

LARGE-SCALE MAPPING OF SEABIRD DENSITIES ON THE NORTH SEA

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Efficient and accurate mapping of seabird densities on the Dutch part of the North sea is done with regression kriging. The results are used for environmental impact assessment studies at sea and require high resolution, high quality bird density estimates. Due to the lack of ecological data like food availability proxy variables are used as explanatory variables. These are usually static (easy to obtain) variables like distance to coast, distance to colony, and depth. Here we show that the accuracy and explanatory power of the method is greatly enhanced if we include (derivatives of) sea surface temperature as explanatory variables in the analysis. Sea surface temperature is modeled, but also gradients of temperature change as proxy for fronts. Weekly mean sea surface temperature on a 4x4km grid are combined with the seabird measurements. The study shows that dynamic explanatory variables for the prediction of seabird distribution are better proxys than static variables.