CLIMATE TALK



**Silencing the Heralds of Spring**

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Though it may not be obvious by looking at the thermometer, the calendar tells us that spring is here. The days are getting longer and I am once again waking up to the sounds of birds singing outside my window. Over the next month or so we will be treated to the annual migration of birds moving through the area as they return to their summer nesting grounds. As a life-long birdwatcher, this is something I look forward to every year. The Chequamegon Bay Birding and Nature Festival (May 17-19) is timed to try to coincide with the peak of this spring event. This is a bit of a moving target dependent on weather conditions from year to year. Due to changes in climate over the last few decades, spring events, like bird migration, seem to be happening earlier than they used to. During the 35 years I have lived in Bayfield, I have not only witnessed these changes, but also troubling declines in the numbers of individuals and bird species that appear here.

Phenology is the study of the timing of biological events in plants and animals such as flowering, leafing, hibernation, reproduction, and migration. Monitoring the cycling of these biological events throughout the year offers a reading of the “pulse of life.” Aldo Leopold, Wisconsin’s conservation hero and author of A Sand County Almanac, kept phenological records at his farm in Sauk County Wisconsin from 1936 to 1947. Aldo’s daughter Nina Leopold Bradley resumed marking the dates of blooms and birdsongs at the Leopold Reserve from 1976 to 1998. [These two sets of data, collected in the same location over the span of nearly 70 years, offer a unique opportunity to assess the effects of climate change](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC22273/#_blank) on the life cycles of plants and animals in Wisconsin.

The life cycles of many organisms are cued by temperature as a signal of good conditions for growth and reproduction or abundant food. Many of these organisms, such as early spring-blooming plants and birds that migrate short distances, now commence their spring activities 2–3 weeks earlier than they did in Aldo’s time. But the Leopolds’ records show that other organisms, such as long-distance migrant birds whose cycles are guided by day length rather than temperature, have kept the same phenological "schedule."

The timing of key life events is a critical part of nearly every important ecological relationship. For migratory birds the annual cycle of migration, breeding, and nesting is timed every spring to coincide with the peak availability of critical food sources in a delicate synchronization that occurs across large distances and diverse habitats. This synchrony between birds and key resources helps to ensure that birds survive migration and successfully reproduce. When birds and the species with which they interact (including their food sources, predators, and competitors) respond to warming at different rates; climate change has the potential to desynchronize these critical relationships. This could have serious consequences leading to declines in population levels of these birds.

The National Audubon Society recently completed a study that predicts how climate change could affect the ranges of 588 North American bird species. Audubon scientists used three decades of citizen-scientist observations from the Audubon Christmas Bird Count and the North American Breeding Bird Survey to define the range of temperatures, precipitation, and seasonal changes each species needs to survive. Then, using internationally recognized greenhouse gas emissions scenarios, they mapped where each bird’s ideal climatic range may be found in the future as the climate changes. Of the 588 bird species Audubon studied, more than half are likely to be in trouble. Models indicate that 314 species will lose more than 50 percent of their current climatic range by 2080. These include such popular birds as the common loon, bald eagle, hermit thrush, ruffed grouse, white-throated sparrow, mallard, and wood duck that may lose more than half their summer range in Wisconsin.

These losses have already begun. Birds that I saw when I first moved to the area in 1983; like black terns, purple martins, and evening grosbeaks; aren't around any more. Even the numbers of birds that come to feeders that I watch seem to be declining. Birds are key elements of a healthy ecosystem and bring joy and great beauty into our lives. It is apparent that climate change poses a significant threat to many bird species. I think that the Carbon Fee and Dividend proposal from the Citizens’ Climate Lobby is a reasonable and effective way of limiting our contribution to greenhouse gas emissions, a main cause of climate change. This will put a gradually rising fee on carbon emissions and return the fee as a dividend check to each American equally to protect us from rising energy costs. I believe it is important that we take meaningful steps like this to reduce threats to our birds. I would hate to look forward to a spring that was not heralded by the sound of birdsong outside my window.

*Neil Howk has been an interpretive ranger for the National Park Service since 1978 and has worked at Apostle Islands National Lakeshore since 1983. He is the president of Chequamegon Audubon Society. He and his wife also operate the Gray Guest House in Bayfield.*