

Supplemental files:

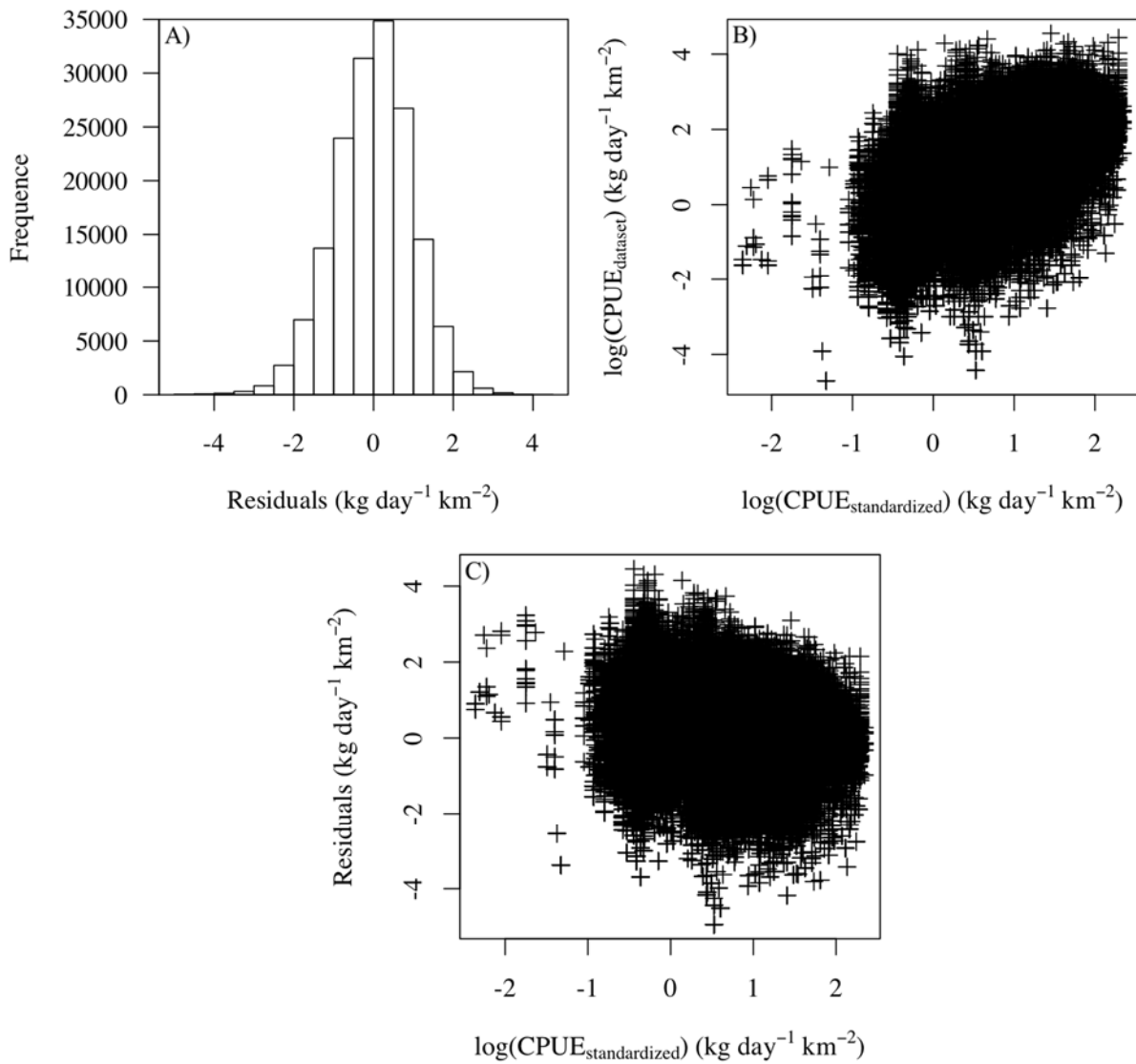


Figure S1. Residuals diagnostics for the standardization of catches, A) histogram of deviance residuals, B) log-transformed observed CPUE against log-transformed standardized CPUE and C) residuals against log-transformed standardized CPUE.

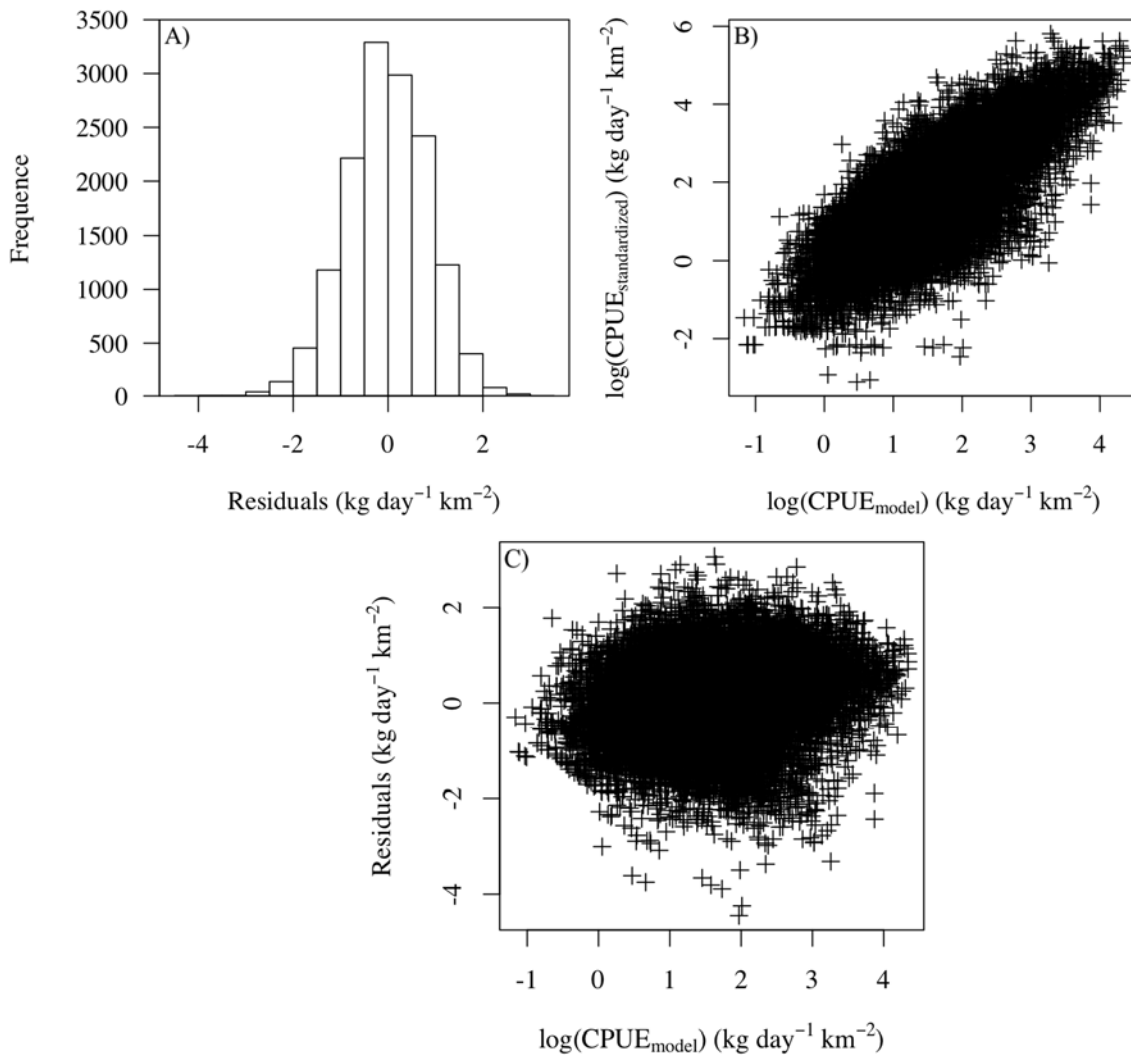


Figure S2. Residuals diagnostic for the random forest model A) histogram of model residuals, B) log-transformed standardized CPUE against log-transformed modeled CPUE and C) residuals against log-transformed modeled CPUE.

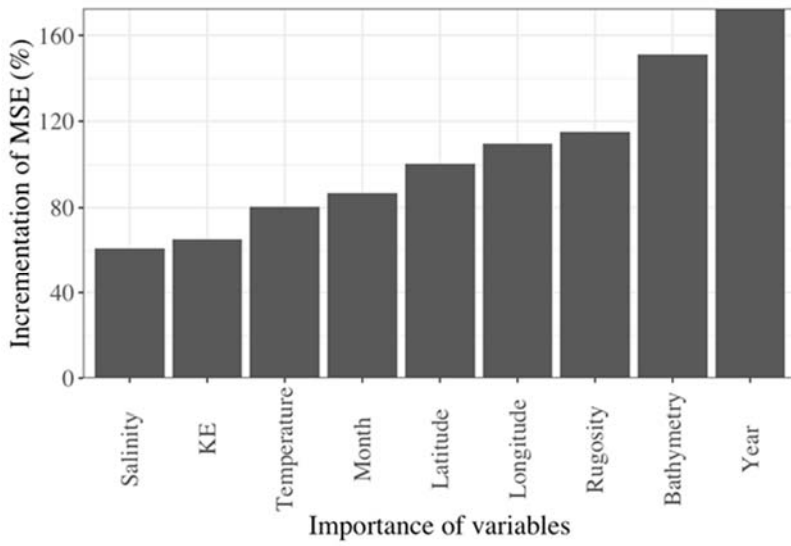


Figure S3. Importance of the variables in the random forest model relative to the incrementation (in percent) of the Mean Squared Error (MSE). The MSE incrementation was obtained by permuting randomly a variable in the dataset, predicting the CPUE based on the permuted dataset, and comparing the MSE from the original dataset and the permuted dataset.

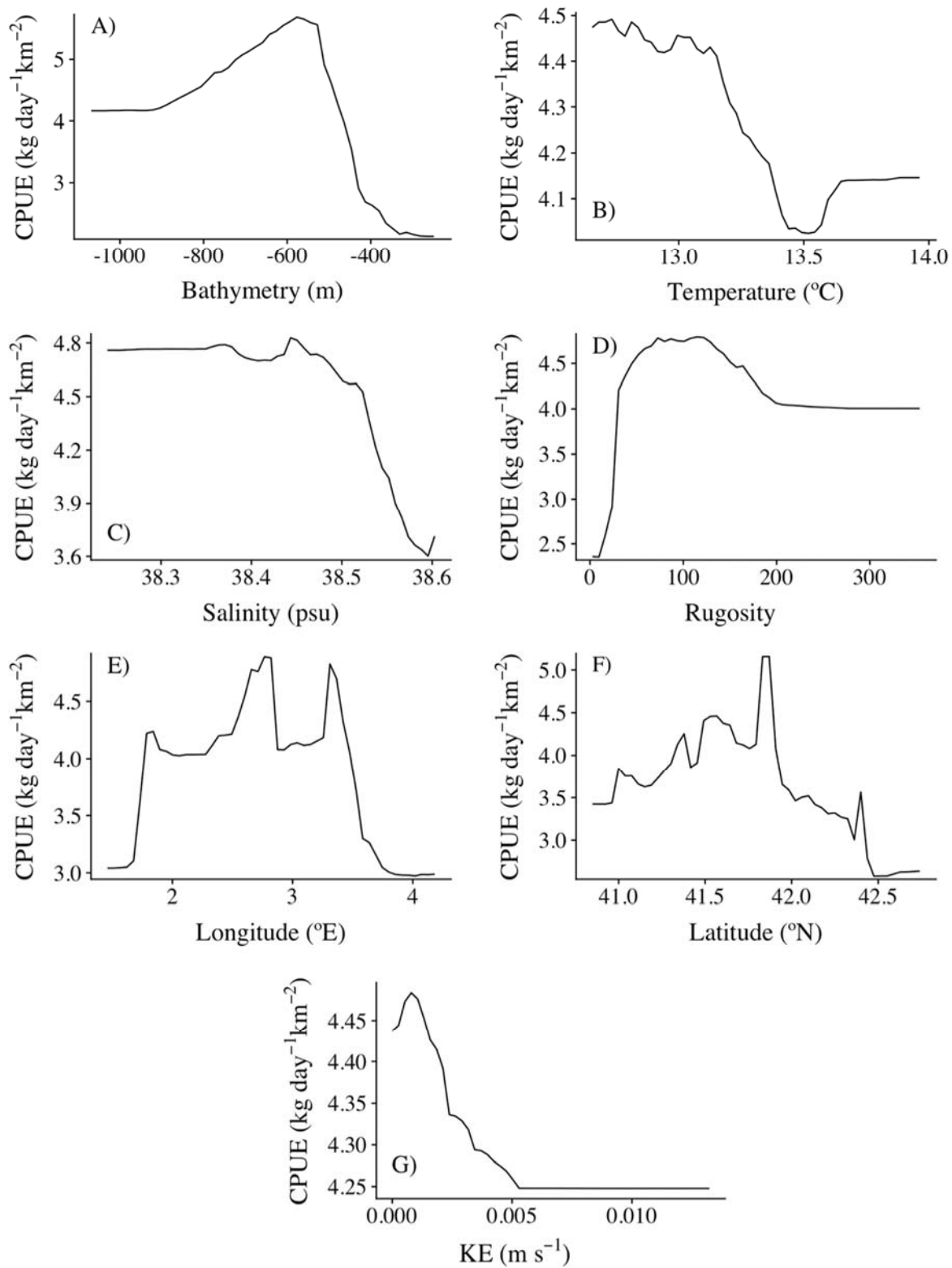


Figure S4. Partial effects of the predictors A) bathymetry, B) seawater temperature, C) salinity, D) rugosity, E) longitude, F) latitude and G) Kinetic Energy (KE) on the CPUE.

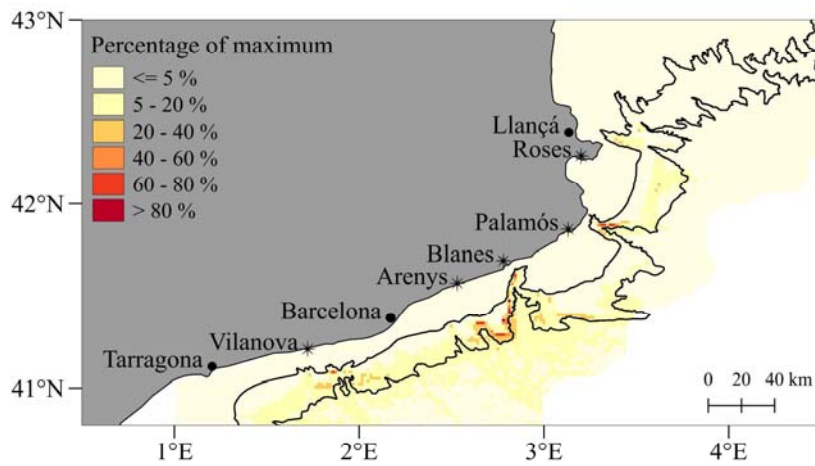


Figure S5. Map of the standard deviation CPUE (as percentage of the maximum) from the random forest model in the Catalan Sea over the decade 2005 – 2014. Isobaths at 200 and 1000 m depth are represented by continuous black lines.

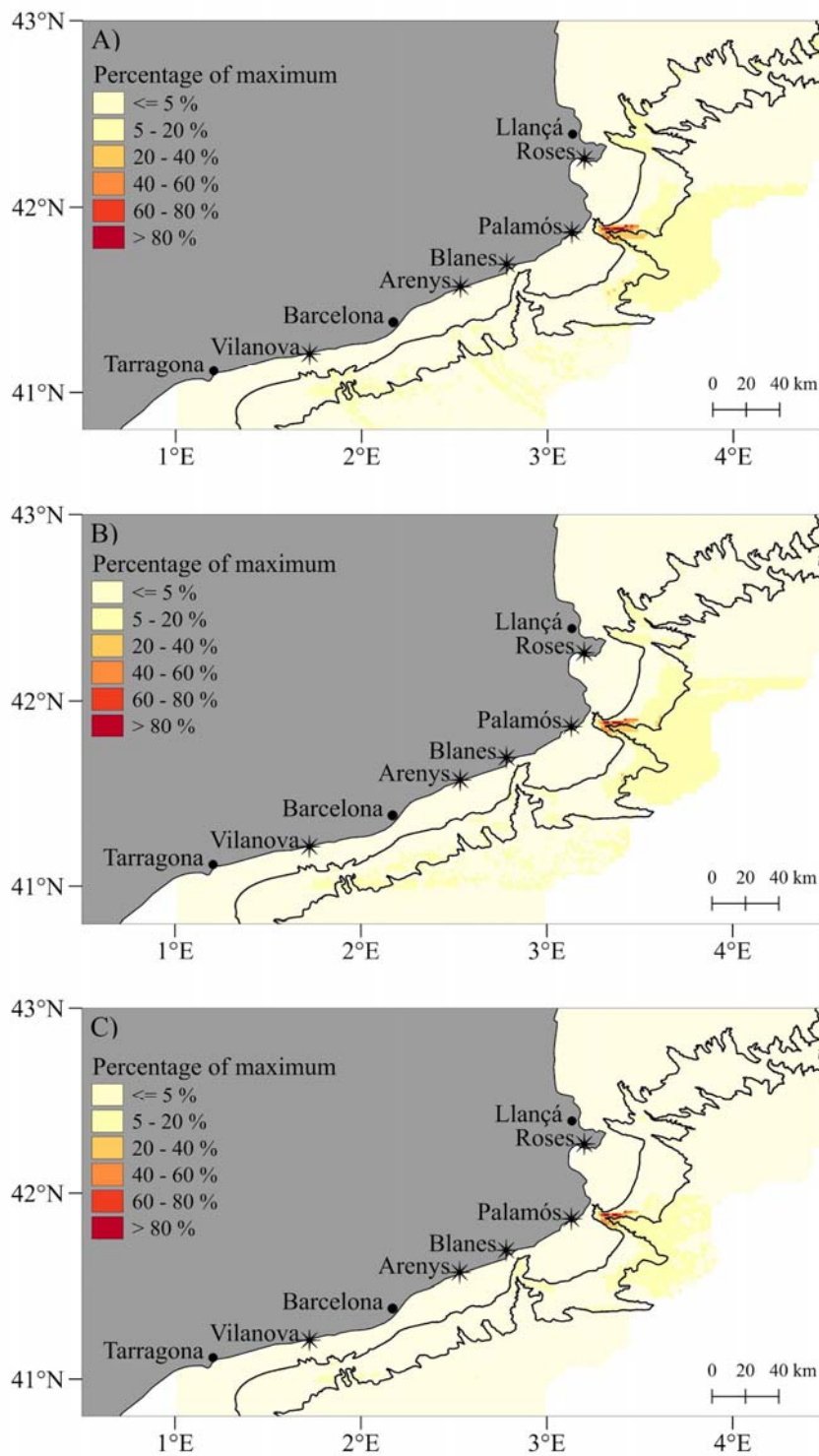


Figure S6. Map of the estimated CPUE (as a percentage of the maximum) from the random forest in summer 2005 (A), 2006 (B), 2007 (C), 2008 (D), 2009 (E), 2010 (F), 2011 (G), 2012 (H), 2013 (I) and 2014 (J) in the Catalan Sea. Isobaths at 200 and 1000 m depth are represented by continuous black lines. Fishing harbor's symbols are indicated in Figure 1.

