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WHY ARE BIRDS' WINGS AS LONG AS THEY ARE?

Stephen Fretwell, William Pursley, Grover Icenogle, and Robert Tuelings

Measurements on birds' wings are easy to obtain from birds in the process of being banded. But we must ask—why bother to record them? There are several reasons. Some people simply find the variation in birds' wings to be interesting. They note that some small birds (like Goldfinches) have long wings while some larger ones (Song Sparrows or Carolina Wrens) have short wings. They might note that the wings of some species (like Field Sparrows) very over a wide range of sizes, while other species (Purple Finches) have wings almost all the same size. Finding something interesting is justification enough to do it, even if we do not know why we are interested. We must not forget that our sub-conscious minds know a great deal more than our conscious minds are aware of. If our sub-conscious minds tell us something is worth doing (by making it interesting), then we should trust ourselves and go ahead.

However, in the case of wing lengths, we have a conscious purpose in making the measurements. For a bird's wings tell us a great deal about where and how that bird lives. Migratory birds must have different wings from resident ones. Birds that catch their food on the wing must have different wings from ground-feeding, or even tree-feeding, birds. Wing length is probably different in young and old or male and female birds. And if wing length variation reflects these differences in ecology, we can look closely at the wings of the birds we catch to band and can perhaps unravel some of the details of their life history. Maybe, when we catch some wintering chickadees, we can identify them as migrants or residents based on their wing lengths. Or we might be able to use wing length data to age the birds we catch.

Our purpose in this paper is to begin to unravel the meaning of wing length. The first step is to do the obvious: to try to quantify or to be precise about the common sense idea that bigger birds will have bigger wings. What we now ask is: How much bigger are the wings of birds that weigh more? How does a gram increase in average species body weight increase the average species wing length?