

Figure S1. Values of z_t^f observed over the period 1976–2005 (top left) and projections of z_t^f over the period 2019–2070 from each of 41 climate models, together with local polynomial regression lines (red).

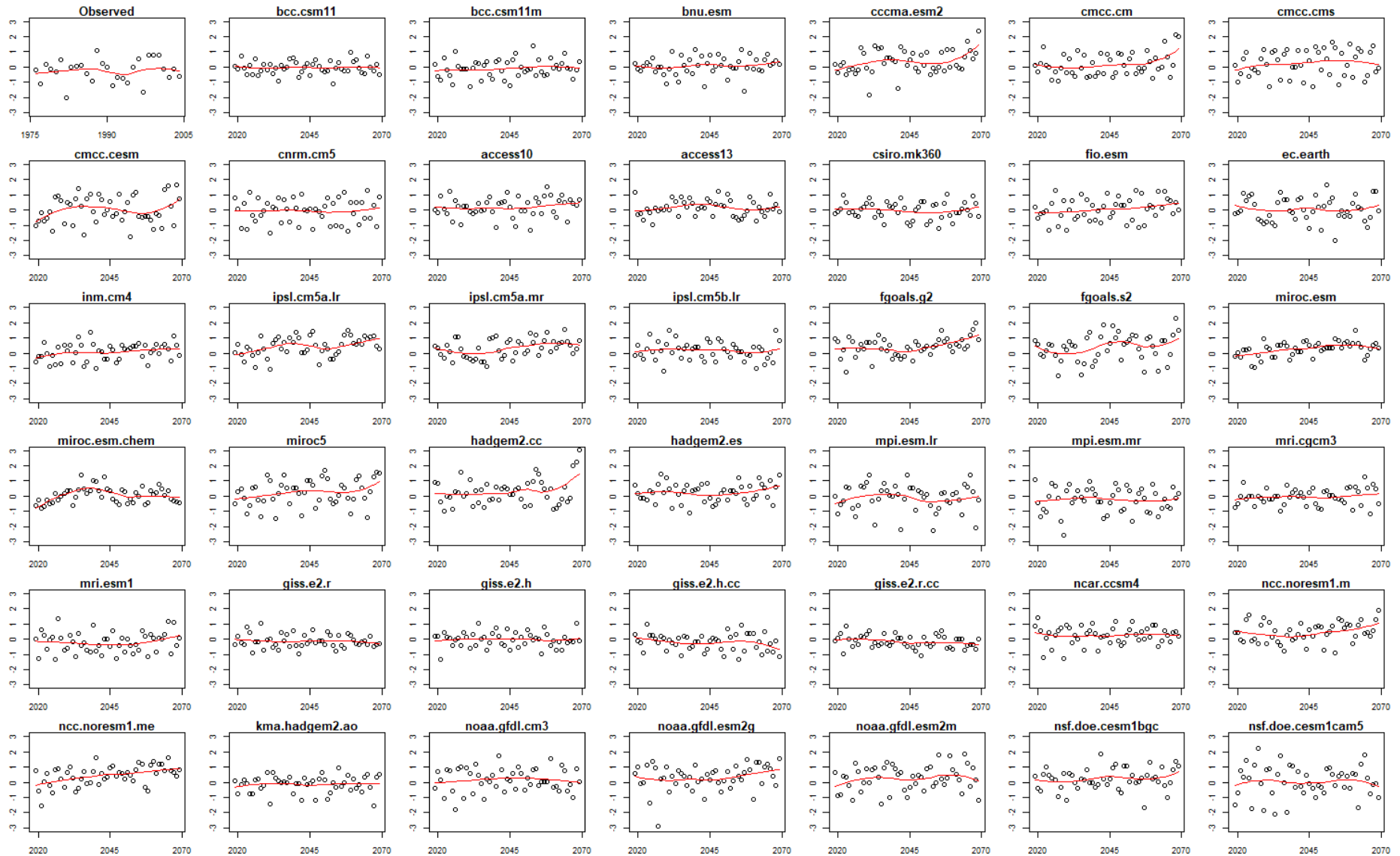


Figure S2. Values of z_i^s observed over the period 1976–2005 (top left) and projections of z_i^s over the period 2019–2070 from each of 41 climate models, together with local polynomial regression lines (red).

