

Migrating birds sprint in spring, but take things easy in autumn

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Radar station in Falsterbo, Sweden, for tracking migrating birds. Credit: Cecilia Nilsson

Passerine birds, also known as perching birds, that migrate by night tend to fly faster in spring than they do in autumn to reach their destinations. This seasonal difference in flight speed is especially noticeable among birds that only make short migratory flights, says researcher Cecilia Nilsson of Lund University in Sweden, in Springer's journal *Behavioral Ecology and Sociobiology*.

Nilsson, in a group led by professor Thomas Alerstam, used a tracking radar to measure over three years the speed by which [birds](#) flew over Falsterbo Peninsula, a bird migratory hot spot in south-western Sweden.

The seasonal differences they found correspond with those recorded for other nocturnal passerine migrants at other sites in southern and northern Sweden.

The seasonal differences in airspeed are more noticeable among short distance migrant birds. Nilsson and colleagues suspect that such birds fly faster in spring because they have a greater urgency to reach their breeding grounds first and to choose the best territories, mates and other resources. While the time savings made in spring might seem miniscule, these remain important because they influence the arrival order of individual birds. In autumn, the birds take things more slowly because they are not as pressured to reach their winter grounds.

Wind is the one weather condition that influences birds' decisions the most about when to take off. In fact, Nilsson and co-authors discovered that passerine birds can actually fine-tune their flights to make full use of winds, making their flying and subsequent migration easier. Short distant migrants have higher ground speeds (speed relative to the ground below) than airspeeds (own speed relative to the air around the bird) in both seasons. Hence, these birds make use of wind assistance. In contrast, long distance migrants often travel with airspeeds exceeding ground speeds, resulting from flying in headwinds, in autumn. These findings correlate with previous studies done at the University of Lund which showed that long distance migrants receive very little wind assistance on average.

Nilsson and colleagues also found that short distance migrants have a more flexible flight schedule, because they are able to wait for good nights. Long distance migrants on the other hand must fly on more nights to reach their destination in good time, even if it means traveling during unfavourable wind conditions. While waiting for nights with good wind conditions will save them energy, it will prolong their migration.

"These results indicate surprisingly fine-tuned seasonal modulation of airspeed and responses to wind. Associated with different behavioural strategies, passerine birds thus are adapted to different levels of time selection pressures during spring and autumn migration," Nilsson summarizes.

More information: Nilsson, C. et al. (2014). Seasonal modulation of flight speed among nocturnal passerine migrants: differences between short- and long-distance migrants. *Behavioral Ecology and Sociobiology*. DOI: [10.1007/s00265-014-1789-5](https://doi.org/10.1007/s00265-014-1789-5)

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