Table S2. Mathematical indicators of each chosen best model.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Model | Parameters | Mean AUC ratio | Partial ROC | Omission rate at 5% | AICc | Delta AICc | W AICc |
| Present\_1\_F\_lqh\_Set13 | Features: Linear, quadratic, hinge.  Regulation multiplier:1  Variables set:13 | 0.9835 | 0.000 | 0.000 | 537.1 | 0.016 | 0.002 |
| UKESM-1-2040\_1\_F\_lqh\_SSP370\_Set57 | Features: Linear, quadratic, hinge.  Regulation multiplier:1  Variables set:57 | 0.97415 | 0.000 | 0.000 | 547.94 | 0.023 | 0.015 |
| IPSL-cm6a-lr-2040\_1.5\_F\_lqh\_SSP585\_Set48 | Features: Linear, quadratic, hinge.  Regulation multiplier:1  Variables set:48 | 0.96875 | 0.000 | 0.000 | 549.71 | 0.024 | 0.009 |
| IPSL-cm6a-lr-2070\_1\_F\_lqh\_SSP370\_Set46 | Features: Linear, quadratic, hinge.  Regulation multiplier:1  Variables set:46 | 0.9865 | 0.000 | 0.000 | 540.72 | 0.020 | 0.006 |
| ESM4-2070\_1\_F\_lqh\_SSP585\_Set67 | Features: Linear, quadratic, hinge.  Regulation multiplier:1  Variables set:67 | 0.9807 | 0.000 | 0.000 | 538.4 | 0.016 | 0.005 |
| UKESM1-0-ll-2100\_1\_F\_lqh\_SSP370\_Set26 | Features: Linear, quadratic, hinge.  Regulation multiplier:1  Variables set:26 | 0.9951 | 0.000 | 0.000 | 547.8 | 0.013 | 0.004 |
| UKESM1-0-ll-2100\_1\_F\_lqh\_SSP585\_Set84 | Features: Linear, quadratic, hinge.  Regulation multiplier:1  Variables set:84 | 0.9924 | 0.000 | 0.000 | 535.7 | 0.017 | 0.002 |