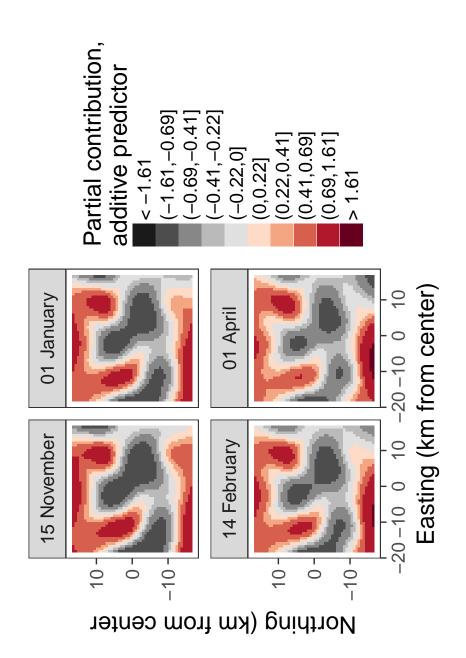
S.3 Stable covariate effects

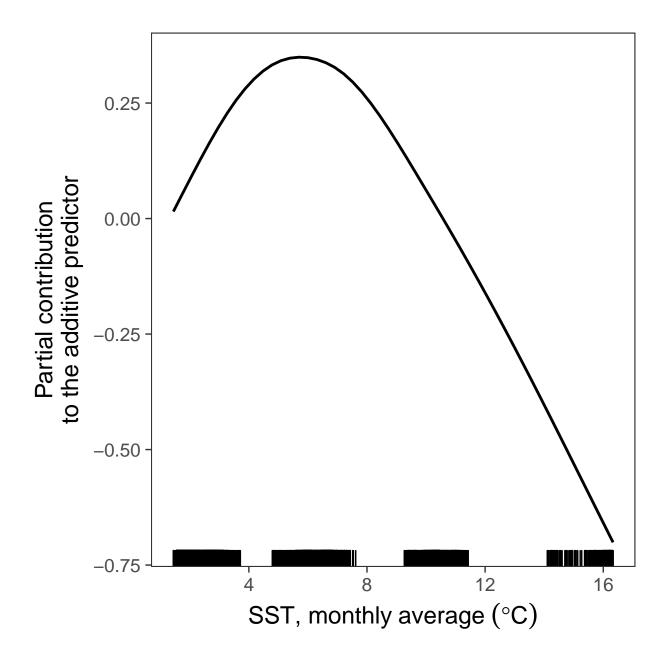
ommon Eider	
Occupancy	2
Conditional mean	1.
Conditional overdispersion	17
lack, Surf, and White-winged Scoter	
Occupancy	23
Conditional mean	34
Conditional overdispersion	36
ong-tailed Duck	
Occupancy	45
Conditional mean	
Conditional overdispersion	57

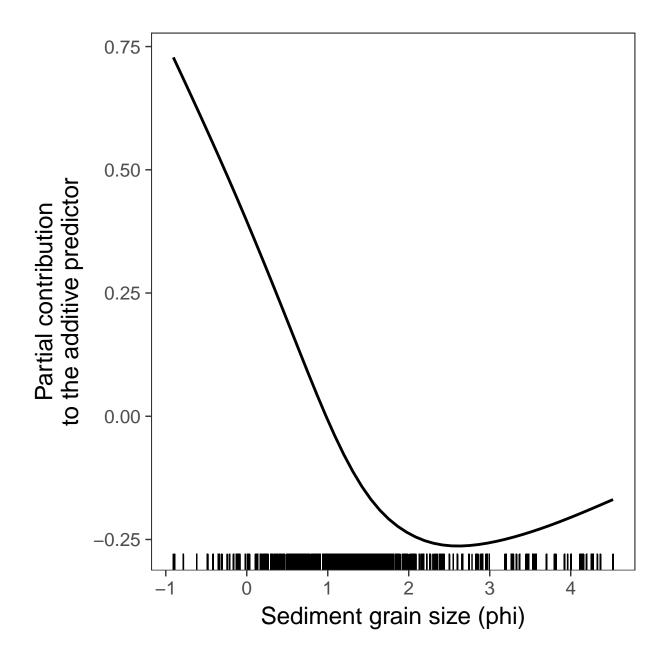
Here we provide marginal functional plots of the relationships between stable covariates and the occupancy, conditional mean abundance, and conditional overdispersion of abundance of sea ducks in Nantucket Sound, Massachusetts, USA. By 'marginal' we mean holding all other variables at their mean or reference values. Covariate plots are ordered roughly in descending order of the magnitude of their influence on the additive predictor in each model (or model parameter for count models). Vertical lines along the x-axis (i.e., rug plots) indicate observed covariate values. Covariates (and any abbreviations) are defined in detail in Table 1 on the manuscript; only effects selected to be stable are depicted (see Supplemental Information S1).

