

The following supplement accompanies the article

## Predicting large-scale habitat suitability for cetaceans off Namibia using MinxEnt

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Table S1. Table of the data sources used in this study and their associated prior(s) used to produce a nuisance offset, as per a MinxEnt modelling approach (Merow et al. 2016).

Platform(s)	Prior(s)
1. Aerial dedicated surveys Sightings from shore	Binary map of 2 km distance from shore
2. Fishing boats	Binary map of the tracks
3. Mining boats	Binary map of 2 km buffered around the sightings
4. Seismic survey vessels	Binary map of the licence blocks sampled
5. Namibian Dolphin Project surveys on <i>!Anichab</i> and <i>Mirabilis</i> vessels	Binary map of the Namibian Islands Marine Protected Area and 200 m distance to the Namibian Islands Marine Protected Area
6. Small boat dedicated surveys	Distance from launch site
7. Tour boats <i>!Anichab</i> Island run	Binary map of the tour boats tracks Binary map of the Namibian Islands Marine Protected Area

Table S2. Descriptive statistics of the environmental variables used to predict seasonal distributions of different cetacean species.

Environmental variable	Mean	Standard deviation	Minimum	Maximum	Sources	Original spatial resolution	
Depth (m)	-2895,4	-1690,9	-5000,0	0,0	<a href="http://www.gebco.net/">http://www.gebco.net/</a> <a href="http://www.natureearthdata.com">http://www.natureearthdata.com</a>		
Distance from shore (m)	303020,5	190206,2	5,5	792438,3			
Slope (°)	76,0	32,2	0,0	90,0			
Complexity (°)	20,6	30,0	0,0	90,0			
Chl <i>a</i> (mg.m <sup>-3</sup> )	Spring	1,5	2,3	0,2	16,8	<a href="https://giovanni.gsfc.nasa.gov/giovanni/">https://giovanni.gsfc.nasa.gov/giovanni/</a>	4 km
	Summer	1,0	1,8	0,1	15,6	<a href="https://giovanni.gsfc.nasa.gov/giovanni/">https://giovanni.gsfc.nasa.gov/giovanni/</a>	4 km
	Autumn	1,3	2,1	0,1	20,1	<a href="https://giovanni.gsfc.nasa.gov/giovanni/">https://giovanni.gsfc.nasa.gov/giovanni/</a>	4 km
	Winter	1,6	2,1	0,2	16,8	<a href="https://giovanni.gsfc.nasa.gov/giovanni/">https://giovanni.gsfc.nasa.gov/giovanni/</a>	4 km
SST (°C)	Spring	16,9	1,1	12,5	19,5	<a href="https://giovanni.gsfc.nasa.gov/giovanni/">https://giovanni.gsfc.nasa.gov/giovanni/</a>	4 km
	Summer	20,7	1,4	15,2	23,5	<a href="https://giovanni.gsfc.nasa.gov/giovanni/">https://giovanni.gsfc.nasa.gov/giovanni/</a>	4 km
	Autumn	20,1	2,0	13,8	23,8	<a href="https://giovanni.gsfc.nasa.gov/giovanni/">https://giovanni.gsfc.nasa.gov/giovanni/</a>	4 km
	Winter	17,0	1,4	12,7	19,3	<a href="https://giovanni.gsfc.nasa.gov/giovanni/">https://giovanni.gsfc.nasa.gov/giovanni/</a>	4 km

