

Appendix A.

Detailed explanation of data subsetting and model fitting procedure for both model types.

The logistic model was fitted to our n ($=20$) observations N_i ($i = 1, \dots, n$) for years t (with $t = i + 1993$). We have $n - 1$ ($=19$) data points, namely (N_i, N_{i+1}) with ($i = 1, \dots, n - 1$). We fitted as follows:

- No breakpoints: $N_{i+1} = N_i \left(1 + r \left(1 - \frac{N_i}{K} \right) \right) + \varepsilon$ with $\varepsilon \cong N(0, \sigma^2)$ (where ε is a normally distributed stochastic variable with mean zero and variance σ^2). Thus, three parameters were estimated: r and K plus variance estimate σ^2 for the full data set N_i with $i = 1, \dots, n - 1$
- One breakpoint: $N_{i+1} = N_i \left(1 + r_q \left(1 - \frac{N_i}{K_q} \right) \right) + \varepsilon_q$ with $\varepsilon_q \cong N(0, \sigma_q^2)$ and ($q = 1, 2$). Thus six parameters $r_1, K_1, \sigma_1^2, r_2, K_2,$ and σ_2^2 were estimated for two subsets of the full data set, namely subset 1: N_i with $i = 1, \dots, n_1$ ($n_1 \geq 3$) and respectively subset 2: N_j with $j = n_1 + 1, \dots, n - 1$ and $n - n_1 - 1 \geq 3$.
- Two breakpoints: $N_{i+1} = N_i \left(1 + r_q \left(1 - \frac{N_i}{K_q} \right) \right) + \varepsilon_q$ with $\varepsilon_q \cong N(0, \sigma_q^2)$ and ($q = 1, 2, 3$). Thus nine parameters $r_1, K_1, \sigma_1^2, r_2, K_2, \sigma_2^2, r_3, K_3$ and σ_3^2 were estimated for three subsets of the full data set, respectively, namely subset 1: N_i with $i = 1, \dots, n_1$ ($n_1 \geq 3$), subset 2: N_j with $j = n_1 + 1, \dots, n_2$ ($n_2 - n_1 \geq 3$) and subset 3: N_k with $k = n_2 + 1, \dots, n - 1$ ($n - n_2 - n_3 - 1 \geq 3$).
- Two breakpoints: $N_{i+1} = N_i \left(1 + r_q \left(1 - \frac{N_i}{K_q} \right) \right) + \varepsilon_q$ with $\varepsilon_q \cong N(0, \sigma_q^2)$ and ($q = 1, 2$). Thus six parameters were estimated: $r_1, K_1, \sigma_1^2, r_2, K_2,$ and σ_2^2 for the two subsets of the full data set, respectively subset 1: N_i with $i = 1, \dots, n_1, n_2 + 1, \dots, n - 1$ ($n_1 \geq 3, n - n_2 - 1 \geq 3$) and subset 2: N_j with $j = n_1 + 1, \dots, n_2$ ($n_2 - n_1 \geq 3$)

The same procedure was used, *mutatis mutandis*, for fitting the Ricker model.