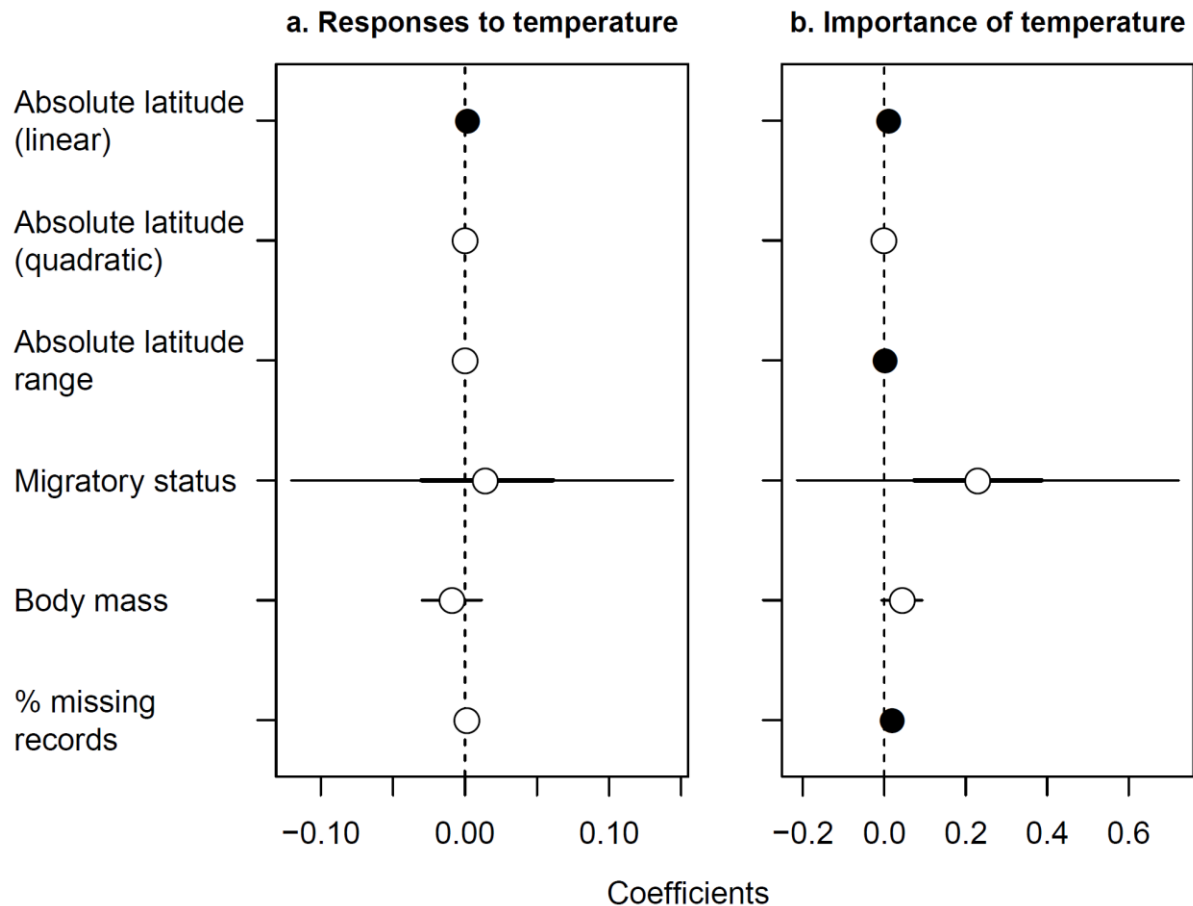**Supplementary Information**

Responses of global waterbird populations to climate change vary with latitude

Tatsuya Amano, Tamás Székely, Hannah S. Wauchope, Brody Sandel, Szabolcs Nagy, Taej Mundkur, Tom Langendoen, Daniel Blanco, Nicole L. Michel, William J. Sutherland
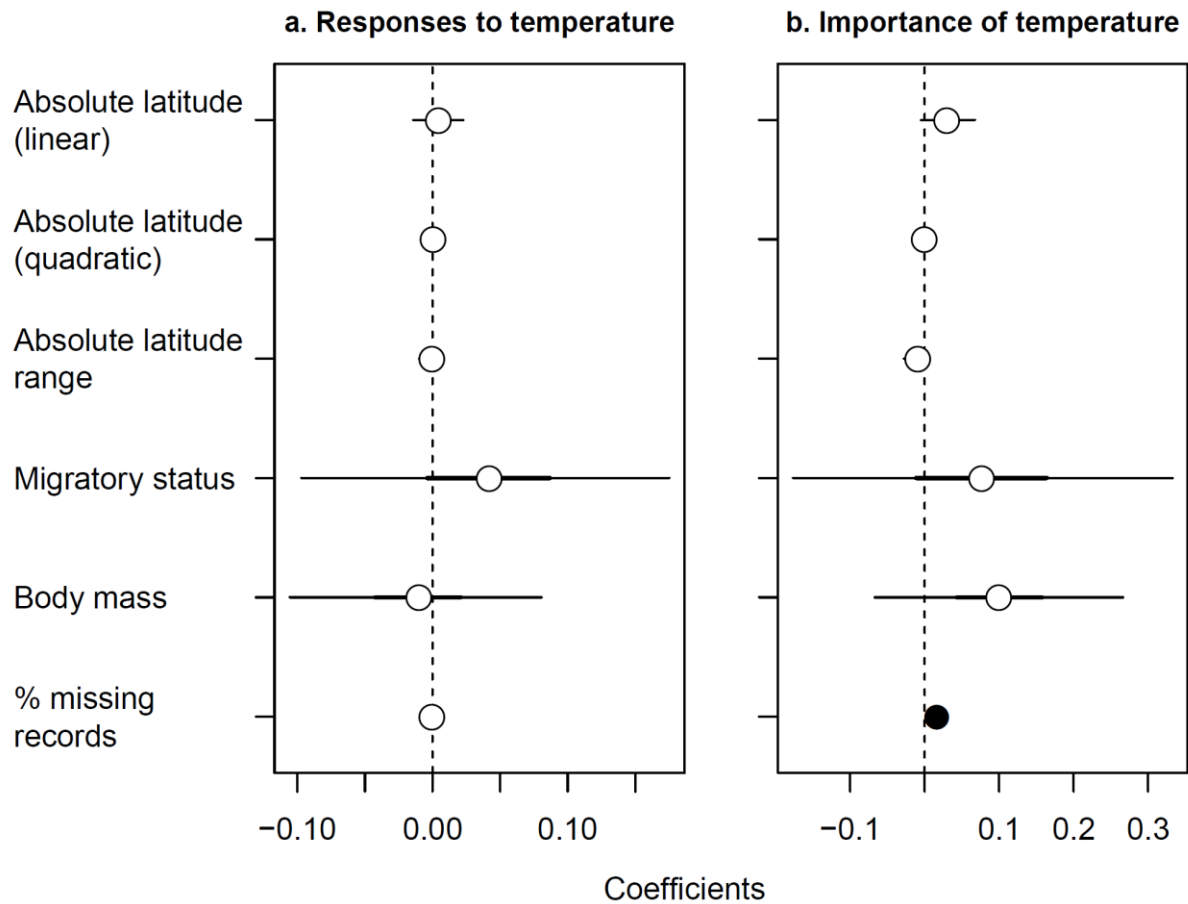

