km	0	-
	October '18	GyM+2km	0	-
		NW5	2	34

PHASE	MONTH	AREA	COUNT	ABUNDANCE ESTIMATE
	November '18	GyM+2km	4	22
	January '19	GyM+2km	0	-
	February '19	NW5	7	200
	March '19	GyM+2km	0	-
		NW5	11	254



LEGEND

- Gwynt y Môr Wind Farm Area
- Gwynt y Môr Wind Farm 2km Buffer
- NW5 Survey Area
- Operational Offshore Wind Farm
- Liverpool Bay SPA

Red Throated Diver Distribution (2010/11)

- 1
- 2
- 3 - 5

Data Source:
Wind Farm data from The Crown Estate

PROJECT TITLE:
AWEL Y MÔR OFFSHORE WINDFARM

FIGURE TITLE:
Cumulative distribution of RTD during pre-construction (2010/11)

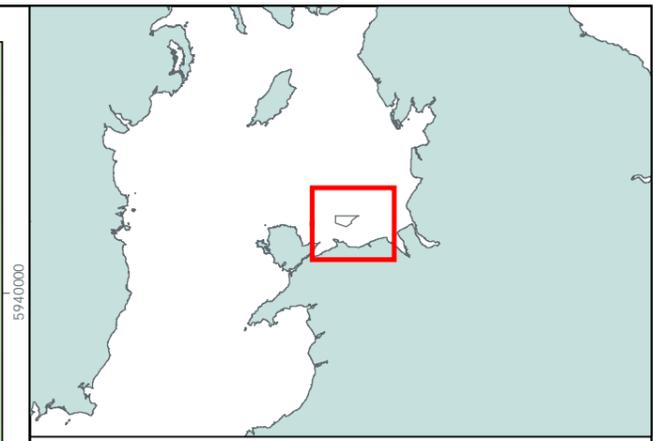
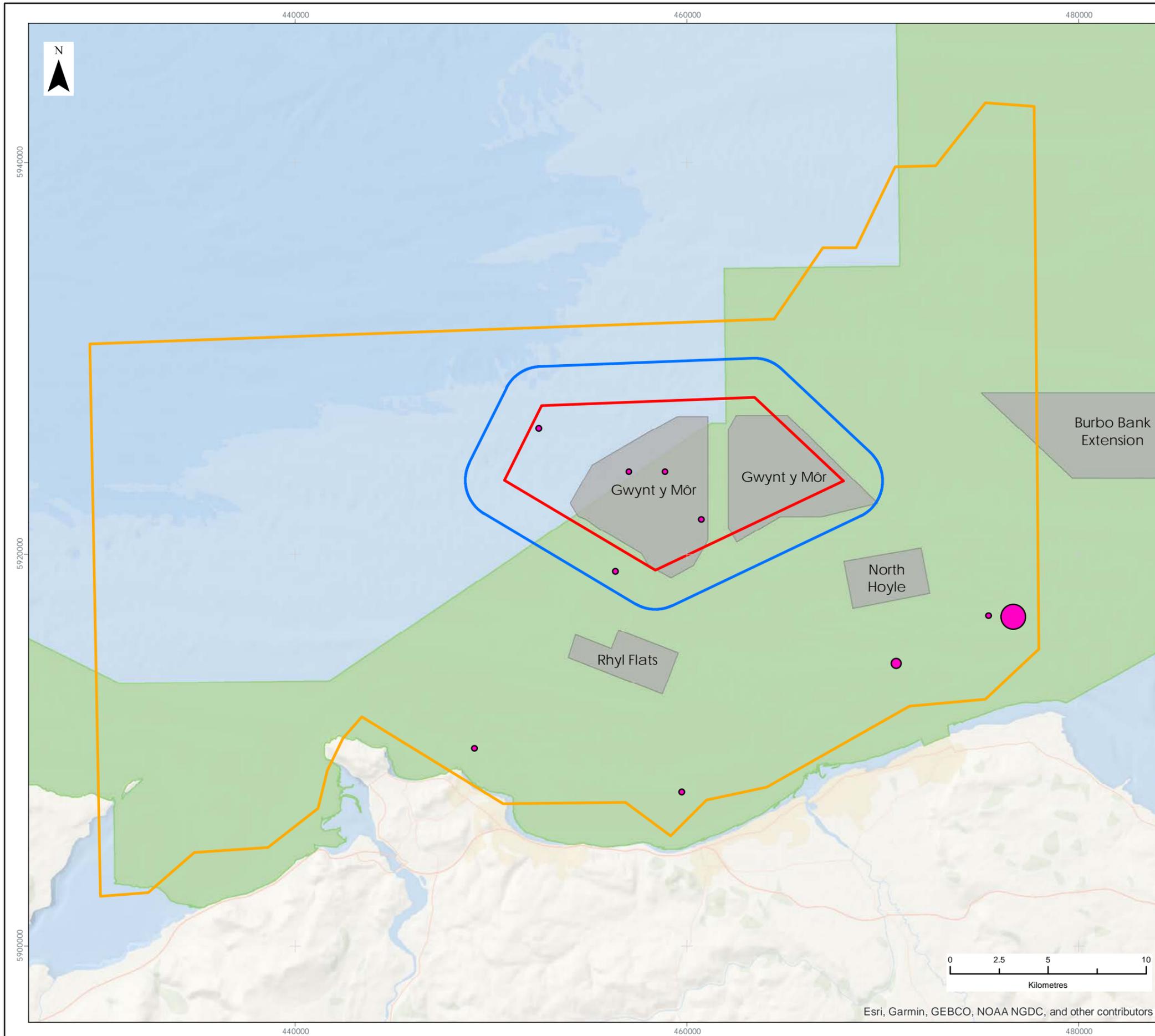
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Figure 3

