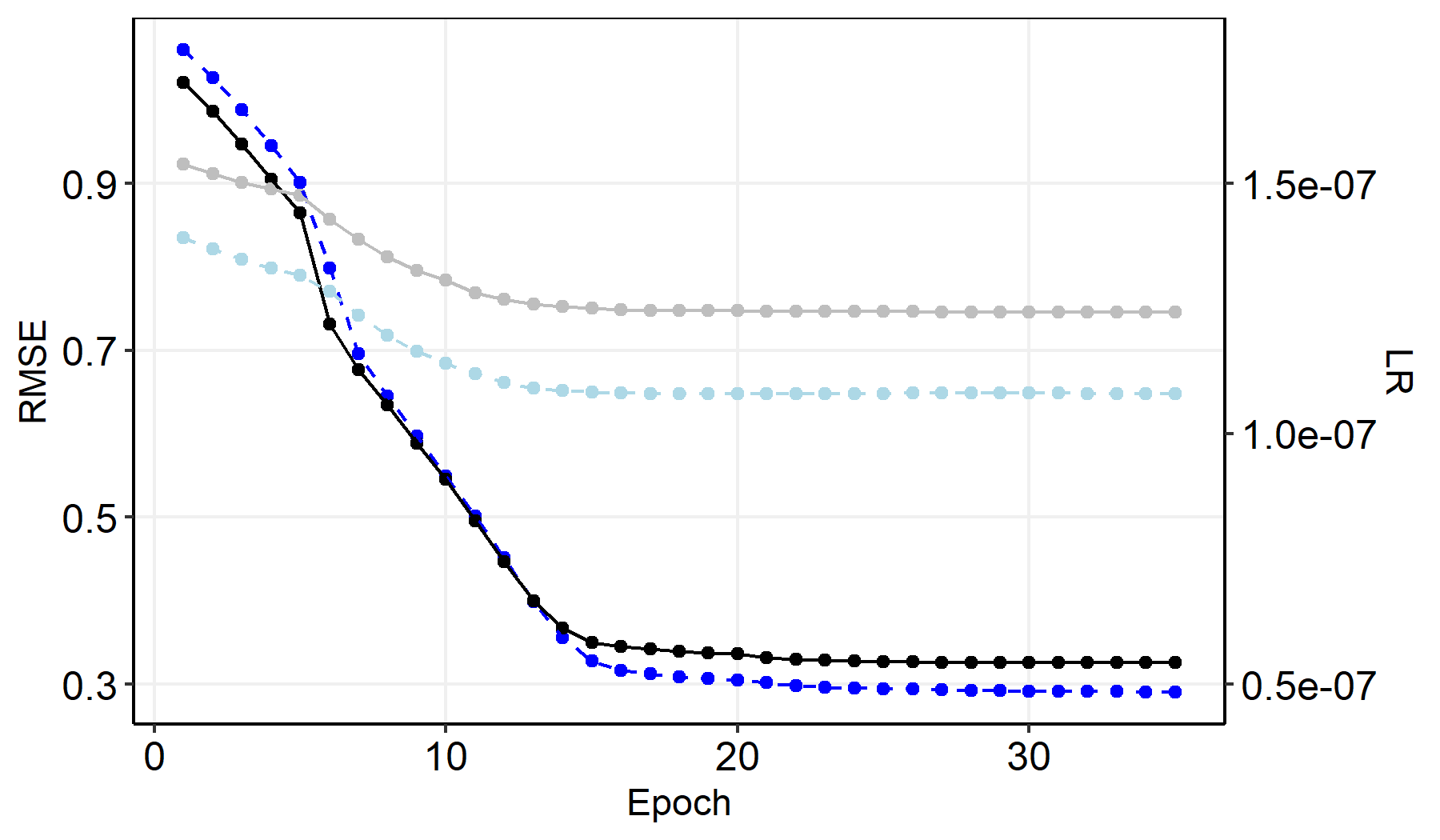
# Supplementary material

## Table

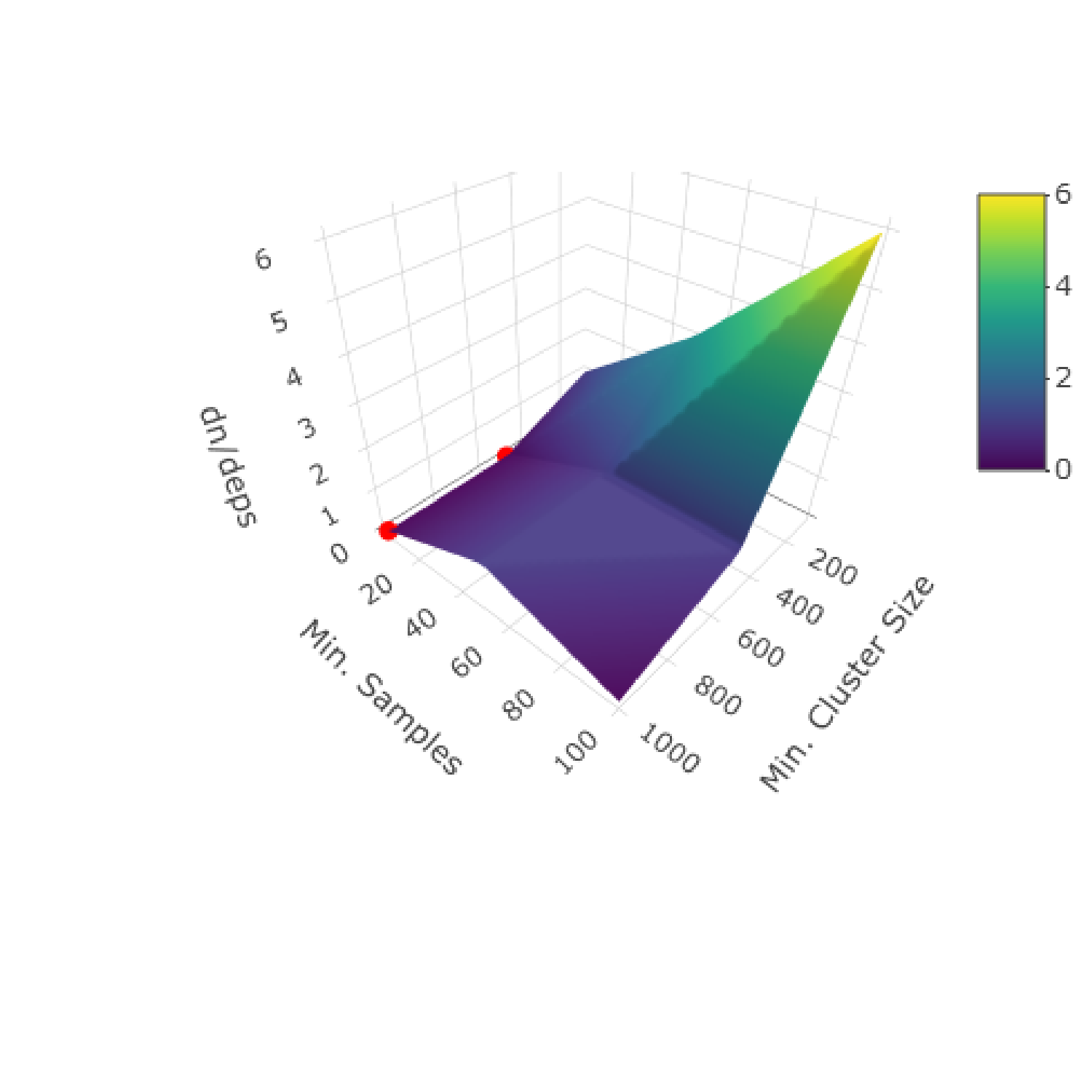
Supplementary Table S 1: Final parameter collection and respective VIF values. NS: vertical gradient; WE: horizontal gradient.

| **Parameter** | **GVIF** |
| --- | --- |
| dtNS | 1.98 |
| dtWE | 1.59 |
| Oxygen | 2.16 |
| doNS | 1.84 |
| doWE | 1.57 |
| Salinity | 1.36 |
| dsNS | 1.09 |
| dsWE | 1.07 |
| Chlorophyll\_a | 1.17 |
| dcNS | 1.12 |
| dcWE | 1.03 |
| Appendicularia | 1.04 |
| Copepoda | 1.25 |
| Pluteus | 1.13 |
