

HUNTINGTON BEACH

STATE PARK

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Murrells Inlet, SC 29576
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Huntington Beach State Park offers a wide variety of nature and history educational opportunities to its visitors. Its diverse habitats include beach, sand dunes, salt marsh, freshwater marsh, brackish marsh, maritime forest, rock jetty and maritime grasslands. Many of these habitats exist in close proximity to each other, leading to an exceptional abundance of wildlife habitat. Most of these habitats are also easily accessible to the public for nature study and wildlife viewing. In fact, Huntington Beach is considered by many birders to be the best site for bird watching in South Carolina.

The park's Education Center contains an exhibit hall featuring a touch tank, several aquariums, a number of live animal exhibits (including a baby alligator), and a variety of interactive exhibits. The Education Center also contains a classroom with a number of compound and dissecting microscopes and audio-visual equipment, a Wet Lab with a dozen aquariums and a variety of living and preserved marine organisms,

and a new Eco Lab with a plankton farm and biotope aquariums representing the different wetland habitats of the park.

Huntington Beach is also the site of the historic "Atalaya" castle. The former winter home and studio of noted American sculptress, Anna Hyatt Huntington and her husband, Archer Milton Huntington, Atalaya is also listed as a National Historic Landmark.

Directions

From Murrells Inlet: Drive 3 miles south on Hwy 17. Park entrance is on the left.

From Georgetown: Drive 20 miles north on Hwy 17. Park entrance is on the right.

Reservations and Program Information

For reservations, contact:

Mike Walker

Interpretive Ranger

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Photos by Brian Gomsak

Huntington Beach



Huntington Beach: *Pre-Site*

Content Area:
Science

Grade Level:
5

Time to Complete:

Title of Program:
Life in the Marine Ecosystem:
Up Close and Personal

South Carolina State Standards Addressed

Standard 5-2:

The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems. (Life Science).

Indicators

5-2.2 Summarize the composition of an ecosystem, considering both biotic factors (including populations to the level of microorganisms and communities) and abiotic factors.

5-2.3 Compare the characteristics of different ecosystems (including estuaries/salt marshes, oceans, lakes and ponds, forests, and grasslands).

5-2.4 Identify the roles of organisms as they interact and depend on one another through food chains and food webs in an ecosystem, considering producers and consumers (herbivores, carnivores, and omnivores), decomposers (microorganisms, termites, worms, and fungi), predators and prey, and parasites and hosts.

Lesson Description

The following activity was designed to familiarize the students with the basic concept of the marine ecosystem and its food web.

Focus Questions

1. Compare characteristics common to producers, consumers and decomposers.
2. Discuss the energy flow through the food chain.
3. Create food chains that overlap.
4. Describe a population in the marine ecosystem.

Culminating Assessment

Create a marine food web showing producers, consumers and decomposers.

Materials and Equipment

Pictures of producers, consumers and decomposers and handouts of a marine food web (supplied by park after program scheduled).

Procedures

After handing out copies of the marine food web to each student, the teacher will explain the basic concepts of an ecosystem and a food web. The students will discuss what could happen if one or more of the components are removed. The students will then take the pictures provided by the park and try to create their own food chains. From there they will create food webs. Note: In some cases, a non-native species of shorebird has been inserted to make the key work better. These are identified on the key.

Background Information

Components of the Marine Ecosystem:



An *ecosystem* can be defined as an area of interacting forces or components. The air, with 21% oxygen, 78% nitrogen, 0.03% carbon dioxide, and some inert gases, plus the soil, which is the source of minerals such as nitrogen, zinc, calcium, phosphorous, and others, make up the physical component.

Producers, organisms that make their own food, are another component. Producers, also called autotrophs, in the marine ecosystem include microscopic plants known as phytoplankton. Phytoplankton is composed of billions of single-celled green algae, which produce a vast quantity of food by means of photosynthesis just as land plants do. Other producers in the marine environment include plants such as salt marsh cordgrass (*Spartina alterniflora*).