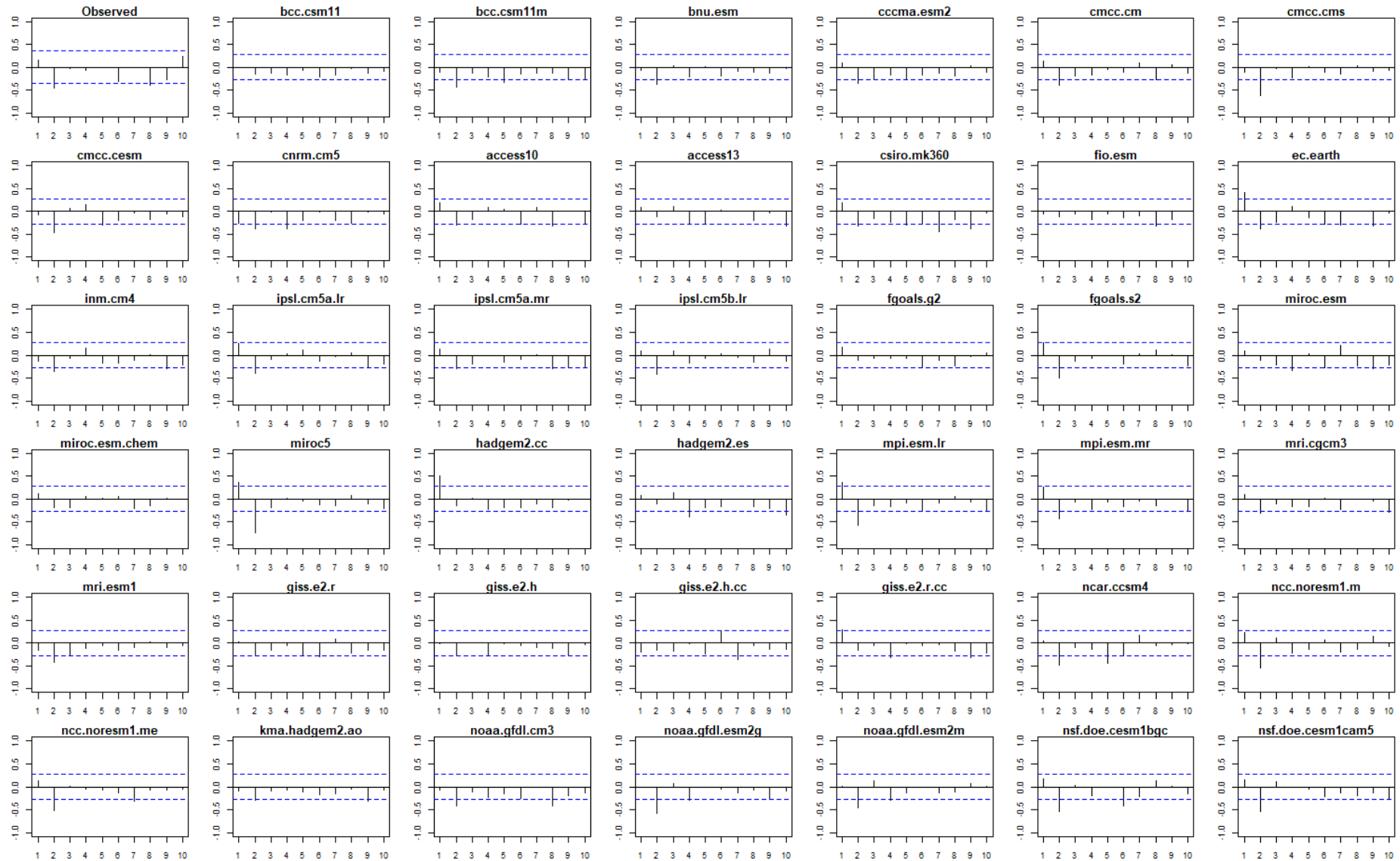


Figure S3. Partial autocorrelation versus lag for the residuals associated with a local polynomial regression line fitted to values of z_t^f observed over the period 1976–2005 (top left) and fitted to projections of z_t^f over the period 2019–2070 from each of 41 climate models. The horizontal dashed lines indicate the approximate confidence limits under the assumption of no autocorrelation in the residuals.

