A Science Program with Wings

by Phil Kahler

During the fall of 1994 my seventh to tenth grade students and their parents constructed a bird feeding station across the creek behind our school. They used recycled lumber to build the station, complete with a covered bird blind.

Using the feeding station, our students have natural world experiences right here in our own backyard that they might otherwise miss. They watch as birds scatter in all directions while a Cooper's hawk swoops down from out of nowhere. Skepticism turns to delight as my students discover that bushtits really do exist and travel around in large family groups. The thrill of seeing a varied thrush for the first time is expressed in "oohs" and "aahs." 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.

The observation blind and feeding station

Stating a problem

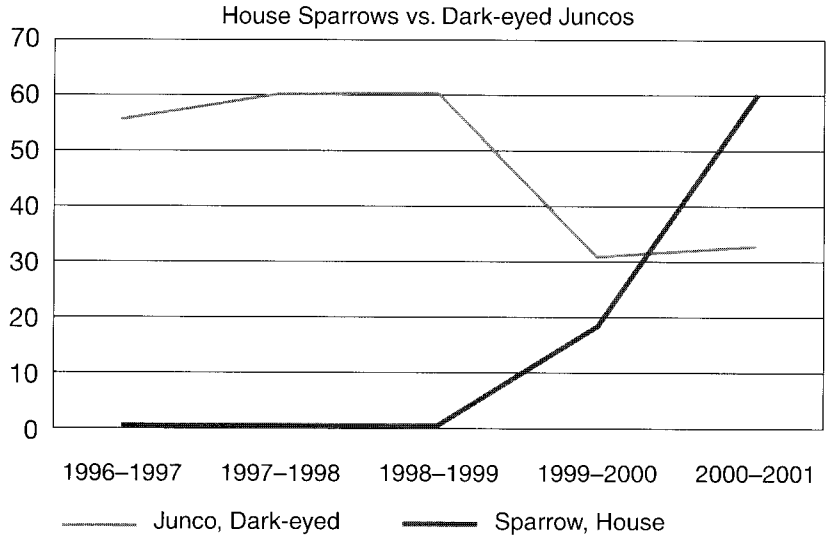
Each fall before the official bird count begins for Classroom FeederWatch, an interactive web site and curriculum developed by Cornell University Laboratory of Ornithology, I ask my students to consider what they know and don't know about the birds we see at our feeders. This process leads to their statement of a problem, an important step in the scientific method. We continue through the steps of the scientific method with trips to the library and internet searches until each student arrives at a hypothesis. Next we review the specific guidelines for collecting field data provided by the Cornell lab.

Problem statements my students used included: "Does the barometric pressure affect the numbers of birds observed at our feeders?" "Does temperature affect the feeding behaviors of dark-eyed juncos?" "Does the presence of Steller's jays affect the presence of black-capped chickadees?"

Here is a problem statement that I presented to my students this year: "Why has the house sparrow population exploded while the dark-eyed junco population has been declining over the past few years? Is it changes in weather patterns or changes in habitat due to the housing and commercial development around our school?" Maybe it is both. Maybe it is something else. But whatever the case, sharing my own questions with my students seems to help them form questions of their own.

Cornell connections

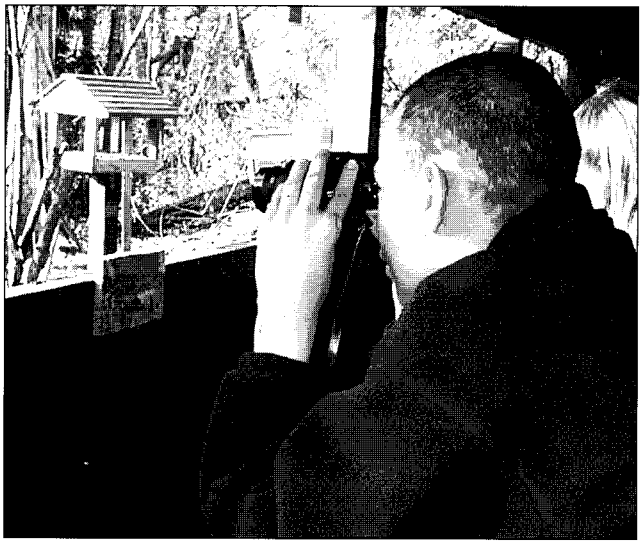
During the data collection phase of the project my students spend one or two thirty-minute periods each week gathering data and making observations. From November to March my students make twelve to fifteen data entries which they organize into tables and graphs using computer data base programs. They then analyze their data and present their findings in a paper. We forward the finished papers to



Cornell Lab of Ornithology for possible publication in *Classroom Birdscope*; a newspaper published for Classroom FeederWatch participants.

Observation data that my students collect include various weather factors and maximum numbers of each bird species observed for each day. Some students also gather data concerning behavior, species interaction, and squirrels and chipmunks observed. This year our school joined the Worldwide School Weather Network when we set up a real-time computer weather station to help us gather a greater variety of accurate weather data for our students to use in their bird research. (See http://aws.com/schools/) The weather station has launched my students into other incredible science and technology directions.

Phil Kahler, an avid bird watcher, teaches grades 7-10 science and biology at Tualatin Valley Junior Academy in Hillsboro, Oregon. He received the Chair's Award from The Institute for Earth Education for his work in developing Lost Treasures™, an earth education program for grades 3 and 4. Lost Treasures™ is currently being piloted at his school in Oregon.



Looking out from the blind

In addition to using this data for their own papers, my students upload daily observation data onto the FeederWatch web site where it will become part of a larger scientific investigation being conducted by Cornell Lab of Ornithology. In this way my students join the efforts of participating schools all across North America.

My students and I have been involved with FeederWatch for the past five years. Since we have been keeping track, we have identified over 30 different bird species visiting the area immediately surrounding our feeding station. This year we added yellow-rumped warblers, American goldfinches and brown creepers to our list during the last week of our official count! On colder days it is not unusual to see more than 100 individual birds feeding at the same time. During the coldest winter months these birds have been known to devour 80–100 pounds of seed per week! Fortunately we have many parents and friends who help out by donating seed to our program.

Adapting the program

I use the Classroom FeederWatch curriculum with my 7th–10th grade students, but the program is designed especially for grades 5–8. Elements of the program have also been successfully implemented by K–4. There are many possibilities for using bird studies across the curriculum. I understand that there are teachers who have used FeederWatch experiences as a springboard into activities in art, writing, geography and math. You don't have to construct a bird blind. Most classrooms observe feeders just outside their windows. If you would like more information about joining the Classroom Feeder Watch program please visit their web site at http://birds.cornell.edu/cfw/.
You can also visit my web site at http://www.tvja.org/science/ for links to other cool bird sites.