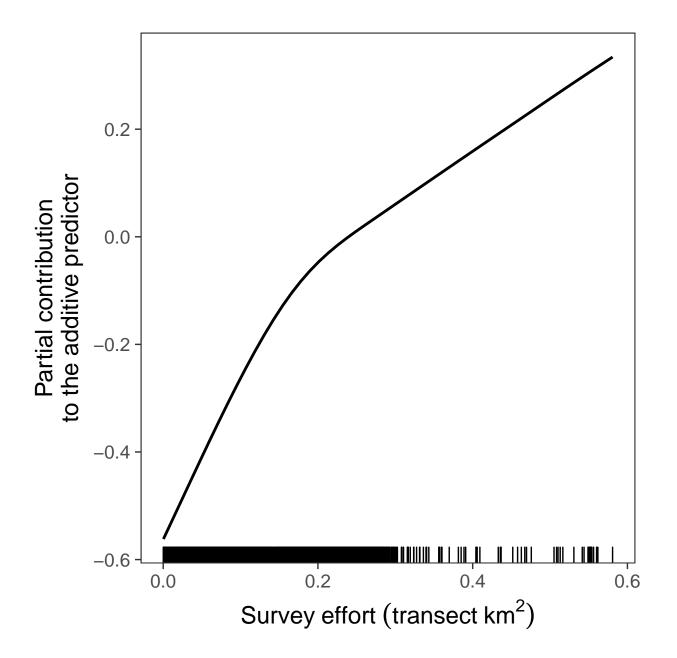
Common Eider

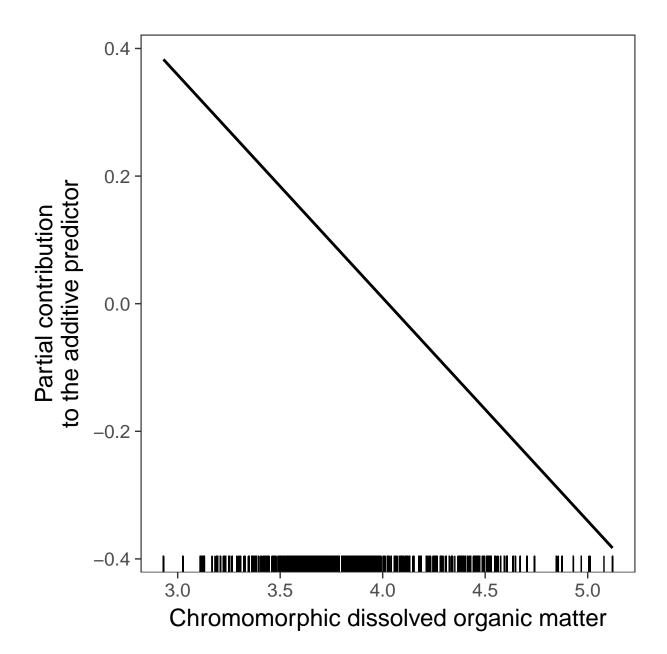
Occupancy

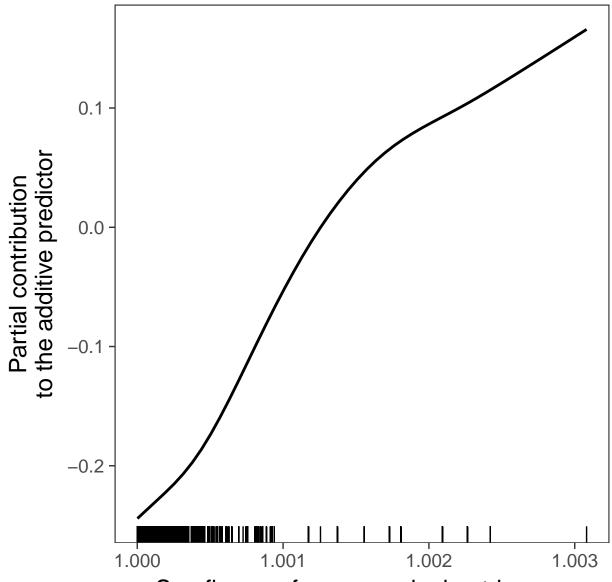




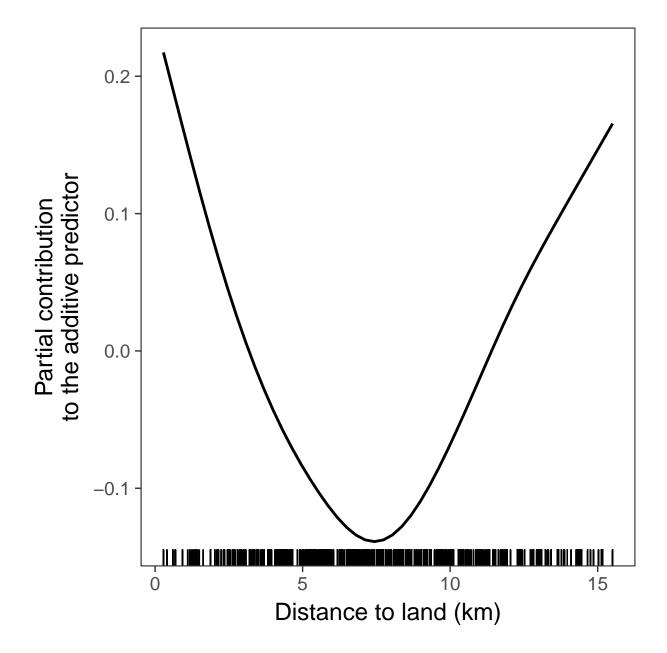


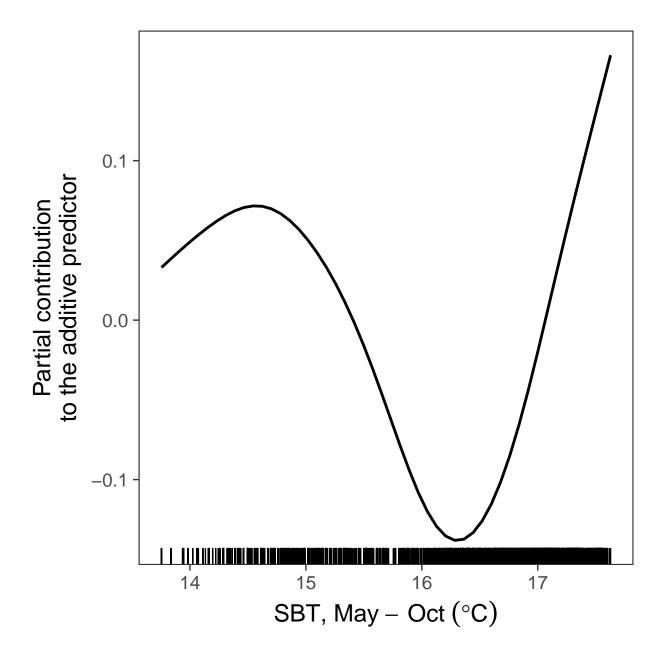


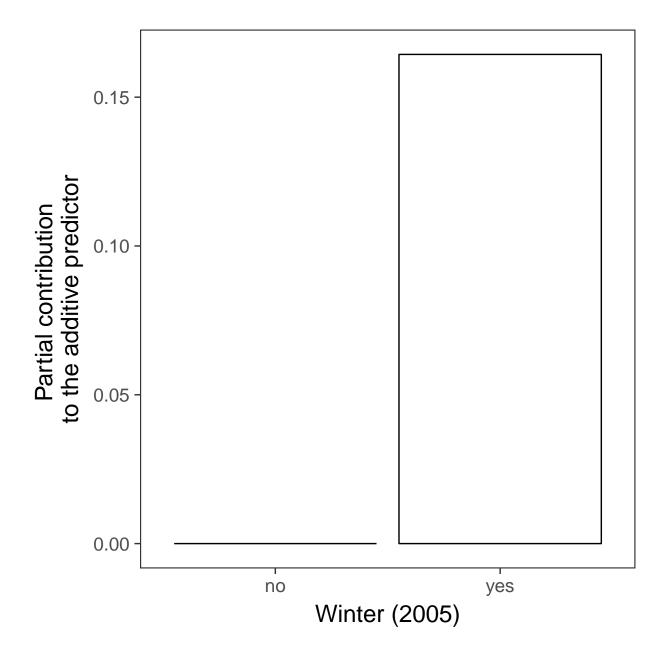




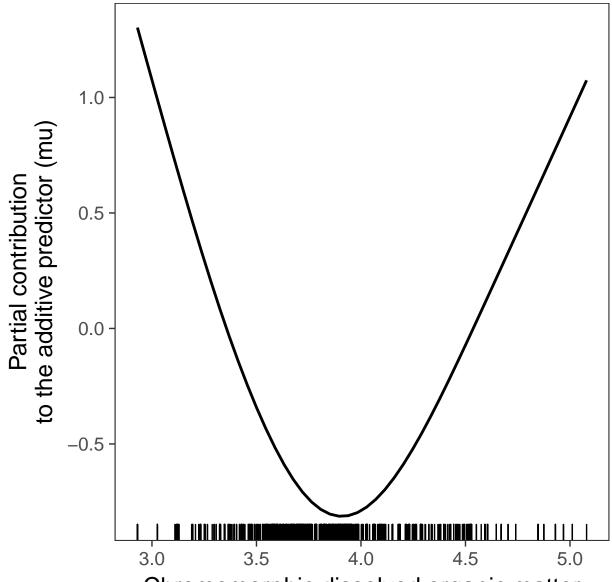
Sea floor surface area:planimetric area



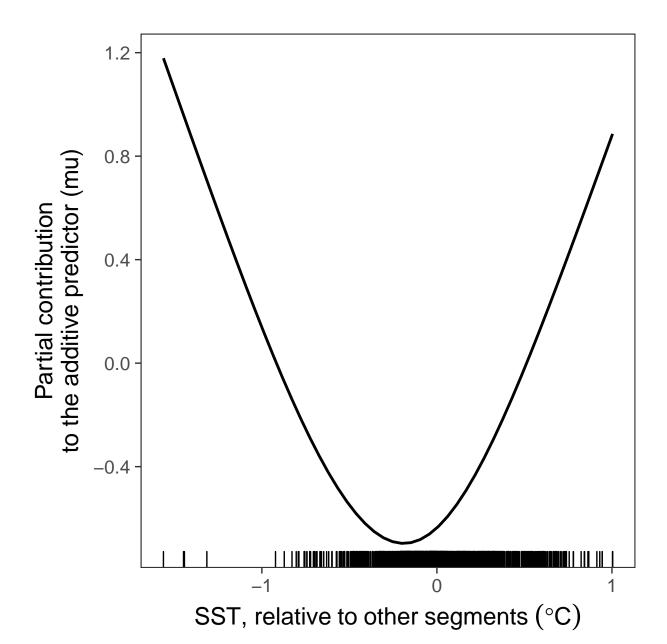


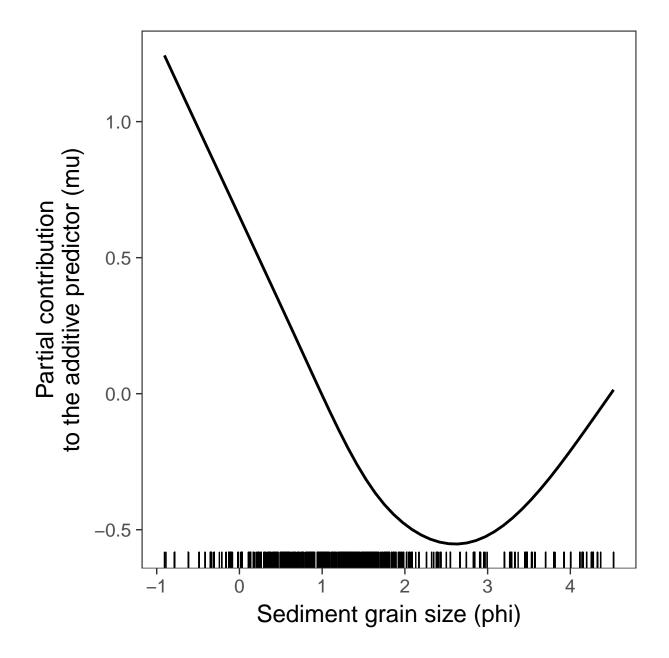


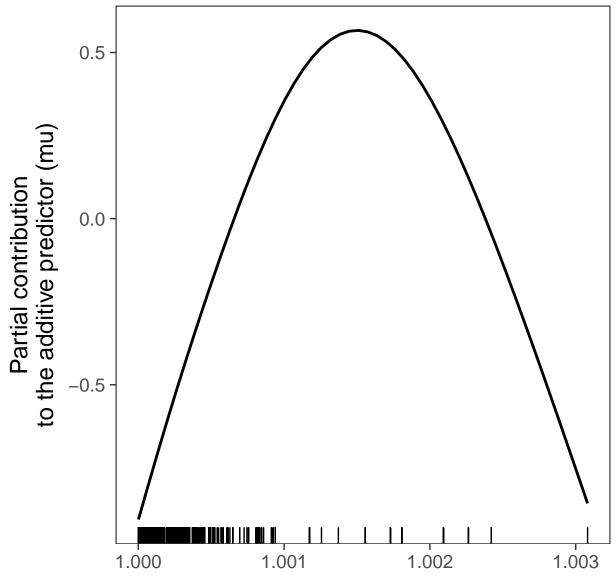
Conditional mean



