MASS AUDUBON

Effects of Climate Change on Birds

Warming temperatures, shifting seasons, changing precipitation, and rising sea levels are disrupting the behavior of our feathered friends and the ecosystems that support them.

Shifting Northward | Species Most At Risk | How We Can Protect Them | Be an Advocate

More than 30% of our breeding birds are already declining and are in need of conservation action. The effect of climate change on birds will become more severe in the future unless we reduce our greenhouse gas emissions and protect the natural resources birds need to adapt to change.

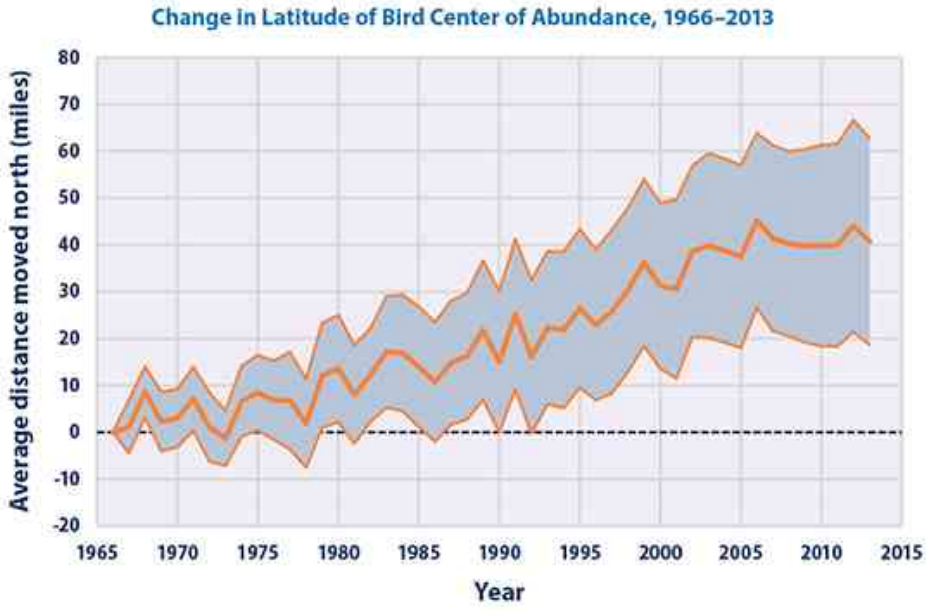
Of 143 breeding bird species evaluated in the State of the Birds 3 report, 43% (61 species) are Highly Vulnerable to the effects of climate change predicted to occur by 2050. Of the other species, 15% (22 species) are Likely Vulnerable and 42% (60 species) are Least Vulnerable.

Shifting Northward

Warmer temperatures are forcing birds to winter and breed farther north than in the past. Many species once found farther south, including popular birds like northern cardinals and tufted titmice, are expanding their ranges into New England.

An assessment of 305 common North American bird species found the average latitude of bird wintering range is now about 40 miles farther north than it was in the 1960s.

As shown in the figure below, the average latitude of bird center of abundance for 305 widespread bird species in North America shifted northward about 40 miles from 1966 to 2013. Wintering seasons are represented by the year the winter began. The shaded band shows the likely range of values for the species observed.



Birds Most at Risk

Species that depend on high-elevation forest habitat, long-distance migrants, and coastal breeders are most at risk from climate change. Some species are already facing clear, direct effects. But in general, most breeding birds will be affected by climate change in a number of ways.

Forest Birds

49% (30 species) of breeding forest species are Highly Vulnerable

The composition of our forest bird community will change markedly as the climate warms. Forests in eastern Massachusetts are predominantly oak, hickory, and pine, with northern hardwoods and hemlock prominent in the central and western sections.

As temperatures rise, northern hardwoods will lose their advantage, and oak, hickory, and pine forest types will eventually cover most of the state. As a result of these changes, we can expect to see increasingly fewer bird species associated with northern forests such as the black-throated blue warbler and yellow-rumped warbler.

Long-Distance Migrants

66% (36 species) of breeding long-distance migrant species are Highly or Likely Vulnerable

Long-distance migrants that breed in New England have declined faster than resident species. The reason may be that migratory species are unable to adjust their migration schedules to coincide with the shifting peak abundance of their far away food sources. If, for example, fruiting plants reach peak abundance two weeks earlier, but long-distance migrants that rely on that fruit are only migrating few days earlier, they'll find less food when they arrive.

This effect is known as decoupling, and it can adversely affect breeding birds—especially if available food sources are insufficient to raise young. Several research studies have investigated the factors that force birds to become out of sync with their food, but each case is distinct. The challenge indicates just how delicate the balance is between birds and their ecosystems.

Coastal-Nesting Birds

56% (12 species) of coastal-nesting species are Highly Vulnerable

Coastal-nesting birds are among the most threatened by climate change. Rising sea levels will reduce nesting areas available for coastal and salt marsh nesting birds. More frequent and stronger storms will contribute to overwash of beaches and salt marsh flooding, further stressing to coastal and salt marsh nesting birds.

Furthermore, most of the carbon we emit ends up in the ocean. As they take up that excess carbon,

oceans become more acidic, and it becomes more difficult for crustaceans and other marine life to form their shells. Birds that depend on those shellfish and fish communities for food will also be affected.

We Can Protect Birds from Climate Change

There are two categories of activities that we need to take action on in order to protect birds—and ourselves—from the most severe effects of climate change.

Reduce Existing Stressors on Ecosystems

Wildlife face challenges from a number of different directions, and many of those challenges will be amplified by climate change. By dealing with the existing stress, we also help wildlife deal with climate change.

- Keep your cat indoors. Each year, outdoor cats kill more than a billion birds in the US and Canada; keeping cats inside is safer for them and better for birds.
- Landscape your yard for wildlife. Gardens, trees, and native flowers are good for people and birds. Learn How >
- Reduce kills from window strikes. Place feeders at least 25 feet from your home, and use window decals to prevent collisions. Learn More >
- Drink bird-friendly coffee. Buying and drinking certified bird-friendly, shade-grown coffee reduces stress on migratory bird habitat and natural resources. Buy Online >

Reduce Greenhouse Gas Emissions

- To avoid the worst effects of climate change we need to reduce greenhouse gas emissions at all scales, from individual actions to international agreements.
- Reduce your own carbon footprint. Get Started >
- Get your community to buy electricity from renewable sources through Community Choice Aggregation. Find Out How >
- Support Massachusetts and partner states in meeting the greenhouse gas reductions targets established by the Paris Agreement. https://www.massaudubon.org/our-conservation-work/climate-change/what-mass-audubon-is-doing/policy-advocacy/global-warming-solutions-act-gwsa >
- Advocate for federal leadership to honor the Paris Agreement. Here's Why

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https://www.massaudubon.org/our-conservation-work/climate-change/effects-of-climate-change/on-birds