Bird Migration Patterns

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Every year, many birds across the world undergo incredible migrations, by means that scientists still do not completely understand. A better understanding of how birds migrate would lead to a better understanding of birds in general. This project investigates the possible tools migratory birds utilize to travel. I inputted data from a previous bird migration experiment, where Gambel's white-crowned sparrows were captured mid-migration and displaced thousands of miles, into the Google Earth mapping program, as well as constructed hypothetical lines that would reflect the use of different migratory tools, such as an internal compass or internal map. I then analyzed the data and performed a chi-square test comparing the juvenile birds, who had never completed the migration, to experienced adult birds. The majority of the adult birds flew in the direction of their normal wintering grounds, while most of the juvenile birds flew directly south. The chi-square test determined the discrepency between the two was significant. For both adult and juvenile birds, a small selection of birds either flew back to the location of capture or flew in circles around the release point. Gambel's white-crowned sparrows, and possibly most birds, are wired with an internal map to help them migrate, as most of the birds flew in the correct cardinal direction. However, instead of flying towards their destination like the adult birds, most of the juvenile birds flew directly south, from which I can infer that an internal map is created with experience.

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