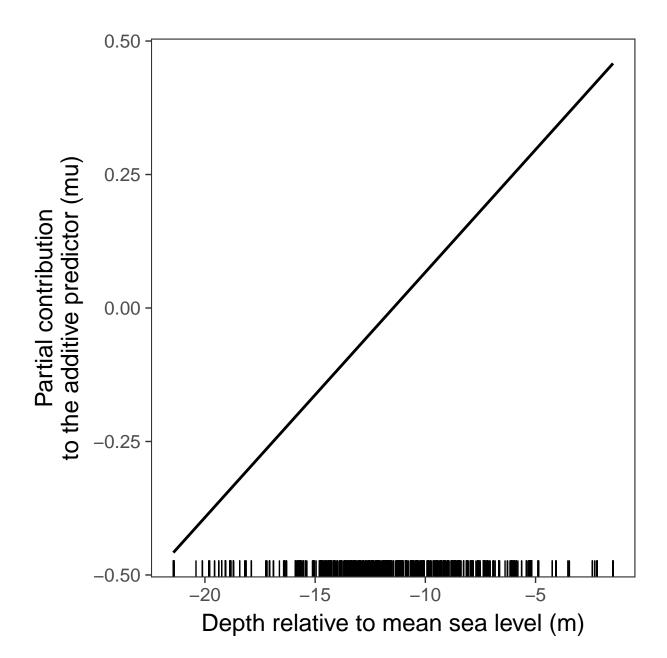
Chromomorphic dissolved organic matter

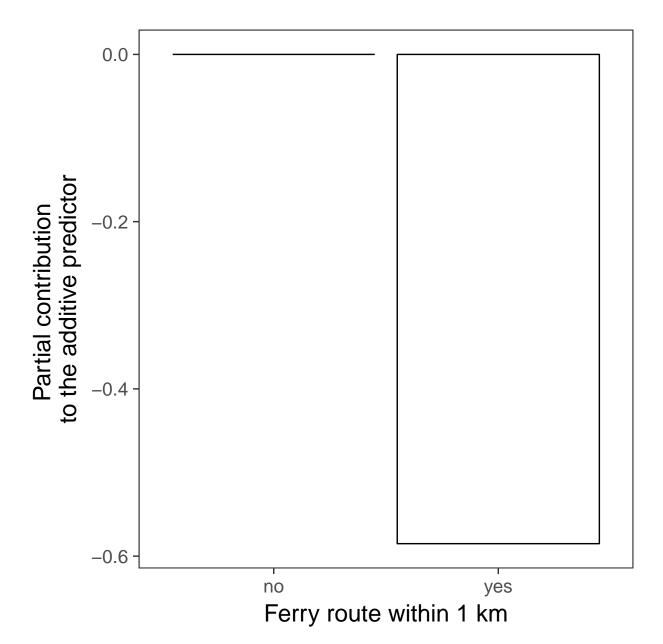


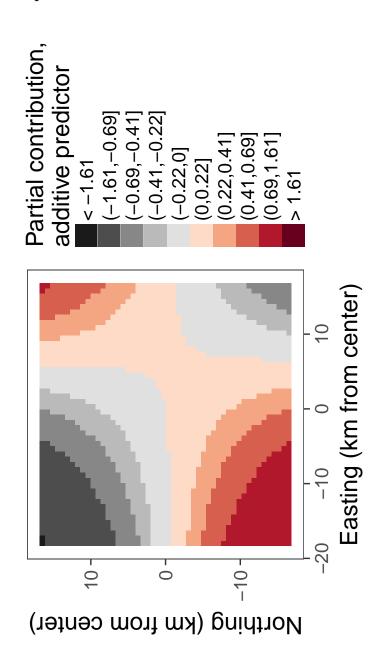


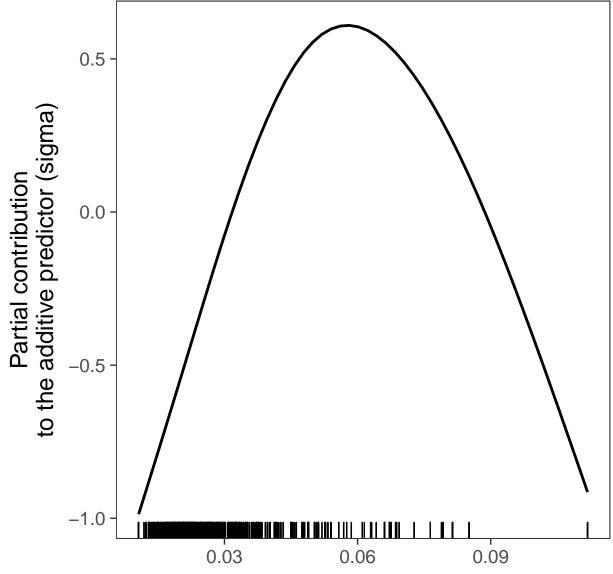


Sea floor surface area:planimetric area

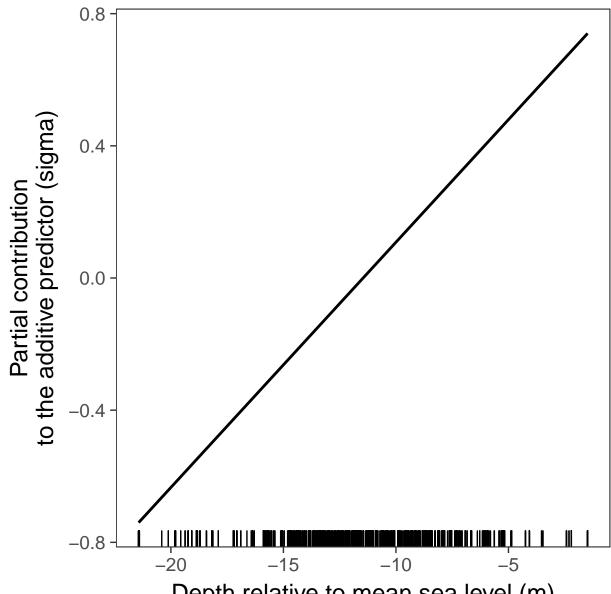




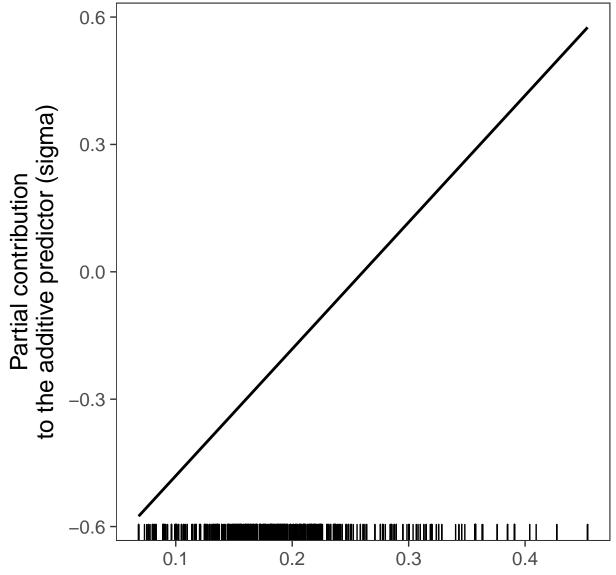




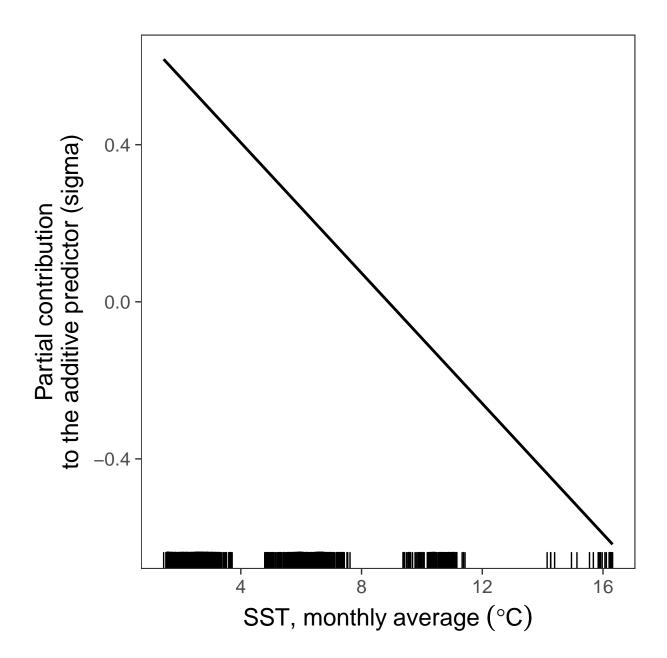
Epibenthic tidal velocity (mean; m/s)

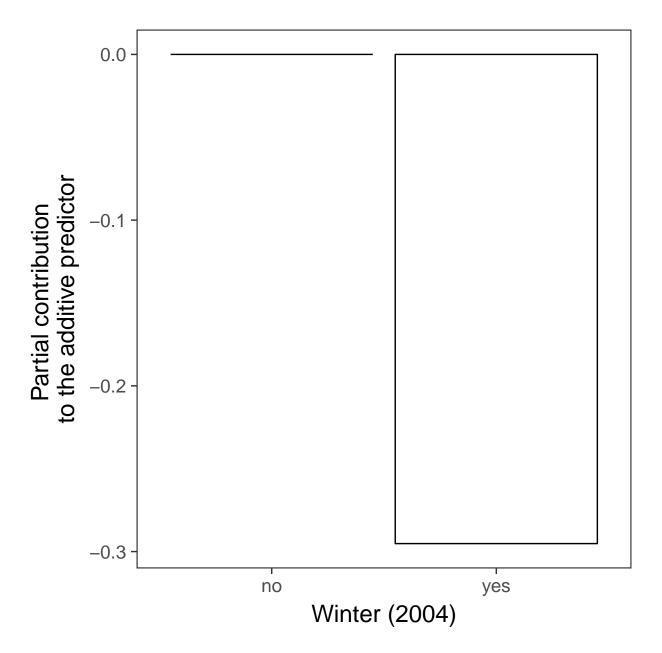


Depth relative to mean sea level (m)

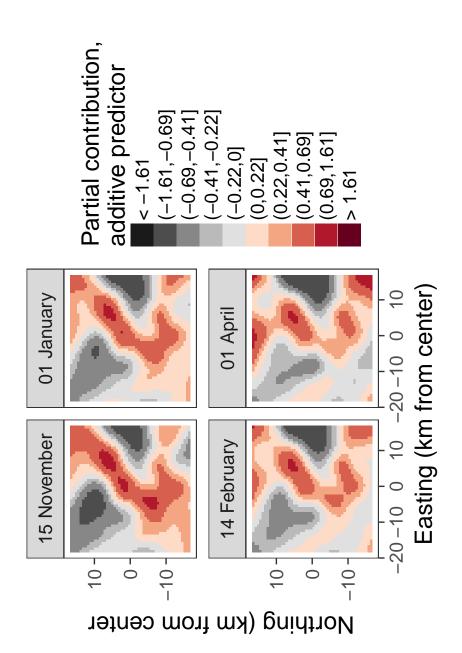


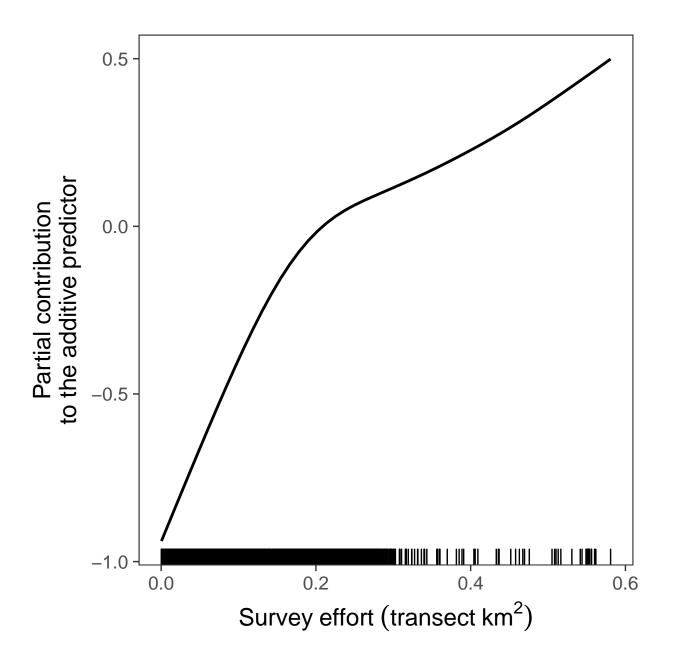
Epibenthic tidal velocity (standard deviation; m/s)

