

## SUPPLEMENTARY INFORMATION

### **Palaeoclimatic conditions in the Mediterranean explain genetic diversity of *Posidonia oceanica* seagrass meadows**

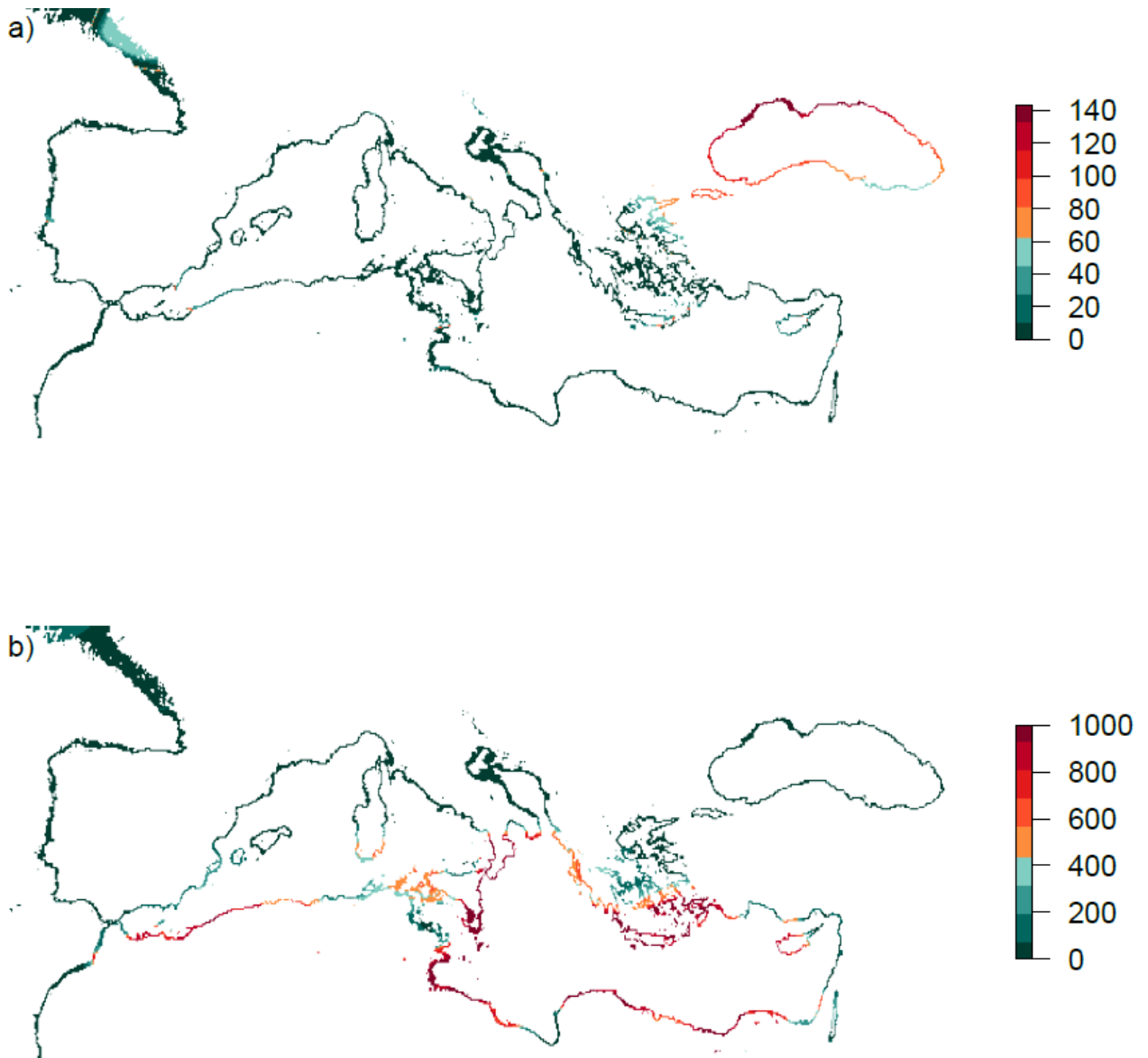
Rosa M. Chefaoui<sup>1\*</sup>, Carlos M. Duarte<sup>2</sup>, Ester A. Serrão<sup>1</sup>

<sup>1</sup> CCMAR - Centro de Ciências do Mar, CIMAR Laboratório Associado, Universidade do Algarve, Campus de Gambelas, 8005-139 Faro, Portugal