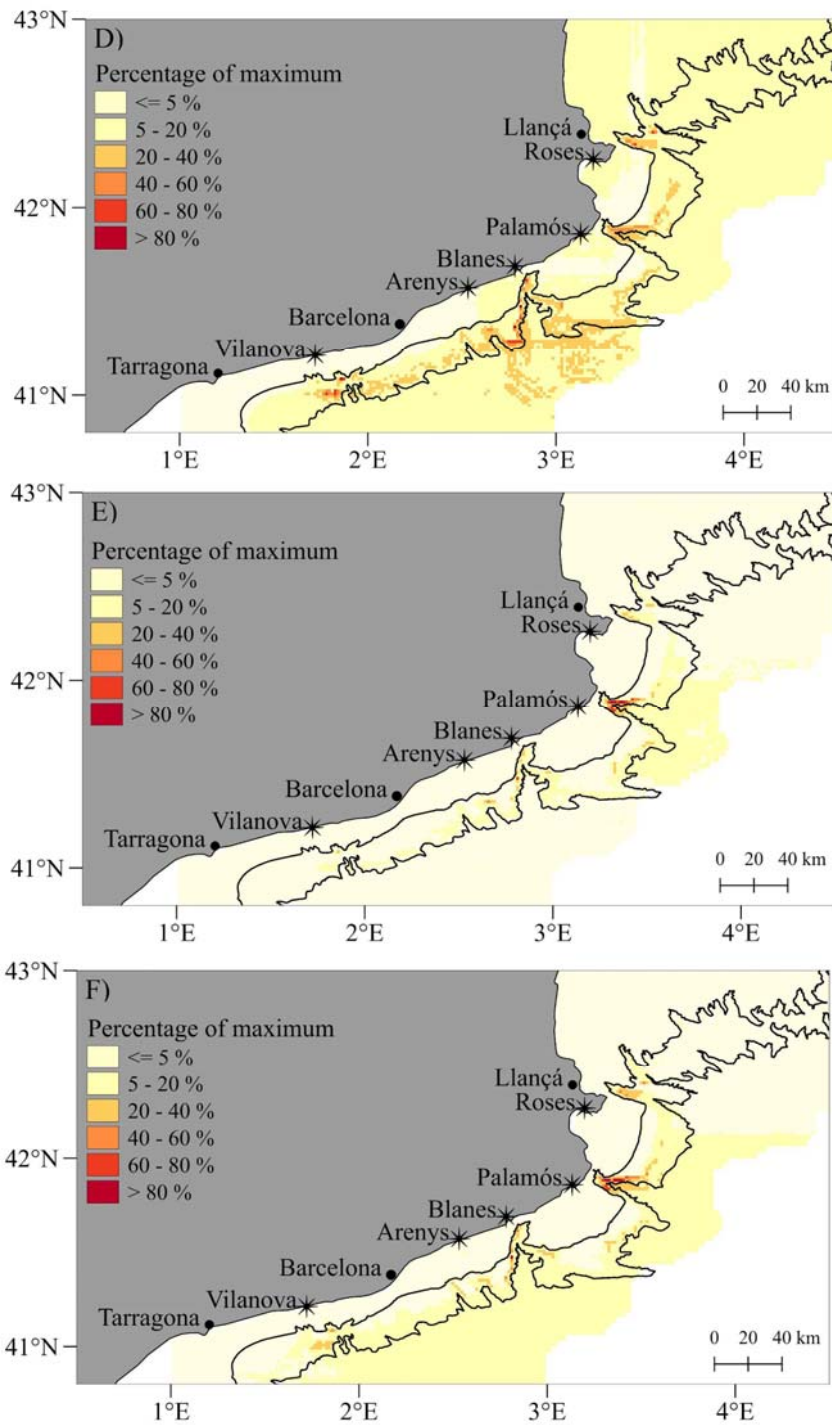


Figure S6. (Suite)

