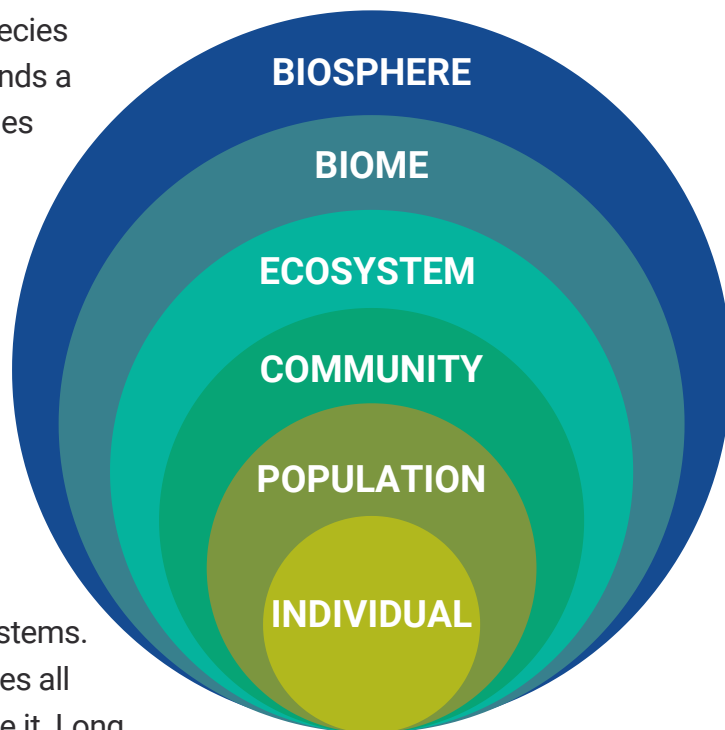




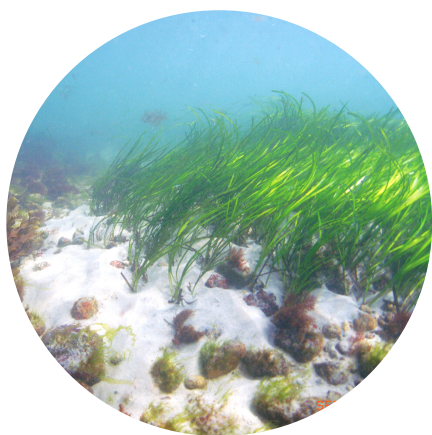
HABITATS AND NICHES

Long Island's Coastal Ecosystem

A **habitat** is the natural environment in which a particular species of organism lives, or the physical environment which surrounds a **population** of **individuals**. The habitat of an organism includes where that organism finds food, protection and mates. The **ecosystem**, in which habitats are found, are characterized by **abiotic** (non-living) and **biotic** (living) factors. These factors affect the traits an organism must have in order to survive in that ecosystem, thus determining the **community** of species interacting together in a given area. Some organisms have a very specific set of conditions they must live in, while others can tolerate a wider variety of conditions in their habitat. **Biomes** are geographic areas characterized by abiotic factors such as water availability, temperature range, etc. and consist of a collection of ecosystems. The **biosphere** is the broadest level of organization; it includes all life on Earth, as well as the nonliving elements that influence it. Long Island's coastal ecosystem is a diverse collection of aquatic habitats including sandy beaches and dunes, salt marshes, rocky intertidal zones, mudflats, submerged aquatic vegetation beds, shellfish reefs, estuaries and more! These habitats are vitally important to the people who live and visit here, as well as the diverse array of species that depend on these habitats to thrive. Our coastal ecosystems are environmentally and economically important, providing resources and services that makes living on Long Island so unique.



Examples of Long Island's Coastal Habitats



Eelgrass meadows are the most biodiverse marine habitats in our region



Coastal sand dunes form natural barriers and protection from storm damage



Salt marshes are highly productive and are a natural filter between land and sea



Examples of Long Island's Coastal Habitats



The rocky intertidal is one of the most physically harsh environments on earth



Oyster reefs provide habitat while simultaneously benefiting water quality



Estuaries are where fresh water from the land and salt water from the ocean mix.

Each organism plays a particular role in its ecosystem. This role is called a species' **niche**. Niche is often confused with habitat. A habitat is the **location** and set of conditions the organism lives under. A niche describes how an organism is adapted to its environment and what it does in its environment. The niche relates to the organism's role in the flow of **energy and nutrients** through the ecosystem. No two species can fill the same niche in a habitat or one will eventually out compete the other, forcing the other to adapt or else risk extinction.

Differentiating Habitats and Niches



Habitat: Sandy beach



Species: Piping Plover

Niche:
Hunts for insects and small invertebrates, serves as an indicator species and provides beach cleaning services by controlling insect populations along sandy beaches.



Species: American Oystercatcher

Niche:
Pries open bivalve shells with its knifelike bill and probes sand for worms and crabs. Oystercatchers help regulate mollusk and crustacean populations.



Habitat Restoration with Cornell Cooperative Extension Marine Program

Habitat destruction or loss is when there is a reduction of habitat available to the organisms within that habitat. Habitat loss can cause a population to decrease and, if bad enough, can cause species to go extinct or otherwise disrupt the vital balance of our coastal ecosystems. Long Island's coastal habitats are not only significant environmentally, but also economically for those of us who live and work here.

Cornell Cooperative Extension Marine Program's Habitat Restoration Program has been actively restoring coastal habitat on Long Island for over 30 years. Coastal habitats have been destroyed throughout history to make way for buildings, canals and hardened shorelines. Now that we have a better understanding of the value of the marine ecosystem, local governments as well as waterfront home-owners are choosing to convert shorelines back to their natural state, and utilize mother nature's best line of defense for protecting Long Island's shores.

Eelgrass Restoration



Salt Marsh Restoration



Beach Grass Restoration





HABITATS AND NICHES

After reading the text, answer the following questions.

Question 1. Define habitat and list examples of coastal habitats found around Long Island.

Question 2. Explain the difference between biotic and abiotic factors. Provide examples of each.

Question 3. Is a salt marsh a habitat? Why, or why not? Support your answer using evidence from the text.

Question 4. Do humans live in habitats? Why, or why not? Support your answer using evidence from the text.

Question 5. Explain the difference between a species' habitat and its niche.



Identify the habitat and the niche for each organism shown below



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Identify the habitat and the niche for each organism shown below



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:



Habitat:

Niche:

