

# Birds migrate earlier, but some may be left behind as the climate warms rapidly

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Many birds are arriving earlier each spring as temperatures warm along the East Coast of the United States. However, the farther those birds journey, the less likely they are to keep pace with the rapidly changing climate.

Scientists at Boston University and the Manomet Center for Conservation Sciences analyzed changes in the timing of spring migrations of 32 species of birds along the coast of eastern Massachusetts since 1970. Researchers at Manomet gathered this data by capturing birds in mist nets, attaching bands to their legs, and then releasing them. Their findings, published in *Global Change Biology*, show that eight out of 32 bird species are passing by Cape Cod significantly earlier on their annual trek north than they were 38 years ago. The reason? Warming temperatures. Temperatures in eastern Massachusetts have risen by 1.5 degrees Celsius (2.7 degrees Fahrenheit) since 1970.

Species, such as the swamp sparrow, that winter in the southern United States are generally keeping pace with warming temperatures and earlier leafing of trees. They migrate earlier when temperatures are warm and later when spring is cool.

Birds that winter further south, like the great crested flycatcher, which spends its winters in South America, are slow to change, though. Their migration times are not changing, despite the warming temperatures in New England.

There appears to be good reason for the difference between the short- and long-distance migrants. Because temperatures are linked along much of the East Coast of the United States—an early spring in North Carolina is generally an early spring in Massachusetts—the short-distance migrants can gain insight into when it will be warm further north. They can follow the flush of leaves and insects all the way to their breeding grounds each year. Long-distance migrants, though, do not have any good cue for whether it will be an early or late spring on the northern stretches of their migrations. Weather in South America has little to do with weather in New England.

Being slow to change in response to warming temperatures could have serious repercussions for long-distance migrant birds. This same research group has shown that plants are blooming earlier in Massachusetts than they did in the past. It appears that the short-distance migrants are keeping pace with this changing environment. However, long-distance migrants are being left behind; as temperatures continue to warm, they will probably experience environments increasingly different from the ones for which they are adapted. Other researchers have already noted that some long-distance migrant birds returning from African wintering areas to breed in Europe are now mistimed with their insect food supply. The inability of some birds to adapt to rapid climate change may be an important factor in some of the declines among songbird populations that have been documented in recent years.

Source: Wiley - Blackwell

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