

A Field Guide to Bats in your Neighborhood

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A Field Guide to Bats in your Neighborhood

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ABSTRACT

Bats comprise over 20% of known mammal diversity and different species have evolved to fit in diverse environments and ecological niches. Bats are basically everywhere, with the exception of polar regions and some remote islands. In this exercise, students focus locally and are asked to research and present on bats in their region. Specifically, students search for information on the bats in their region, list which species they think could live in their neighborhood, and then find more information on one of those species. Students are then asked to create a “field guide” on that species.

INTRODUCTION

As explained in the accompanying synthesis, *Our Neighbors, Bats!*, bats are pretty much everywhere. But... what about where you live? How many species of bat live in your area? What species are they? What special characteristics do they have?

In this exercise, you will search for information on the bats in your region, list which species you think could live in your neighborhood, and then find more information on one of those species. You’ll make a “field guide” presentation on that species, which might be an informational poster, an oral or digital presentation, a blog, or some other type of medium. Your instructor may guide you or help you choose a specific format.

WHAT’S A FIELD GUIDE?

A field guide is traditionally a book that people bring out into the “field” (which basically just means outdoors) to help them identify and learn more about plants and animals in that environment. There are thousands of published field guides available on different regions and the different groups of species found there—on wildflowers, freshwater insects, coral reefs, birds, reptiles, mammals, you name it! Field guides are also available in digital formats: for example, apps like iNaturalist or Merlin Bird ID.

The format of and information in these books and digital guides differs, but generally they include identifying and natural history information such as:

- the common name and scientific name of species—for example: common Vampire Bat (*Desmodus rotundus*);
- a photo or drawing of the species (sometimes with images of males and females and/or juveniles and adults if there are considerable differences between those groups);
- a written physical description of the species (such as size range or distinguishing characters like color patterns);
- a written description of the species’ biology and behavior (like whether or not they migrate, when and how often they mate, and other unique characteristics that they have);
- a written description of the species’ ecology—meaning how the species interacts with other species and the environment—which might include what they eat and what eats them, or how they create shelters or burrows;
- a large-scale map of where you can find them in the world (called a distribution map);
- the conservation status of the species (meaning whether or not is considered at risk for extinction), if it is common, rare, or even an estimated population size, and possibly a list of reasons why a particular species is threatened or flourishing; and
- other fun facts about the species that are interesting and/or unique (see Figure 1 for an example field guide entry).

INVASIVE / NUISANCE SPECIES

ASIATIC SAND SEDGE (*Carex kobomugi*)

Non-native / Invasive Species

Description: Perennial sedge found primarily in primary and secondary dune communities along the shoreline. Grows up to 12" tall. Leaves are curled and yellow-green in color with small ridges along the edges. This sedge spreads through the production of rhizomes and/or seed heads.



ASGECI

Notes: The root systems of this sedge can grow to several feet below the ground. This sedge is highly invasive and has been found within the primary dune community at the NGTC.

ORIENTAL (ASIATIC) BITTERSWEET (*Celastrus orbiculata*)

Non-native / Invasive Species

Description: Perennial, deciduous plant that can grow up to 60' as a climbing vine or trailing shrub. Dark brown to brown striated bark. Alternate, glossy, round leaves. Female plants produce clusters of small, greenish flowers in the leaf axils and a large number of fruits and seeds.



ASGECI

At maturity, globular, green to yellow fruits split open to reveal three red-orange, fleshy arils that contain the seeds.

Notes: An aggressive vine that inhabits forest edges, open woodlands, fields, hedgerows and other disturbed lands. It grows over native vegetation and often kills trees by shading, girdling and uprooting them. This species may be distinguished from the native American bittersweet (*Celastrus scandens*) by the location of its fruit. *C. orbiculatus* has small clusters of fruit in the leaf axils while *C. scandens* has clusters only at its branch tips.

THREATENED AND ENDANGERED

PIPING PLOVER (*Charadrius melodus*)

Federally Threatened, State Endangered

Description: Length to 7.25" with sand colored mantles and wings, and whitish undersides. Distinguishing features include a black tipped orange bill, orange legs, a black neckband and black eyebrow markings.



Gene Nieminen / USFWS

Notes: Plovers nest in the sand within primary dunes where vegetation cover is less dense. Plovers forage within the primary dunes and intertidal areas. Piping plovers have nested at the NGTC in previous years. Fenced protection areas have been created onsite to protect their nesting habitat. Nesting plovers are highly sensitive to disturbance from human activity and pets.



Gene Nieminen / USFWS



K. Quaglia



K. Quaglia

Figure 1. Example pages from a field guide of New Jersey beach habitats. Image credit: National Guard Training Center, Sea Girt, NJ, www.nj.gov/military/construction-facilities-management/environmental-management/documents/3307-booklet-FINAL.pdf.

Descriptions often don't include information on characteristics that are similar to other species in that group, but rather things that make this species different. For example, a field guide to birds of the world wouldn't say "golden eagles fly," but that same guide might mention that the Kiwi, a bird native to New Zealand, doesn't fly (i.e., is flightless) because that makes it different from most other birds. A bird guide might also give details about how fast a bird flies, whether it has a unique flight motion (like soaring), or how old it is when it begins to fly.

YOUR NEIGHBORHOOD BATS

Make a Field Guide!

1. First, collect information about what species of bats might be in your area. A good place to start could be doing an online search for "list of bats in _____" (with the blank space being your State, Province, or Country). Another good source might be finding out if your local government has a webpage dedicated to wildlife. For example, US state governments have wildlife departments that publish information about the wildlife in your state. Once you have narrowed down which species of bats might be in your area, compare your list with others in your class.
2. You will continue to search for more information to create your field guide entry for one of the bat species on the list. In addition to the information found in your initial online search, consider checking out the International Union for the Conservation of Nature (IUCN)'s webpage called the "Red List" (www.iucnredlist.org).



[org/](#)) or the “Animal Diversity Web” ([animaldiversity.org/](#)) to help with basic information about the species, as well as its conservation status.

Warning: Make sure you are not copying from sources word-for-word! Read at least three different sources of information about your species and then paraphrase the information you’ve read. In your end product, you’ll need to refer to where you got your information, so be sure to copy down the sources and any URLs.

3. Design a presentation/product (based on guidelines instructor gives you) that can be an educational tool for others to learn about and identify your species.
4. Share your product and read/see/hear about all the bat species in your region!

REFLECTION AND DISCUSSION QUESTIONS

1. Were there any differences in content between what you presented in your field guide and that of other students? For instance, were there facts that didn’t match up, even though you were talking about the same species? Were there different types of or gaps in information provided by different students/groups? Explain.
2. Do you think that all the bat species in your field guide are found outside around your home or school? Could there be anything about the area where you live that makes it unlikely that certain bats are found nearby (even though they might be in your wider region)?
3. Field guides are great tools for helping identify the species around you. However, can you think of a reason why a visual description of bats might not be as helpful as a visual description of birds? What about a bat’s biology makes it harder for you and me to see them?