MODELLING SEABIRD DISTRIBUTION PATTERNS IN THE SOUTH-EASTERN NORTH SEA USING HYDROGRAPHIC DATA

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We analysed the influence of hydrographic parameters on seabird distribution in the south-eastern North Sea based on data of research cruises which combined hydrographic measurements with simultaneous seabird counts. We applied Generalized Additive Models to the data of one extensive research cruise to identify hydrographic parameters which had a significant influence on seabird distribution patterns. According to the models, the distribution of Northern Fulmar, Common Gull, Common Guillemot and Black-legged Kittiwake could be well explained by the selected hydrographic factors. Most important was the factor Secchi depth which indicates water transparency. We modelled seabird distribution patterns using the respective hydrographic parameters which had a significant influence on the distribution of the single species. We then compared modelled distribution patterns with the distribution patterns actually observed. In a next step, we predicted seabird distribution patterns for a second research cruise carried out at a similar time of year based on the model developed for the first research cruise and again compared modelled distribution patterns with the patterns actually observed.