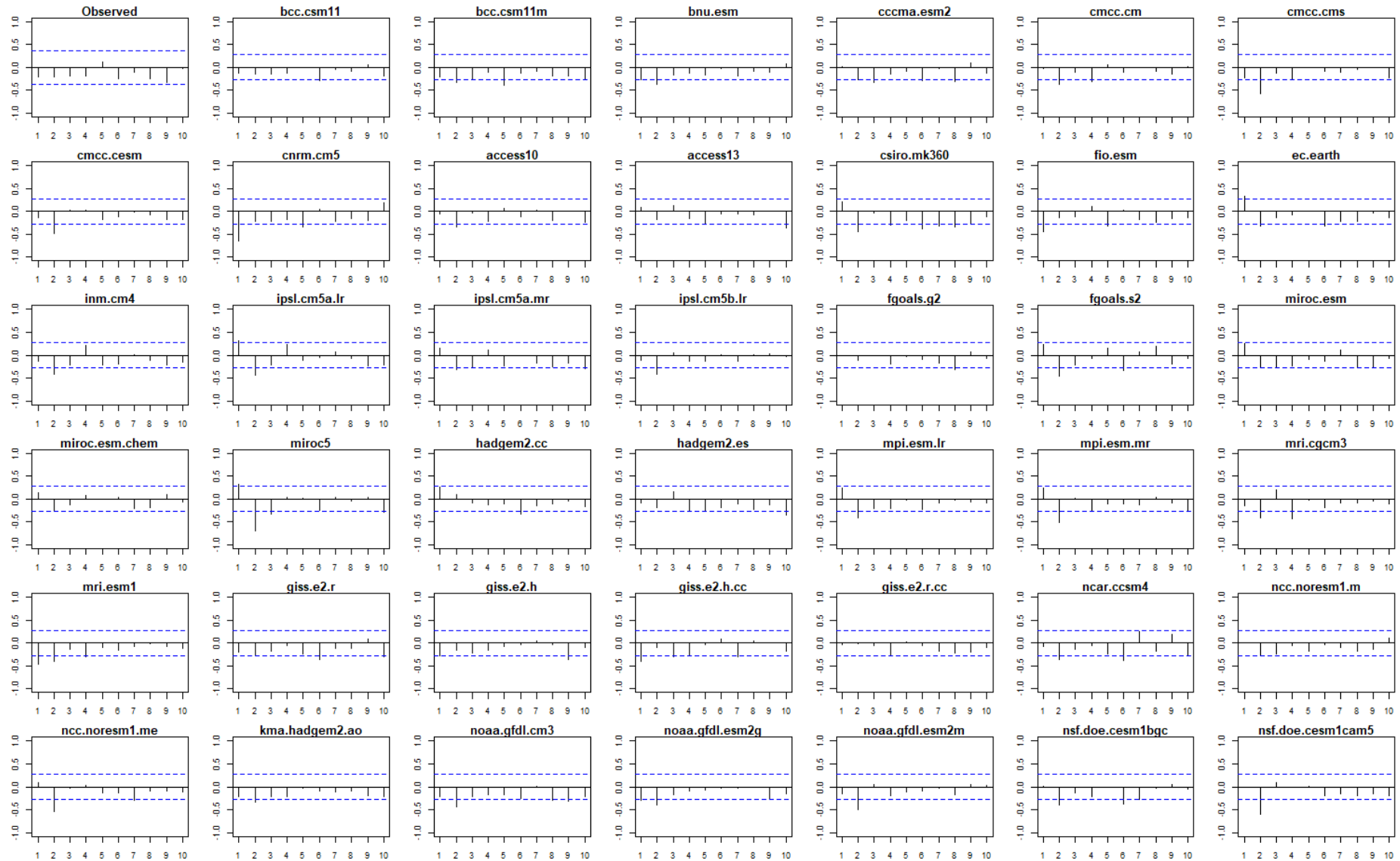


Figure S4. Partial autocorrelation versus lag for the residuals associated with a local polynomial regression line fitted to values of z_t^S observed over the period 1976–2005 (top left) and fitted to projections of z_t^S over the period 2019–2070 from each of 41 climate models. The horizontal dashed lines indicate the approximate confidence limits under the assumption of no autocorrelation in the residuals.

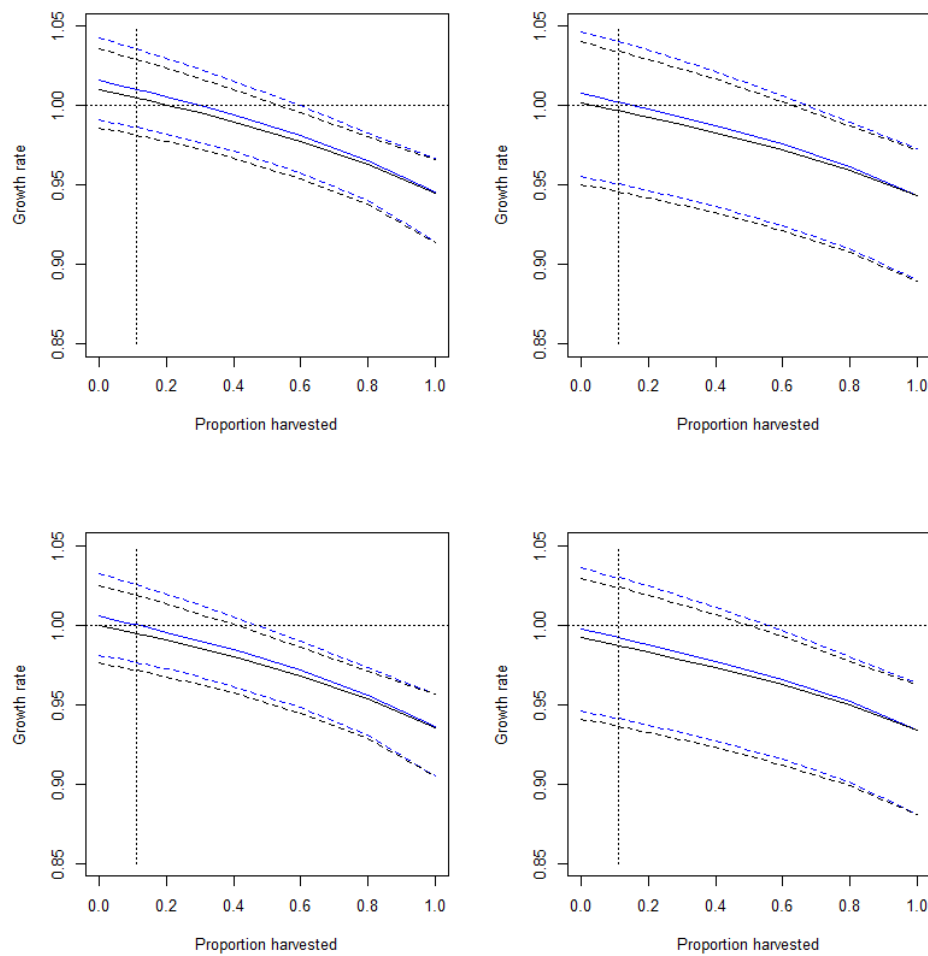


Figure S5. Effects of including non-SOI annual variation in adult survival and fecundity on the annual growth rate over the period 2019–2070, using the original and modified versions of the best-fitting model (S-1F0). The plots show the annual growth rate versus the proportion of chicks harvested each year, aggregated over 41 SOI scenarios. The results in the left column are based on the original model, while those in the right column are based on the modified model, which includes a specified amount of non-SOI annual variation in adult survival and fecundity. The results in top and bottom row correspond to bycatch = 0 and bycatch = 0.01 respectively. The lines represent the posterior median (solid) and 95% credible limits (dashed), for no weka-depredation (blue) or weka-depredation is 0.11 (black). The projections were obtained by modelling data for the period 1976–2005, and the estimate of the mean annual proportion of chicks harvested during this period (0.11) is indicated by a vertical dotted line.

