

Conducting a Field Study in Your Backyard

(Part I: Survey Design and Data Collection)

This is a great activity to introduce your students to local species and the ecological role they play, and to help them develop and use the same data collection and critical thinking skills as a conservation biologist! One of the first steps in creating a conservation plan for a species involves figuring out how many animals are in a given area. Often it is too difficult to count all the individuals, so scientists use different methods to help them estimate the populations. This lesson will help your students develop an understanding of how to design a field investigation and how data collected in this way helps to detect trends in local animal populations!

Objectives:

- To investigate the different tools and community partnerships scientists at the Wildlife Conservation Society use to collect data on species in the wild, like the Grauer's gorilla.
- To highlight the connection between the science practices both conservation biologists and middle school students use to gather information about the natural world and develop solutions to conservation challenges.

Materials:

- [Local Population Transect Survey Instructions](#)
- [Data Collection Sheet for Animal Population Surveys](#)
- [Investigation Design Diagram \(IDD\)](#)
- Fiberglass tape measure (50m-100m, depending on how large of an area you'd like to survey)
- Quadrats

Note: The fiberglass tape measure will be used to determine the total area that will be surveyed. The quadrat will be used to provide a standard view for your students to look through. This can either be purchased OR you can have students create their own. To make a quadrat, simply take a file folder and trace a rectangle on the front of it (each side of the rectangle should be 1 inch from the edge of the folder). Once this is done, cut out and discard the rectangle you've traced and laminate the remaining part of the folder. It should essentially provide a looking glass for students to use at each stop to ensure that they are not looking too far out or too far up.

Process:

- 1) Background for teacher:
 - a. Before doing this activity with your students, please review the [Local Population Transect Survey Instructions](#).
- 2) The teacher will introduce the topic of the importance of surveying animal populations using one or more of the following:
 - a. Article “How does war affect gorillas?” (see Interactive Reading Guide activity)
 - b. WCS Videos
 - i. “The Process of Science”
 - ii. “Data Collection”
- 3) The teacher will introduce the activity, highlighting that students will be using the same data collection techniques that Andy Plumptre and his staff use to collect important information on the critically endangered Grauer’s gorilla.
- 4) The teacher will hand out the data collection instructions and review them. The teacher will reiterate that rather than counting nests like Andy Plumptre did, they will be counting live subjects (select a local species of your choosing) and that they will be using a survey method called a belt transect to estimate relative abundance of a species.
- 5) The teacher will introduce the tools (fiberglass tape measure and quadrat) to briefly demonstrate what this looks like—more time will be allowed for practice outside.
- 6) Ask the students: What questions could we answer with a transect survey? The teacher will then explain that we’ll be getting an estimate of relative abundance of a species in an area.
- 7) Next, the teacher will ask students to look at a local map and/or conduct background research and consider what variables could impact the relative abundance of the species.
- 8) Students will then select the independent variable they’d like to investigate (potentially after doing initial observations). Suggested naturally occurring variables for a field study like this could include:
 - a. Habitat type (natural vs. developed; rural vs. urban)
 - b. Time of day (morning vs. afternoon)
 - c. Food source (natural vs. human food)*

*Please note that “human food” as it is used here refers to anthropogenic sources of food that already exist in the study area (food dropped on a food court, food accessed through a dumpster or trash can, etc.). When conducting a field study with your students, you should never put out human food for animals to consume. The variables being investigated should only include things that are already in the environment, and the investigator should not introduce or manipulate variables.

9) Students will design their survey using the IDD and perform an initial observation to make a prediction.

10) Students will collect their data using the data collection sheet (pages 1 and 2). Students will work in small groups to do this (assign roles).

11) Once students have their data, see part II of this activity.



▲ Silverback Western Lowland Gorilla at the Bronx Zoo's Congo Gorilla Forest

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FIELD SIGHT

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