Consumers, also called heterotrophs, are organisms that are dependent on other organisms for their food. Primary consumers, or herbivores, eat phytoplankton or plants such as spartina. Primary consumers can be very small, like protozoa or brine shrimp, or very large, like the green sea turtle. Carnivores are consumers that feed on herbivores. Some consumers feed on both herbivores and smaller carnivores. These are called omnivores.

Decomposers form another important part of the marine ecosystem. The decomposers (fungi and bacteria) break down plant and animal remains and return them to the environment in forms that can be consumed as food by other organisms. Decomposed material is known as detritus, and it sometimes appears as a soupy-looking material in the water.

An ecosystem is composed of *populations* of individual species. A population is defined as all individuals of a species

that live together at a given place and time. Populations of organisms can be categorized by the function they serve in an ecosystem, i.e. producers, consumers, decomposers.

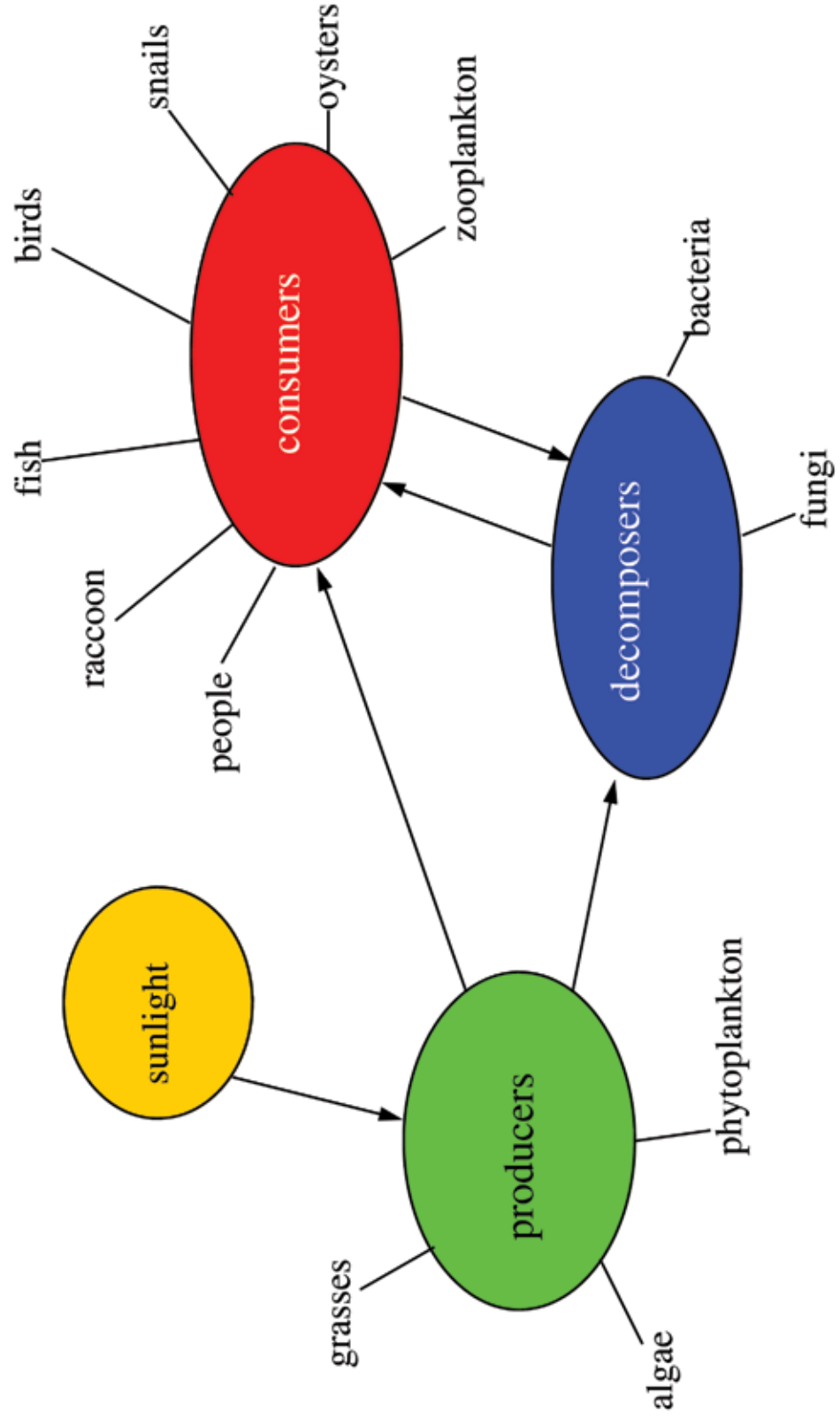
The ecological niche is an organism's role in an ecosystem or food web.



