## Excerpt from Scientific American, December 17, 2019

A study released yesterday in the journal Nature Climate Change suggests that rising temperatures are causing birds to migrate a little earlier each spring. It finds that the journey home is shifting forward by a little less than two days each decade.

That doesn't sound like much. But what's striking about the results is that they apply to hundreds of migrating species all over the country.

In other words, climate change is causing a noticeable, if gradual, shift in one of nature's grandest natural phenomena.

.....

While rising temperatures seem to be the driving force generally, their exact effects on bird behavior may vary from one species to the next. Bird migrations are thought to be influenced by a variety of factors, such as the growth of new plants or the availability of food.

These relationships are important to investigate in the context of a changing climate, the authors suggest. Other studies suggest that global warming may also be affecting the timing of spring vegetation blooms or the abundance of insects and other food sources—factors that can strongly affect the survival of migrating birds.

.....

In the meantime, migration timing isn't the only indicator that global warming is affecting migratory birds. Earlier this month, a study of 52 species published in Ecology Letters found that birds' bodies are getting smaller over time while their wingspans are getting longer, apparently in response to rising temperatures.

The smaller size may allow the animals to lose body heat faster as the climate warms, the researchers suggest.

(excerpted from <a href="https://www.scientificamerican.com/article/millions-of-birds-are-migrating-earlier-because-of-warming">https://www.scientificamerican.com/article/millions-of-birds-are-migrating-earlier-because-of-warming</a>)