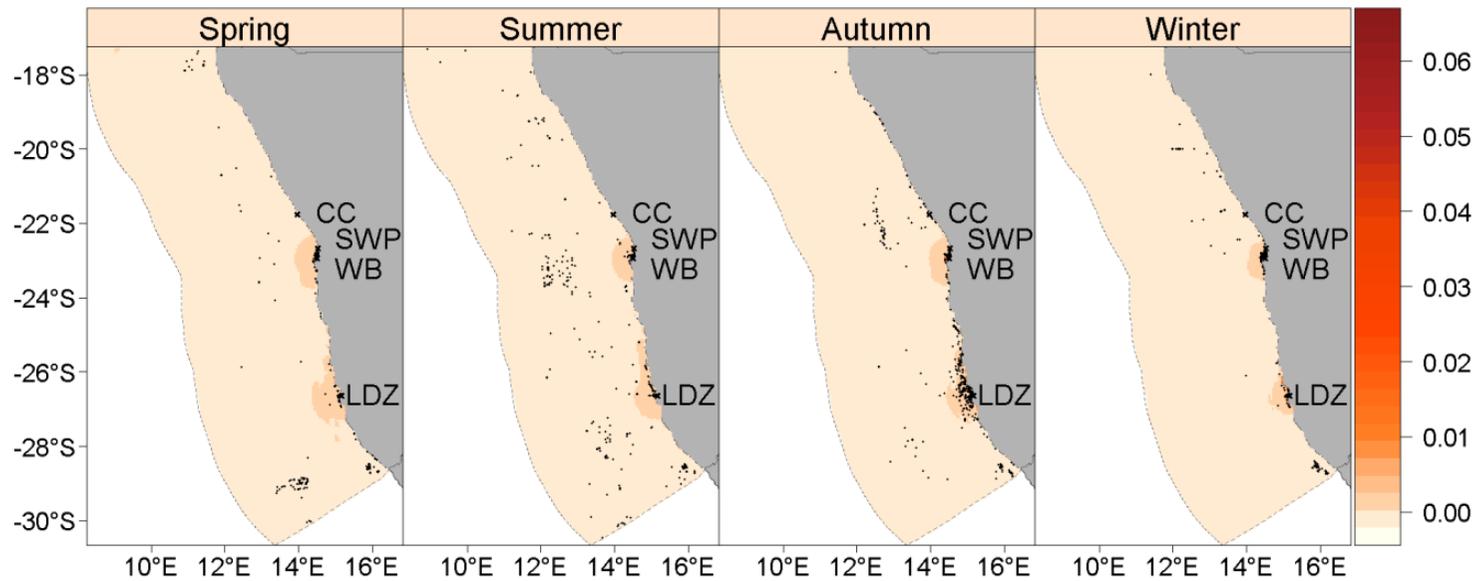


Fig. S1. Maps of predicted seasonal sampling bias using a MaxEnt model with the combined sampling intensity dataset (Fig. 2) and the associated records (nuisance offsets), within the study area. Darker red colours highlight the areas with high sampling effort and lighter orange colours show the areas with less or no sampling effort. Towns are represented by abbreviations: CC for Cape Cross, SWP for Swakopmund, WB for Walvis Bay and LDZ for Lüderitz.

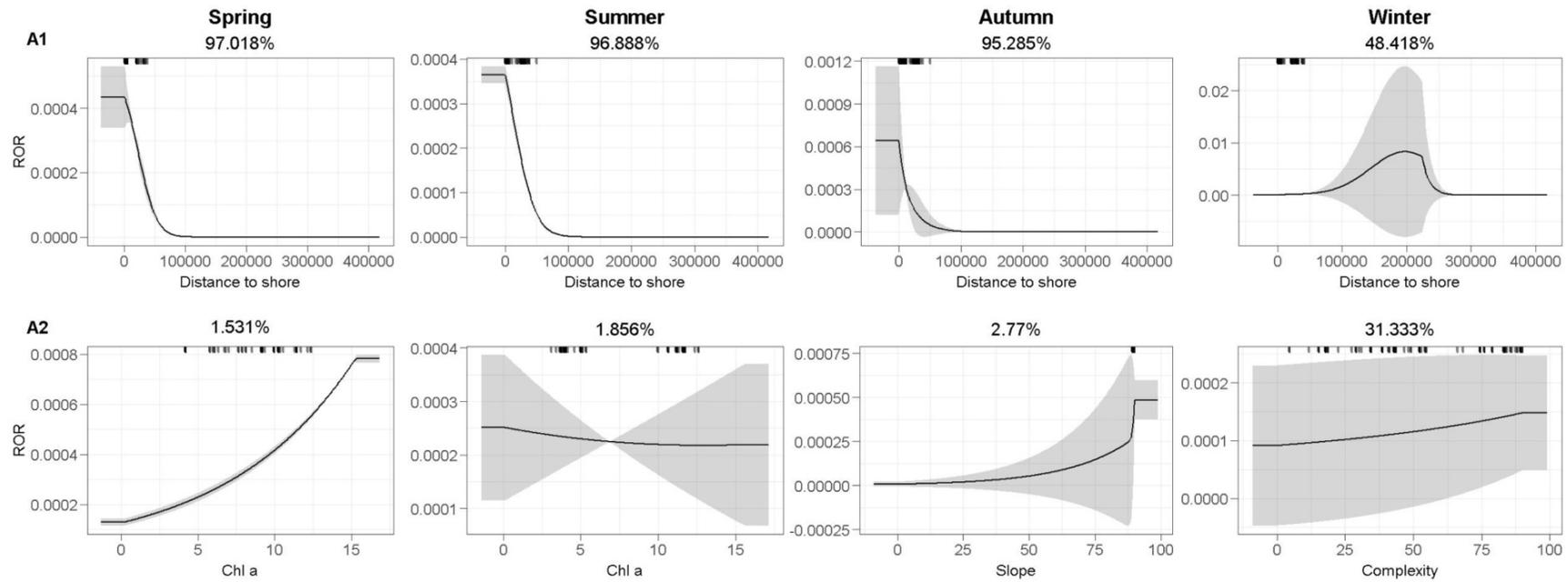


Fig. S2. Response curves for each season illustrating the relationship between the most important environmental variable (row A1), or the second most important environmental variable (row A2), and the relative occurrence rate (ROR; a measure of habitat suitability) of Heaviside's dolphins *Cephalorhynchus heavisidii*. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Distance to shore (m); Chl a = chlorophyll *a* concentration ( $\text{mg}\cdot\text{m}^{-3}$ ); Slope = seabed slope (degrees); Complexity = habitat complexity (the rate of change of slope: degrees of degrees).