| MarineSnow | 1.30 |
| Dinoflagelattes | 1.02 |

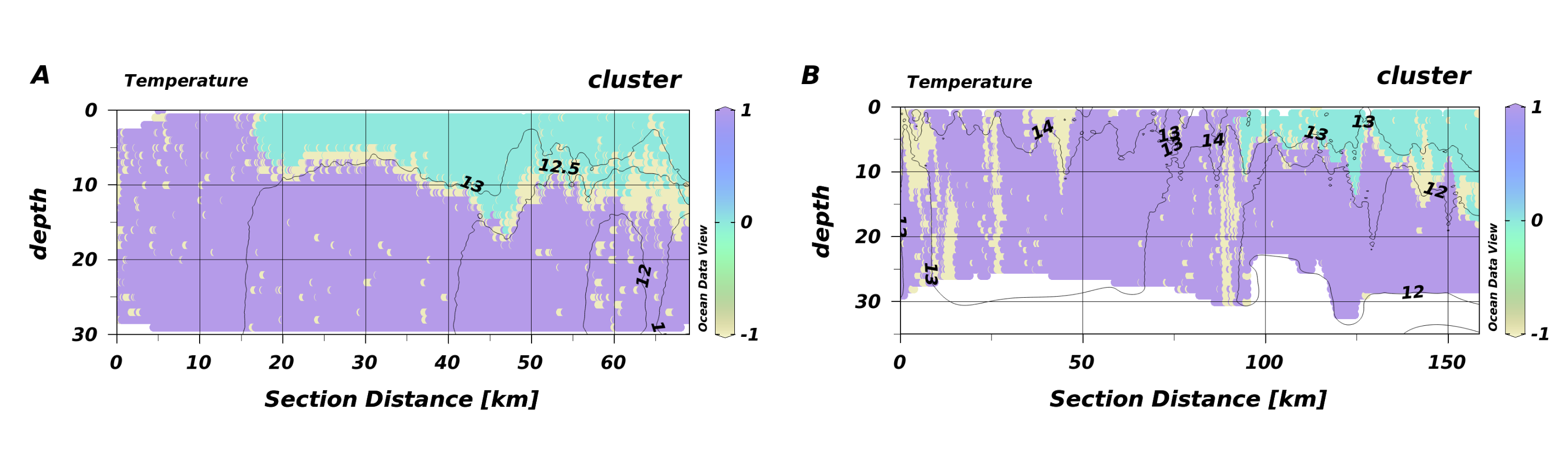
## Figures



Supplementary Figure S 1: Prolonged history of model training. black: validation, blue: training, light: including density, dark: without density.



Supplementary Figure S 2: Influence of Epsilon regarding the segregation of macro-habitats. dn/deps is the difference in segregated macro-habitats at a specific range in Epsilon (0.2 - 0.32).



Supplementary Figure S 3: Habitat maps of T1 (A) and T2 (B) from HE534 overlayed by temperature isolines.