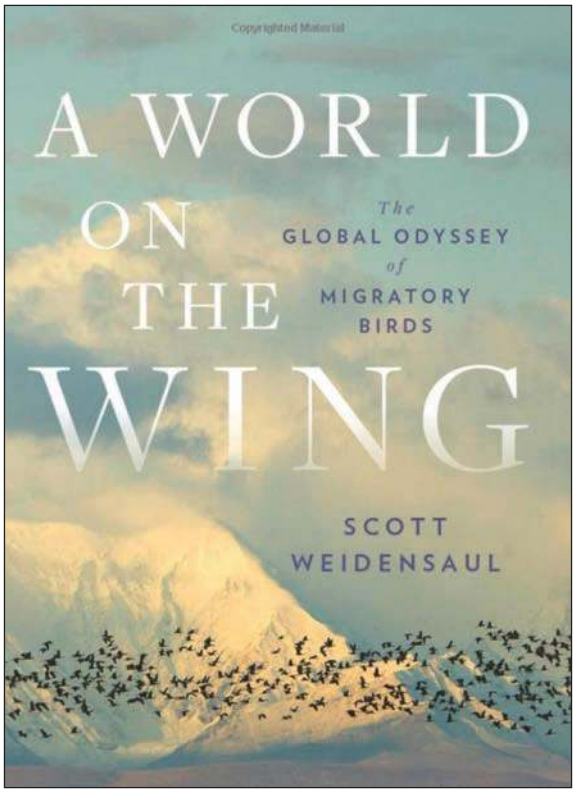
A World on the Wing, Scott Weidensaul

Scott Weidensaul's latest book focuses on the migration of birds. He is an engaging writer who has worked with many different ornithologists around the world. Using the latest knowledge about the routes and timing of migrations using tiny geolocating devices, he describes the incredible physiological changes that birds must undergo to survive. A few examples from his book indicate the scale of the problems facing whole species of birds and, ultimately, us.



Snowy Owls that visit us each winter are in decline, and the reason is global warming. The Arctic is warming faster than anywhere else in the world, and that affects lemmings, the main food these owls feed to their growing young. In years with fewer lemmings, the owls curtail the number of eggs they lay, or stop nesting entirely. Lemmings live on a "boom and bust" cycle of about four years. Because warmer winters provide less cover for the lemmings, they do not fare well. The big irruptions of Snowy Owls that we see in Massachusetts are due to the increase in first-year birds, resulting from a boom in lemmings the previous summer.

In 1994, on the Scandinavian Peninsula, the lemming population crashed for two decades while Snowy Owls and Arctic foxes largely disappeared. The same thing happened on Greenland in 1998 and remains so today. In the Russian Far East, the lemmings have shifted to an eight-year cycle, and the owls breed less there. On a positive but temporary note, in the eastern Canadian Arctic winters are more severe, and the owls are doing well. The long-term forecast for this region, however, is that the warming trend will catch up there as well.

Lemming

Another amazing migratory bird is the Bar-tailed Godwit. This is a tall wading shorebird the size of a pigeon. They breed in Alaska and fly non-stop over the Pacific Ocean for 7,200 miles to New Zealand for the winter. This takes eight or nine days of uninterrupted flight with no food, and they sleep by using only one hemisphere of their brains at a time. This requires navigational skills far beyond human comprehension. On their return flight in the spring, they stop on the wide tidal flats of the Yellow Sea on the northern coast of China,.

Global warming is beginning to erase tidal flats and coastal marshes around the world, including here in Massachusetts. There continues to be human development along the Yellow Sea area including big seawalls to protect the developments from the rising seas. Under natural circumstances, these flats and our coastal marshes would shift inland, but seawalls will prevent this. We humans will then have to live with consequences of the absence of these natural coastal buffer zones. The creatures that depend on those zones will become extinct or move. But move where?