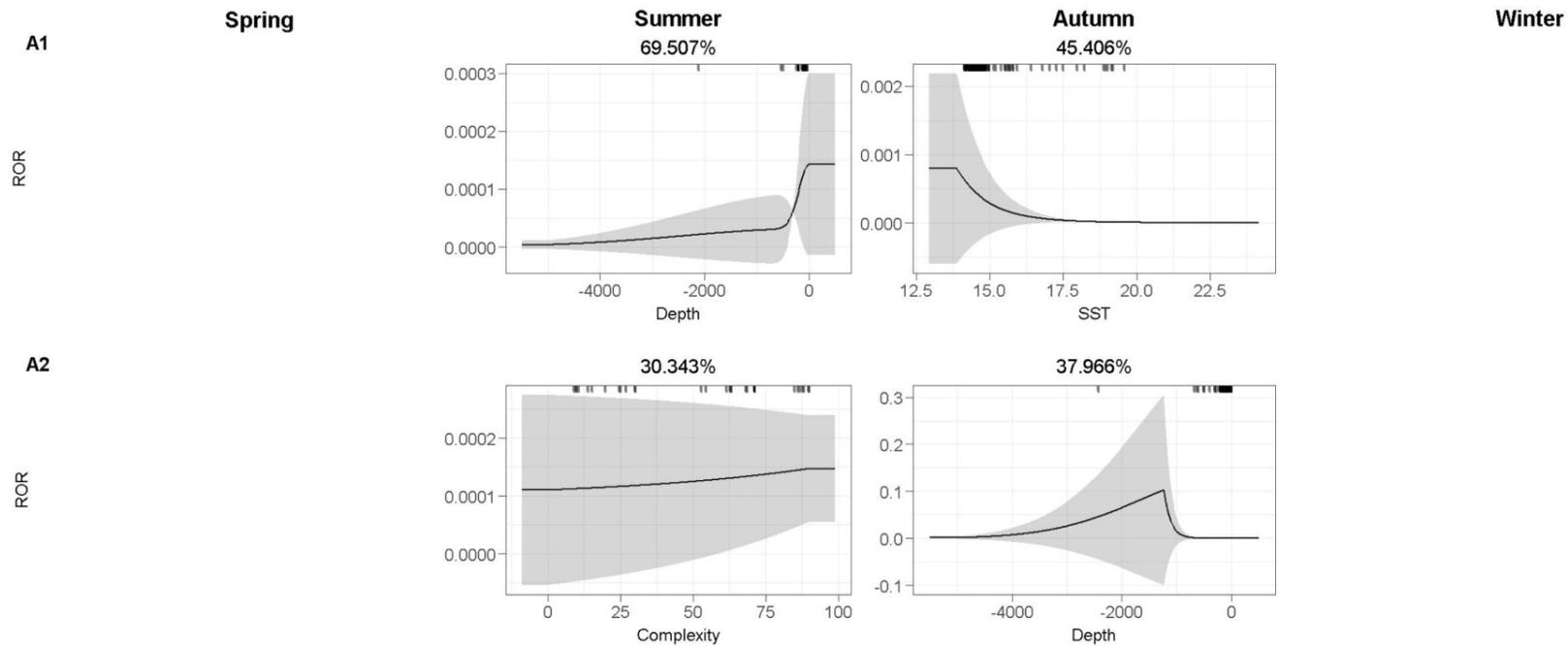


Fig. S3. Response curves illustrating the relationship between the most important environmental variable (row A1) or the second most important environmental variable (row A2) in summer and the relative occurrence rate (ROR) of dusky dolphins *Lagenorhynchus obscurus*. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Depth (m); SST= sea surface temperature (°C) ; Complexity = habitat complexity (the rate of change of slope: degrees of degrees).

