Table 3: Covariate tests

Table 1. Top covariates for the monsoon (Jul-Sep) and post-monsoon (Oct-Mar) catch ( and ) models. M is the base models with only prior catch as covariates. To the base models, the environmental covariates are added. ns-SST is nearshore (0-80km) and r-SST is regional (0-160km). The full set of nested covariate models and tests are given in the appendices.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | Resid. df | Adj. R2 | RMSE | AICc | LOOCV | LOOMdAE |
| **July-Sept catch** |  |  |  |  |  |  |
| null model: | 33 |  | 1.6 | 126.6 | 1.6 | 0.56 |
| base (M): | 30 | 21.7 | 1.2 | 115.2 | 1.31 | 0.69 |
| nonlinear covariate model: = M + |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| = Jun-Sep ns-SST (L2) | 27.9 | 35.3 | 1.06 | 112.7 | 1.24 | 0.64 |
| = Jun-Sep Bakun-UPW (L2) | 27.6 | 43.1 | 0.98 | 109.1 | 1.35 | 0.73 |
| = Jun-Jul Precipitation - land gauges (S1) | 28 | 29.9 | 1.1 | 115.3 | 1.33 | 0.62 |
| = 2.5-year average r-SST (A1) | 27.8 | 37.3 | 1.04 | 111.8 | 1.29 | 0.49 |
| = DMI 2.5-year average (A3) | 28.2 | 36.4 | 1.05 | 111.5 | 1.34 | 0.59 |
|  |  |  |  |  |  |  |
| **October-March catch - simpler model** |  |  |  |  |  |  |
| null model: | 32 |  | 1 | 92.9 | 1 | 0.26 |
| base (M): | 29.1 | 45.9 | 0.82 | 87.7 | 0.95 | 0.32 |
| nonlinear covariate model: = M + |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| = Jun-Jul Precipitation - land gauges (S1) | 26.9 | 59.6 | 0.69 | 82.1 | 0.91 | 0.25 |
| = 2.5-year average r-SST (A1) | 26.9 | 64.5 | 0.64 | 78.1 | 0.76 | 0.35 |
| = DMI 2.5-year average (A3) | 27.2 | 59.7 | 0.69 | 81.5 | 0.82 | 0.36 |
|  |  |  |  |  |  |  |
| **October-March catch - more complex model** |  |  |  |  |  |  |
| null model: | 32 |  | 1 | 92.9 | 1 | 0.26 |
| base (M): | 26.6 | 57.3 | 0.7 | 84.6 | 1.05 | 0.35 |
| nonlinear covariate model: = M + |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| = Jun-Jul Precipitation - land gauges (S1) | 24.6 | 70.5 | 0.56 | 77.5 | 0.97 | 0.29 |
| = 2.5-year average r-SST (A1) | 24.7 | 72 | 0.55 | 75.6 | 0.75 | 0.28 |
| = DMI 2.5-year average (A3) | 24.9 | 62.3 | 0.64 | 84.5 | 0.93 | 0.43 |
|  |  |  |  |  |  |  |

Notes: The nested F-tests are given in Supporting Information. LOOCV = Leave one out cross-validation. RMSE = root mean square error. MdAE = median absolute error. AICc = Akaike Information Criterion corrected for small sample size. and = AICc greater than 2 and greater than 5 below model M (base catch model). , , and = LOOCV RMSE 5%, 10% and 20% below model M, respectively. indicates current season (Jul-Jun). For covariates that are multiyear, is the current calendar year.