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LEGEND

- Gwynt y Môr Wind Farm Area
- Gwynt y Môr Wind Farm 2km Buffer
- NW5 Survey Area
- Operational Offshore Wind Farm
- Liverpool Bay SPA

Red Throated Diver Distribution (2012/13)

- 1
- 2
- 3 - 5

Data Source:
Wind Farm data from The Crown Estate

PROJECT TITLE:
AWEL Y MÔR OFFSHORE WINDFARM

FIGURE TITLE:
Cumulative distribution of RTD during construction (2012/13)

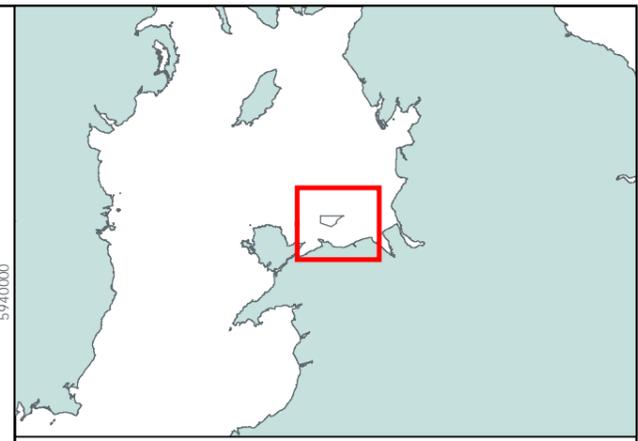
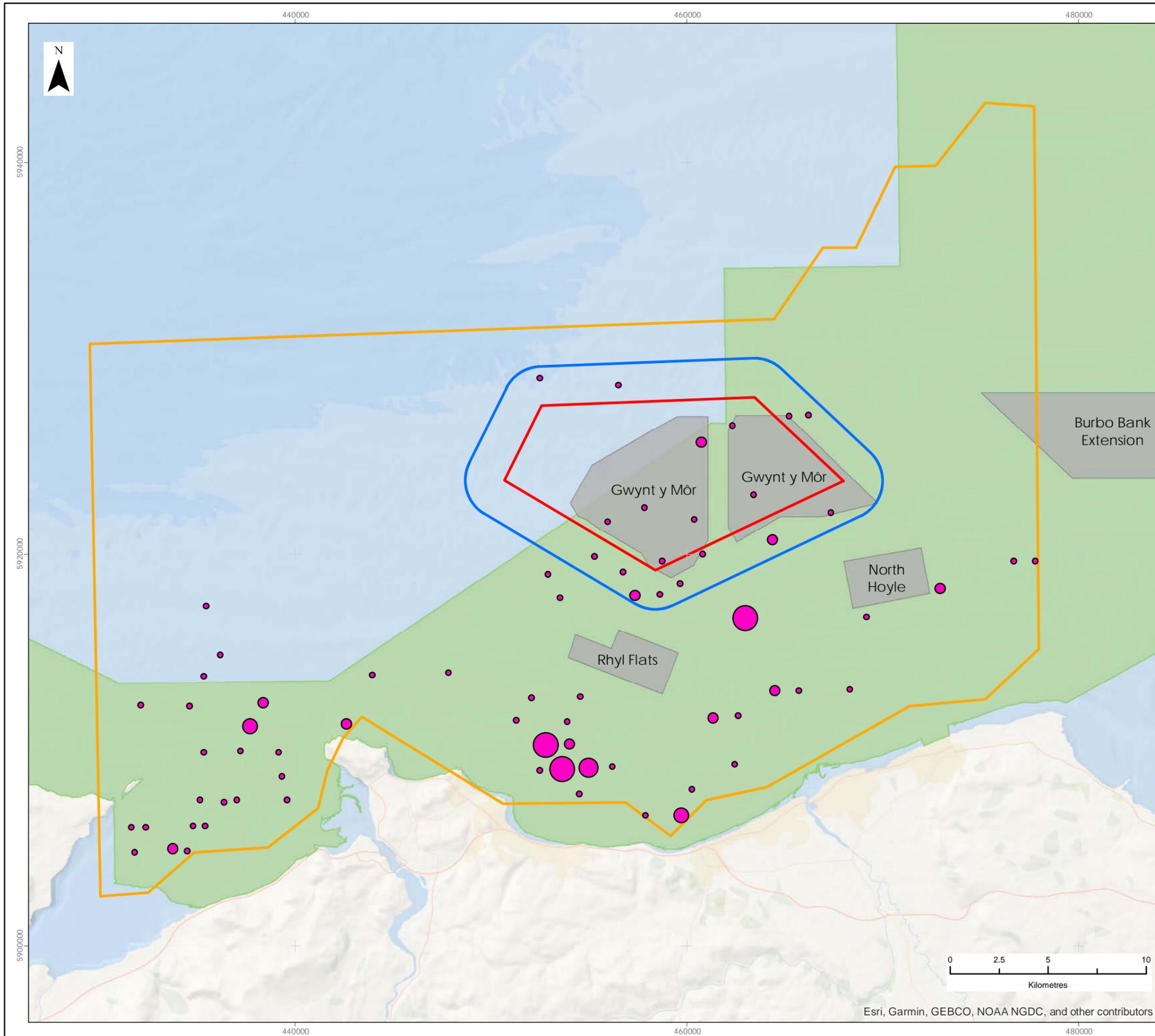
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Figure 4