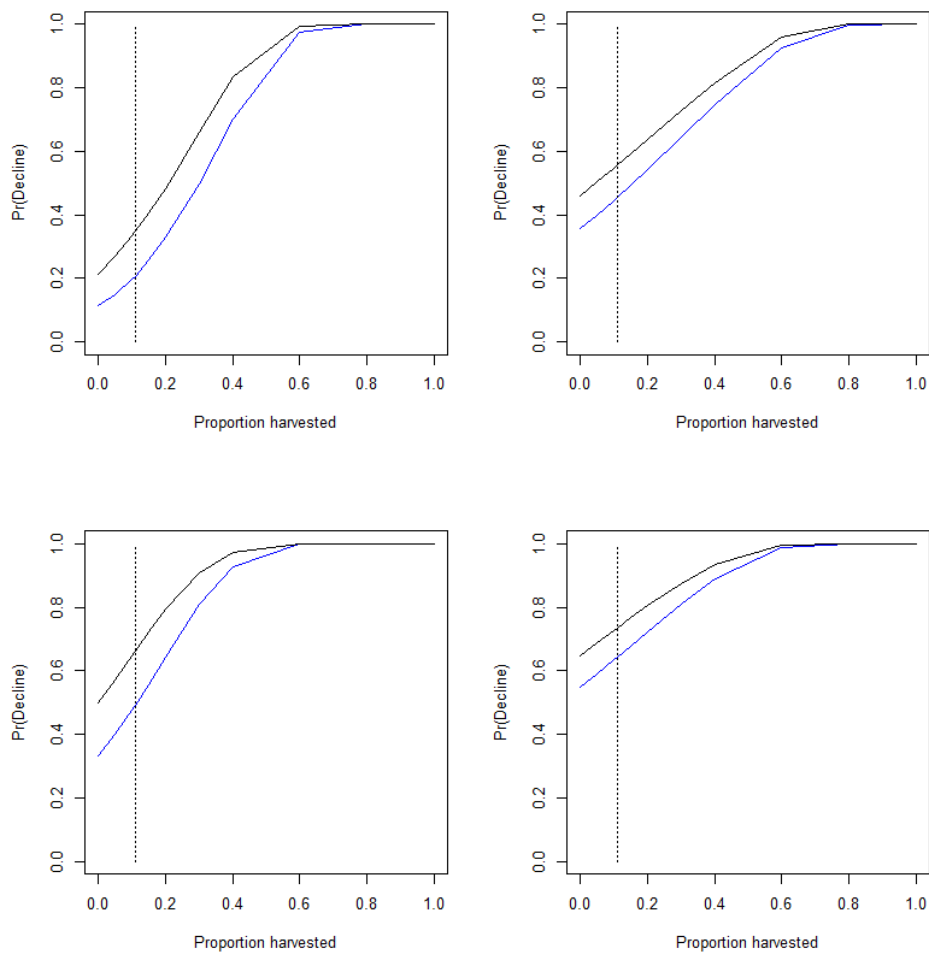


Figure S6. Effects of including non-SOI annual variation in adult survival and fecundity on the probability of decline over the period 2019–2070, using the original and modified versions of the best-fitting model (S–1F0). The plots show the probability of decline versus the proportion of chicks harvested each year, aggregated over 41 SOI scenarios. The results in the left column are based on the original model, while those in the right column are based on the modified model, which includes a specified amount of non-SOI annual variation in adult survival and fecundity. The results in top and bottom row correspond to bycatch = 0 and bycatch = 0.01 respectively, while the lines represent no weka-depredation (blue) or weka-depredation is 0.11 (black). The projections were obtained by modelling data for the period 1976–2005, and the estimate of the mean annual proportion of chicks harvested during this period (0.11) is indicated by a vertical dotted line.