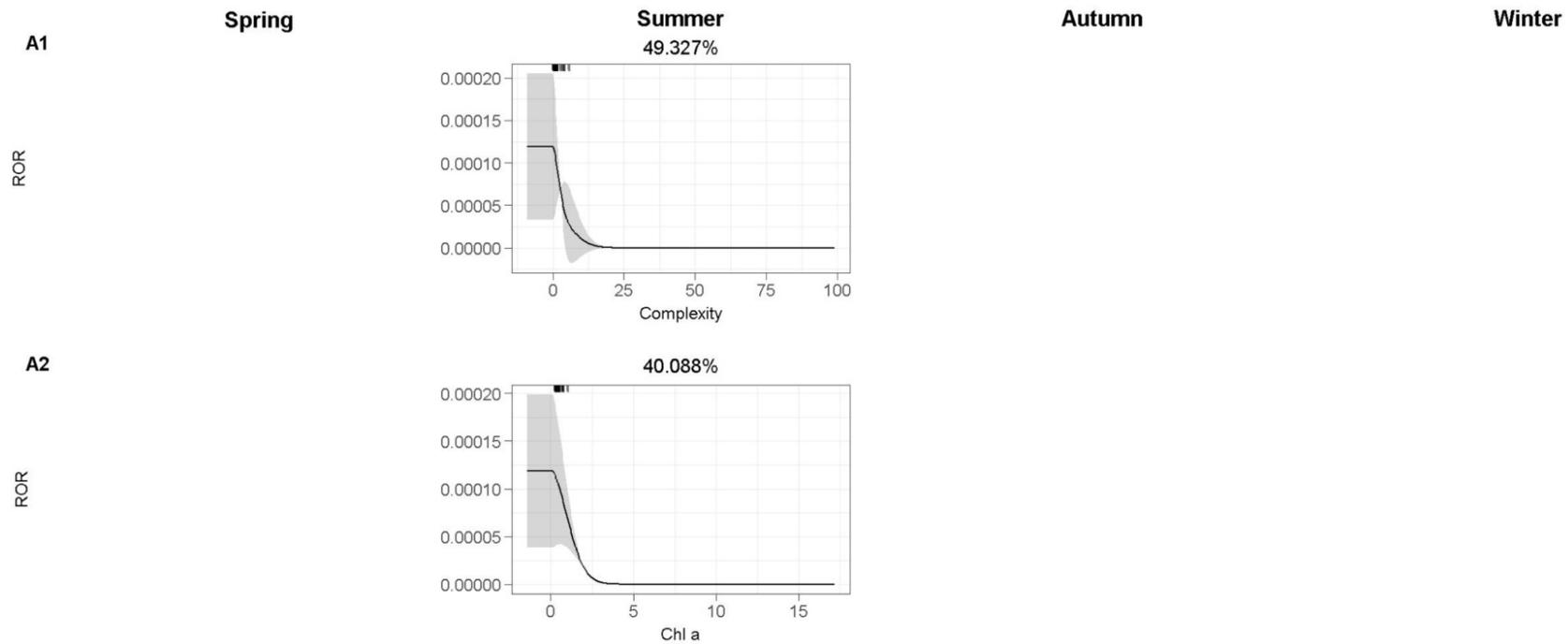


Fig. S4. Response curves illustrating the relationship between the most important environmental variable (row A1) or the second most important environmental variable (row A2) in summer and the relative occurrence rate (ROR) of common dolphins *Delphinus delphis*. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Complexity = habitat complexity (the rate of change of slope: degrees of degrees); Chl a = chlorophyll *a* concentration ( $\text{mg} \cdot \text{m}^{-3}$ ).