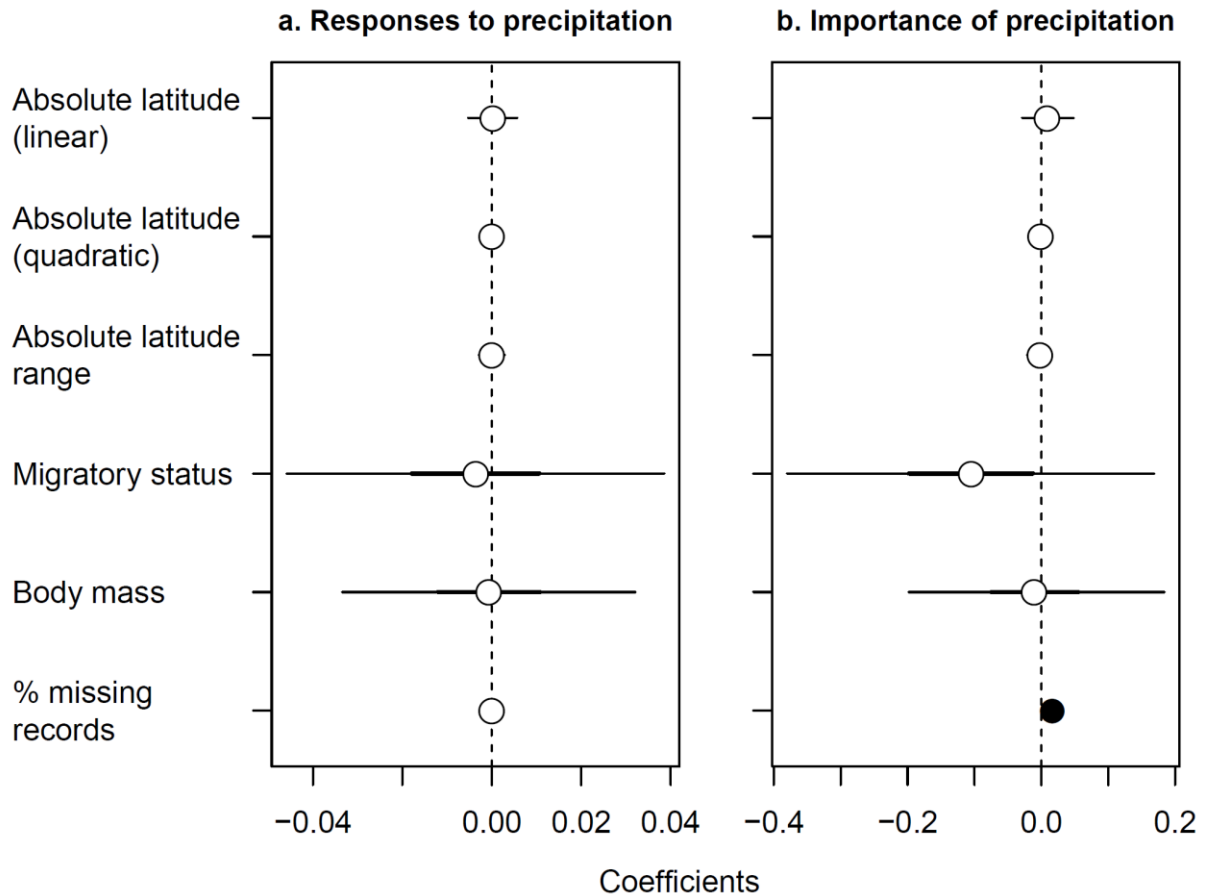**Supplementary Fig. S1. Effects of species-level predictors on waterbird abundance responses to temperature changes at the northern hemisphere**. The estimated coefficients with 95% and 50% (thick lines) credible intervals of six explanatory variables for explaining among-species variations in the rate of abundance changes with increasing temperature (a) and the importance of temperature in explaining abundance changes (b). Filled circles indicate variables with 95% credible intervals not overlapping with zero. Only 164 northern hemisphere species were analysed (see **Statistical Analysis** for more details). Note that the estimated coefficients for *Absolute latitude (linear)* in both (a) and (b) and for *Absolute latitude range* and *% missing records* in (b) are all positive.
