

Researchers find migration risks likely led to drab colored female birds

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Prothonotary warbler (*Protonotaria citrea*). Credit: Wikipedia

(Phys.org)—A trio of researchers with Trinity University in Texas has found that the development of dimorphism (physical differences between male and females of the same species) in songbirds appears to have been most strongly caused by migration. In their paper published in *Proceedings of the Royal Society B*, Richard Simpson, Michele Johnson and Troy Murphy describe a study they undertook of wood-warblers, a type of songbird and what they learned.

It is common knowledge that many birds of the same species look radically different, males often sport bright colors or fancy feathers, all designed to help them find a mate. Females, because they are generally the target of such pursuit and can pick and choose from many males, quite often are less colorful. But not in all cases—the researchers noted

that in some species color dimorphism was quite pronounced in some parts of North America and barely noticeable in others, and wondered why there was a difference. They noted that it appeared to be based on latitude, female wood—warblers, for example that live in the south, tended to be nearly as colorful as the males, while those that lived up north tended to be far more drab. But could it all be chalked up to location? The researchers were not so sure so they poured over prior research studies of the birds focusing on ancestry, [migration patterns](#), coloring and breeding locales of 109 of the warbler species.

They used the data they compiled to test three hypotheses—two of which suggested the differences in coloring were due to migration—one based on the cost due to risk from predators the other to simple relaxation of [natural selection](#). The third considered whether the differences in coloring of females had anything to do with the coloring of the [males](#).

In the end, the first theory held out, gender coloring differences were most pronounced based on migration distances, which suggested that [females](#) have less coloring because it makes them less visible to predators during their annual migrations, or as the authors note, the loss of female coloring appeared to be a driver of [dimorphism](#), which implies that at least for wood-warblers, social and/or natural selection may be a stronger force for variation than sexual selection.

More information: Migration and the evolution of sexual dichromatism: evolutionary loss of female coloration with migration among wood-warblers, *Proceedings of the Royal Society B*, Published 27 May 2015 [DOI: 10.1098/rspb.2015.0375](https://doi.org/10.1098/rspb.2015.0375)

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