

Llŷr Marine Ornithological Clarification Note 1

Checking the Llŷr figures adopted by Mona for cumulative / in-combination assessment

As requested by NRW (A) and JNCC, the figures adopted for Llŷr in the Mona cumulative / in-combination assessments have been checked and confirmed to be correct.

NRW (A) and JNCC are content with the gap-filling exercise undertaken by Mona, and they accept that applicant’s impact estimates (collision risk and displacement mortalities) for the Liverpool Bay projects with no available data. The modelling, methodologies and overall approach adopted by Mona for their cumulative and in-combination assessments have been accepted by NRW (A) and JNCC and use the correct input figures for Llŷr. Therefore, this matter should now be closed out with the provision of this clarification note.

1. Displacement

As presented in **Table 1**, HiDef have checked that the correct mean seasonal peak (MSP) figures for Llŷr have been taken forward by Mona for their cumulative / in-combination displacement assessments. The information is taken from the following sources, to which the table numbering and page references (viewer mode) apply:

- **Mona** - Deadline 7 ES Cumulative Assessments, REP7-033, Section 5.9
- **Llŷr** - ES_Appendix 22D_Marine Ornithology Displacement Assessment

Table 1 – Confirmation that correct seasonal abundances for Llŷr have been adopted in the Mona cumulative / in-combination assessments

Species for displacement assessment	Llŷr Breeding season abundance	Breeding season abundance for Llŷr given in Mona	Llŷr Non-breeding season abundance	Mona Non-breeding season abundance for Llŷr given in Mona	Llŷr ref	Mona ref
Guillemot	2,026	2,026	13,009	13,009	Table 22-2	Table 5-52, p142
Razorbill	21	21	493	493	Table 22-2	Table 5-56, p146
Puffin	152	152	592	592	Table 22-2	Table 5-62, p150
Gannet	246	246	715 / 65	715 / 65	Table 22-2	Table 5-66, p153
Manx shearwater	3,434	3,434	27 / 1,267	27 / 1,267	Table 22-2	Table 5-76, p160

2. Collision Risk

As presented in **Table 2**, HiDef have checked that the correct seasonal mortality estimates for Llŷr have been taken forward by Mona in their cumulative / in-combination collision risk assessments. The information is taken from the following sources, to which the table numbering applies:

- **Mona** - Deadline 7 ES Cumulative Assessments, REP7-033, Section 5.9
- **Llŷr** - ES_Appendix 22C_Marine Ornithology Collision Risk

As these collision mortality estimates are a seasonal summary, there are slight differences related to the number of decimal points applied for presentational purposes, as well as in relation to the seasonal definitions adopted. These slight differences are not material nor statistically significant in relation to the standard deviations provided as the agreed measure of uncertainty in sCRM outputs.

The figures presented below are also the ‘worst case’ in terms of the Llŷr turbine scenario selected for modelling (the maximum 10 turbine scenario), and CRM avoidance rates applied.

Table 2 – Confirmation that correct collision mortality estimates for Llŷr have been adopted in the Mona cumulative / in-combination assessments

Collision mortality estimates	Breeding season	Autumn migration	Non-breeding	Spring migration	Annual Total
Kittiwake					
Llŷr - Table 22-5, 10 turbine scenario	Mar - Aug	Sep - Dec	N/A	Jan - Feb	-
Seasonal mortality	1.1	20.6	-	2.1	23.9
<i>SD</i>	0.3	2.8	-	0.4	3.8
Mona - Table 5-116, figures for Llŷr	May - Jul	Aug - Dec	-	Jan - Apr	-
Seasonal mortality	1.13	21.19	-	2.16	24.48
Lesser black-backed gull					
Llŷr - Table 22-7, 10 turbine scenario	Apr - Aug	Sep - Oct	Nov-Feb	Mar	-
Seasonal mortality	1.1	0.2	0.2	0.4	1.9
<i>SD</i>	0.2	0.1	0.1	0.2	0.6
Mona - Table 5-123, figures for Llŷr	May - Jul	Aug - Oct	Nov-Feb	Mar - Apr	-
Seasonal mortality	1.12	0.20	0.20	0.41	1.93

Collision mortality estimates	Breeding season	Autumn migration	Non-breeding	Spring migration	Annual Total
Gannet					
Llŷr – Table 22-8, 10 turbine scenario	Mar - Sep	Oct - Nov	N/A	Dec - Feb	-
Seasonal mortality	3.0	0.5	-	0.3	3.7
<i>SD</i>	<i>0.6</i>	<i>0.3</i>	-	<i>0.1</i>	<i>1.5</i>
Mona - Table 5-127, figures for Llŷr	Apr - Aug	Sep - Nov	N/A	Dec - Mar	-
Seasonal mortality	3.09	0.51	-	0.31	3.91
Great black-backed gull					
Llŷr - Table 22A8*, 10 turbine scenario	Mar - Aug	N/A	Sep - Feb	N/A	-
Seasonal mortality	0.653	-	0.960		1.613
Mona - Table 5-117, figures for Llŷr	Mar - Aug	N/A	Sep - Feb	N/A	-
Seasonal mortality	0.65	-	0.96	-	1.61

*Table 22A8 in Annex A of Llŷr ES Appendix 22C provides monthly CRM outputs for great black-backed gull as agreed by NRW (A) and JNCC.

The monthly estimates for all species were given to three decimal places (DPs) in this Annex and were only summarised to a single DP for presentation of the seasonal summaries.