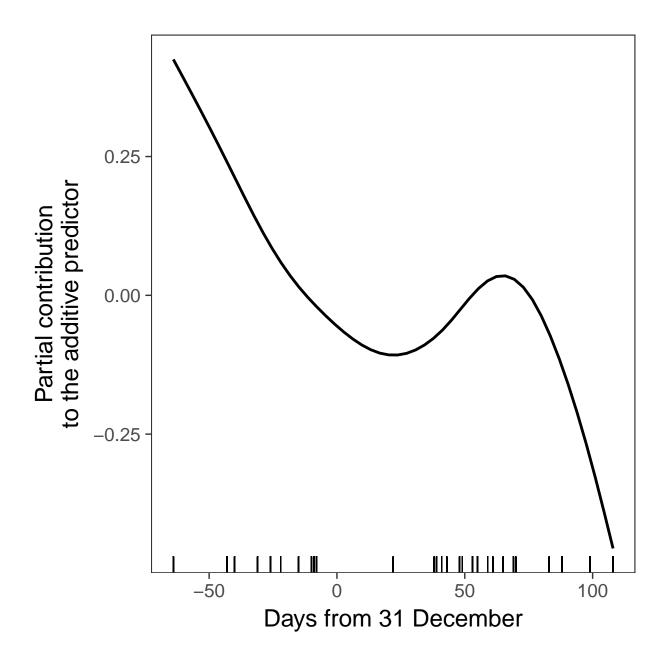


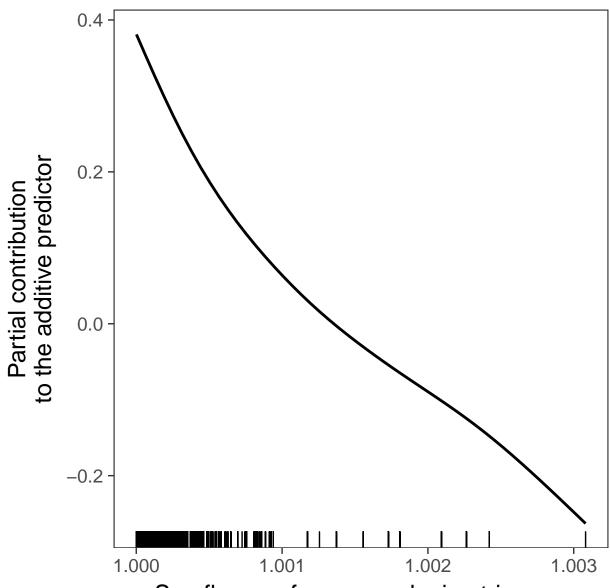


Black, Surf, and White-winged Scoter
Occupancy

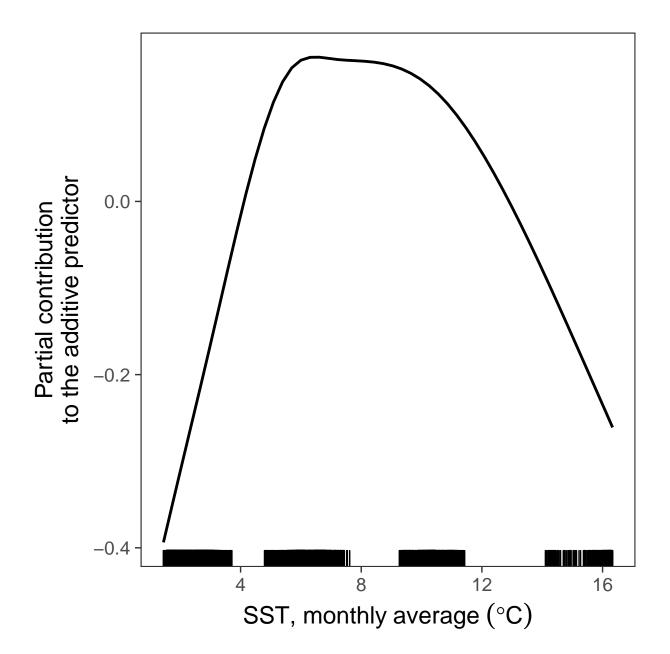


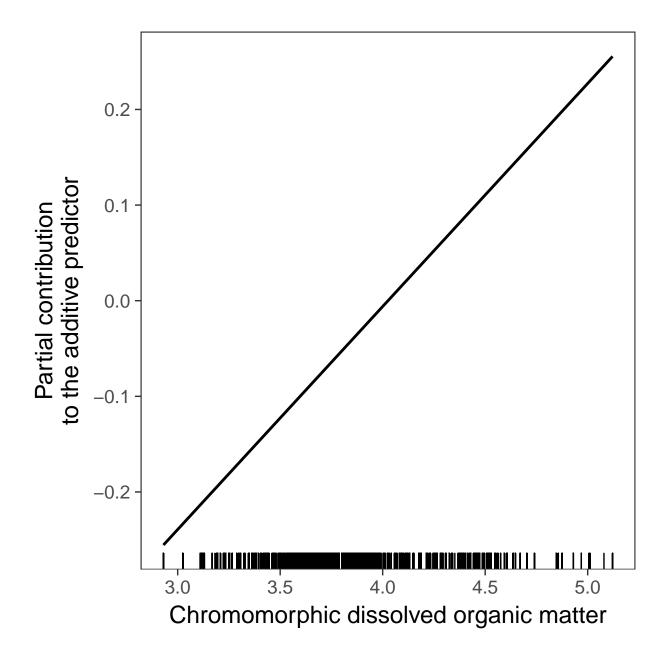


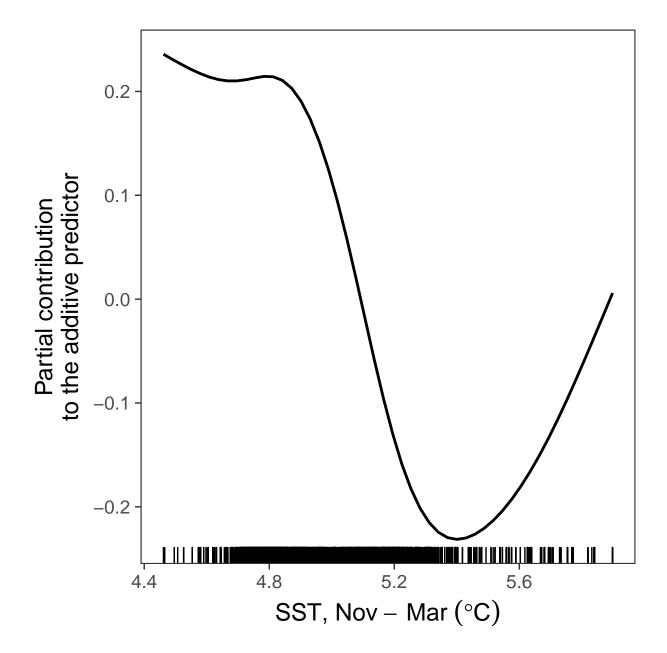


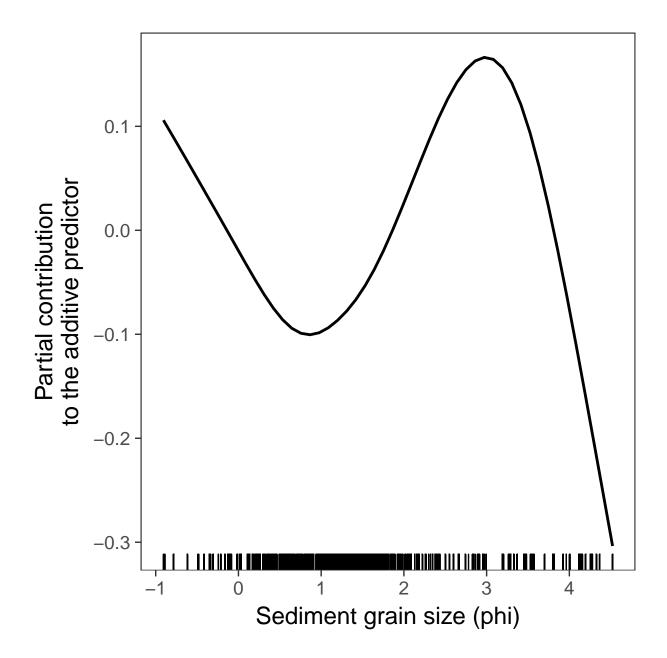


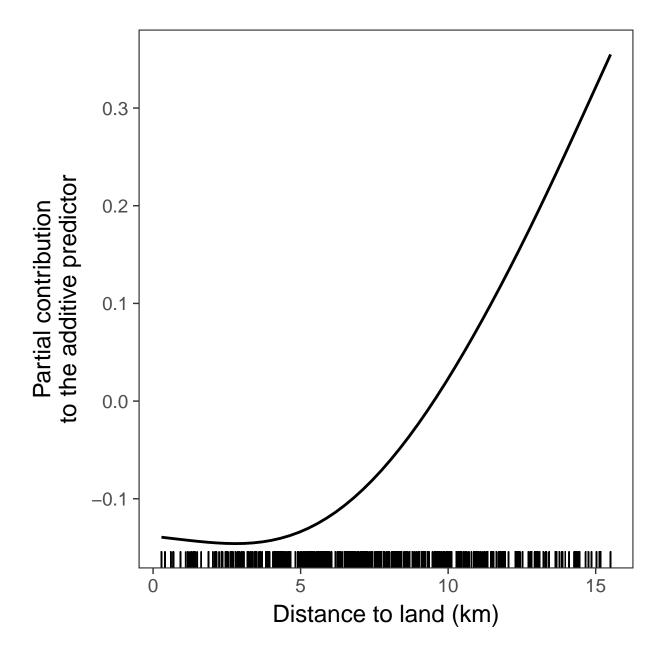
