McKellar et al. supplemental table and figures

Table S1. The summary results of a 10-fold targeted cross-validation where all observations from a random sample of years are predicted when left-out of the model training set. The best model is the same as the model identified as the best by the approximate leave-one-out comparison reported in the main paper.

| Model | Mean lppd | z-statistic pairwise difference from best model |
| --- | --- | --- |
| Climate-plus-core | -2.031 | NA |
| Climate-plus-core [NAOI 1-year lagged] | -2.032 | -0.7 |
| Climate | -2.034 | -1.3 |
| Base | -2.037 | -2.2 |

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| Figure S1. Covariate effects from all 5 models. |

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| Figure S2. Local effect of 3-month SPEI (top plot) and 3-month SPEI 1-year lagged (bottom plot) from the Climate [spring+sprin 1-year lagged] model. The general pattern of strongest positive effects in the core of the range is very similar to the pattern for the combined effect of local 15-month SPEI that had higher predictive accuracy. |

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| Figure S3. Local effect of NAOI 1-year lagged (12-18 months before BBS counts) from the Climate-plus-core [NAOI 1-year lagged] model. The spatial pattern in effects is largely opposite to the pattern for the NAOI from the preceding winter (1-6 months before BBS counts): negative in the core of the species’ range and positive in the southern perimeter. |

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| Figure S4. Population trajectories and trends from all of the models compared in the paper. Long-term trends are very similar across all models, and the short-term effects from all covariate models (all models except the base model) are all very similar. |