

Planning a Field Survey

Understanding species ecology is an essential first step in conservation. By using historical data, field surveys, and geospatial tools, researchers are able to better protect wildlife. In this activity, students will conduct background research about an animal that WCS is interested in conserving, the jaguar. They will use the information they collect to frame their thinking about what kind of information a field researcher would need to collect about a wild space to determine whether it would be a good habitat for jaguars.

Objectives:

Students will be able to:

- Understand a species' role and needs in an ecosystem, and how that relates to an individual animal's behavior
- Collect information to inform the design of a field survey of a particular wild area

Materials:

- [WCS Jaguar Introduction Reading](#)
- [WCS Jaguar Habitat Map](#)
- [Animal Diversity Web Jaguar Background Reading](#)
- [Jaguar Background Research Note Catcher](#)

Process:

- 1) Show students a picture of a jaguar (on the Animal Diversity Web Jaguar Background Reading) and ask students what they know about that animal.
 - a) Where does it live?
 - b) What does it eat?
 - c) What do they notice from the picture?
- 2) Explain that jaguars, like many big cats around the world, are facing many conservation problems. Your students are going to have the opportunity to act as scientists in mapping jaguar habitats in order to make decisions about their conservation. Before starting that process, however, they will need to collect some information about jaguars and their ecosystem.

- 3) Distribute the WCS Jaguar Introduction Reading and Jaguar Background Research Note Catcher. Students should individually read the introductory fact sheet and then answer question number 1 on the note catcher.
- 4) Ask students what they found in the reading. Once students have discussed their findings, highlight the current/historic range graphic. Check for student understanding on which color represents where jaguars currently lived and which color represents where jaguars lived in the early 1900s. Point out that jaguar range used to include parts of the United States.
- 5) Explain that it's essential to know where an animal lives in order to protect it, and that can be a challenge for animals like jaguars that are solitary and elusive. To understand where a certain species can live, scientists need to know that animal's role in an ecosystem, as well as its needs within an ecosystem.
- 6) Distribute the Animal Diversity Web Jaguar Background Reading, and explain that the students are going to learn more about how jaguars live, and then they will use that information to predict what kind of places they could expect to find jaguars.
- 7) Jigsaw this reading by first splitting students into four groups, with each group reading three sections of the document:
 - a) Geographic Range, Habitat, Physical Description
 - b) Reproduction, Lifespan/Longevity, Behavior
 - c) Communication and Perception, Food Habits, Predation
 - d) Ecosystem Roles, Economic Importance for Humans: Positive and NegativeStudents should then discuss the readings with their group summarizing their findings.
- 8) Direct students to form new groups of four, where each group member has read something different. Each group member should explain what they learned about jaguars. Each group should fill out the remainder of the Jaguar Background Research Note Catcher.
- 9) Once groups have finished discussing, explain that scientists use information like this to help plan their conservation research. This type of information can be used to plan an investigation to help scientists know if an area should be protected as a habitat for a particular species.
- 10) Ask students, "If you were a field scientist who wanted to know if jaguars were living in a particular area, what environmental factors would you look for?" Encourage students to share where they found their answer in the reading. Chart their responses in the form of a list.
- 11) Explain that, using geospatial analysis, it is possible to look at **all** of these factors on one map and that students will be able to build a similar map in the next activity.