Marine Food Web

Marine Food Web

COPY ME!



Huntington Beach: *On-Site*

Content Area:
Science

Grade Level:
5

Time to Complete:

Title of Program:
Life in the Marine Ecosystem:
Up Close and Personal

Lesson Description

The following activity was designed to provide an opportunity for the students to observe and touch some micro and macro organisms, and to learn how they function in the marine ecosystem.

Focus Questions

1. Discuss the similarities and differences of producers on land and the producers in the ocean.
2. Discuss the organisms' niches in their ecosystem.
3. Distinguish among the roles organisms serve in the food chains.

Materials/Equipment/Resources

The park's Education Center staff will provide several specimens of marine organisms for viewing with and without a microscope. Specimens will consist of organisms such as phytoplankton (diatoms and dinoflagellates), spartina, mud snails, marsh periwinkles, fish and other seasonal creatures. Clipboards, note paper and pencils will be supplied by the park.

Procedures

The Park Interpreter will review the marine ecosystem and explain how to use the microscopes. The students will be asked to view each specimen and make notes and drawings. These will be used to answer the focus questions.

South Carolina State Standards Addressed

Standard 5-2:

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Indicators

5-2.2 Summarize the composition of an ecosystem, considering both biotic factors (including populations to the level of microorganisms and communities) and abiotic factors.

5-2.3 Compare the characteristics of different ecosystems (including estuaries/salt marshes, oceans, lakes and ponds, forests, and grasslands).

5-2.4 Identify the roles of organisms as they interact and depend on one another through food chains and food webs in an ecosystem, considering producers and consumers (herbivores, carnivores, and omnivores), decomposers (microorganisms, termites, worms, and fungi), predators and prey, and parasites and hosts.



Producer, Consumer or Decomposer?



Producer, Consumer or Decomposer?

Use P, C, or D to indicate whether an organism is a Producer, Consumer or Decomposer.

Oyster _____

Diatoms _____

Clam _____

Crab larva _____

Bacteria _____

Periwinkle snail _____

Mud snail _____

Spartina (cordgrass) _____

Sea star _____

Codium (dead man's fingers) _____

Gull _____

Fiddler crab _____



Huntington Beach: *Post-Site*

Content Area:
Science

Grade Level:
5

Time to Complete:

Title of Program:
Life in the Marine Ecosystem:
Up Close and Personal

Lesson Description

The following activity was designed to assess the students' understanding of the marine ecosystem.

Focus Questions

1. Compare the importance of each organism in the marine ecosystem.
2. Discuss what could happen if a specific organism is removed.
3. Analyze the effect that would occur in the salt marsh if one of the abiotic (non-living) components is changed or removed.
4. Discuss what you, your family and friends do to help preserve the marine ecosystem.
5. Which organisms (producers or consumers) would have the greatest number of individuals in a population?

Culminating Assessment

Create a marine food web showing producers, consumers and decomposers.

Activity

1. The students will take the list of organisms (lab sheet) they used in the classroom and number the organisms in order of importance to the ecosystem, with 1 being the most important.
2. Total the numbers on the board of each student's decision.
3. Discuss how they came to the conclusion as to which was the most important and which was the least important. The object of the discussion is to determine that all of the components are important.
4. The students will then be asked to use some of the organisms on the P, D, C page and draw a food web and determine their niche.

South Carolina State Standards Addressed

Standard 5-2:

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Indicators

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