Table S1. Environmental variables and Global Climate Models were used in this study. Fourteen variables for predicting the current breeding range were bolded.

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| **Environmental variables** | |
| **WorldClim\_BIO1** | Annual Mean Temperature |
| **WorldClim\_BIO2** | Mean Diurnal Range (Mean of monthly (max temp - min temp)) |
| WorldClim\_BIO3 | Isothermally (BIO2/BIO7) (×100) |
| **WorldClim\_BIO4** | Temperature Seasonality (standard deviation ×100) |
| WorldClim\_BIO5 | Max Temperature of Warmest Month |
| WorldClim\_BIO6 | Min Temperature of Coldest Month |
| WorldClim\_BIO7 | Temperature Annual Range (BIO5-BIO6) |
| **WorldClim\_BIO8** | Mean Temperature of Wettest Quarter |
| **WorldClim\_BIO9** | Mean Temperature of Driest Quarter |
| WorldClim\_BIO10 | Mean Temperature of Warmest Quarter |
| **WorldClim\_BIO11** | Mean Temperature of Coldest Quarter |
| **WorldClim\_BIO12** | Annual Precipitation |
| WorldClim\_BIO13 | Precipitation of Wettest Month |
| WorldClim\_BIO14 | Precipitation of Driest Month |
| **WorldClim\_BIO15** | Precipitation Seasonality (Coefficient of Variation) |
| WorldClim\_BIO16 | Precipitation of Wettest Quarter |
| **WorldClim\_BIO17** | Precipitation of Driest Quarter |
| WorldClim\_BIO18 | Precipitation of Warmest Quarter |
| WorldClim\_BIO19 | Precipitation of Coldest Quarter |
| **WorldClim\_ELEV** | Elevation |
| **LAND\_COVER5** | Shrubs |
| **LAND\_COVER6** | Herbaceous Vegetation |
| LAND\_COVER8 | Regularly Flooded Vegetation |
| LAND\_COVER10 | Snow/Ice |
| LAND\_COVER11 | Barren |
| LAND\_COVER12 | Open Water |
| **HFP** | Global Human Footprint (1995-2004) v2 |
| HII | Global Human Influence Index (1995-2004) v2 |
| **NDVI** | May-July, 2014-2018 |
| **Global Climate Models and Modelling Centre** | |
| GFDL-CM3 | NOAA Geophysical Fluid Dynamics Laboratory |
| MIROC-ESM | Japan Agency for Marine-Earth Science and Technology, Atmosphere and Ocean Research Institute (The University of Tokyo), and National Institute for Environmental Studies |