

## 鳥の渡りの距離を決める要因は何か？

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### **Migration ranges in birds: effects of body size, phylogeny, and flight type**

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Many species of birds migrate annually between breeding and non-breeding areas, which are hundreds or thousands kilometers away. What factors affect migration distance of each species? In theory, migration distance is expected to be independent of body size, but this prediction has never been tested. In this study, I compiled the data of annual migration range, recorded by satellite tracking or light-level based geolocation, for 133 bird species, ranging in body mass from 12 g (warbler) to 8775 g (wandering albatross). Using phylogenetically informed statistics, I show that migration range significantly decreases with body size. The discrepancy with theory suggests that some assumptions of the theory are invalid. In addition, I show that dynamic soarers (e.g., shearwaters and albatrosses) have larger migration range for their body size, whereas thermal soarers (e.g., raptors and storks) do not have elevated migration ranges despite of their cost-efficient flight style.