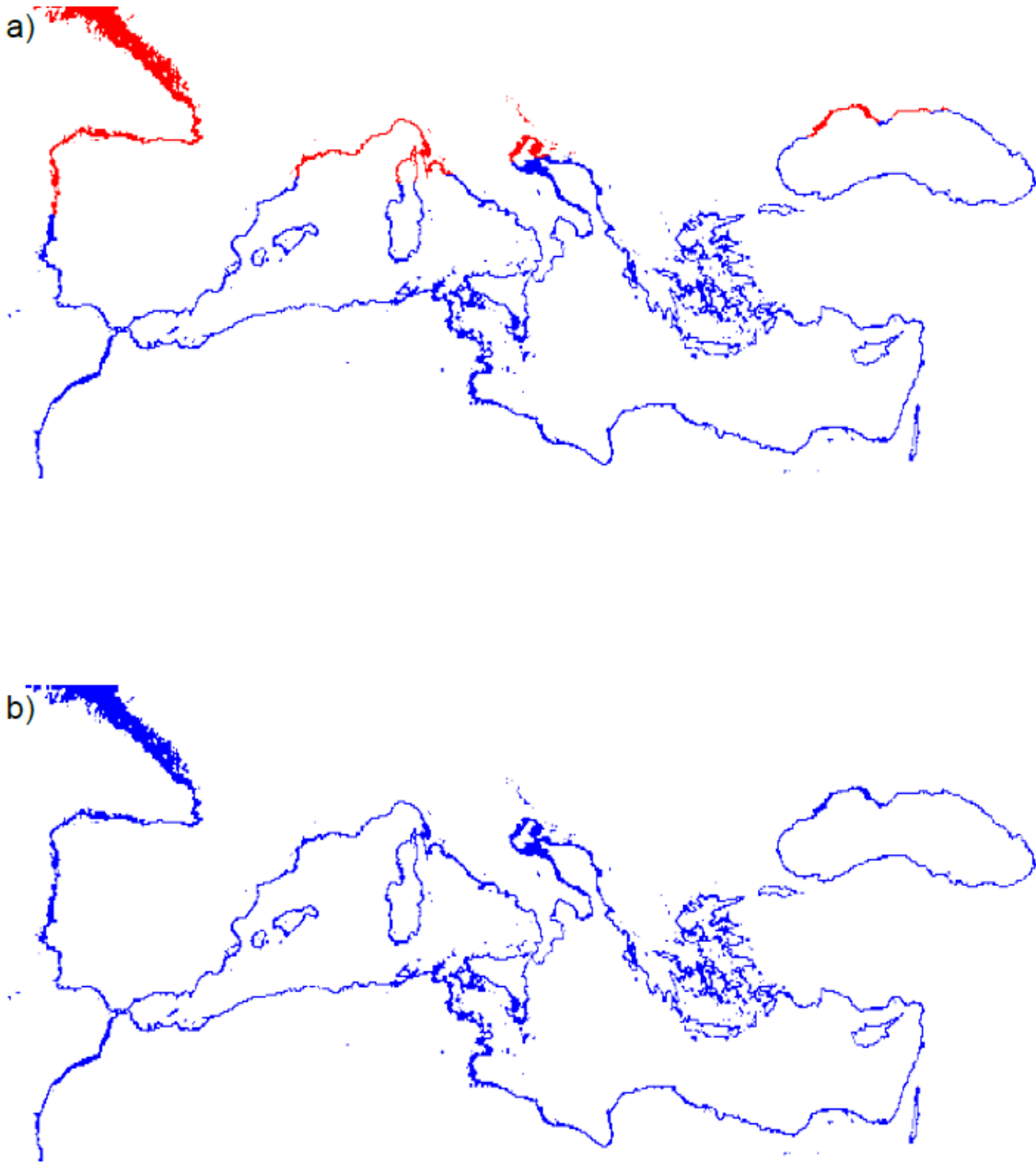
<sup>2</sup> King Abdullah University of Science and Technology (KAUST), Red Sea Research Center (RSRC), Thuwal, 23955-6900, Saudi Arabia

**Table S1.** Mean validation scores of models obtained for *Posidonia oceanica*. Just those with  $AUC \geq 0.9$  or  $TSS \geq 0.65$  were used to produce the ensemble. AUC: the area under the receiver operating characteristic (ROC) curve; TSS: the true skill statistic; GLM: generalized linear model; GAM: generalized additive model; FDA: flexible discriminant analysis; GBM: generalized boosting model; MARS: multiple adaptive regression splines; RF: randomForest.

| <b>Model</b> | <b>AUC</b>  | <b>TSS</b>  | <b>Sensitivity</b> | <b>Specificity</b> |
|--------------|-------------|-------------|--------------------|--------------------|
| GLM          | 0.80 ± 0.01 | 0.50 ± 0.02 | 87.40 ± 3.36       | 64.11 ± 5.27       |
| GBM          | 0.83 ± 0.01 | 0.55 ± 0.01 | 86.23 ± 3.61       | 69.78 ± 4.60       |
| GAM          | 0.80 ± 0.01 | 0.50 ± 0.02 | 87.94 ± 6.80       | 63.36 ± 7.87       |
| FDA          | 0.81 ± 0.01 | 0.54 ± 0.02 | 87.57 ± 2.64       | 66.02 ± 4.37       |
| MARS         | 0.82 ± 0.01 | 0.54 ± 0.02 | 88.90 ± 3.82       | 64.80 ± 5.84       |
| RF           | 0.82 ± 0.01 | 0.53 ± 0.02 | 85.78 ± 3.86       | 69.05 ± 5.13       |



**Fig. S1** Hindcasts obtained from the two Ocean General Circulation Models (a) CCSM; b) CNRM) used afterwards for the Last Glacial Maximum ensemble for *Posidonia oceanica*. Maps were generated using R <sup>43</sup>.



**Fig. S2** Clamping masks for the two ocean general circulation models: CCSM (a) and CNRM (b). Uncertainty in predictions due to variables outside the range used for training the models are shown in red. Maps were generated using R <sup>43</sup>.