**Supplementary material**

**Table S1.** Environmental variables used as explanatory predictors in the construction of the GLM mode of the observed glass eel recruitment values (CPUE) in the Minho River.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Units | Min | 1st Qu. | Median | Mean | 3rdQu. | Max | Description |
| rain\_av\_year | mm | 64.48 | 102.11 | 133.78 | 133.79 | 152.32 | 233.70 | Average annual rainfall |
| rain\_av\_fs | mm | 71.85 | 112.38 | 172.85 | 169.07 | 191.21 | 400.00 | Average fs rainfall |
| rain\_ac\_fs | mm | 503.00 | 864.40 | 1336.80 | 1318.30 | 1527.20 | 3208.00 | Cumulative fs rainfall |
| riverflow\_av\_fs | m3/s | 102.90 | 198.50 | 318.50 | 356.20 | 437.90 | 1331.60 | Average fs river flow |
| rainW | mm | 34.74 | 104.77 | 135.08 | 174.53 | 213.60 | 509.62 | Average winter rainfall |
| rainSp | mm | 20.98 | 73.44 | 99.38 | 104.72 | 138.65 | 221.14 | Average spring rainfall |
| rainSu | mm | 13.78 | 35.98 | 48.90 | 52.24 | 61.50 | 163.95 | Average summer rainfall |
| rainA | mm | 46.47 | 134.93 | 203.75 | 204.89 | 253.90 | 491.45 | Average autumn rainfall |
| NAO | index | -5.96 | -0.52 | 0.65 | 0.42 | 2.05 | 3.88 | North Atlantic Oscillation |
| NAOwi | index | -3.70 | -0.45 | 1.35 | 0.82 | 1.90 | 4.50 | Winter NAO |
| NAOsp | index | -3.70 | -1.38 | -0.60 | -0.35 | 0.90 | 3.50 | Spring NAO |
| NAOsu | index | -5.30 | -1.05 | -0.25 | -0.35 | 0.58 | 1.50 | Summer NAO |
| NAOau | index | -4.40 | -1.10 | -0.15 | 0.06 | 1.55 | 4.40 | Autumn NAO |
| SSTss | °C | 24.94 | 25.17 | 25.36 | 25.35 | 25.49 | 26.39 | Sea Surface Temp. Sargasso Sea |
| SSTpc | °C | 15.08 | 15.74 | 16.11 | 16.10 | 16.40 | 17.12 | Sea Surface Temp. Portuguese coast |

fs - Fishing season



**Figure S1.** Autocorrelation function of the 3-year moving average glass eel CPUE series.

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**Figure S2.** Analysis of GLM model fit for glass eel CPUE. Top left: histogram of the residuals from the regression analysis. Top right: QQ plot comparing the quantiles of a theoretical normal distribution to that of the residuals from the regression analysis (residuals normal distributed). Bottom left: plot of model residuals against the fitted values of the model itself (homogeneity of variance). Bottom right: Cook’s distance plot investigating the leverage of individual data points (observation 41 was removed to investigate its influence in the model; no substantial changes occurred in the variables selected nor in the coefficients).



**Figure S3.** Component-plus-residual plots of three predictor variables in the GLM model for predicting glass eel recruitment variation. Left: Average autumn rainfall; Centre: north Atlantic oscillation; Right: sea surface temperature in Sargasso Sea. X-axes tick marks show the distribution of the predictor values. Y-axes represent the partial effect of the predictor in the response variable. Shadow represents confidence 90% confidence.