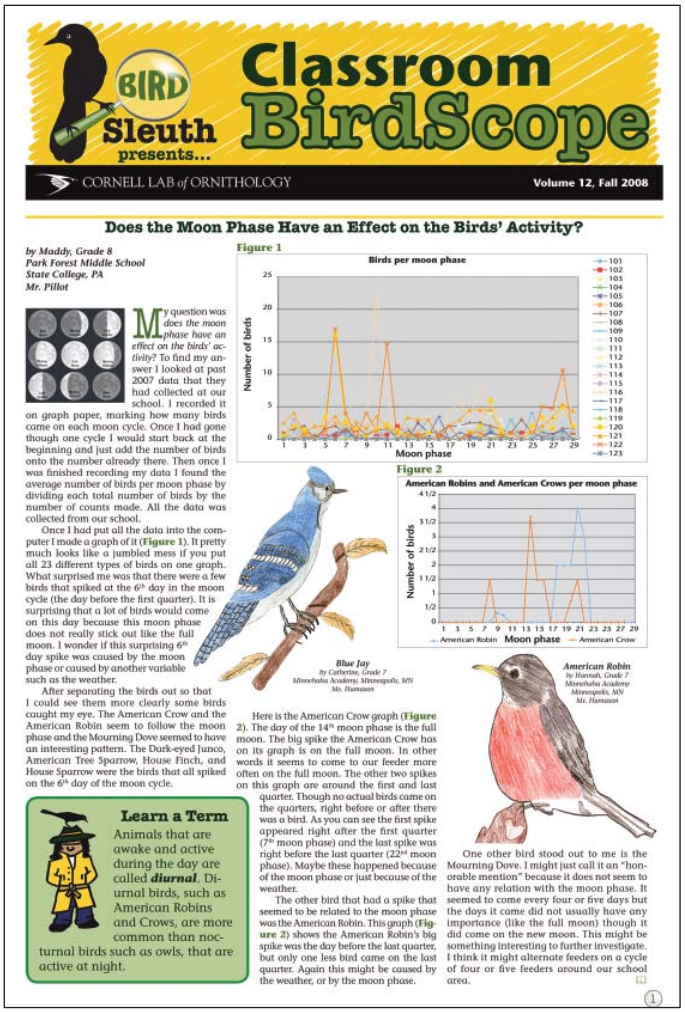
BirdSleuth Inspires Student Inquiry

By Phil Kahler

In the September/October 2001 issue of ***Connect*** I wrote about how my students and I have been monitoring the bird populations that visit our school's feeding station. As participants in the Cornell Lab of Ornithology's BirdSleuth program, my seventh- to tenth-grade students continue to collect bird observation data to use for their own inquiry projects and to share online with scientists at http://eBird.org. Each spring my students submit their reports for publication in BirdSleuth's student research journals.



BIRD Sleuth presents... Classroom BirdScope

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Does the Moon Phase Have an Effect on the Birds' Activity?

by Maddy, Grade 8
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My question was *does the moon phase have an effect on the birds' activity*? To find my answer I looked at past 2007 data that they had collected at our school. I recorded it on graph paper, marking how many birds come on each moon cycle. Once I had gone though one cycle I would start back at the beginning and just add the number of birds onto the number already there. Then once I was finished recording my data I found the average number of birds per moon phase by dividing each total number of birds by the number of counts made. All the data was collected from our school.

Once I had put all the data into the computer I made a graph of it (**Figure 1**). It pretty much looks like a jumbled mess if you put all 23 different types of birds on one graph. What surprised me was that there were a few birds that spiked at the 6th day in the moon cycle (the day before the first quarter). It is surprising that a lot of birds would come on this day because this moon phase does not really stick out like the full moon. I wonder if this surprising 6th day spike was caused by the moon phase or caused by another variable such as the weather.

After separating the birds out so that I could see them more clearly some birds caught my eye. The American Crow and the American Robin seem to follow the moon phase and the Mourning Dove seemed to have an interesting pattern. The Dark-eyed Junco, American Tree Sparrow, House Finch, and House Sparrow were the birds that all spiked on the 6th day of the moon cycle.

Figure 1

Figure 2

Blue Jay
by Catherine, Grade 7
Minnehaha Academy, Minneapolis, MN
Ms. Hanuson

American Robin
by Hannah, Grade 7
Minnehaha Academy
Minneapolis, MN
Ms. Hanuson

Learn a Term

Animals that are awake and active during the day are called ***diurnal***. Diurnal birds, such as American Robins and Crows, are more common than nocturnal birds such as owls, that are active at night.

