

Bird Conservation

Objective(s): Students will (1) define conservation, (2) describe major threats to birds, and (3) develop solutions to help birds in their community.

Overview

Students will identify local threats to birds and develop a conservation action plan to help them.

Georgia Standard(s) of Excellence (GSE)

S1L1; S2E3; S3L2; S4L1; S6E6; S7L4; SB5; SEC1; SEC5; SEV4; SEV5; SZ4; SZ5.

Essential Terms

Bioindicator
Community Science
Conservation
Invasive Species
Native Species

Materials

- *LAB: Bird Conservation Student Guide*
- *LAB: Using a Bird Checklist*
- eBird app
- eBird Essentials for Educators (Cornell Lab K-12 Education)

Additional Resources

- *LAB: Common Birds of Georgia*
- *LAB: Common Birds of Georgia poster*
- *LAB: Nurturing Nature with Natives coloring book*
- *LAB: Birds and their Environment*
- *LAB: Migration Hurdles (Bird Migration)*
- Merlin Bird ID app

Background

Our planet's health depends on birds. They provide essential ecosystem services that save us billions of dollars, including pollination, seed dispersal, pest control, and sanitation. Yet bird populations are in trouble, and as **bioindicators** of the quality of the environment, birds are sending a warning. Equipping the next generation to steward our natural resources is more important than ever.

Birds Georgia **conserves** birds through programs that focus on conservation, education, and community engagement. Our efforts target the major threats to birds, raise public awareness, and attempt to create places where birds and people thrive.

Three Billion Birds

The numbers are staggering. Recent comprehensive research shows that North America's bird population is down by nearly three billion birds since 1970. This devastating loss—one in four birds in one generation—has occurred across every biome. Major contributors to this decline are:

- **Habitat loss:** When habitat is destroyed, degraded, or fragmented for agriculture or urbanization, ecosystems break down and biodiversity declines. Worldwide, habitat loss is the leading cause of declining bird populations.
- **Cats:** In North America, cats are second only to habitat loss as the largest human-related cause of bird deaths. An estimated 2.4 billion birds are killed by cats each year in the United States alone.
- **Window collisions:** Current research estimates that as many as 1.5 billion birds perish in North America each year from colliding with windows. Birds may not see the glass or may be confused by reflections.



Window treatments break up the reflective surface area and reduce the number of bird collisions.

- **Light Pollution:** Migrating birds often become disoriented when city lights obscure the night sky that helps them navigate. "Trapped" by light, birds may circle in confusion until exhaustion forces them to land in urban areas, where windows and limited resources pose threats.
- **Invasive Species:** Non-native species can increase competition for resources (like sunlight or food) and create disturbance to an area. In addition, non-native plants (like kudzu and English ivy) don't support the life cycle of native insects, which usually require specific host plants to lay their eggs. (Monarch butterflies, for example, must lay their eggs on milkweed.) In contrast, the leaves of native trees and flowers support the life cycles of butterfly and moth species, whose caterpillars are a crucial part of a bird's diet.
- **Pesticides:** Weed killers and insecticides not only reduce the available food supply for birds, but they also bioaccumulate in the environment in our soil and water, poisoning wildlife and people.

Grow Native!

As urbanization increases and natural habitats disappear, planting native plants is one of the best ways to restore the habitats birds and other wildlife need. In addition to supporting insect life cycles, they are also better adapted to the local soil and climate and provide healthier food resources (like berries, seeds, nectar) timed with the seasons birds need them. Since most terrestrial birds rely on insects to feed their young, native plants are crucial to their breeding success.

It Takes a Flock

Other ways that individuals and communities can help birds are by removing invasive plants, eliminating pesticides, dimming outdoor lighting during migration periods, making windows safe for birds, supervising pets outdoors, and providing clean bird feeders and water sources.



An American Goldfinch perched on a native coneflower.

Preparing for Flight

The simplest way to turn students into scientists and conservationists is by participating in **community science**—the collection of data by everyday people, usually in support of larger projects with professional scientists. No one scientist can track all birds, but with the public's help, researchers can study population fluctuations, migration patterns, changes in range, and many other facets of birds' lives.

eBird, an online community science database developed by National Audubon Society and Cornell Lab of Ornithology, allows users to record their birding observations. This smartphone application and online portal is a free, accessible resource available to use with students to keep track of birds, explore dynamic maps and graphs, share sightings with other birders, and contribute to global science.

Activity 1: Community Science at Work

Students will complete a class bird checklist and submit their observations to the eBird database.

Community science projects like eBird enable students to participate in the scientific process, connect classroom learning with real world skills, and better understand the natural world. Moreover, by using eBird, students provide important contributions to bird conservation. Even 10 or 15 minutes in the field is sufficient. Taking students outside regularly allows them to create their own datasets, track changes over time, and ask and answer questions about their local birds.

To use *eBird*, basic bird identification skills are necessary. Review the following resources before taking students outside to complete a checklist.

- *LAB: Common Birds* provides guidance for taking students outside to observe and identify birds.
- Cornell K-12's *eBird Essentials for Educators* provides tips and tools for using eBird with students.
- Cornell's Merlin Bird ID makes identification simple by providing photos, sounds, and ID tools.

Activity 2: What's the Solution?

Students will collaborate to develop a bird conservation action plan.

In this problem-based learning activity, students will identify a local threat to birds and conceptualize, design, and launch an innovative solution.

1. **Create a Habitat Map:** Encourage students to act locally for bird conservation by first creating a map of their school or home from a "bird's eye view," illustrating bird-friendly features and threats. Are there native plants? Is there a water source? What types of vegetation are present for food, shelter, and nesting? Is there glass that kills birds? By creating a map and legend of these features, a visual representation is developed for students to pinpoint a conservation problem.
2. **Identify a Threat and Design a Solution:** Students will then gather information on their selected threat and develop their conservation action plan. Depending on students' and the schools' resources and capabilities, a few ideas for conservation action plans include:
 - Leading a school awareness campaign on bird conservation issues through posters, social media, public service announcements, etc. (Examples: "Lights Out," "Grow Native for Birds," "Cats Indoors").
 - Organizing a workday to clean up litter, remove invasive species, or plant native plants.
 - Designing, building, installing, and maintaining a feeding station or water source.

It takes a flock to solve conservation challenges. Encourage students to share their birding knowledge and skills with friends and family!