

# Coastal Habitat Research

*Students research the major Great Lakes coastal habitats and create a visual representation of one of these habitats. If possible, students visit at least one of these habitats.*

## OBJECTIVES

Identify the major habitats along the Great Lakes coast

Describe how humans depend on these Great Lakes habitats

Identify at least 10 native plants and animals in one habitat

Create a visual representation of one coastal habitat

Present information and a visual of a coastal habitat

## SUBJECT

*Ecology, Language arts, Environmental science*

## PREREQUISITE

#1: Coastal Journey

## VOCABULARY

beach  
bog  
emergent marsh  
fen  
forested shoreline  
lakeplain prairie  
ravine  
river  
sand dune  
savanna  
swale  
swamp  
wetland

## MATERIALS

enlarged printout or projection of the coastal habitats chart  
research supplies, including computers with internet access  
art supplies (i.e. colored pencils, markers, paints)

## TIME/DURATION



3 hours

## SETTING

Indoors,  
Computer lab,  
outdoors

This Great Lakes in My World 9-12 activity is aligned to the Common Core State Standards (as available).

This alignment is available on your Great Lakes in My World 9-12 USB flash drive in the “Standards” folder and on-line at <http://www.greatlakes.org/GLiMWstandards>.

**BACKGROUND**

The Great Lakes coastal zone encompasses some of the most diverse and productive ecosystems in the region. Dramatic sand dunes, lush grasslands, and forests characterize some of the unique coastal ecosystems found along the Great Lakes shorelines.

These unique transition areas along the Great Lakes—linking land and water—provide critical habitats for many species of plants and animals, some of which are found only in the Great Lakes watershed. The transitional ecosystems may include a sand dune, wetland (emergent marsh, bog, fen, swamp and/or swale), beach, lakeplain prairie, savanna, forested shoreline, island, the flowing waters of connected rivers and the open waters of the Great Lakes.

**PROCEDURE**

1. Introduce the activity by telling the class that they’re going to build upon what they’ve learned about coastal habitats. You will need to project the coastal habitat chart onto a white board, or produce a large classroom copy of the chart. Each student should also have a copy of the chart from the student pages.
2. Students read the background information and answer the questions on their student pages: How do plants, animals and people depend on the habitats along the Great Lakes coastlines?
3. Next, on their individual charts, students should fill in the first (left) column with the names of the coastal habitats they’ve studied as a class. As the students fill in the left column on their individual charts, the teacher (or a student volunteer) should fill in the left column on the classroom chart.

- Each student (or small group of students) selects one coastal habitat to research. Students research the habitat and use the information to fill in the rows on the chart. Students record the research in their journal or notebook, then enter concise responses on their own charts with information about the following:

Location  
Climate  
Landscape Characteristics  
Native Flora (at least five)  
Native Fauna (at least five)  
How humans use or benefit from this habitat

- Each student creates a visual representation (i.e. picture book, Web site, poster, video) of his/her selected coastal habitat. If students choose to make a book, consider one of the formats described on the Web site - Making Books: <http://www.makingbooks.com/freeprojects.shtml>. Visual representations should include the information from their charts, but students can also choose to include additional information (i.e. interesting facts, specific examples of these coastal habitats). These projects should include photographs and/or drawings of the habitats in addition to written or typed information.
- Each student writes a one-page essay explaining the ecology, interrelationships and importance of the coastal habitats they have chosen. Essays should answer: What are the characteristics of this coastal habitat? What makes this coastal habitat unique? Why is it important to preserve or restore these coastal habitats?
- Each student (or small group) should give a three- to five-minute presentation, which includes their visual representation and educates others about the coastal habitat that they researched. While students are presenting, other students will fill in the information on their own chart. To encourage other students to be attentive, the presenter should make their presentation interactive (i.e. with a quiz for the audience, discussion questions).

#### WRAP-UP

- Discuss the following questions as a class: What characteristics are shared by these coastal habitats? What species are found in more than one of these ecosystems? How do humans depend on these coastal habitats? What problems might humans cause for plants and animals within these ecosystems? (*Global climate change and its effects, erosion, invasive species, habitat destruction, pollution*) What problems might nature cause for plants and animals within these ecosystems? (*Global climate change and its effects, erosion, weathering*) Why is it important to conserve or protect these ecosystems?
- Students answer the wrap-up questions from above on their student pages.

#### EXTENSION

- As a class, take a field trip to an off-campus coastal habitat, or visit a local habitat. Students can take photographs of the habitat and its flora and fauna. Another option would be to ask students to visit a local coastal habitat as a homework or extra-credit assignment to observe and take photographs.
- Students share their coastal habitat projects with another class or the community (e.g. town/village hall, library, local business). Students can host a "Coastal Habitats Fair" or display their visual representations in the library or during a parent visit night.

