

Build Your Own Climate Envelope!

How good are you at identifying the climate suitable for different species of birds?
Where might they be living in 2080?

What is on the screen?

The screenshot shows the 'Interactive Climate Envelopes' interface. On the left, four graphs allow users to set limits for 'Minimum Temperature', 'Growing season', 'Water availability', and 'Seasonality'. Each graph has a slider and a small map of Europe. The top right features a species selection menu with 'Alcedoatthis' selected. Below the menu is a large map of Europe showing the current distribution of the species. At the bottom right, another map shows the predicted distribution in 2080, with a 'Cohen's $\kappa = -0.014$ ' score displayed. A 'Toggle Map' button is located between the two maps. A 'Legend' section allows switching between 'By Eye' and 'GLM' methods, and 'Output results for' 'Current' and 'Future' options.

Annotations on the screen include:

- Want more information? Click here! (pointing to the 'Toggle Map' button)
- Select a species here, or... enter a scientific name for more species options (pointing to the species selection menu)
- Map of the species in Europe to match (pointing to the current distribution map)
- Limits for the minimum temperature of the coldest month: how cold is winter? (pointing to the Minimum Temperature graph)
- Limits for the length of the growing season (pointing to the Growing season graph)
- How much soil water is there? (determined by rain and soil) (pointing to the Water availability graph)
- How seasonal is the climate: Continental or Atlantic? (pointing to the Seasonality graph)
- Use sliders to set the upper and lower limits (pointing to the sliders on the graphs)
- Maps of the 4 climatic variables (red = high: purple = low) (pointing to the small maps next to the graphs)
- Switch to where this climate might be in 2080 (pointing to the 2080 distribution map)
- To see how well the computer does, switch to GLM (pointing to the 'GLM' option in the legend)
- Map of your current climate limits (pointing to the current distribution map)
- What's your score? (pointing to the 'Cohen's $\kappa = -0.014$ ' score)

What to do:

Choose a species and find out where it lives now.

Use the sliders to set the upper and lower limits for each climate variable and see how well this works in the map on the lower right of the screen. The statistical match is given by the Kappa score between the two maps.

Check where this climate is expected to be in 2080 by toggling to 'Future' in the lower control options.

Is the species range likely to grow or shrink?

Compare your score with the computer using the GLM / by eye option.