Dispersal Discussion Questions

Radinger et al:

Question 1. This paper focused on 17 native fish species to the River Elbe catchment. However, it lacked to consider any non-native or invasive species in the model. But after a quick google search it is apparent that those species are in the study. **Would you account for invasive species in a model? What are the benefits of adding them, and what are the consequences if you don't?**

Question 2. One of the findings from this study was a negative relationship between predicted net gains of suitable habitats and fish body size (*when climate conditions change such that the river systems warm, fish of a smaller size experience more gain in habitat than species of a larger body size*). Bergmann's rule has been suggested as a potential solution to these observations (*Bergmann's rule broadly states that species found in colder climates tend to be larger than those found in warmer climates with a relatively smaller body size*). **Do you agree or disagree with the proposal of Bergmann's rule as an explanation for these observations? If you disagree, explain why and what else might be an explanation.**

Della Rocca et al:

Question 3. This article investigates six European beetle species' hypothetical dispersal and range changes. Climate change was broadly found to have a positive effect on the future spatial availability of four of the species, a negative effect on one species, and a weak effect on one species. **Radinger et al. proposes the idea of "winners and losers" when considering future environmental changes. Do you think that idea also applies to the results of this study? Explain your answer, and propose additional instances of related taxa as winners and losers in future projections of climate change.**

Question 4. The discussion introduces the idea that dispersal ability is sometimes calculated by using qualitative morphological traits (*such as body size or wingspan*). The authors state that using qualitative morphological traits as a proxy for dispersal capability requires significant assumptions about the specific use of said morphological traits and that these assumptions could be misinformed (*especially if the exact mechanism of dispersal is not well studied*). **Do you agree or disagree with the author's claim? How do we find a balance between assuming the functionality of a morphological character in aiding dispersal while respecting our current level of knowledge about the mechanism of a species' dispersal?**