

SZC operational WDA: Company's response to Sch 5 [No.2] for information requests 10 (a) to (f): Initial response provided 25/02/2021 before formal submission, and formal submission provided within response 3 (dated 18/03/2021)

Below are two tables with information regarding the SZC WDA Schedule 5 notice [No.2] response for question 10(a) to 10(f).

Table 1 contains the pre-response detail from the company regarding the information that is and is not available to address 10(a) to 10(f). This is mainly missing raw data and substantial aspects for response 10(a). It also includes our response and advice dated 12/03/2021 in response. Table 2 contains a check of the company's response to question 10(f), as provided in the pre-response on the 25/02/2021. This is to cross-reference the location of the mean and mean/maximum foraging ranges data within Appendix C of the WDA (App C is the company's HRA supporting information report), and to confirm the reports used as references. The final page contains our original information requests for 10(a) to 10(f) from Schedule 5 [No.2] for reference

Table 1: Pre-response Information provided by company on 25/02/2021 in advance of formal response to information requests 10(a) to 10(f) for Sch 5 [No.2], and our responses dated 12/03/2021.

Query raised by EA in Sch 5 notice [No.2]		SZC company's pre-response dated 25/02/2021	EA comments and response to the company dated 12/03/2021											
10(a)	Flight lines, areas of foraging activity, locations of peak foraging and loafing, and vantage locations as shown in plates 6.1 to 6.4, and 6.6 to 6.13 inclusive.	GIS data and the majority of the raw data is not available given that the reports are from approximately ten years ago. Only raw data for Plate 6.2 and Plate 6.4 is available.	<p>It is appreciated that there are difficulties with addressing the missing information request 10(a). Please provide the information that is currently available, which indicated in your e-mail below is raw data for plates 6.2 and 6.4. However, as we recently discussed, we require written confirmation of the difficulties in acquiring the requested information as formal response to the Schedule 5 notice. For example:</p> <ul style="list-style-type: none"> Is it impossible as the information no longer exists? Is it possible, albeit with difficulties in terms of time/financial resources to acquire from archives/3rd parties/previous consultants etc? <p>Although our technical team have indicated that we can proceed without the missing information from request 10(a), there may come a point later during the process when this information is required to proceed with aspects of the determination. Therefore, all reasonable steps needed to acquire this information should be considered now (as it may prevent a potential delay later), and communicated to us in writing in place of the information requested for plates 6.1, 6.3, and 6.6 to 6.11 inclusive via 10(a).</p> <p>In terms of the remaining information requests via 10(b) to 10(f), please provide the data that is available. We asked for the raw files/data to be provided in case we were unable to use the GIS files (e.g. if they are incompatible with the software available to us). We need to check the GIS files you have stated are available, and see if they operate with our systems. If they do, then the lack of the raw data/files will not be an issue (this comment applies to each case where the raw data is unavailable but GIS files are available) and allow us to close out this aspect of the information request.</p>											
10(b)	Thermal and chemical plumes as shown in plates 8.1, and 8.3 to 8.6	GIS data provided for thermal and chemical plumes (plates 8.1 and 8.3 to 8.6) are provided as part of the Schedule 5 request. The raw data was not available as the data was received in a modelling spatial format (NetCDF files) and then converted into GIS data (which is then used in analysis and mapping).												
10(c)	Breeding colony locations and predicted foraging ranges as in plates 8.1, and 8.3 to 8.8.	GIS data provided for breeding colony locations and predicted foraging ranges as part of the Schedule 5 request. Raw data provided for Plate 8.8. The raw data was not available as the data was received in a modelling spatial format (NetCDF files) and then converted into GIS data (which is then used in analysis and mapping).												
10(d)	The vantage locations as provided in figure 6.1	GIS files have been provided for the vantage locations (figure 6.1) as part of the schedule 5 request. The raw data is not available because the data is just survey locations.												
10(e)	The thermal plumes as shown in figures 5.3 to 5.10, and chemical plumes as shown in figures 5.11 to 5.13.	GIS data provided for thermal (figures 5.3 to 5.10) and chemical plumes (figures 5.11 to 5.13) as part of the Schedule 5 request. The raw data was not available as the data was received in a modelling spatial format (NetCDF files) and then converted into GIS data (which is then used in analysis and mapping).												
10(f)	From your Appendix C report (Information for the Habitats Regulations Assessment – 100232391), please confirm and provide the 'mean foraging range', and the 'mean maximum foraging range' figures for each species as given in the body of text. Please provide this information in an Excel spreadsheet format	<p>We assume that the EA are referring to the values used to examine overlaps of predicted foraging ranges with thermal and chemical plumes for Sandwich tern, common tern and lesser black-backed gull -</p> <p>Details of the values used and their derivation are provided in the sHRA but are as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>Mean foraging range</th> <th>Mean mx foraging range</th> </tr> </thead> <tbody> <tr> <td>Sandwich tern</td> <td>11.5km</td> <td>32km</td> </tr> <tr> <td>Common tern</td> <td>4.5km</td> <td>18.6km</td> </tr> <tr> <td>Lesser black-backed gull</td> <td>72km</td> <td>141km</td> </tr> </tbody> </table> <p>The mean max values from the two tern species are as determined in the Wilson et al JNCC report, whilst all other values are from Thaxter et al (2012). The mean values for the two tern species are taken from Thaxter et al because the Wilson et al report does not provide mean foraging range values. Values were taken from Thaxter et al and not from the updated foraging range estimates (Woodward et al.) because the work on determining overlaps with plumes was undertaken prior to the Woodward et al. report being formally published. It is not clear to us why the request includes a requirement to provide an excel spreadsheet</p>			Mean foraging range	Mean mx foraging range	Sandwich tern	11.5km	32km	Common tern	4.5km	18.6km	Lesser black-backed gull	72km
	Mean foraging range	Mean mx foraging range												
Sandwich tern	11.5km	32km												
Common tern	4.5km	18.6km												
Lesser black-backed gull	72km	141km												