Sea floor surface area:planimetric area

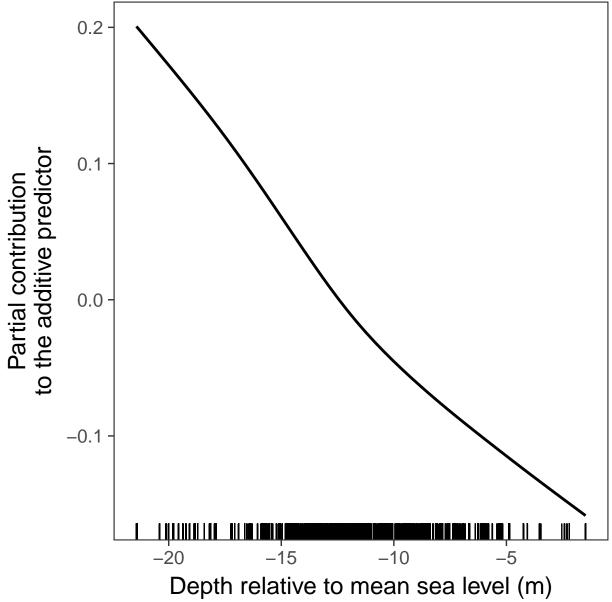


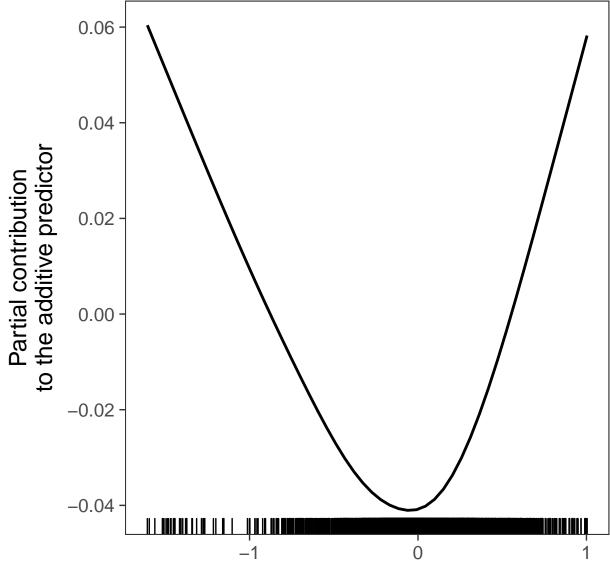




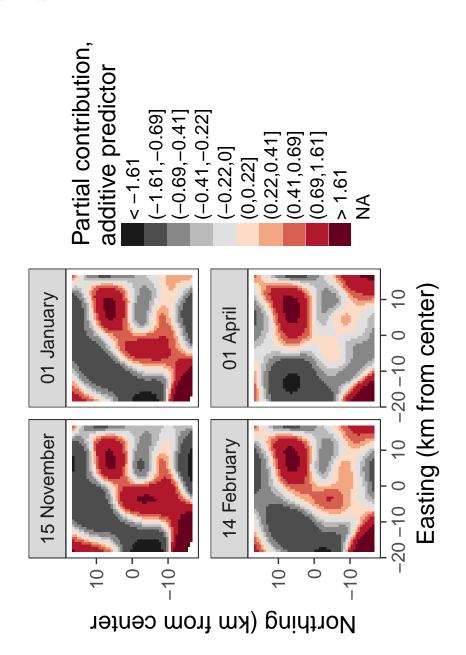


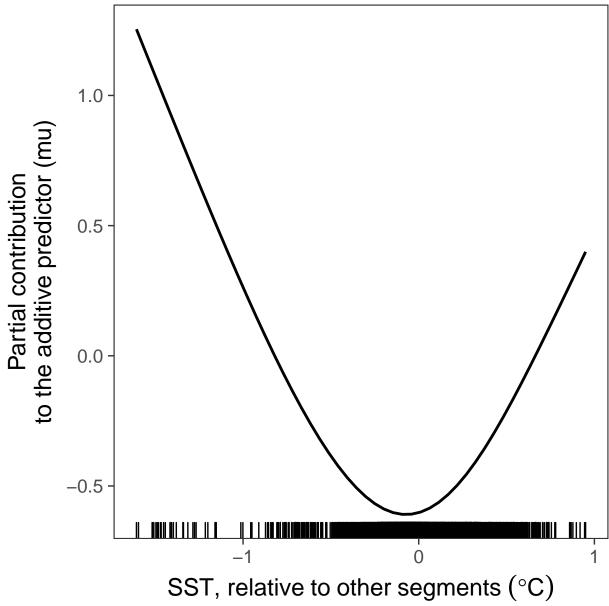


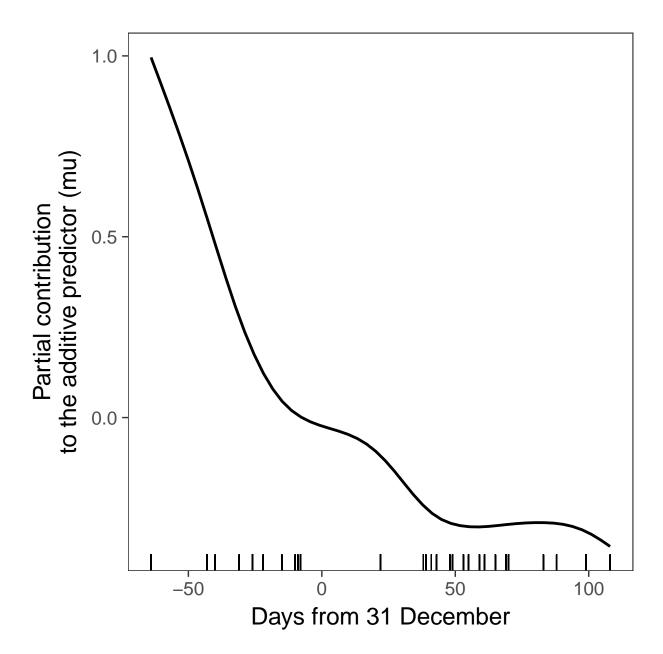


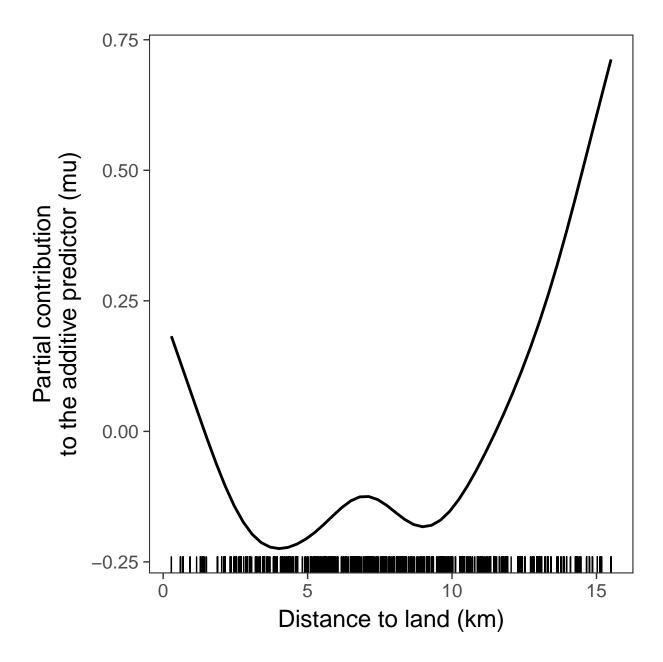


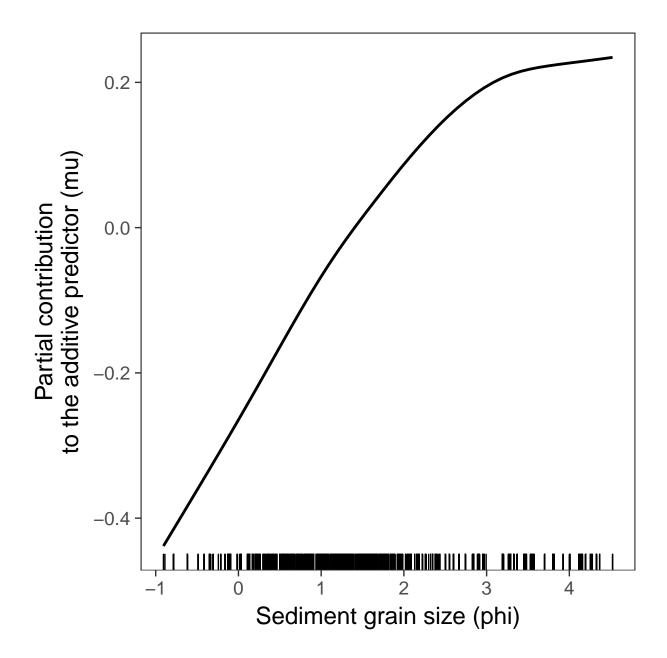
SST, relative to other segments (°C)