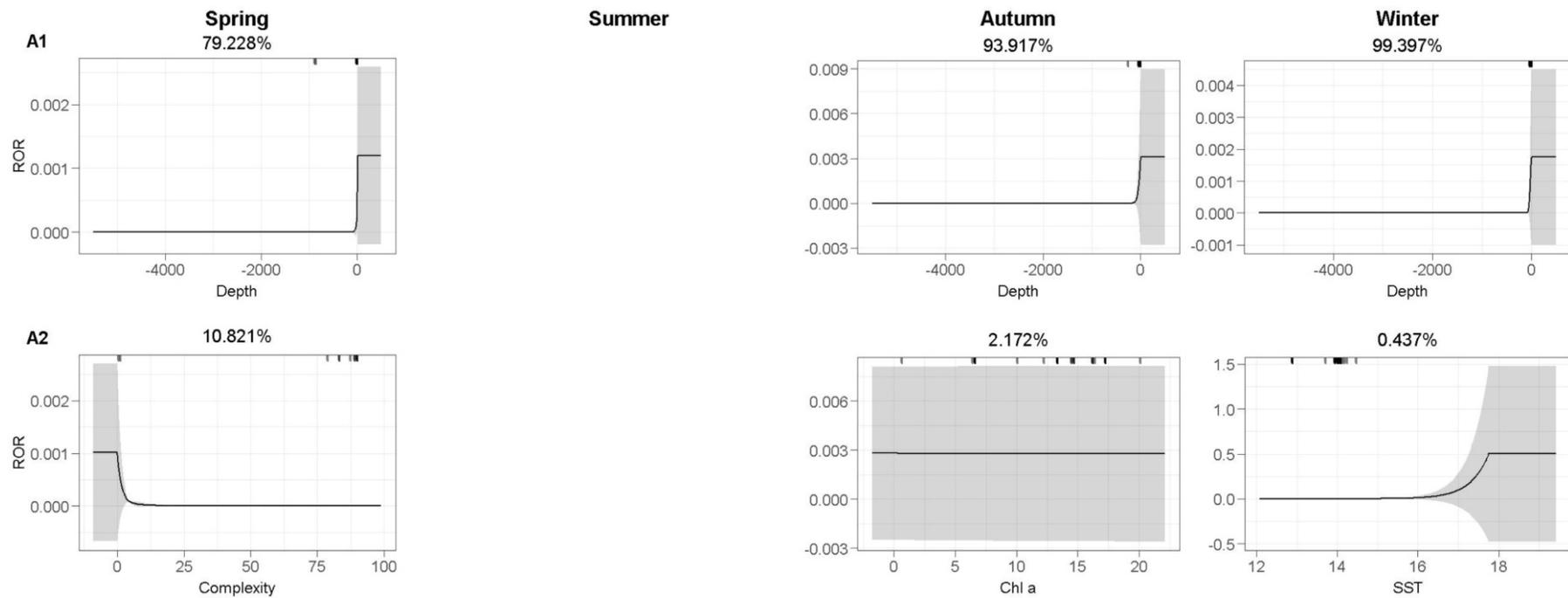


Fig. S5. Response curves illustrating the relationship between the most important environmental variable (row A1) or the second most important environmental variable (row A2) per season and the relative occurrence rate (ROR) of bottlenose dolphins *Tursiops truncatus*. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Depth (m); Chl a = chlorophyll *a* concentration ( $\text{mg}\cdot\text{m}^{-3}$ ); SST = sea surface temperature ( $^{\circ}\text{C}$ ); Complexity = habitat complexity (the rate of change of slope: degrees of degrees).

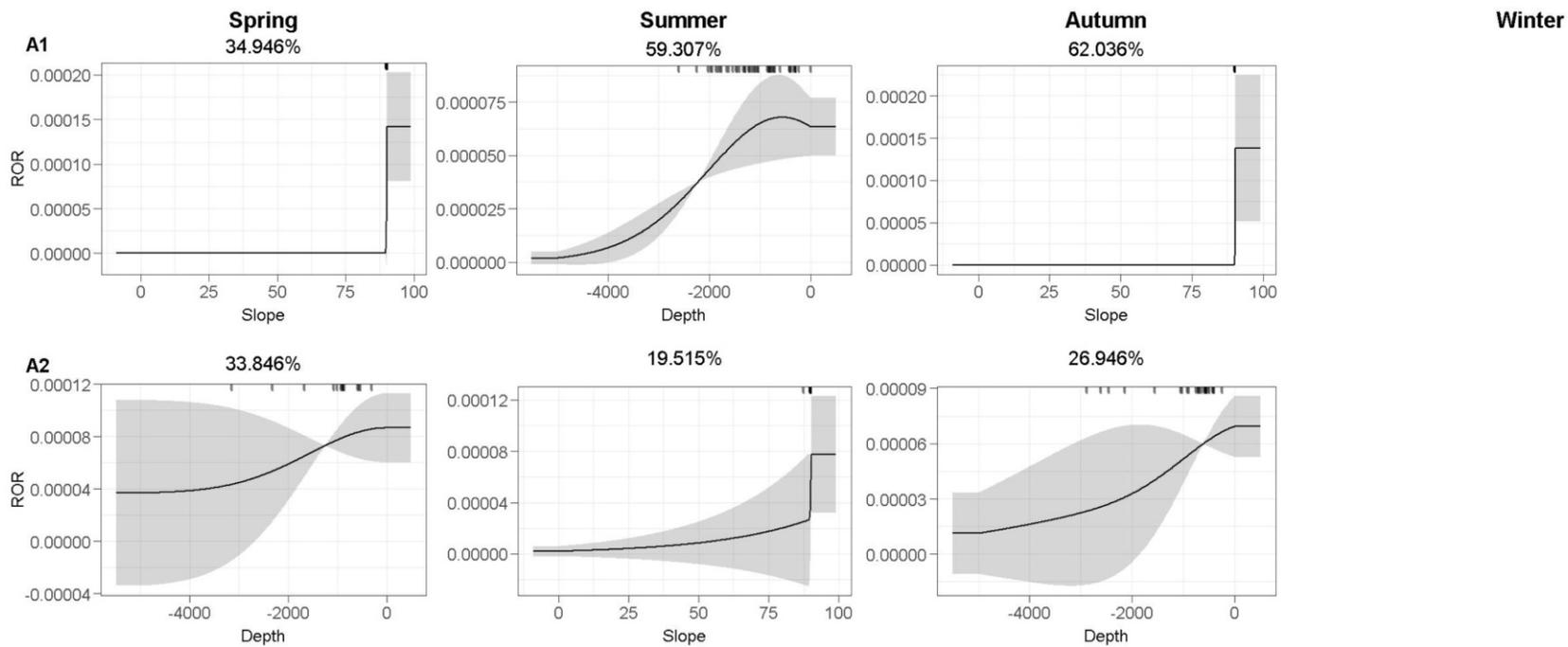


Fig. S6. Response curves illustrating the relationship between the most important environmental variable (row A1) or the second most important environmental variable (row A2) per season and the relative occurrence rate (ROR) of pilot whales *Globicephalus* spp. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Depth (m); Slope = seabed slope (degrees).