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LEGEND

- Gwynt y Môr Wind Farm Area
- Gwynt y Môr Wind Farm 2km Buffer
- NW5 Survey Area
- Operational Offshore Wind Farm
- Liverpool Bay SPA

Red Throated Diver Distribution (2016-19)

- 1
- 2
- 3
- 4
- 5

Data Source:
Wind Farm data from The Crown Estate

PROJECT TITLE:
AWEL Y MÔR OFFSHORE WINDFARM

FIGURE TITLE:
Cumulative distribution of RTD during post-construction (2016-19)

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1	01/04/2022	For Issue For RTD Technical Note	BPHB	RM

FIGURE NUMBER:
Figure 5

SCALE: 1:200,000	PLOT SIZE: A3	DATUM: WGS84	PROJECTION: UTM30N
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Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

2.2.3 Distribution of RTD during GyM monitoring

- 18 Figure 3, Figure 4 and Figure 5 show the distributions of RTD surveyed in the pre-, during- and post-construction monitoring of GyM, respectively, with Figure 5 showing combined distribution for all post-construction monitoring surveys. Monitoring during all phases highlighted that the majority of RTDs surveyed were not within the array or 2 km buffer zone. The majority of RTD were recorded closer inshore. The data additionally suggests that the area proposed for the AyM development, directly west of the GyM+2km buffer (in the northwest of NW5), has low numbers of recorded RTD. Therefore, the GyM and AyM and immediate buffer zones are of low importance to RTD.
- 19 During-construction and post-construction surveys showed that a number of RTD were recorded within the GyM array and 2 km buffer zone. The number surveyed during both periods is smaller than those recorded in the south of the NW5 survey zone, close to shore (Figure 5), with highest densities recorded in the south-east of the NW5 survey zone during construction and the south-west of the NW5 survey zone during post-construction. The recording of RTD within the GyM array plus 2 km buffer zone during construction and post-construction demonstrates that there is not 100% displacement of RTD during construction or operation of GyM.

