

RESOURCE LIBRARY
ACTIVITY : 50 MINS

An Imbalance in our Ocean

Students watch videos to examine ways that human actions can throw a marine ecosystem out of balance and lead to species decline. Then they brainstorm a list of stakeholders and generate questions about them.

GRADES

9 - 12+

SUBJECTS

Earth Science, Oceanography, Geography, Human Geography, Physical Geography

CONTENTS

3 Videos

OVERVIEW

Students watch videos to examine ways that human actions can throw a marine ecosystem out of balance and lead to species decline. Then they brainstorm a list of stakeholders and generate questions about them.

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/an-imbalance-in-our-ocean/>

DIRECTIONS

1. Have students brainstorm a list of human threats to marine ecosystems.

Have students brainstorm a list of human behaviors that threaten the stability of marine ecosystems. Write students' ideas on the board. Prompt them to include behaviors such as pollution, overfishing or overharvesting, and boating. Remind students that many human activities not associated with the marine environment can also affect ocean ecosystems. For example, agricultural runoff and coastal development can cause marine pollution. Ask

students to generate more examples.

2. Have students watch three videos about human activities that threaten the world ocean.

Show students the following videos: “EcoTipping Point Success Stories: Apo Island” (stop after 3 minutes and 38 seconds), “Arabian ‘Sea Cows’ Going Hungry?” (5 minutes), and “Coral Reefs” (3.5 minutes). Ask students to take a few notes as they watch each video. Tell them to pay close attention to the ocean threats and actions people are taking to address those threats. After viewing each video ask:

- *What is the main ocean threat discussed in this video?* (Video 1: overfishing and destructive fishing practices; Video 2: coastal development; Video 3: pollution)
- *What actions are people taking to address those threats?* (Video 1: establish Marine Protected Areas, educate local fisherman and young people, impose limits on tourism; Video 2: research dugong populations, establish Marine Protected Area, regulate boat speeds and fishing nets, educate students; Video 3: establish artificial reefs, increase reef protection and restoration)

3. Have small groups generate lists of stakeholders for each threat.

Explain to students that stakeholders are individuals, groups, or organizations that stand to gain or lose from the success or failure of a project. Divide students into three groups—one for each threat listed above. Give each group time to brainstorm a list of stakeholders who may be involved in the issue. Provide some examples, if needed, such as:

- citizen, consumer, land owner, recreational user
- scientist, conservationist, environmentalist
- industry representative, coastal developer
- government organization, policymaker, economist
- journalist, historian

Have each group share their list. Compile the class list on the board.

4. Ask students to generate questions about the threats with stakeholders in mind.

Have students think about and list questions they have about ocean threats, stakeholders, and the relationship between threats and stakeholders. Have students share some of their questions and discuss them as a class. Ask:

- *Which stakeholders may share the same perspective on a threat?*
- *Which stakeholders are likely to have opposite perspectives on a threat?*

- *How can one stakeholder influence an environmental management decision or debate?*
- *Which stakeholder is likely to have a similar perspective to your own?*
- *What are your primary questions or concerns about the threat you explored?*

Informal Assessment

Use students' video notes and stakeholder questions to assess their comprehension and participation.

Extending the Learning

Have students investigate the effects of human activities in their local community. Ask students to create a scrapbook of one local environmental issue using newspaper and magazine articles, brochures, and other resources. Ask them to identify both the direct and the indirect impacts of human actions, including stories of local environmental stewardship projects or other human actions that have helped the local area.

OBJECTIVES

Subjects & Disciplines

Earth Science

- [Oceanography](#)

Geography

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

Learning Objectives

Students will:

- identify human threats to marine ecosystems
- identify stakeholders for each threat
- ask relevant questions about the relationships between human threats and stakeholders

Teaching Approach

- Learning-for-use

Teaching Methods

- Brainstorming
- Cooperative learning
- Discussions
- Visual instruction

Skills Summary

This activity targets the following skills:

- Critical Thinking Skills
 - Analyzing
 - Understanding
- Geographic Skills
 - Acquiring Geographic Information
 - Asking Geographic Questions

National Standards, Principles, and Practices

NATIONAL COUNCIL FOR SOCIAL STUDIES CURRICULUM STANDARDS

- Theme 3:

People, Places, and Environments

NATIONAL GEOGRAPHY STANDARDS

- Standard 14:

How human actions modify the physical environment

NATIONAL SCIENCE EDUCATION STANDARDS

- (9-12) Standard F-4:

Environmental quality

• **(9-12) Standard F-5:**

Natural and human-induced hazards

OCEAN LITERACY ESSENTIAL PRINCIPLES AND FUNDAMENTAL CONCEPTS

• **Principle 6a:**

The ocean affects every human life. It supplies freshwater (most rain comes from the ocean) and nearly all Earth's oxygen. It moderates the Earth's climate, influences our weather, and affects human health.

• **Principle 6b:**

From the ocean we get foods, medicines, and mineral and energy resources. In addition, it provides jobs, supports our nation's economy, serves as a highway for transportation of goods and people, and plays a role in national security.

• **Principle 6d:**

Much of the world's population lives in coastal areas.

• **Principle 6e:**

Humans affect the ocean in a variety of ways. Laws, regulations and resource management affect what is taken out and put into the ocean. Human development and activity leads to pollution (such as point source, non-point source, and noise pollution) and physical modifications (such as changes to beaches, shores and rivers). In addition, humans have removed most of the large vertebrates from the ocean.

• **Principle 6g:**

Everyone is responsible for caring for the ocean. The ocean sustains life on Earth and humans must live in ways that sustain the ocean. Individual and collective actions are needed to effectively manage ocean resources for all.

• **Principle 7c:**

Over the last 40 years, use of ocean resources has increased significantly, therefore the future sustainability of ocean resources depends on our understanding of those resources and their potential and limitations.

Preparation

What You'll Need

MATERIALS YOU PROVIDE

- Paper
- Pencils

REQUIRED TECHNOLOGY

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

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group instruction
- Small-group instruction

OTHER NOTES

Before starting the activity, download and queue up all three videos. Only show the first 3 minutes and 38 seconds of the Apo Island video.

BACKGROUND & VOCABULARY

Background Information

Human well-being is highly dependent on marine ecosystems and the resources and benefits they provide, such as food, recreation, and livelihoods. However, humans are causing a negative impact on marine environments due to pollution, overfishing, and development. Stakeholders are individuals or organizations who stand to gain or lose from the success or failure of a project. Their perspectives need to be taken into account in order for a resolution to be successful.

Prior Knowledge

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Recommended Prior Activities

- [Human Impacts on Marine Ecosystems](#)
- [Marine Migration](#)

Vocabulary

Term	Part of Speech	Definition
marine ecosystem	<i>noun</i>	community of living and nonliving things in the ocean.
stakeholder	<i>noun</i>	person or organization that has an interest or investment in a place, situation, or company.

For Further Exploration

Websites

- [National Geographic Education: National Teacher Leadership Academy \(NTLA\)](#)

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