Here is the American Crow graph (**Figure 2**). The day of the 14th moon phase is the full moon. The big spike the American Crow has on its graph is on the full moon. In other words it seems to come to our feeder more often on the full moon. The other two spikes on this graph are around the first and last quarter. Though no actual birds came on the quarters, right before or after there was a bird. As you can see the first spike appeared right after the first quarter (7th moon phase) and the last spike was right before the last quarter (22nd moon phase). Maybe these happened because of the moon phase or just because of the weather.

The other bird that had a spike that seemed to be related to the moon phase was the American Robin. This graph (**Figure 2**) shows the American Robin's big spike was the day before the last quarter, but only one less bird came on the last quarter. Again this might be caused by the weather, or by the moon phase.

One other bird stood out to me is the Mourning Dove. I might just call it an "honorable mention" because it does not seem to have any relation with the moon phase. It seemed to come every four or five days but the days it came did not usually have any importance (like the full moon) though it did come on the new moon. This might be something interesting to further investigate. I think it might alternate feeders on a cycle of four or five feeders around our school area.

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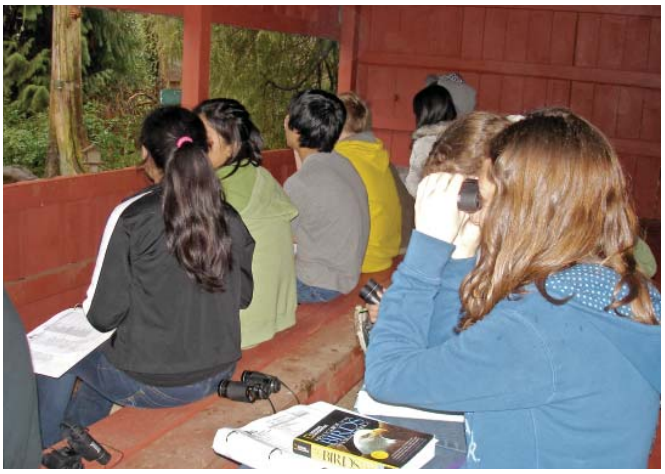
In 1994, students and parents constructed a bird-feeding station across the creek behind our school. We have been collecting bird data there ever since. During the time that we have collected data we have noticed significant shifts in the bird populations visiting our feeders and have witnessed extraordinary changes to the local environment.

When we first began collecting data our most populous species was the dark-eyed junco. House sparrows had never been observed at our feeding station. Throughout the 1999–2000 school year we observed a dramatic drop in the dark-eyed junco population and experienced a huge influx of house sparrows. The effect was impressive enough to catch the attention and concern of nearly all of my students. Why was this happening? Was it a coincidence? Did the construction of houses and the loss of the field behind our school have something to do with this change? Were the house sparrows driving away the juncos?

Online authors

In 2002, Kristina, one of my tenth-grade students, wrote a paper for *Classroom Birdscope* in which she concluded the recent housing development was the cause, as other Oregon FeederWatch schools were not experiencing declines in their junco populations during the same time period. In 2007, Nick, one of my seventh-grade students, followed up with a paper that concluded the arrival of house sparrows to our feeders was related to the recent and ongoing construction and development around our school.

After the initial house sparrow popula-



tion explosion observed in 2000–2001, many of our bird species appeared to be on the decline, including house sparrows. An analysis of our data revealed that most of the bird species are responding to the same ups and downs that are affecting the house sparrow population. This seems to confirm Kristina and Nick's conclusions about habitat loss causing the population declines rather than house sparrows driving away other species.

Positive experiences such as observing birds from the blind foster a sense of caring and understanding for living things so rarely achieved within the confines of the classroom. My student's excitement and enthusiasm for science and the natural world has been greatly enhanced through participation in the BirdSleuth program. The *BirdSleuth Teacher's Guide*, student *Investigator's Journal*, and online resources provide many helpful tools for organizing student inquiry and data collection. The BirdSleuth Investigating Evidence module is available for free at http://www.birdsleuth.net.

Phil Kahler teaches seventh- to tenth-grade science at Tualatin Valley Academy in Hillsboro, Oregon. He co-instructed the BirdSleuth online summer course for teachers in 2009.