3 Discussion

3.1 International and national importance of GyM for RTD

- 20 To determine the relative importance of the GyM area for RTD, peak abundance estimates for 2018/19 can be compared to regional, national and international thresholds.
- 21 The UK SPA / Natura 2000 standard data form for the Liverpool Bay SPA records 1,171 RTD as regularly occurring in the SPA, or 6.89% of the GB population (RTD being a listed feature of the SPA makes its conservation status of international importance, even though the species is not present in internationally important numbers).
- 22 The global population of RTD is estimated to number c. 150,000-450,000 individuals (Wetlands International 2019), and the international threshold for birds wintering in NW Europe is set at 2,600.
- 23 The 1% regional, national and international importance thresholds for RTD are 81, 170 and 2,600, respectively. Although post-construction surveys have shown the NW5 area supports at least 1% of the population (with an estimated 254 individuals recorded in March 2019), RTD were only present in the GyM+2km area at a peak estimate of 22 birds which is well below the 1% regional, national and international importance thresholds. This shows that low numbers of divers used the wind farm area during the operational post-construction period and demonstrates that the site is of low relative importance to this species.

3.2 Importance of GyM and AyM for RTD

- 24 RTD are recorded throughout the pre-construction, construction and post-construction surveys within the array and 2 km buffer suggesting that there is not 100% displacement. The numbers recorded within the GyM plus buffer zone were low compared to the wider NW5 survey area (greater numbers are recorded in the waters closer to shore from GyM), with few recorded within the AyM proposed development area. This is supported by the AyM baseline surveys as presented in Volume 4, Annex 4.1: Offshore Ornithology Baseline Characterisation Report (application ref: 6.4.4.1), where the majority of RTD were recorded closer inshore.

25 Therefore, the pre-construction (and subsequent during- and post-construction) GyM monitoring surveys (inclusive of the NW5 study area) and the AyM baseline surveys do not suggest that the habitat around GyM and AyM are of particularly high value for RTD. Additionally, the GyM monitoring results suggest that there is unlikely to be 100% displacement of RTD from within the array and 2 km buffer for projects within this area during construction and operation.

3.3 Rhyl Flats post-construction monitoring

26 Post-construction monitoring of Rhyl Flats was undertaken between October 2009 and July 2012 (APEM, 2011; APEM 2012). RTD were recorded between October and February during the 2011/12 surveys with a peak count of 143 for the wider survey area in November 2011. A small number of birds were recorded within the footprint of the wind farm during the 2011/12 winter surveys indicating that despite the high sensitivity of this species to disturbance, displacement was not 100%. Diver occurrence within the survey area was recorded largely to the east of the offshore wind farm in both offshore and inshore areas, which is comparable to historic levels.

3.4 Conclusion

27 Analysis and interpretation of the pre-, during- and post-construction survey results has enabled an assessment of any changes in the abundance and distribution of RTD throughout the GyM construction and operation. Operation of GyM currently appears to have had little influence on the presence of RTDs in this area.

28 During all the pre-, during- and post-construction aerial surveys RTD were estimated to be present in such low densities (with their distribution not significantly varied across the survey areas) that GLMs could not be run for any of the surveys.

29 Only three RTD were recorded **in flight** during the post-construction surveys, of which only one was suitable for flight heights analysis. This supports the finding by (Langston, 2010) that this species is at low risk from collision.

- 30 Although significant differences of RTD densities **between the survey areas** were shown, with densities in the NW5 site being higher than those observed in the GyM+2km area across all construction phases, no significant effect of construction phase was found. Given that there can be large inter-annual variation in seabird numbers (Maclean *et al.* 2013) and that very low numbers of RTD were present before construction these changes could be by chance.
- 31 Higher predicted densities observed in the south-east of the NW5 area are to be expected as this area is larger and is stretched across Colwyn Bay, which contains preferred feeding habitats such as shallow waters (i.e., depths of 0-20 m which are associated with prey items such as herring *Clupea harengus* and sprat *Sprattus sprattus*).
- 32 It is considered that any small and insignificant increases observed within the NW5 area between pre-, during- and post-construction most likely reflects changes in RTD in the wider Liverpool Bay SPA for reasons that are unlikely to be associated with the wind farm.
- 33 Within the GyM+2km area, densities of RTD have remained low and relatively constant across pre-, during- and post-construction phase monitoring with the number having increased slightly in the 2017/18 post-construction surveys, then remaining stable in the 2018/19 surveys. However, any small fluctuation in numbers in the GyM+2km area during the pre-, during- and post-construction years is likely to be a chance or stochastic event since RTD were recorded in very low densities throughout, thus making it unlikely that the low numbers present during post-construction were due to displacement of this disturbance-sensitive species.

