*Ensemble modelling*

In order to test the MaxEnt output, ensemble modelling was performed using the `biomod2` package (Thuiller et al., 2020) within the R programming language (R Core Team, 2019). This package combines the outputs of multiple different types of models, which may reduce the impact of biases from any of the constituents (Araújo & New, 2007). The full range of models available in the `biomod2` package was not used as it has been shown that this does not appreciably increase the performance of the final ensemble model (Duffy et al., 2017; App S1). We chose here to use a Generalized Linear Model, Random Forest, Artificial Neural Network, and BIOCLIM as these represent the range of modelling techniques available within the package.

Because these models require presence *and* absence data it was necessary to create pseudo-absence values before running any of the models (Thuiller et al., 2020). Following Barbet-Massin et al. (2012), 1,000 pseudo-absence points were generated for species with 1,000 or fewer presence records, and 10,000 pseudo-absence points were generated for species with more than 1,000 presence records. For thoroughness these pseudo-absences were generated five separate times, and the full suite of models was run three times using the `biomod2` default settings. This means that a total of 15 ensemble models were created for each species.

When running each model, 70% of the data (both presences and pseudo-absences) were used to train the model, and 30% of the data were used to test. As with the MaxEnt model above, the skill of the models within the ensemble were assessed with their TSS score, and no models with a TSS score under 0.7 were included in the ensemble. The weight of each model within the ensembles depended on their TSS scores as well. Once the ensemble models were created they were used to project the likelihood of the presence of each species on a global scale. These likelihood projections were then converted to a binary suitable/unsuitable map based on the TSS scores of the constituent models. These projections were made for the present, 2050, and 2100 (see below).

In order to compare the MaxEnt and ensemble model outputs...

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