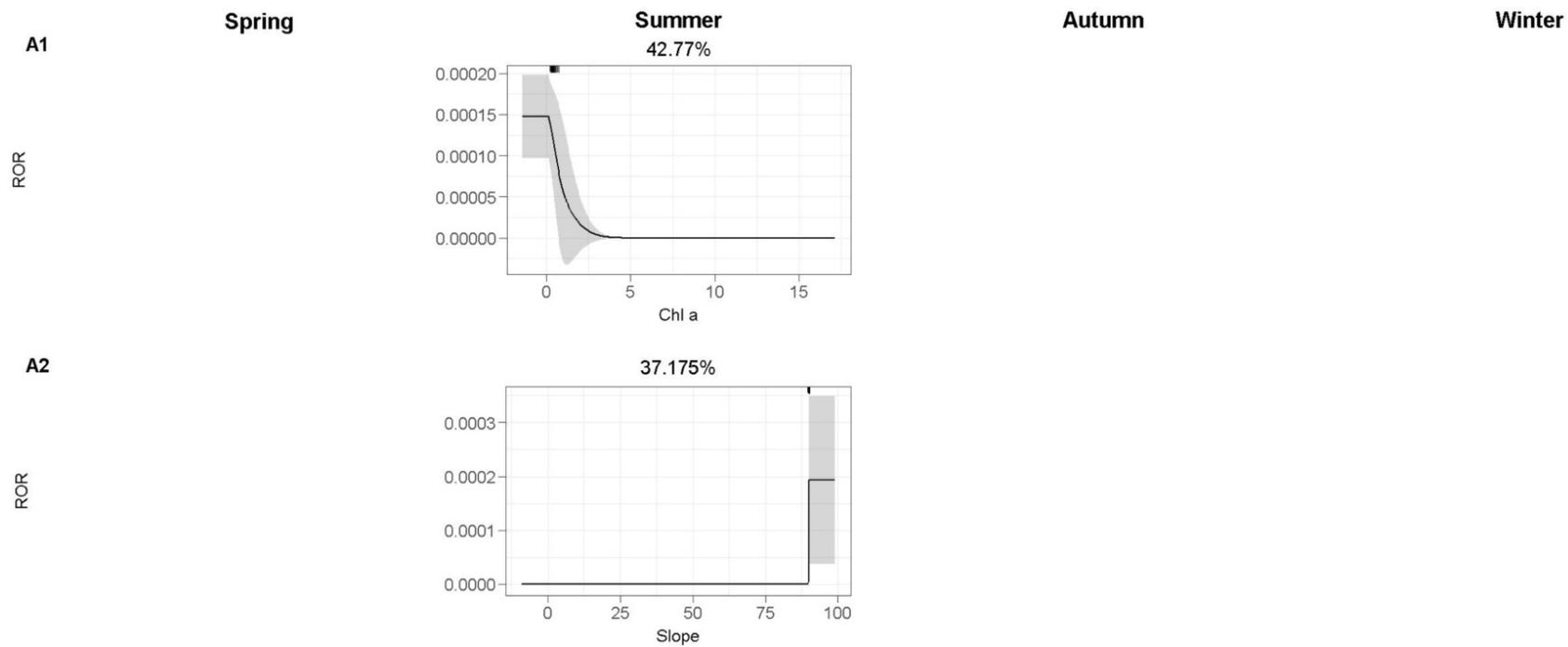


Fig. S7. Response curves illustrating the relationship between the most important environmental variable (row A1) or the second most important environmental variable (row A2) in summer and the relative occurrence rate (ROR) of sperm whales *Physeter macrocephalus*. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Chl a = chlorophyll *a* concentration ( $\text{mg}\cdot\text{m}^{-3}$ ); Slope = seabed slope (degrees).