- 34 Despite Garthe & Hüppop (2004) showing that RTD are notoriously shy and are considered highly sensitive to wind farm development, the presented data suggests that they have not been displaced by 100% from the GyM array and 2 km buffer during construction or operation of the wind farm. This is supported by monitoring at Rhyl Flats which recorded RTD within the array and buffer zone post-construction. Based on the evidence of GyM and Rhyl Flats, displacement of RTD within this area of Liverpool Bay SPA is not 100%, therefore displacement in this area has been observed as lower than elsewhere in the North Sea and German Bight. This may be due to physical or ecological differences between the regions and highlights the necessity of using region-specific displacement estimates within offshore wind farm assessments.
- 35 It can be concluded that the GyM site was not of high relative importance to RTD either before or after the construction of the OWF, and that the recorded distribution of RTD within the survey areas suggests that the proposed AyM site is also not of high relative importance to RTD. Furthermore, the displacement results from GyM and Rhyl Flats monitoring are more likely to represent what might be seen for AyM, given the proximity of GyM and Rhyl Flats to AyM, which would suggest the sensitivity in this location is not as high as that seen in the examples that influence the recent guidance (JNCC, 2022), which states a displacement of 10 or more km and use of 100% displacement in at least the array area of a wind farm.

3.5 References

- APEM. (2011). Rhyl Flats Aerial and Boat Surveys – Post-Construction Year Two: Final Report. Report to RWE npower renewables. 140 pp.
- APEM. (2012). Rhyl Flats Aerial Surveys – Post-Construction Year Three: Final Report. Report to RWE npower renewables. 121 pp.
- APEM. (2019). Gwynt y Môr Offshore Wind Farm Post-construction Aerial Surveys Annual Report 2018/2019. Ref P00002798 June 2019
- ERM. (2005). Assessment of the environmental impacts of the Gwynt y Môr Offshore Wind Farm project on Birds and other terrestrial species. A report to npower renewables.
- Garthe, S & Hüppop, O. (2004). Scaling possible adverse effects of marine wind farms on seabirds: developing and applying a vulnerability index. *Journal of Applied Ecology*, 41, 724-734.
- JNCC. (2022). Joint SNCB Interim Displacement Advice Note.
- Langston, R.H.W. (2010). Offshore wind farms and birds: Round 3 zones, extensions to Round 1 and Round 2 sites and Scottish Territorial Waters. RSPB Research Report No. 39. RSPB, Sandy, UK.
- Maclean, I.M.D., Rehfisch, M.M., Skov, H. & Thaxter, C.B. (2013). Evaluating the statistical power of detecting changes in the abundance of seabirds at sea. *Ibis*, 155, 113-126.
- RWE Npower Renewables Ltd. (2005). Gwynt y Môr Offshore Wind Farm Environmental Statement.
- Skov, H. & Prins, E. (2001). Impact of estuarine fronts on the dispersal of piscivorous birds in the German Bight. *Marine Progress Series* 214, 279-287.
- Wetlands International (2019). Waterbird Population Estimates . Available from: wpe.wetlands.org [Accessed on 05/06/2019].

Appendix A

Table 2: Raw counts (count) and abundance estimates, lower confidence limits (-CL), upper confidence limits (+CL) and precision (CV') for RTD observed in the survey areas for all construction phases of GyM monitoring.

PHASE	MONTH	AREA	COUNT	ABUNDANCE ESTIMATE	-CL	+CL	CV'
Pre-construction	January '11	NW5	11	458	83	958	0.30
	February '11	GyM+2km	1	8	1	23	>1.00
During-construction	December '12	GyM+2km	2	9	2	23	0.71
	February '13	NW5	8	405	51	963	0.35
Post-construction	February '17	NW5	6	198	33	430	0.41
	March '17	GyM+2km	1	6	1	19	>1.00
	July '17	GyM+2km	0	-	-	-	-
	November '17 (autumn)	GyM+2km	0	-	-	-	-
NW5		0	-	-	-	-	

PHASE	MONTH	AREA	COUNT	ABUNDANCE ESTIMATE	-CL	+CL	CV'
Post-construction	November '17 (winter)	GyM+2km	6	33	6	72	0.41
	January '18	GyM+2km	1	6	1	17	1.00
		NW5	2	53	2	132	0.71
	February '18	GyM+2km	0	-	-	-	-
	March '18	NW5	54	932	569	1,397	0.14
	July '18	GyM+2km	0	-	-	-	-
	October '18	GyM+2km	0	-	-	-	-
		NW5	2	34	2	86	0.71
	November '18	GyM+2km	4	22	6	44	0.5
	January '19	GyM+2km	0	-	-	-	-
	February '19	NW5	7	200	193	208	0.39
	March '19	GyM+2km	0	-	-	-	-

PHASE	MONTH	AREA	COUNT	ABUNDANCE ESTIMATE	-CL	+CL	CV'
		NW5	11	254	251	257	0.34



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