Habitat Fact Sheets

Habitats in the Gulf of Maine serve many important roles for the environment and for humans as well. These include: cycling nutrients, filtering pollution, trapping sediments, storing carbon, buffering upland areas from storm damage, providing recreation opportunities, and supporting productive fisheries.

Physical Habitats

-Physical habitats are characterized mainly based on substrate and water depth.
-Substrates include mud, sand, rock and water column habitats and accommodate different organisms in each.
-Water depth is similarly diverse in that organisms need various levels of sunlight and can be found as shallow as inter tidal areas to deep-sea environments.

Rocky habitats

Rocky habitats are dominated by seaweeds and often mussels, which rely on the rocks for attachment.

Ecological Functions:

- Rocky habitats provide homes for many animals and plants.

Economic and Recreational Value:

- Various seaweeds are commercially harvested in Maine
- Tourists, scientists, and students all use rocky shorelines, tide pools, etc as an educational and recreational activity.

Management Considerations:

- Development along the coast can cause both direct and indirect damage to rocky shorelines and intertidal habitats.
- Mussel and fish trawling disturb rocky bottoms often uprooting seaweeds and sea grasses and thereby alters the habitat.

Sandy Habitats

Sandy habitats include dunes, beaches, and sandy subtidal bottoms all of which are composed primarily of quartz in the Gulf of Maine region.

Ecological Functions:

- Dunes serve as nesting habitats for many species of birds, some of which are endangered and rely on this specific habitat.
- Certain species of fish hide in the ridges of sandy bottoms, often blending into the sea floor.

Economic and Recreational Value:

- Commercially important species such as surf clams, quahogs, winter flounder, summer flounder, and Atlantic halibut are found in sandy habitats.

Management Concerns:

- Commercial and residential development on sand dunes has the greatest impact on these habitats.
- Trawling changes the species composition and often reduces the biomass of species not being targeted for trawling.

Muddy Habitats

Muddy bottoms are areas of fine sediments that may be unvegetated or covered by green algae and occur in calm, wave sheltered environments.

http://www.patriotledger.com/photos-wild/x700951894/On-a-clam-quest-in-Duxbury

Ecological Functions:

- Muddy habitats are a good home for burrowing animals such as clams, crustaceans, and worms, which in turn help facilitate nutrient cycling so that oxygen is continually circulating.

Economic and Recreational Value:

- Mud flats support important recreational and commercial fisheries for soft shell clams, jack knife clams, quahogs, bloodworms, sand worms, etc.

Management Concerns:

- Muddy habitats are extremely susceptible to pollution because they are in areas where waves and currents are weak and the retention time of chemicals in mud tends to be quite long.
- Fishing gear disturbs the organisms living on the bottom surface and significantly alters the bottom habitat and species composition.

Water Column Habitats

The water column is the space between the sea floor and sea surface, which is characterized by a lack of solid substrate.

http://www.mainelakedata.org/WCFall2010/Lakeside.php

Ecological Functions:

- Water column habitats are highly productive due to the constant mixing of nutrients and stirring of oxygen.

Economic and Recreational Values:

- The economy of many coastal towns is highly dependent upon fishing and other industries associated with the Gulf of Maine.

Management Concerns:

- Runoff from sewage drains, roads, fields, etc goes directly into the water column, which can lead to poor water quality.

Biogenic Habitats

Habitats that are created by plants and animals, which provide a unique living environment for other organisms

Salt Marshes

Salt marshes are grass-dominated habitats that span from the low intertidal zone to the upper limits of the highest high tides.

http://science.kennesaw.edu/~jdirnber/oceanography/LecturesOceanogr/LecSaltMarsh/LecSaltMarsh.html

Ecological Functions:

- Salt marshes absorb carbon dioxide and other excess nutrients, and help improve water clarity.

Economic and Recreational Values:

- Commercial species use these habitats during different points of their life cycles for protection, food, and continuation of the food web
- Bird watching, kayaking, canoeing, and other outdoor activities can be done here.

Management Concerns:

- Coastal development, roads, highways, etc. all divide these habitats which greatly inhibits their function.

Seagrass (Eelgrass) Beds

Seagrass is a flowering plant that lives in low intertidal and subtidal marine environments.

http://www.gulfofme.com/products.php?cat=8

Ecological Functions:

- Seagrass beds make-up a large part of productivity cause by photosynthesis.
- They also improve water quality, stabilize sediments, support a large species diversity, and act as a nursery for many organisms.

Economic and Recreational Values:

- Seagrass beds are nursery grounds for commercially fished organisms such as cod, scallops, mussels, and flounder.

Management Concerns:

- Water clarity, excess nutrients, and disease all contribute to loss of seagrass beds.
- Trawling is another major cause for loss of seagrass beds, especially in the Gulf of Maine.

Shellfish Beds

http://www.yourlocalweb.co.uk/pembrokeshire/bryn-henllan/pictures/

Ecological Functions:

- Some mollusks form large, dense, beds that provide protection to other small animals and serve as sites of attachment for others.

Economic and Recreational Values:

- Blue mussels are commercially harvested in the Gulf of Maine via trawling and aquaculture as a livelihood for many people.

Management Concerns:

- Shellfish beds are threatened by many things including a decline in water quality, an increase in sediment deposits, dragging in shellfish beds, and the rising water temperature due to global warming.

Information from Gulf of Maine Habitat Primer: http://www.gulfofmaine.org/habitatprimer/

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