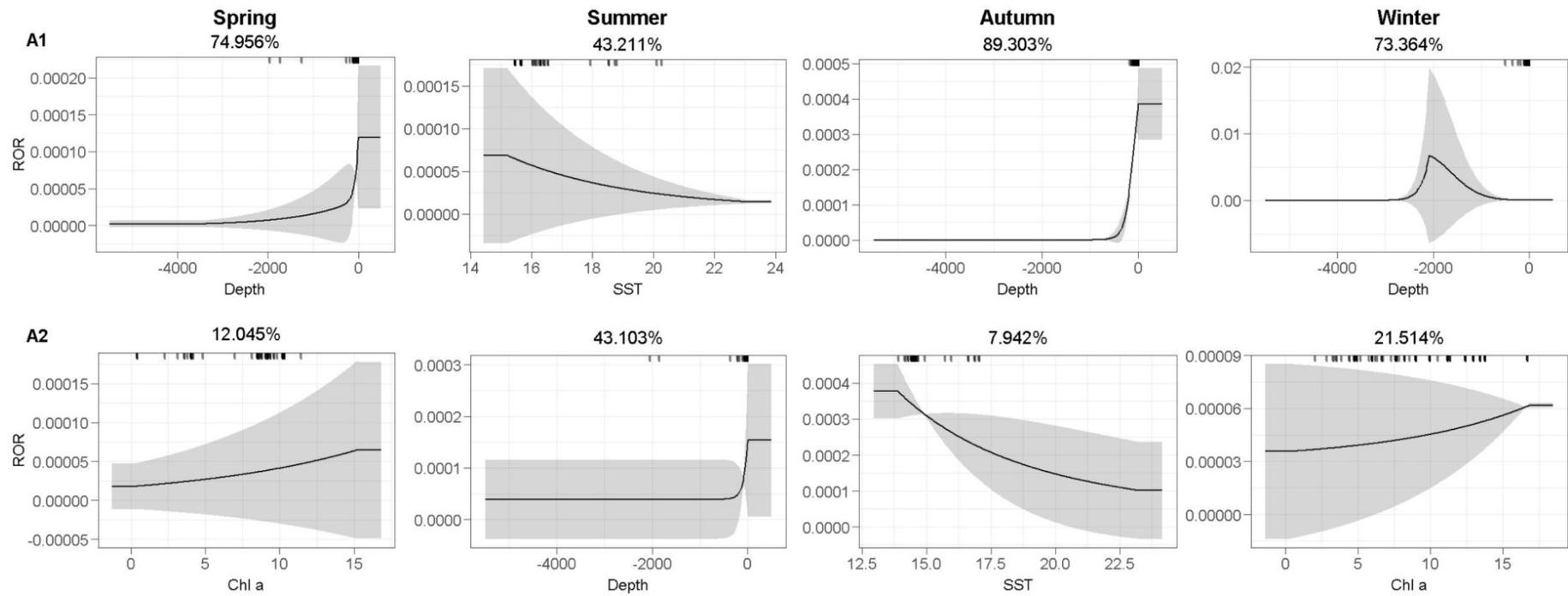


Fig. S8. Response curves illustrating the relationship between the most important environmental variable (row A1) or the second most important environmental variable (row A2) per season and the relative occurrence rate (ROR) of humpback whales *Megaptera novaeangliae*. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Depth (m); Chl a = chlorophyll *a* concentration (mg.m<sup>-3</sup>); SST = sea surface temperature (°C).

