

RESOURCE LIBRARY
ACTIVITY : 45 MINS

Protecting the Ocean

Students discuss "who owns the ocean" and work in small groups to explore ocean use questions. Then they watch videos and discuss concepts related to the creation and designation of Marine Protected Areas (MPAs).

GRADES

9 - 12+

SUBJECTS

Biology, Ecology, Earth Science, Oceanography, English Language Arts, Geography, Human Geography, Physical Geography

CONTENTS

1 PDF, 1 Video, 1 Link

OVERVIEW

Students discuss "who owns the ocean" and work in small groups to explore ocean use questions. Then they watch videos and discuss concepts related to the creation and designation of Marine Protected Areas (MPAs).

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/protecting-the-ocean/>

DIRECTIONS

1. Build students' background about protected areas, both terrestrial and marine.

Ask: *What is a sanctuary?* Elicit from students that a sanctuary is a place of refuge and protection. Have students brainstorm examples of sanctuaries or protected land or water areas, such as national parks, nature reserves, wilderness areas, and marine protected areas.

Ask:

- *What are these areas used for?*
- *Who are the stakeholders, or users, of these areas?*
- *Do some of these uses conflict with one another? How? What are some examples?*

Provide students with the following examples: During certain seasons, hunters are allowed into parks to help regulate populations of deer, and during those times the park is closed to other uses like hiking and fishing. Or, mountain bikers and horseback riders have to use different trails from hikers. Ask: *Who protects these areas? What are they protected from?* Elicit from students that various levels of government protect these areas from human development and impacts that may threaten species or destroy the habitat. Ask: *What is a MPA?* Elicit from students that it is a marine protected area, and like a sanctuary or park, it protects habitat and wildlife located within or bordering the ocean.

2. Have small groups discuss questions about ocean ownership and protection.

Explain that students will now focus on marine protected areas and will discuss issues of ocean ownership and protection. Read the MPA handout aloud to the class. Divide students into small groups and give each group one large sheet of paper. Write the following questions on the board:

- *Who owns the ocean?*
- *Who has the right to use the ocean? Why?*
- *Who protects the ocean? From whom? From what?*
- *Who makes and enforces rules about the ocean?*

Give each group approximately five minutes to discuss and write their answers. Then post all papers at the front of the room for a ten-minute class discussion.

3. Have students watch the NOAA video “Your National Marine Sanctuaries.”

Have students watch the video (4 minutes). Then check their comprehension. Ask:

- *How many U.S. National Marine Sanctuaries are there?* (14 marine sanctuaries)
- *Where are they located?* (Great Lakes, East and West coasts, Gulf of Mexico, Hawaiian Islands, American Samoa)
- *How many square miles do they cover?* (150,000 square miles)
- *Why did Congress begin establishing sanctuaries to protect the ocean in 1972?* (to protect fragile marine resources)
- *Why do you think these 14 specific locations were selected?*
- *Which sanctuary is one of the largest marine protected areas on Earth and was also the nation's first marine national monument?* (Papahānaumokuākea Marine National Monument)
- *Why is it important to establish sanctuaries or protected areas in the ocean?*

Ask if students have any questions about the video or the MPA fact sheet. Facilitate the discussion and elaborate as needed.

4. Have students watch the Chadwick School's MPA public service announcement.

Explain to students that marine biology students at Chadwick School in Palos Verdes Peninsula, California, created the public service announcement video to raise awareness on marine issues and the need for establishing a marine protected area near their school. Ask students to think about how they would carry out a similar project in an area that they think should be designated as a MPA. Tell students that their culminating assignment for this unit will be to design their own MPA so they need to keep MPAs and the different users of these environments in mind as they learn more about ocean ecosystems. Access the video by going to the CAL-SPAN web page. Click on the January 14, 2009, video and start the video at 04:03:50. Have students watch the video (5.5 minutes). Then check students' comprehension. Ask:

- *How did the students become interested in California's Marine Life Protection Act (MLPA) Initiative?*
- *What did they notice about the changes in the biodiversity and habitat of their study site?*
- *What were some of the anthropogenic, or human, threats affecting their study site?*
- *Who are some of the stakeholders involved in California's MLPA Initiative?*
- *What are some positive effects resulting from the establishment of MPAs?*

5. Have students reflect on what they have learned.

Remind students that, earlier in the class, they answered the question: Why is it important to establish sanctuaries or protected areas in the ocean? Ask: *Has your answer changed? How? Why?*

Informal Assessment

Assess students based on their participation in the small group and class discussions. Check students' understanding by asking them to orally restate the definitions of MPAs, marine reserves, marine sanctuaries, and marine parks.