Table 2: AEV checks of information provided by company in response to 10(f) following Sch 5 [No.2] pre-response on 25/02/2021, and formal response submission on 18/03/2021

Species	Mean foraging range		Mean maximum foraging range	
	Response dated 25/02/2021	Location in HRA report Appendix C of WDA	Response dated 25/02/2021	Location in HRA report Appendix C of WDA
Sandwich tern	11.5km	8.4.14 (ref 4.6)	32km but has been recorded over 50km (ref 6.31)	6.3.26 (based on a generic model of range usage derived from a UK-wide study encompassing a range of colonies), 6.3.27, 8.4.13,
Common tern	4.5km	8.8.7 (ref 4.6)	18.6km but has been recorded up to 30km have been recorded (ref 6.31, section 6.3g)	6.3.70, 6.3.76 (based on a generic model of range usage derived from a UK-wide study encompassing a range of colonies) and 8.8.4
Little tern (EA checked data for this species)	Unable to confirm within App C	There is no data other than mean-max foraging range	3.9km alongshore (ref 6.15) 2.4km seaward (ref 6.15)	6.3.11 (based on surveys of foraging little terns at a range of colonies around the UK coastline), 6.3.48, 6.3.59, 6.3.68, 8.4.29, 8.5.1, 8.6.3
Lesser black-backed gull	72km	8.4.35 (ref 4.8)	141km	6.3.38, 6.3.40 (ref 6.30), 6.3.41 (ref 4.6), 8.4.35, ref 4.8 (section 6.3b)
References from above (we do not have copies of these reports/documents, if required we may need to request via Sch 5)				

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- **Ref 4.6:** C. B. Thaxter et al. *Measuring the interaction between marine features of Special Protection Areas with offshore wind farm developments zones through telemetry: second year report* (BTO Research Report No. 610). British Trust for Ornithology, Thetford. 2012a.
- **Ref 4.8:** E. D. Wakefield et al. *Breeding density, fine-scale tracking, and large-scale modelling reveal the regional distribution of four seabird species*. *Ecological Applications*, 2017, 27, p. 2074–2091.
- **Ref 6.15:** M. Parsons et al (2015). *Quantifying foraging areas of little terns around its breeding colony SPA during chick-rearing*. JNCCA Report no. 548. JNCC, Peterborough
- **Ref 6.30:** C. B. Thaxter et al. *Seabird foraging ranges as a preliminary tool for identifying candidate Marine Protected Areas*. *Biological Conservation*, 2012a, 156, pp.53-61.
- **Ref 6.31:** L. J. Wilson et al. *Quantifying usage of the marine environment by terns *Sterna* sp. around their breeding colony SPAs*. JNCC Report No. 500. JNCC, Peterborough, 2014, pp. 125.

For reference: EA information request for 10(a) to 10(f) within Schedule 5 [No.2]

Please provide the following information as specified via points (a) to (f) below. Please provide your responses for requests (a) to (e) in the format specified within points 1.) and 2.). The information requested via (f) below is standalone, and is requested in a specific format (please refer to the supporting text for point (f) below for confirmation).

The information requests (a) to (f) are to allow comparisons to be made between the plume extent (thermal and chemical) and ecological data sets, and for in-combination impact of plumes of different types to be considered.

The additional information requested below is mainly for GIS files, and the relevant underlying raw data, as we consider it will be simpler, quicker and more efficient for us, given these data sets, to undertake the analysis required to make, as yet undefined, comparisons for ourselves, rather than require you (the applicant) to make and report on each comparison, as and when these are defined. This should reduce the potential for additional, future Schedule 5 requests for additional information.

We therefore require, where relevant, for each of the following information requests in points (a) to (e) below to be provided in **both**:

- 1.) the GIS file format used in producing the relevant figure or plate within your supporting information documents, and
- 2.) as raw data from which the GIS layer was produced.

We require both formats to be provided, as we anticipate to use the GIS files directly within the software available to us, but if this is not possible, to derive our own GIS layers from the raw data provided.

Therefore, from your Appendix C report (Information for the Habitats Regulations Assessment – 100232391) and Appendix D report (WFD compliance assessment), please provide your responses to **10 (a) to 10 (e)** in both formats **1.)** and **2.)**:

(a) Flight lines, areas of foraging activity, locations of peak foraging and loafing, and vantage locations as shown in plates 6.1 to 6.4, and 6.6 to 6.13 inclusive.

(b) Thermal and chemical plumes as shown in plates 8.1, and 8.3 to 8.6.

(c) Breeding colony locations and predicted foraging ranges as in plates 8.1, and 8.3 to 8.8.

(d) The vantage locations as provided in figure 6.1

(e) The thermal plumes as shown in figures 5.3 to 5.10, and chemical plumes as shown in figures 5.11 to 5.13.

(f) From your Appendix C report (Information for the Habitats Regulations Assessment – 100232391), please confirm and provide the 'mean foraging range', and the 'mean maximum foraging range' figures for each species as given in the body of text. Please provide this information in an Excel spreadsheet format.