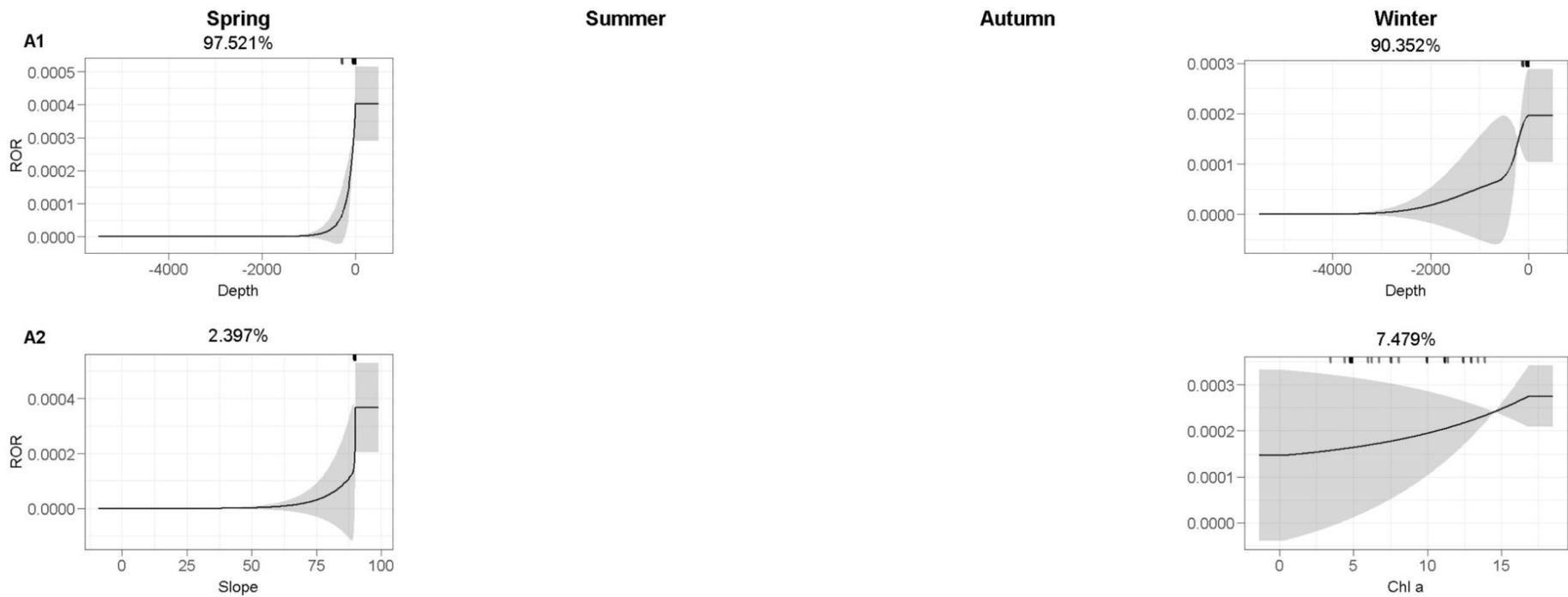


Fig. S9. Response curves illustrating the relationship between the most important environmental variable (row A1) or the second most important environmental variable (row A2) per season and the relative occurrence rate (ROR) of southern right whales *Eubalaena australis*. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Depth (m); Chl a = chlorophyll *a* concentration (mg.m<sup>-3</sup>); Slope = seabed slope (degrees).

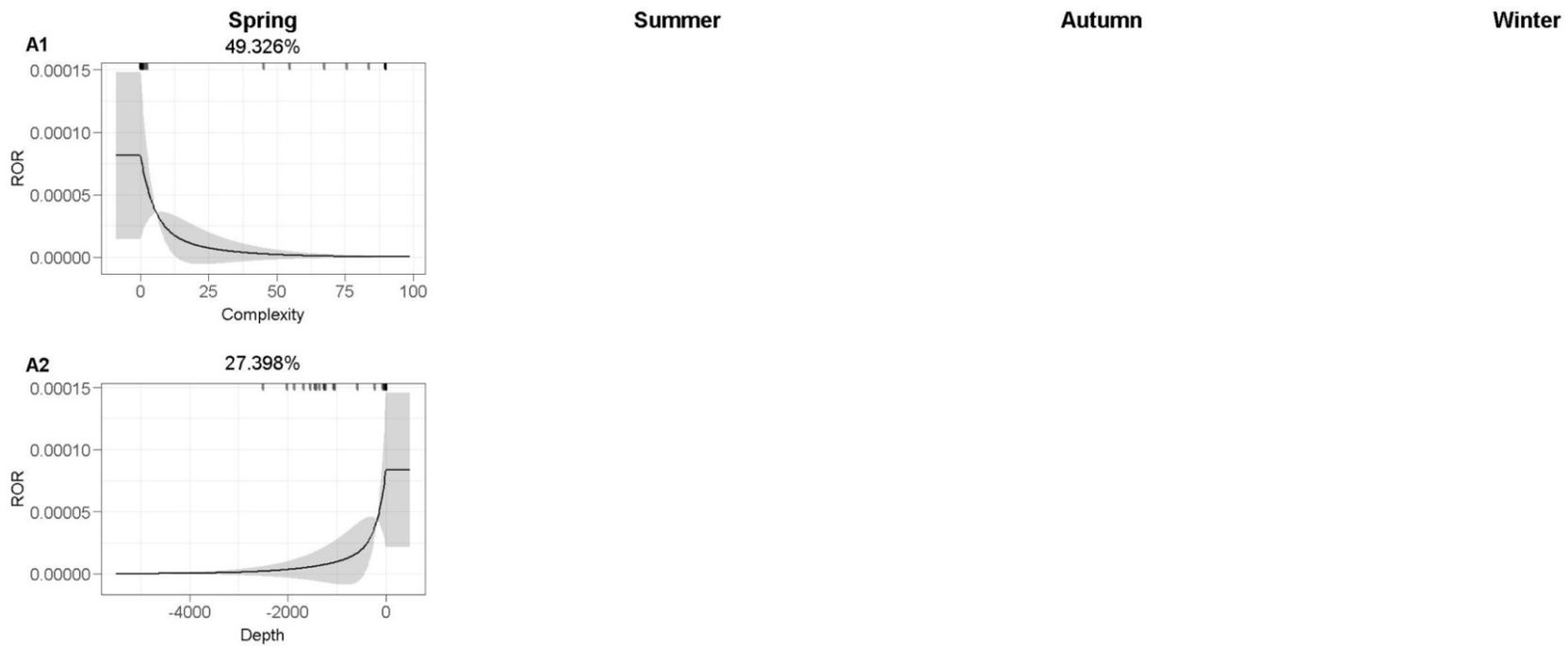


Fig. S10. Response curves illustrating the relationship between the most important environmental variable (row A1) or the second most important environmental variable (row A2) in spring and the relative occurrence rate (ROR) of balaenopterid whales *Balaenopterid* spp. The percentages above the plots represent the permutation importance of the environmental variable. The shading represents the 95% confidence interval and the ticks on the upper x-axis of the plots indicate values for presence occurrences. Depth (m); Complexity = habitat complexity (the rate of change of slope: degrees of degrees).