Extending the Learning

Have students investigate a local marine, freshwater, or terrestrial protected area. Ask students to present their findings to the class.

OBJECTIVES

Subjects & Disciplines

Biology

- [Ecology](#)

Earth Science

- [Oceanography](#)

- English Language Arts

Geography

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

Learning Objectives

Students will:

- distinguish between different types of MPAs, including marine reserves, sanctuaries or conservation areas, and parks
- describe the importance of MPAs in terms of biological, cultural, social, and economic factors

Teaching Approach

- Learning-for-use

Teaching Methods

- Cooperative learning
- Discussions
- Multimedia instruction
- Reading

Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
 - Information, Media, and Technology Skills
 - Media Literacy
 - Learning and Innovation Skills
 - Communication and Collaboration
- Critical Thinking Skills
 - Remembering
 - Understanding
- Geographic Skills
 - Acquiring Geographic Information
 - Analyzing Geographic Information

National Standards, Principles, and Practices

IRA/NCTE STANDARDS FOR THE ENGLISH LANGUAGE ARTS

- **Standard 12:**

Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

NATIONAL GEOGRAPHY STANDARDS

- **Standard 14:**

How human actions modify the physical environment

NATIONAL SCIENCE EDUCATION STANDARDS

- **(9-12) Standard C-4:**

Interdependence of organisms

- **(9-12) Standard F-3:**

Natural resources

- **(9-12) Standard F-4:**

Environmental quality

OCEAN LITERACY ESSENTIAL PRINCIPLES AND FUNDAMENTAL CONCEPTS

- **Principle 5a:**

Ocean life ranges in size from the smallest virus to the largest animal that has lived on Earth, the blue whale.

- **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.

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: Quicktime

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group instruction

OTHER NOTES

Have students read the four-page introduction handout as a homework assignment the night before the lesson is taught.

Prior to the activity, put a map of a marine protected area of your choice up in the classroom with the definition of an MPA written below it.

BACKGROUND & VOCABULARY

Background Information

Marine Protected Areas (MPAs) are areas where natural and cultural resources are given greater protection than the surrounding waters. In the United States, MPAs span a range of habitats including the open ocean, coastal areas, intertidal zones, estuaries, and the Great Lakes. They also vary widely in purpose, legal authorities, agencies, management approaches, level of protection, and restrictions on human uses, thereby affecting a variety of stakeholders. MPAs help improve the sustainability of marine creatures, resources, and habitats and protect them from human impacts.

Prior Knowledge

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Recommended Prior Activities

- [Marine Critical Issues: Case Studies](#)
- [Marine Protected Areas](#)
- [Marine Protected Areas: Case Studies](#)
- [MPA Designation and Management](#)

Vocabulary

Term	Part of Speech	Definition
anthropogenic disturbance	<i>noun</i>	changes to the natural environment caused by human activity.
biodiversity	<i>noun</i>	all the different kinds of living organisms within a given area.
habitat	<i>noun</i>	environment where an organism lives throughout the year or for shorter periods of time.
Marine Life Protection Act (MLPA)	<i>noun</i>	(1999) California law passed to create a network of marine protected areas (MPAs) along the California coast.
marine park	<i>noun</i>	part of the ocean protected by the government to preserve a threatened ecosystem or habitat. Marine parks are often recreational areas.
marine protected area (MPA)	<i>noun</i>	area of the ocean where a government has placed limits on human activity.
marine reserve	<i>noun</i>	part of the ocean where no fishing, hunting, drilling, or other development is allowed.
marine sanctuary	<i>noun</i>	part of the ocean protected by the government to preserve its natural and cultural features while allowing people to use and enjoy it in a sustainable way.
stakeholder	<i>noun</i>	person or organization that has an interest or investment in a place, situation, or company.

For Further Exploration

Websites

- [NOAA: National Marine Sanctuaries](#)
- [NOAA: National Marine Protected Areas Center](#)

FUNDER

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