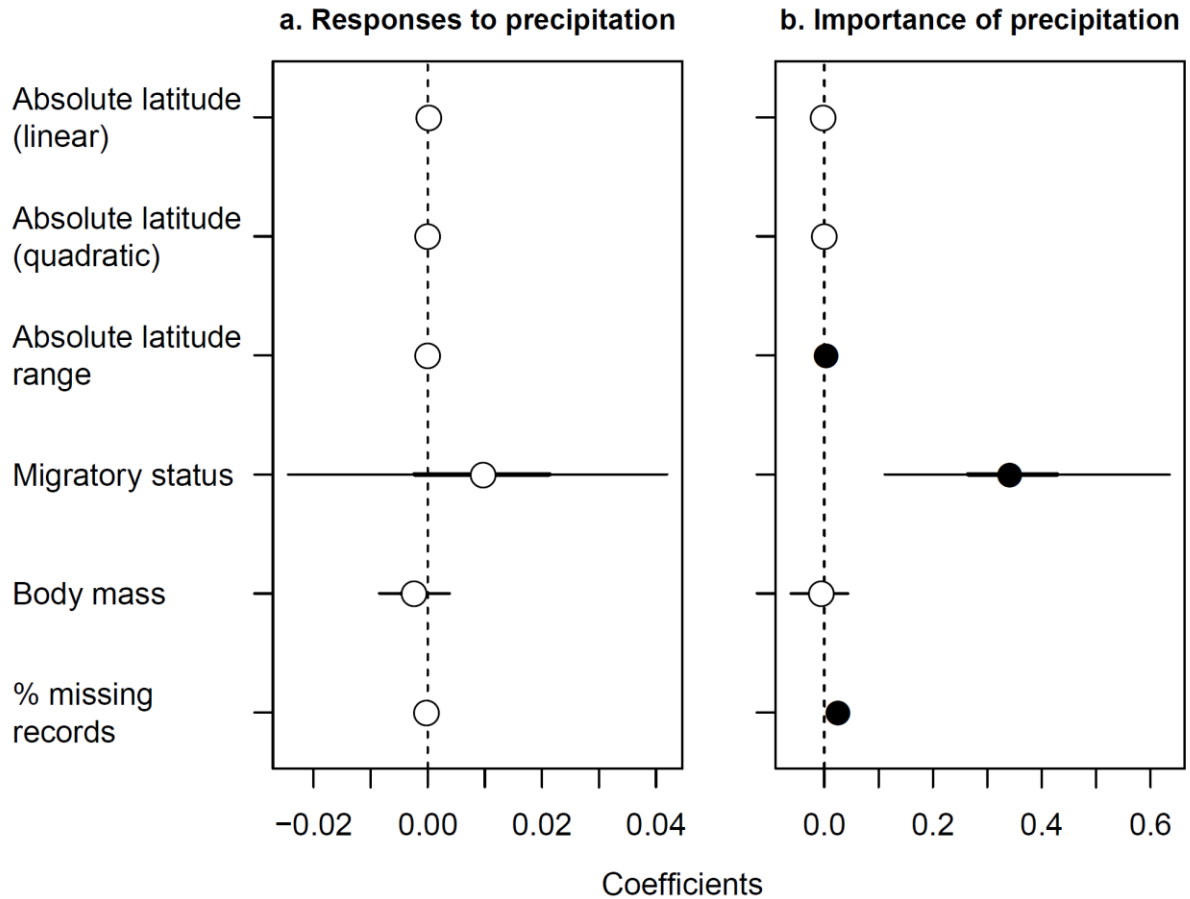
Supplementary Fig. S2. Effects of species-level predictors on waterbird abundance responses to precipitation changes at the northern hemisphere. The estimated coefficients with 95% and 50% (thick lines) credible intervals of six explanatory variables for explaining among-species variations in the rate of abundance changes with increasing precipitation (a) and the importance of precipitation in explaining abundance changes (b). Filled circles indicate variables with 95% credible intervals not overlapping with zero. Only 164 northern hemisphere species were analysed (see **Statistical Analysis** for more details). Note that the estimated coefficient for *Absolute latitude range* in (b) is positive.

Supplementary Fig. S3. Effects of species-level predictors on waterbird abundance responses to temperature changes at the southern hemisphere. The estimated coefficients with 95% and 50% (thick lines) credible intervals of six explanatory variables for explaining among-species variations in the rate of abundance changes with increasing temperature (a) and the importance of temperature in explaining abundance changes (b). Filled circles indicate variables with 95% credible intervals not overlapping with zero. Only 49 southern hemisphere species were analysed (see **Statistical Analysis** for more details).