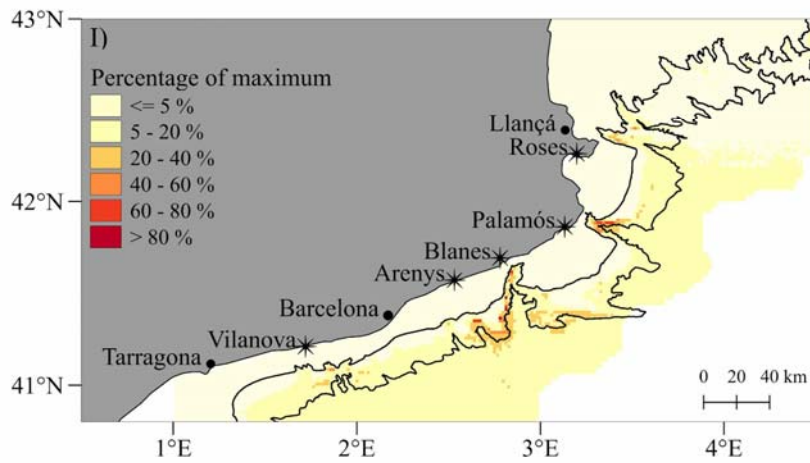
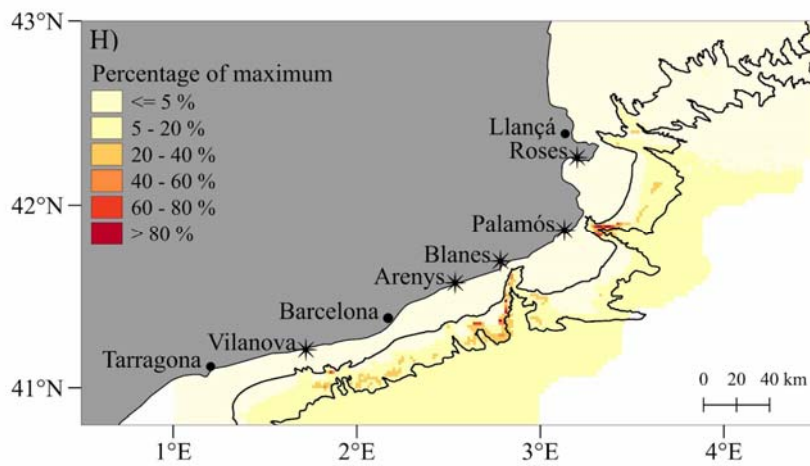
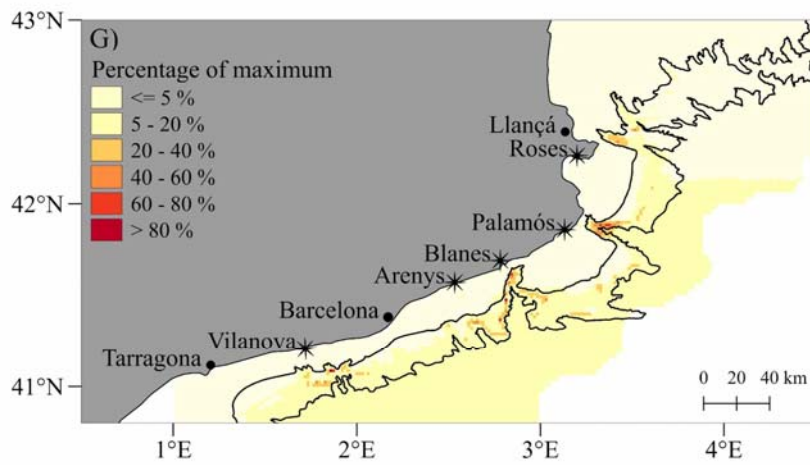


Figure S6. (Suite)

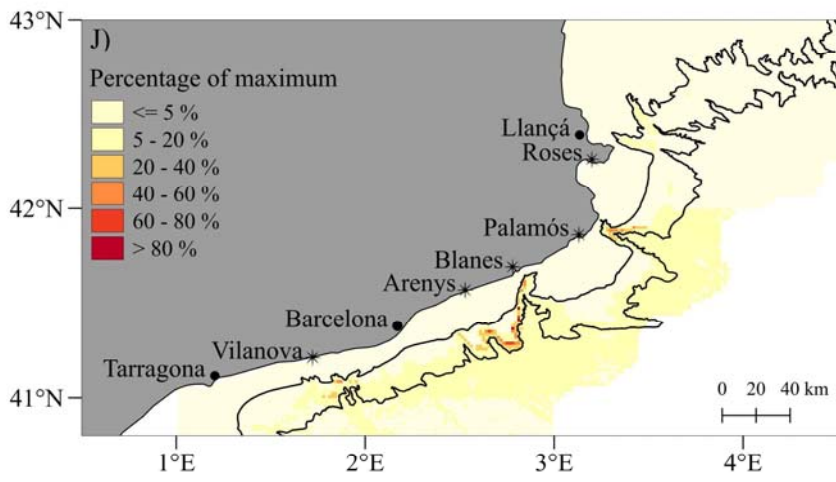


Figure S6. (Suite)