Closer to home is the Northeast Motus Collaboration. This refers to a system of tracking stations with a radio receiver that picks up the signal from a tiny transmitter weighing, in some cases, a fraction of a gram. These transmitters are on hummingbirds, monarch butterflies, and some dragonflies as well as on many larger animals. They all transmit on the same frequency.

The idea to put up such a system came from a Canadian organization, Birds Canada. The idea has spread. Weidensaul's team erected 20 of these stations, one about every 30 miles, from near Philadelphia to Lake Erie, diagonally across the state of Pennsylvania. His team has also put more of them up in New England.

Scientists are tracking many different birds and animals; each station picks up the signal from any of these tagged animals

and stores the data for retrieval. If you google "Motus" https://motus.org/ you get the Motus Wildlife Tracking System, a program of Birds Canada. On their web site there is a map with little spots of light where the tracking stations are located. There are four in the greater Boston area, and a lot of them in the northeastern United States. You can even download data from these stations, as the data is open to everyone.

In chapter four of the book, Weidensaul describes the usefulness of eBird, a free citizen science smartphone app. Observers can locate their position with the app and then record how many species they have seen. The data has shown that large cities are migration hotspots, and that many birds are attracted to the lights of our cities.

Related to this topic, and in connection with the Newton Conservators' invasive pulls, we have this quote from the book: "There may be a lesson and a silver lining, in this news. The lesson is that urban land conservation may be far more important for migratory birds than anyone has ever realized — not just protecting land from development but improving and restoring urban parks (many of which are overrun with exotic invasive plants of limited value to birds, and which are managed more for aesthetics and human recreation instead of wildlife). In terms of producing the maximum value to birds in the greatest need, restoring habitat in a fairly small urban park may be more important than setting aside a significantly larger tract of land in some more distant area."

He refers to birds in the greatest need here. The book outlines the enormous stresses that migrating birds are under. The stopover points along a migration route are key to restoring the fat reserves that birds need to continue and to survive the trip.

There are various stories of renewal and hope in the book. An example took place in the Central Valley of California. There, the agriculture of the rice fields requires farmers to flood the fields each fall to help clear the stubble from the previous year. The Nature Conservancy (TNC) knew that wading birds had historically used the wetlands in the Central Valley as a migration stopover in huge numbers. Agriculture had stopped this.

Buying back the land was prohibitively expensive. Using eBird data and knowing that the shorebirds were using the Central Valley wetlands for a few weeks, the TNC held a "reverse auction" in which farmers were paid to allow the TNC to flood their rice fields with less water so that the shorebirds could handle the habitat. The program has been a big success and more of these kinds of successes are described in the book.

This book is a fantastic read for anyone interested in the science connected to migration, but it does not read like a novel. Parts of the book are dense with the research methods, the involved scientists' work, and the dangers some of them face in the field. The book's valuable message shows that the global plummeting numbers of birds is a warning. The science is already in place to paint a clear picture for us; as a species, we either listen and act, or, as a species, we will pay. ◆

A World on The Wing, Scott Weidensaul, W. W. Norton & Company, 2021.

Pete Gilmore

MISSION
Newton Conservators, Inc.

The Newton Conservators promotes the protection and preservation of natural areas, including parks, playgrounds, forests and streams, which are open or may be converted to open space for the enjoyment and benefit of the people of Newton. It further aims to disseminate information about these and other environmental matters.

A primary goal is to foster the acquisition of land, buildings and other facilities to be used for the encouragement of scientific, educational, recreational, literary and other public pursuits that will promote good citizenship and the general welfare of the people of our community.

The Newton Conservators was formed as a not-for-profit organization 60 years ago in June 1961.

The Newton Conservators' Newsletter© is published four times each year by the Newton Conservators, Inc., in June, September, December, and March. Deadlines for these issues are the second Friday of the month before the issue is published.

We welcome material related to our mission from any source. Send proposed articles or letters by email in MS Word or rich text format to articles@newtonconservators.org. Digitized photographs, maps and diagrams are also welcome.

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