Supplementary Fig. S4. Effects of species-level predictors on waterbird abundance responses to precipitation changes at the southern hemisphere. The estimated coefficients with 95% and 50% (thick lines) credible intervals of six explanatory variables for explaining among-species variations in the rate of abundance changes with increasing precipitation (a) and the importance of precipitation in explaining abundance changes (b). Filled circles indicate variables with 95% credible intervals not overlapping with zero. Only 49 southern hemisphere species were analysed (see **Statistical Analysis** for more details).
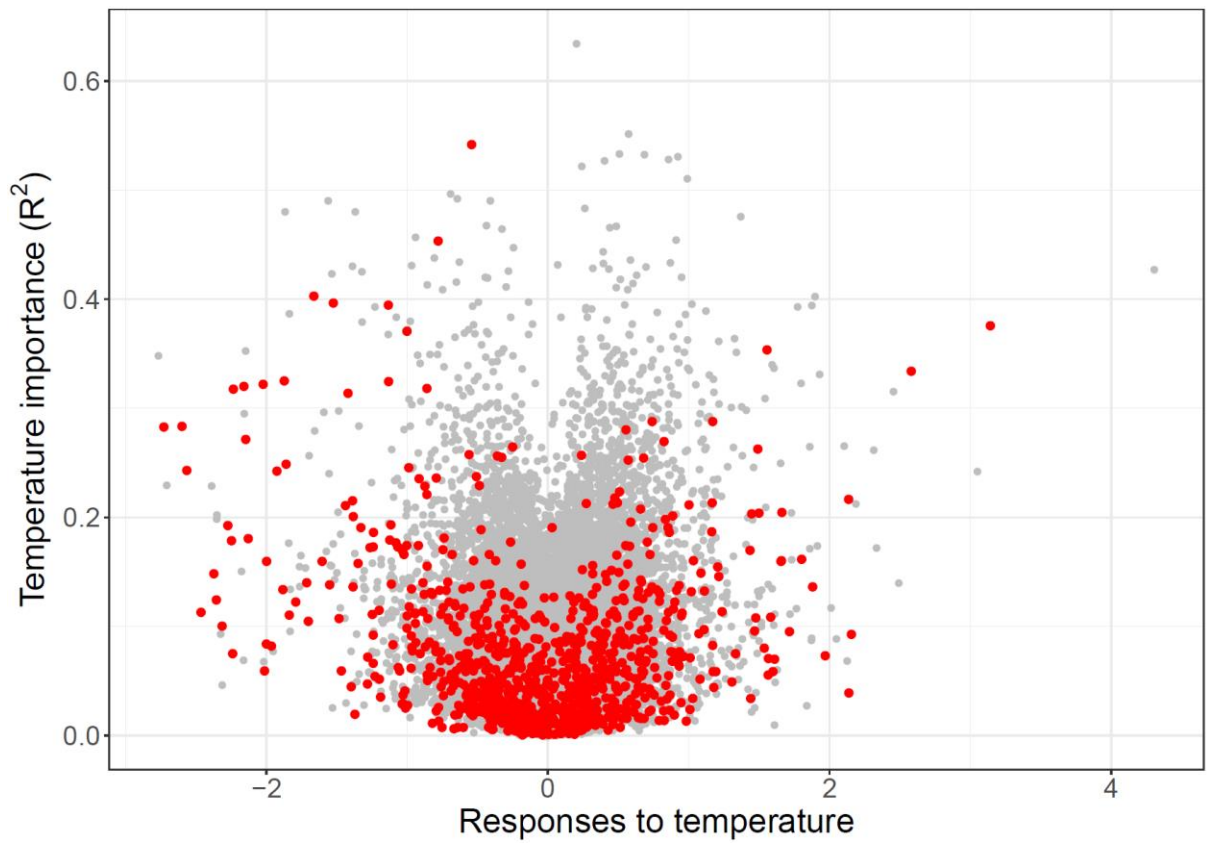
Supplementary Fig. S5. Grid cell-level relationship between abundance responses to temperature and temperature importance. Each dot represents estimates for each species within each 1° × 1° grid cell. Grid cells in the tropical region (absolute latitude < 23.4) are shown in red.