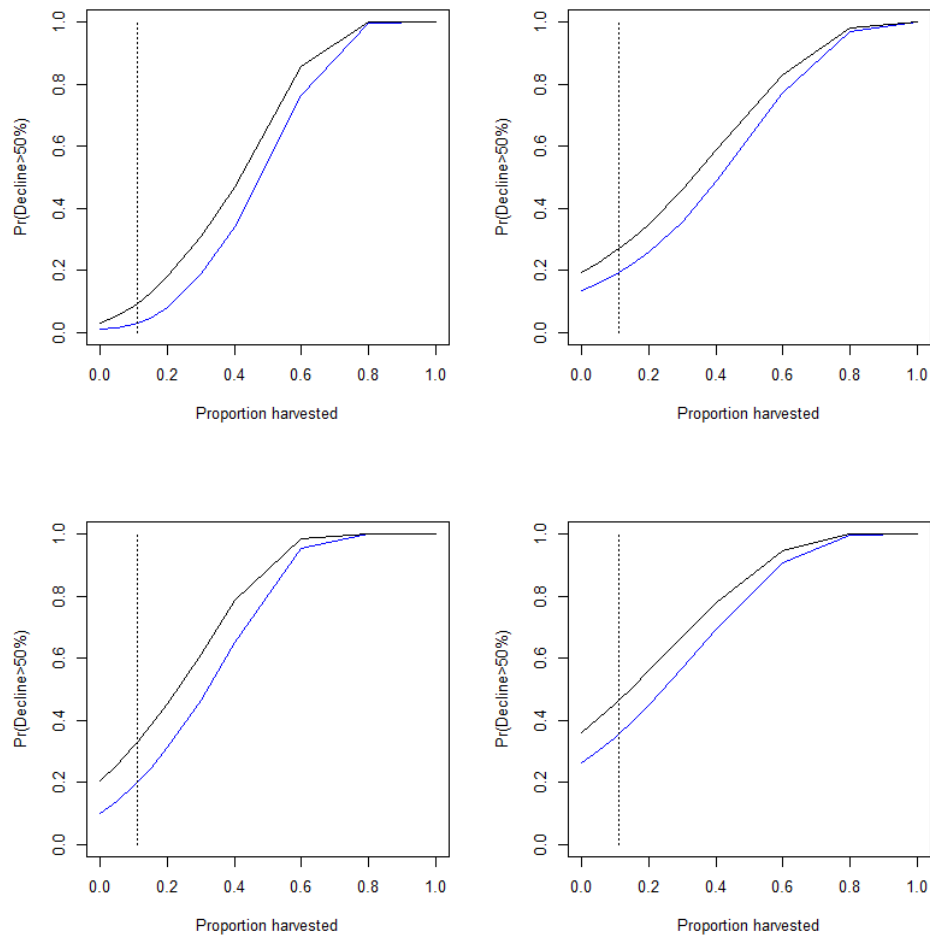


Figure S7. Effects of including non-SOI annual variation in adult survival and fecundity on the probability of a decline greater than 50% over the period 2019–2070, using the original and modified versions of the best-fitting model (S–1F0). The plots show the probability of a decline greater than 50% versus the proportion of chicks harvested each year, aggregated over 41 SOI scenarios. The results in the left column are based on the original model, while those in the right column are based on the modified model, which includes a specified amount of non-SOI annual variation in adult survival and fecundity. The results in top and bottom row correspond to bycatch = 0 and bycatch = 0.01 respectively, while the lines represent no weka-depredation (blue) or weka-depredation is 0.11 (black). The projections were obtained by modelling data for the period 1976–2005, and the estimate of the mean annual proportion of chicks harvested during this period (0.11) is indicated by a vertical dotted line.