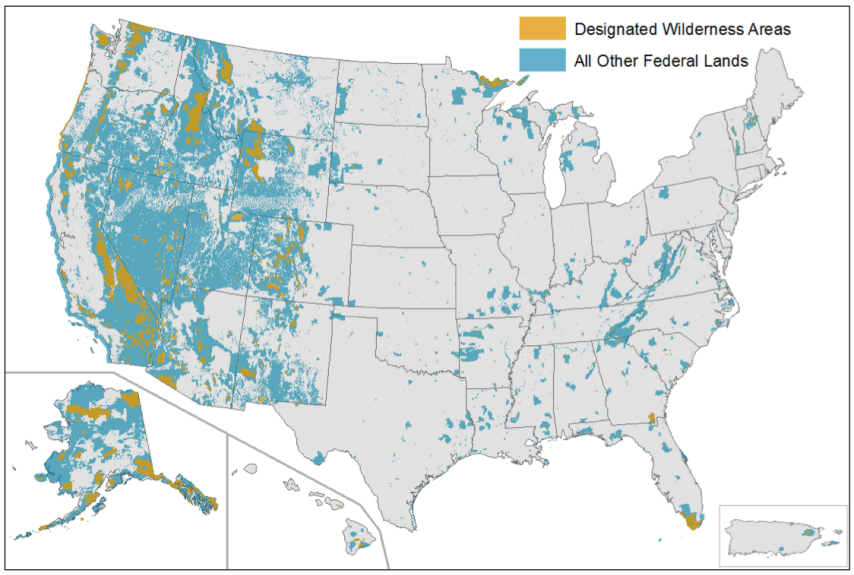
Protected Lands: Phenomenal Maps

This mini-lesson combines aspects of our ***Phenomenal Image*** and ***DataPlay*** lesson formats. Maps are images that typically contain many layers of data that we take for granted. Maps can be approached initially as phenomena that can then be analyzed further by students for the rich data they contain. This lesson features 3 maps that contain information on land use and ownership in the US that can be used to engage student thinking land and species conservation decisions.



Legend: Map 1: Map of the US showing all federal lands in blue and the subset that meets the definition of wilderness according to the 1964 Wilderness act in orange.

This map shows all of the federally-owned land in the United States, often called "public land." The fraction of federal land that is officially designated wilderness is highlighted in orange. This video chat with Jon Leibowitz of the Northeast Wilderness Trust provides background on the history and current state of "wilderness" in the United States.

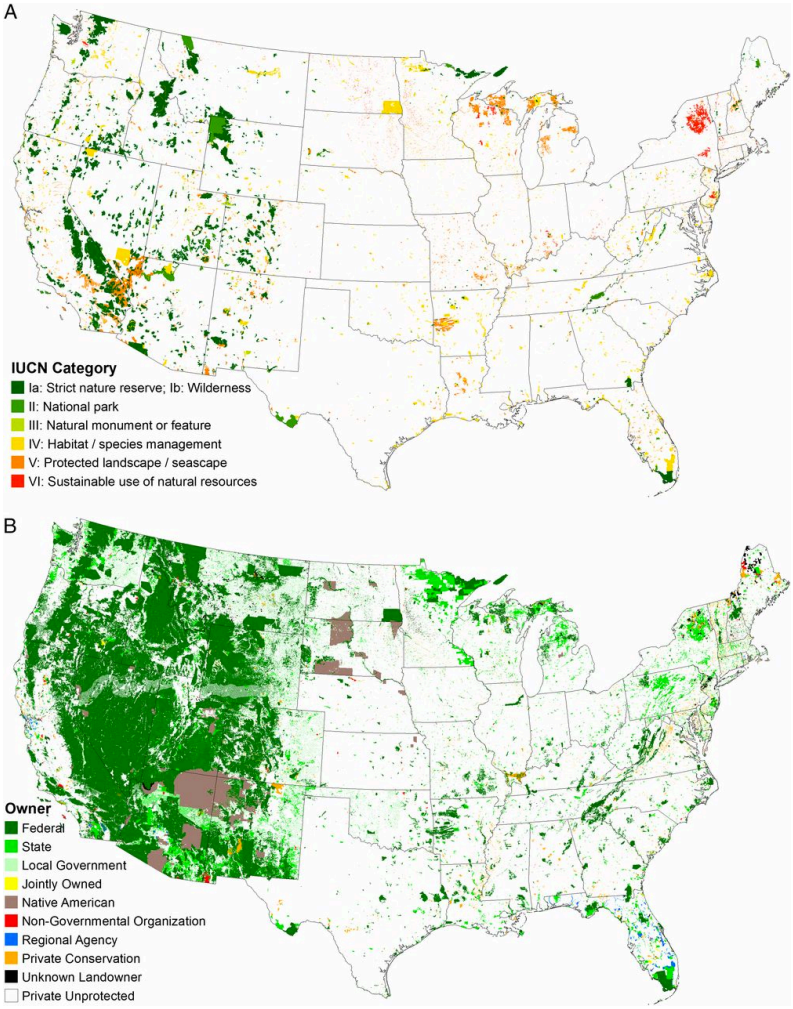
What do you notice? What do you wonder?
Show students the map without context, and ask them to jot down what they notice about the map, perhaps 5-10 things. Then have students generate questions about what they are observing.

Part 1: Conservation Decisions
Prompt students with the following discussion questions.

1. If we are trying to put half the United States into some type of protected designation to conserve 85% of our biodiversity, what additional information you will need to know before making your decision? Discuss.
2. Based on just the information on map 1, what action steps might you take to start ensuring more of the United States is protecting land and species?

Maps 2 & 3, are from an article in the Proceedings for the National Academy of Sciences of the United States, and provide a different view of protected lands in the United States

Legend: Maps 2(A) and 3(B): Map A color codes US federal lands by their official international protection status (IUCN). Map B color codes all US lands emphasizing their species protection status.



What do you notice? What do you wonder?
Ask students to jot down what they notice about these two maps, again aiming for 5-10 observations. Next have students record their questions about what they are observing.

Compare and Contrast
Have students analyze the images more deeply by explicitly comparing and contrasting all three maps. What are at least 4 similarities and differences among the data the map is depicting?

Part 2: Conservation Decisions
1.What makes each map so different from the others?

2.Which map helps you most think Half-Earth is achievable? Why?

3.Do you think we could get to half the U.S. protected for biodiversity without private land and trusts? Explain your answer with evidence from the maps.

4. Watch this video chat about land trusts and gather quantitative evidence to support your answer to number 3 above. Amend your response accordingly.