#### ASSESSMENT

See rubric on page 52.

#### RESOURCES

Please see Resource List for additional information related to sand dunes, wetlands, native and invasive species and more.

# Coastal Habitat Research

## VOCABULARY

beach  
 bog  
 dune  
 emergent marshes  
 fen  
 forested shoreline  
 lakeplain prairie  
 ravine  
 river  
 sand dunes  
 savanna  
 swale  
 swamp  
 wetlands

## BACKGROUND

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These unique transition areas along the Great Lakes—linking land and water—provide critical habitats for many species of plants and animals, some of which are found only in the Great Lakes Basin. The transitional ecosystems include sand dune, wetland (emergent marsh, bog, fen, swamp and swale), beach, lakeplain prairie, savanna, forested shoreline, island, the flowing waters of connected rivers and the open waters of the Great Lakes. Keep in mind all of the different aspects of coastal habitats and how they impact your daily life.

## INTRODUCTORY QUESTIONS

1. How do plants, animals and people depend on the habitats along the Great Lakes coastline?

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## COASTAL HABITATS: RESEARCH

On your own or in a small group, research one of the coastal ecosystems of the Great Lakes. Take notes on notecards or on a separate sheet of paper, then fill in one row of the information table with the facts that you learned while researching. Later, while your classmates present information about their ecosystems, fill in the other rows of the table.

## COASTAL HABITATS: A VISUAL REPRESENTATION

It's time to be creative. Create a visual representation of the coastal habitat you researched. This could be a poster, picture book, Web page or other representation. Your visual representation should include the information from the chart above, but you can also choose to include additional information (i.e. interesting facts, specific examples of these coastal habitats). Your project should include photographs and/or drawings of the habitat.

## COASTAL HABITATS: A WRITTEN REPRESENTATION

Using a computer or a separate sheet of paper, write a one-page essay explaining the ecology, interrelationships and importance of the coastal habitat that you researched. Your essay should answer the following questions: What are the characteristics of this coastal habitat? What makes this coastal habitat unique? Why is it important to preserve or restore coastal habitats?

NAME \_\_\_\_\_

COASTAL HABITATS: RESEARCH

ECOSYSTEM	DESCRIPTION	LOCATION	PHYSICAL CHARACTERISTICS	CLIMATE

NAME \_\_\_\_\_

FLORA	FAUNA	HUMAN CONNECTION	BIODIVERSITY THREAT	INTERESTING FACTS

Use this space for research notes, to sketch ideas for your visual representation or to outline your essay.

**WRAP-UP QUESTIONS**

2. What characteristics are shared by these coastal habitats?

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3. What organisms are found in more than one of these ecosystems?

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4. How do humans depend on these coastal habitats?

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5. What problems might nature cause for plants and animals within these ecosystems? What problems might humans cause?

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6. Why is it important to conserve or protect these ecosystems?

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**RUBRIC**

ELEMENTS	☆☆☆☆	☆☆☆	☆☆	☆
RESEARCH: Student recognizes the different types of coastal habitats and chooses one habitat to research. Student is able to report the location, climate, landscape characteristics, five native plants, five native animals and the human connection to this habitat.	Addresses all of the components	Missing one of the components	Missing two components	Missing three or more components
VISUAL REPRESENTATION: Student creates a visual representation of their selected coastal habitat. Visual representations include all information described in the table, any interesting facts, specific examples of coastal habitat, photographs and/or drawings.	Addresses all of the components	Missing one of the components	Missing two components	Missing three or more components
ESSAY: Student explains the ecology, interrelationships, and importance of the coastal habitat they have chosen in a one-page essay. Essay describes the characteristics of the habitat, any unique features, and why it is important to preserve and/or restore this habitat. The essay is well developed and thorough. All ideas are supported with evidence from research. Spelling and grammar are accurate. Sources are cited.	Addresses all of the components	Missing one of the components	Missing two components	Missing three or more components
PRESENTATION: Student educates the class about the coastal habitat they researched through giving a three- to five-minute presentation. Student uses the visual aid they created and interacts with classmates in group discussion.	Addresses all of the components	Missing one of the components	Missing two components	Missing three or more components
SYNTHESIS: While other students are presenting, student completes the remainder of the coastal habitat table with information presented by their peers. Student asks questions, if needed, to fully complete the table.	Addresses all of the components	Missing one of the components	Missing two components	Missing three or more components