

RESOURCE LIBRARY
ACTIVITY : 30 MINS

Mapping Our Human Footprint

Students learn about the Human Footprint data set, analyze a map showing where and to what extent humans have influenced Earth, and participate in a class discussion.

GRADES

6 - 12+

SUBJECTS

Geography, Human Geography, Physical Geography

CONTENTS

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OVERVIEW

Students learn about the Human Footprint data set, analyze a map showing where and to what extent humans have influenced Earth, and participate in a class discussion.

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/mapping-our-human-footprint/>

Program



DIRECTIONS

1. Introduce the data set.

Tell students that scientists with the Wildlife Conservation Society and Columbia University's Human Footprint Project mapped degrees of human influence over every square kilometer of

Earth's surface (1 square kilometer = .39 square mile). Four factors were evaluated: population, travel routes, land use, and lights. While humans affect Earth in many ways, these four have the most immediate impact on wildlife and wild lands. Ask: *Why do you think these four factors have the most immediate impact?*

2. Display the Human Footprint data layer on the MapMaker Interactive.

Display the MapMaker Interactive with the Human Footprint layer selected. Click on the legend tab in the top right side of the map and review the legend. Explain that green signifies areas least impacted by humans. Purple signifies areas most impacted by humans. Ask: *What is the predominant color in North America? What level of impact does it signify?* Invite volunteers to point out any patterns they notice, such as greater human impact near urban areas.

3. Have students make a personal connection.

Ask students to find their hometown. Ask: *What color is it on the map? How great is the human impact?*

4. Discuss areas of lesser human impact.

Zoom back out to the global scale. Ask: *What areas are less impacted by human activity?* (Possible answers: the Amazon Rainforest, the Sahara Desert, Northern Canada, Northern Russia, and central Australia) *What connections can you make between areas of less impact and geographic factors such as climate or physical landscape?* Encourage students to notice that these areas tend to have a harsh climate and are remote or inaccessible due to physical features. For example, the Arctic Circle, the Sahara Desert, the Himalayas, and the Amazon rainforest are all remote and/or inaccessible. Ask: *Will areas with lower degrees of human impact remain this way?* Remind students that this map reflects four factors: population, travel routes, land use, and lights. Ask: *Which factors are likely to change over time?* (Each factor could increase, decrease, or remain unchanged over time.)

5. Discuss areas of greater human impact.

Ask: *In which areas is the degree of human impact greater?* (Possible answers: Europe, India, Southeast Asia, and the eastern coast of South America.) *What connections can you make between areas of greater impact and geographic factors such as climate or physical landscape?* Encourage students to notice that these areas tend to have a moderate climate, arable land, and proximity to oceans. They are also close to sources of fresh water and are easily accessible.

6. Have students compare the Human Footprint data layer and the Population Density data layer on the interactive map.

Click on the second map slide in the media carousel to load the interactive map with the Population Density layer selected. Explain to students that the Human Footprint data layer does not show population; it shows areas that have been affected by human populations. Have students compare the two data layers on the interactive map. Ask them to identify the differences they see.

Extending the Learning

Go to the [National Geographic Society](#) website to find out where you can get the *Human Footprint* DVD.

OBJECTIVES

Subjects & Disciplines

Geography

- [Human Geography](#)
- [Physical Geography](#)

Learning Objectives

Students will:

- explain what information the Human Footprint data layer and map legend show
- use the Human Footprint data layer to analyze the degree of human impact in their hometown
- make connections between areas of human impact and geographic factors
- describe similarities and differences between the Human Footprint data layer and a Population Density data layer

Teaching Approach

- Learning-for-use

Teaching Methods

- Discussions
- Visual instruction

Skills Summary

This activity targets the following skills:

- Critical Thinking Skills
 - Analyzing
 - Understanding

National Standards, Principles, and Practices

NATIONAL GEOGRAPHY STANDARDS

- **Standard 14:**

How human actions modify the physical environment

Preparation

What You'll Need

REQUIRED TECHNOLOGY

- Internet Access: Required
- Tech Setup: 1 computer per classroom, Projector
- Plug-Ins: Flash

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group instruction

BACKGROUND & VOCABULARY

Background Information

“Human footprint” is a phrase used to describe the environmental impact humans have had on the Earth’s surface.

Prior Knowledge

Recommended Prior Activities

- None

Vocabulary

Term	Part of Speech	Definition
degree	<i>noun</i>	a clearly marked point, level, or stage.
human footprint	<i>noun</i>	single person's lifetime use of natural resources.

For Further Exploration

Websites

- [National Geographic Channel: Human Footprint](#)
- [National Geographic: Earthpulse](#)

PARTNER

