A warm spring and early summer improve the nesting success of northern songbirds

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A recent study based on long-term Finnish monitoring data indicates that small birds produce more offspring after warm springs and summers. Cold weather means there are fewer insects to eat while reducing the chances of nesting twice in one summer and increasing the risk of exposure for the young.

"I'm sure many people remember the cold weather we had in the late spring and early summer last year. That led to the lowest number of offspring among small birds in the history of the monitoring," says Kalle Meller, a researcher at the Finnish Museum of Natural History Luomus, a part of the University of Helsinki.

Impact of temperature varies in Europe

Warm springs increase the production of offspring in Finland for both short-distance migrants, or birds that spend their winters in Europe, and long-distance migrants, which winter in the tropics.

Further south, the situation may be reversed, as it has been found that long-distance migrants that return to western Europe later struggle when the spring is warm. This is because insects react to temperature faster than birds, meaning that when the spring is early and the weather warm, the peak availability of insects will occur before the offspring of long-distance migrants have a chance to hatch. It seems that further north, long-distance migrants do not have the same problem.

According to the recent study, a high number of offspring produced in Finland increased the sizes of nesting populations during the following year among long-distance migrants, but not short-distance migrants.

"For birds that migrate within Europe, the nesting populations depend on both the nesting success and mortality from cold during the winter," says Markus Piha, a Luomus researcher.

Even though temperatures in May and early June have not changed significantly over the past few decades, a warming climate could increase the size of nesting populations among northern European songbirds, at least in the short term.

The study was conducted in cooperation with researchers from the University of Helsinki and the University of Jyväskylä, and is based on monitoring data gathered by volunteer bird-ringers from 20 species of songbirds since 1987. The results have been published in the internationally acclaimed *Oecologia* series.

More information: Kalle Meller et al. A positive relationship between spring temperature and productivity in 20 songbird species in the boreal zone, *Oecologia* (2018). DOI: 10.1007/s00442-017-4053-7

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