

NATURALIST'S CORNER

Nowhere Left to Go

I have just finished a book that really hit my naturalist mind, and I would like to share some of the thoughts with you. The book is *Nowhere Left to Go - How Climate Change is Driving Species to the Ends of the Earth* by Benjamin Von Brackel. As Earth warms, plants and animals that are suited to certain locations are fleeing to cooler areas to survive. This usually involves traveling to latitudes farther away from the equator, or to higher altitudes. Both of these strategies ultimately have dead ends. Of course this has happened many times as ice ages have come and gone, but this time it is humans that have created the problem. And it is humans that often stand in the way of these migrations.

Is there already evidence that plants and animals are fleeing to cooler locations? As the ocean warms, fish are moving north in our part of the world. As water warms, it carries less oxygen, so fish are fleeing in search of oxygen. This has affected the fishing industry around Iceland and in the North Sea. People have set up political boundaries where each country has the right to fish, but many species of fish have moved out of those boundaries. Life in the ocean is moving toward the poles at 45 miles per decade — roughly 16 feet per day. Fishing fleets that historically fished in North Carolina and Virginia are now having to travel up to New Jersey.

As species move, they encounter new problems. Their prey may not be available in their new region, and they become subject to predation. In the past, migrations typically occurred slowly, allowing time for evolutionary responses. Change happens all the time on our planet. Millions of years ago, Springfield, Massachusetts was on the equator. Just 10,000 years ago, there was a mile of ice over our city. The transition to our present latitude and climate occurred slowly. Contemporary, anthropogenic climate change is occurring at a dramatically faster rate.

Can you see this change yourself? Do you remember, when you were younger, celebrating the first robin returning in the spring? Now I see several that stay all winter. I used to hear the fish crow only when I was visiting in Georgia, but the other day there was a flock in a grocery store parking lot here.

Some initiatives have sought to save species imperiled by climate change by setting aside preserves. These preserves are often islands in a sea of civilization. Instead of saving endangered species, though, these efforts often effectively imprison animals that are trying to migrate to cooler environments but are unable to travel through areas of high human activity. In his book, Von Brackel proposes that National Parks take up a new mission: providing safe corridors of escape for wildlife migrating in response to climate change.

Climate change is also threatening the well-being of our own species by expanding the ranges of disease vectors. Yellow fever, a sometimes-fatal virus transmitted by mosquitoes, has historically been a risk in tropical areas. Now it's arrived in Tennessee and is continuing to spread north at a rate of 150 miles per year. Many newly identified diseases, including Covid, have resulted from humans moving into wild areas where a virus has been able to jump from a host species into humans. With climate change, we no longer have to go out into the natural world to encounter novel risks — the natural world is coming to us.

Animals are not the only forms of life needing to migrate. The University of Massachusetts estimates that, by 2100, sugar maple syrup production in New England will drop by half. Canada, rather than Vermont, will become the center of syrup production. Trees at the southern end of the range of growth are dying, and populations are expanding at the northern end. The problem is, these range shifts are not keeping up with climate change, so we are experiencing a net loss of trees.

We have all heard about the plight of the Polar Bear. The ice that it needs in the Arctic is melting. Meanwhile the Grizzly Bear is moving north. Recently, a hunter killed a bear that was neither a polar bear nor a grizzly. It had a white coat with brown flecks and a hump on its back. DNA testing revealed it was a hybrid of the two species. Polar bears may well go extinct, but their DNA will be carried on in grizzly bears just as we carry Neanderthal DNA from our extinct relatives.

I see this book as a wake-up call. It is difficult for humans to see small, ongoing changes — we are much more skilled at identifying and running from sudden, large changes. This has been compared to the frog in the saucepan: If you place a frog into a pot of hot water, it will suddenly jump out. If you put a frog in a pot of cool water, then very gradually heat it, the frog will just stay there until it cooks to death. In human terms, if a jet crashes with 300 people aboard it makes the news headlines. Smoking-related illness accounts for 1,300 deaths per day, but that statistic is absent from the daily news.

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There have been five great extinctions of life on this planet. From the available fossil evidence, we can conclude that each of them must have been horrendous. We are now in the midst of the sixth great extinction. This one is caused directly by humans. Climate change seems to be happening slowly in the span of our lifetime, but the rate of change is faster than in other great extinctions.

If we can each do something, however small, to stem climate change, we will save ourselves and so many other living things with which we share this planet. We must pay attention to these small changes and jump out of the pot before we cook ourselves to death.

~Sonya Vickers