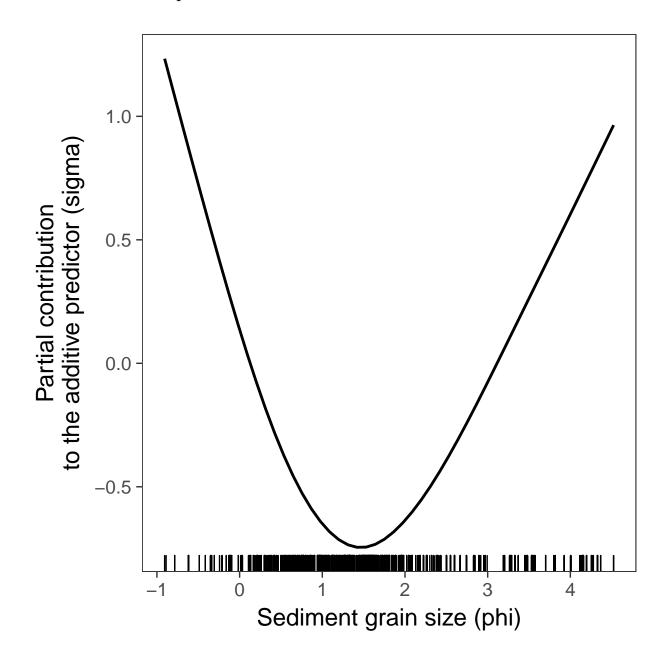


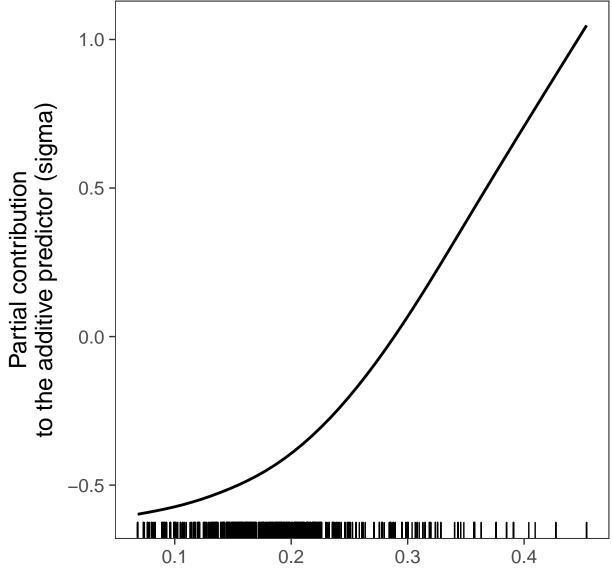




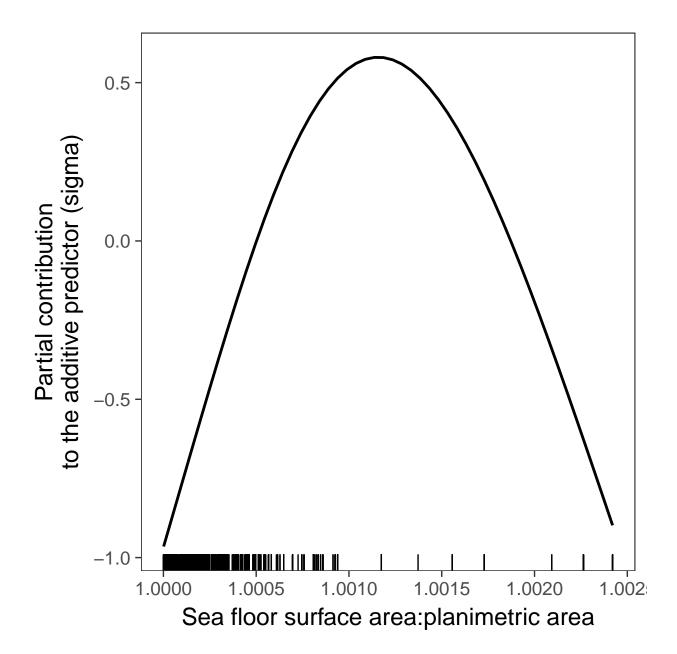


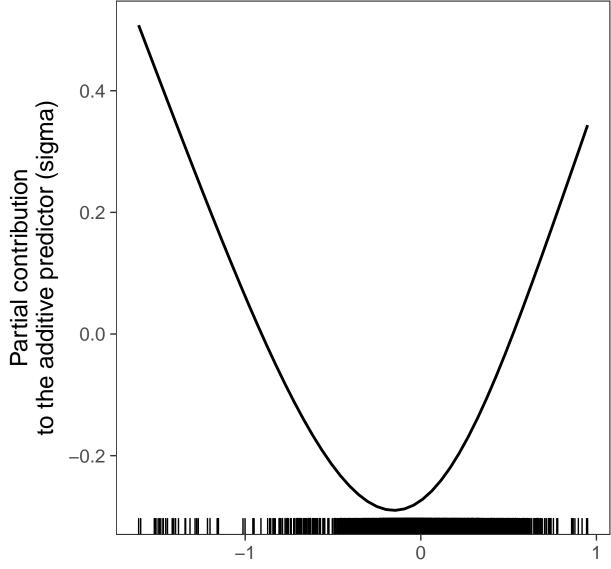




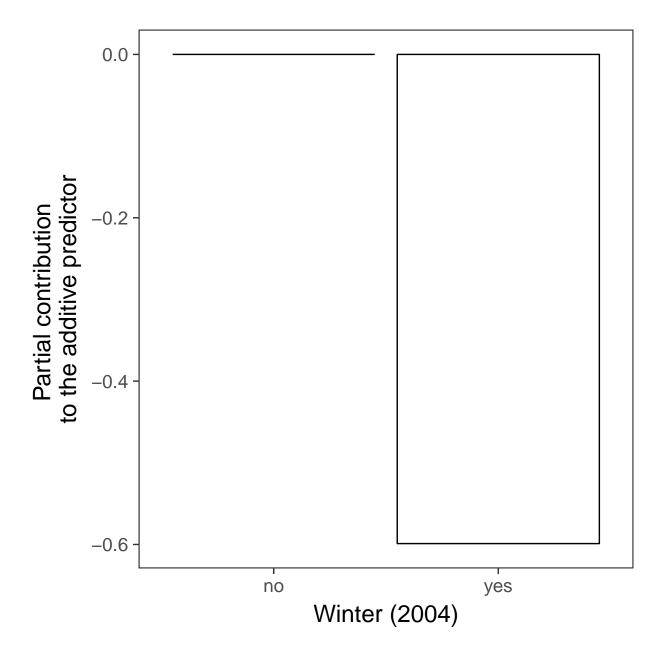


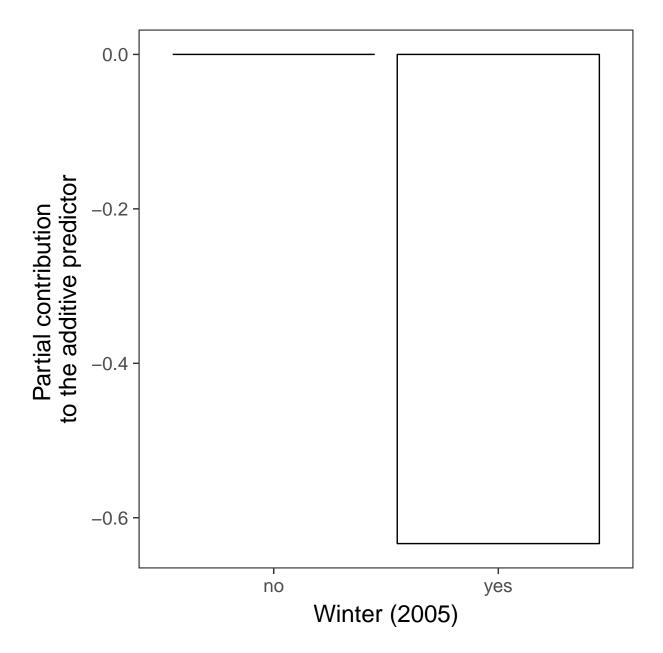
Epibenthic tidal velocity (standard deviation; m/s)





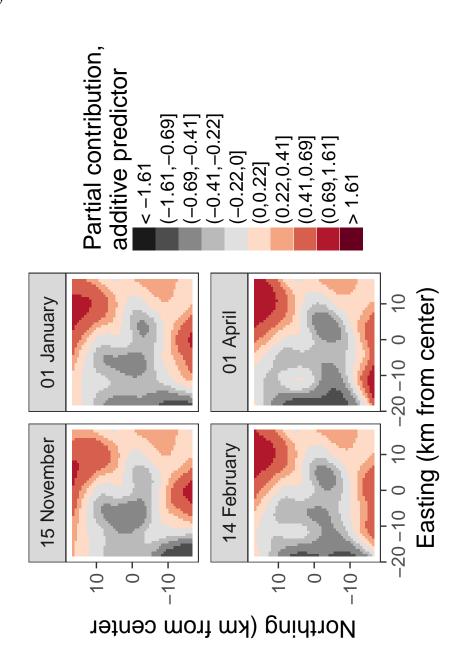
SST, relative to other segments (°C)

