



Bird Notes

From Northeast Kingdom Audubon
1302 Main Street, Saint Johnsbury, Vermont 05819

For Immediate Release

Something To Do With Magnets

Recently I have been thinking a lot about magnets. Testing them out on myself, looking for pain relief, and learning about their power through other peoples' stories, have peaked my interest. When it came time to write about migration yet again, with hawks, monarchs and dragonflies whizzing by, I revisited the discussion about migration and magnetism and knew that was going to be my topic. It seems that using magnetism during migration is only one of many ways that our feathered travelers make their way.

Studying birds in a lab has lead to many ideas about migration. Looking at orientation is the classic way to examine migratory birds, which way do they, well, point? Here is what has been found. Birds are oriented towards different directions in the winter and summer. One explanation comes from the fact that scientists have detected tiny crystals of magnetite in the brains of some birds. It is still not known exactly how the birds can sense the position of the magnetite crystals in their heads, and there is little experimental data on the subject. However, when the magnetic field around them is altered, they change their orientation. Interestingly, during solar flares, when the earth's magnetic field is out of whack, the birds are confused. People who support the power of magnets will be pleased to know that when scientists attached magnets to birds' heads, the birds shifted their orientation. Apparently, if birds do use a magnetic compass they must be able to reset or calibrate their magnetic compass every few days. Some say that the bird's magnetic compass is recalibrated against the sun and star compasses during rest stops along the migration route, and that if the birds do not have enough time at rests, they may get lost. But what about visual cues? Studies on this show that on a sunny day, most birds can orient correctly, however, on an overcast day the birds in a cage have no preferred direction. This could be a good birding tip for us.

A quick note on other migrations. National Geographic reported that there are about a dozen of the approximately 400 known dragonfly species that are believed to migrate, journeying from the northern U.S. and southern Canada to the southern U.S., the Caribbean, and Mexico each fall. Equipped with tiny (very tiny!) transmitters, dragonflies are being studied to find out more about his migration. Magnetisim, who knows? And much has been studied about monarch butterfly migration providing pages and pages of information. Over ten years ago following observations that on cloudy or overcast days monarchs still orient themselves in the correct southward direction, scientists discovered magnetic particles in the butterflies' thorax, probably consisting of magnetite. Try this website to find out more, www.monarchwatch.org.

As it turns out, magnetite has been found in human brains. Now I know why I have been hiking or driving to mountaintops for the last two sunny weeks! Maybe just for fun.

Happy Magnetic Birding!

Carolyn E. Boardman is a board member of NEK Audubon living in Brownington, Vermont. NEK Audubon is one of 8 chapters of Audubon Vermont and part of the National Audubon Society. NEK Audubon is a non -profit organization that encourages people to enjoy birds, wildlife and natural habitats through field trips, programs and publications. For more information about meetings, field trips and special events visit www.nekaudubon.org. Art work by Robin Rothman.