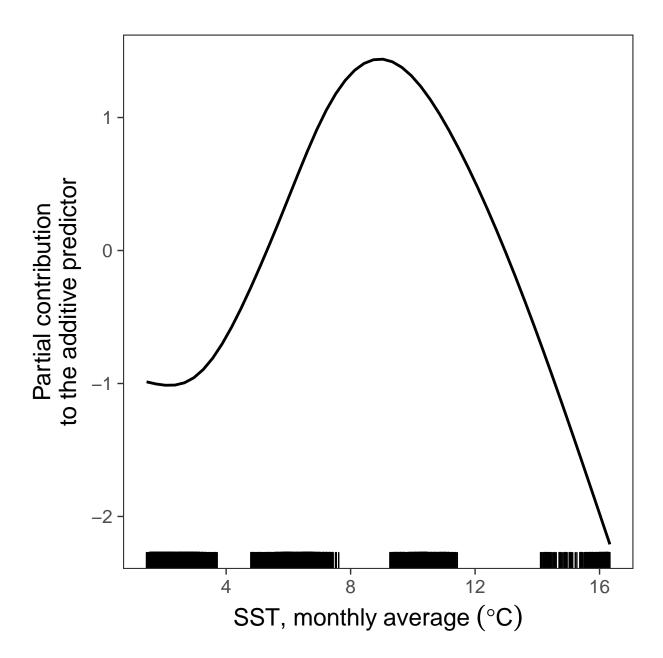


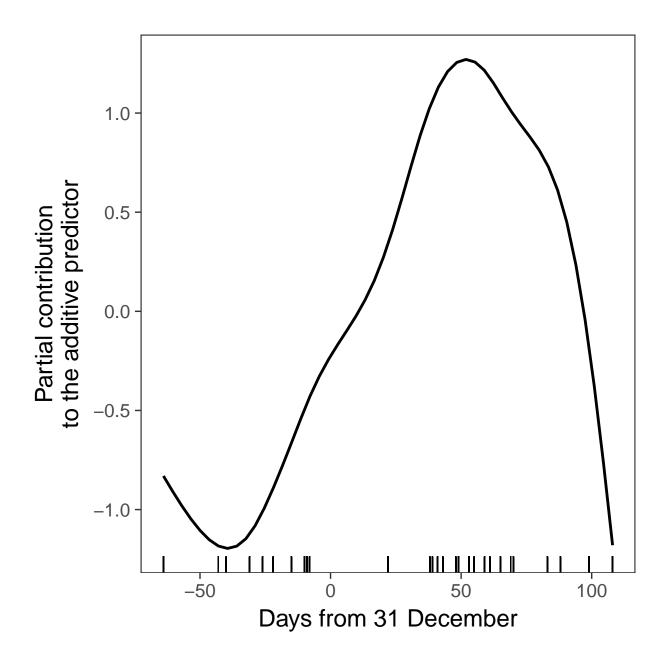


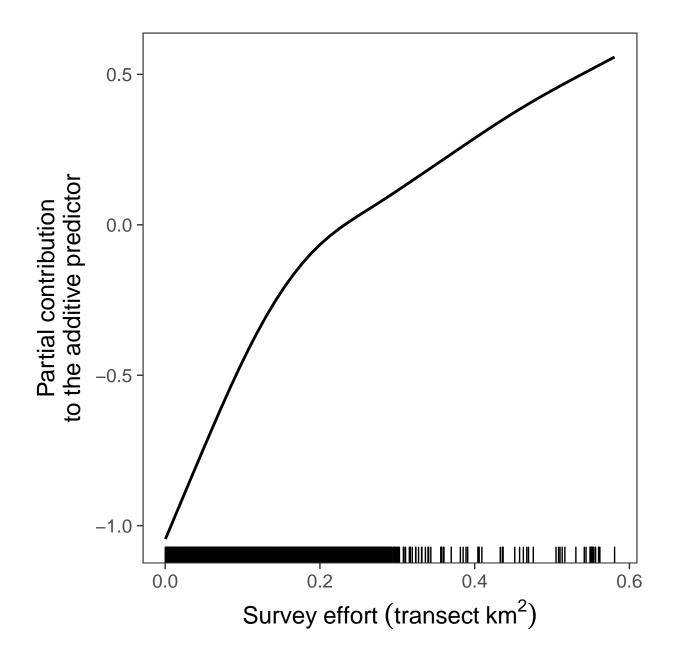
Long-tailed Duck

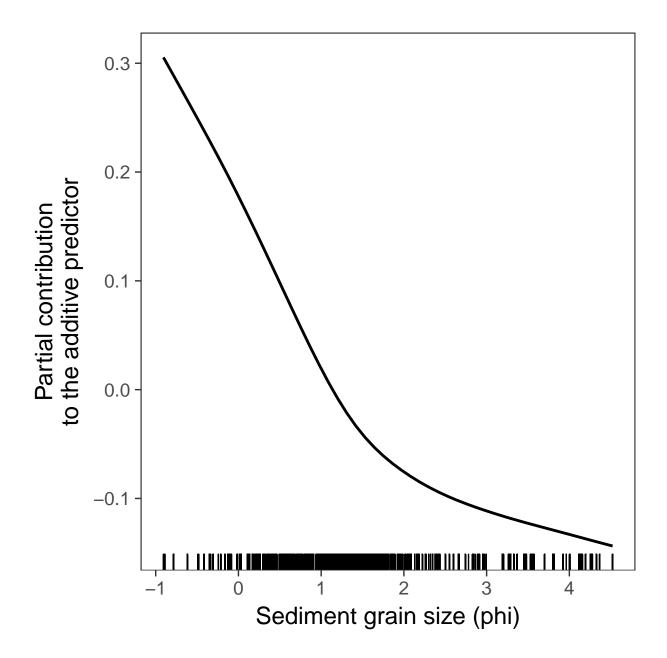
Occupancy

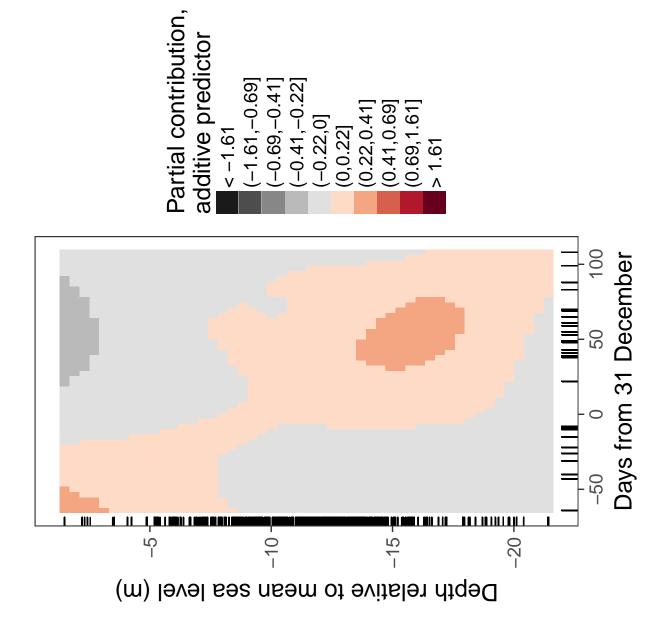


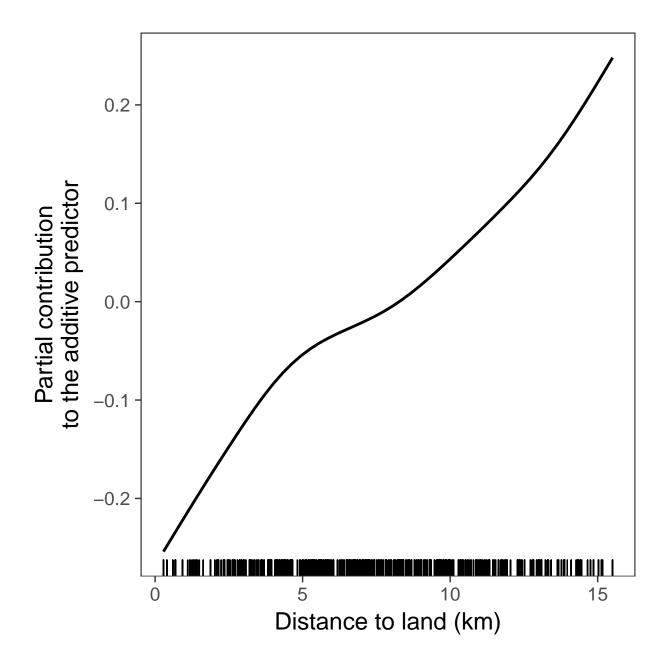


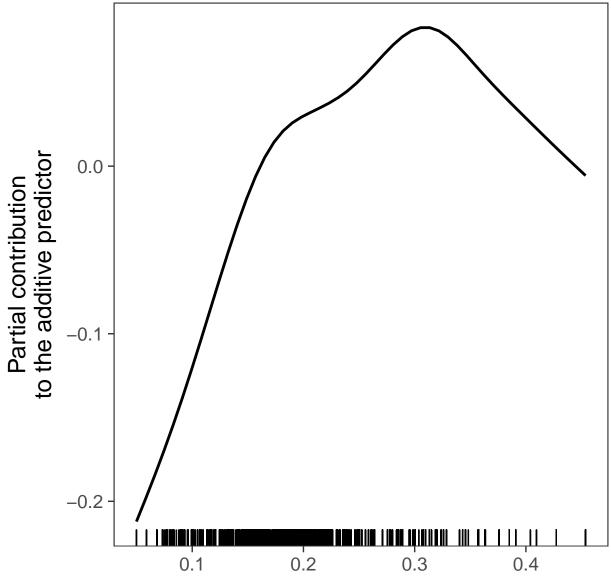




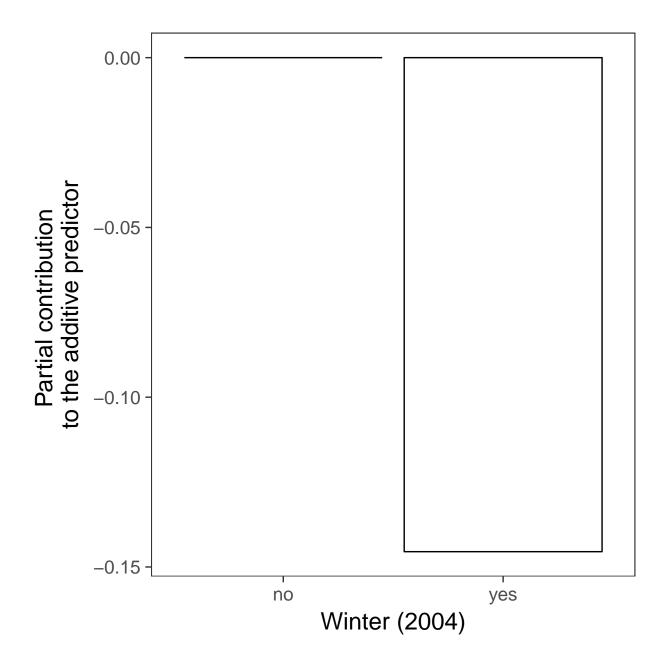




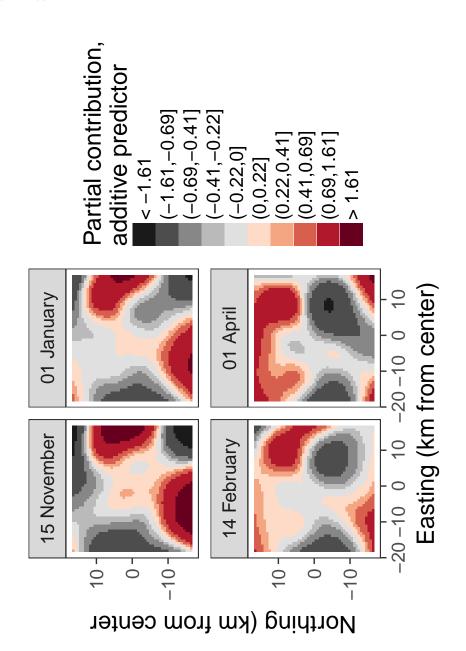


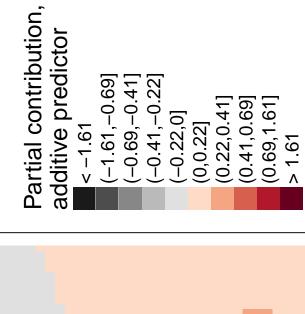


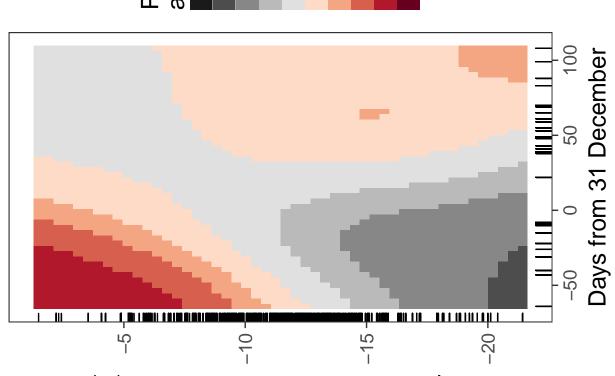
Epibenthic tidal velocity (standard deviation; m/s)



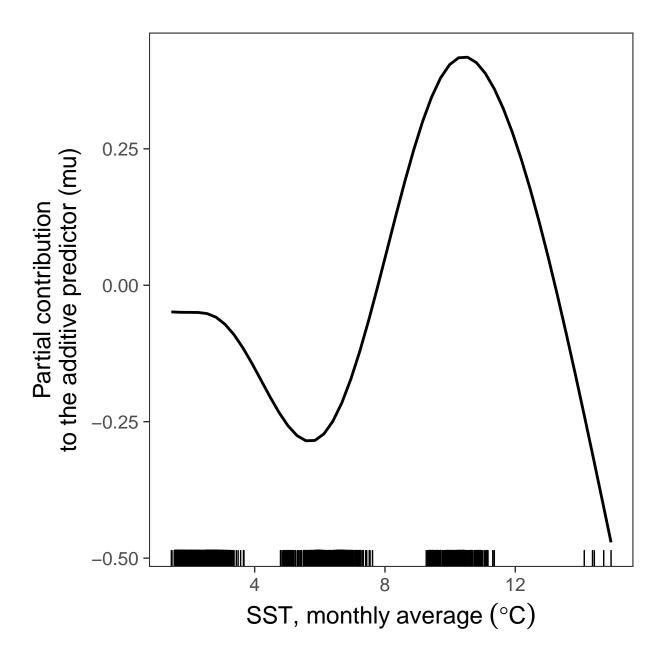
Conditional mean



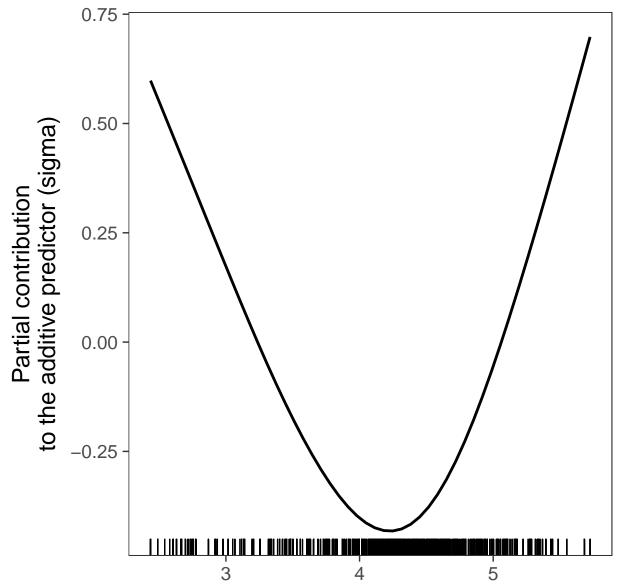




Depth relative to mean sea level (m)



Conditional overdispersion



Water column stratification potential (summer)