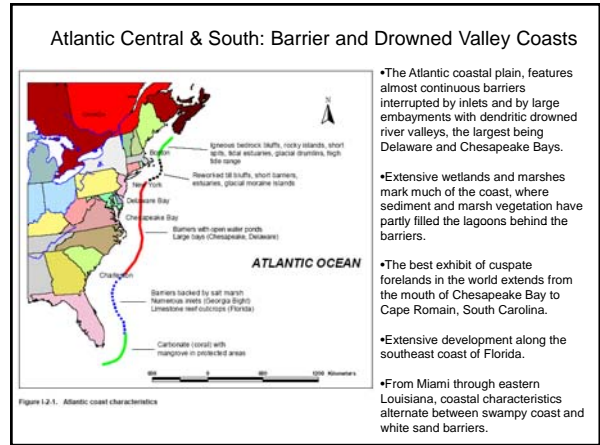
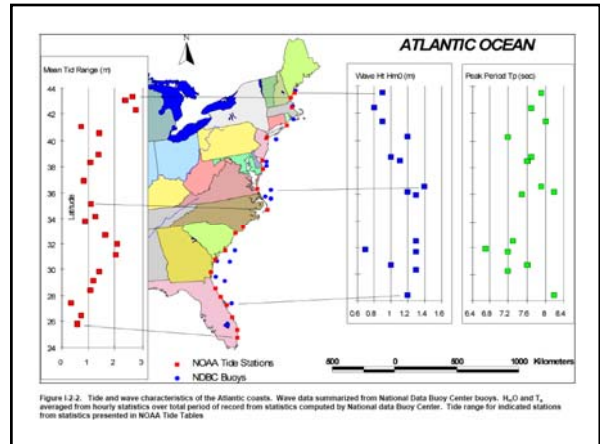
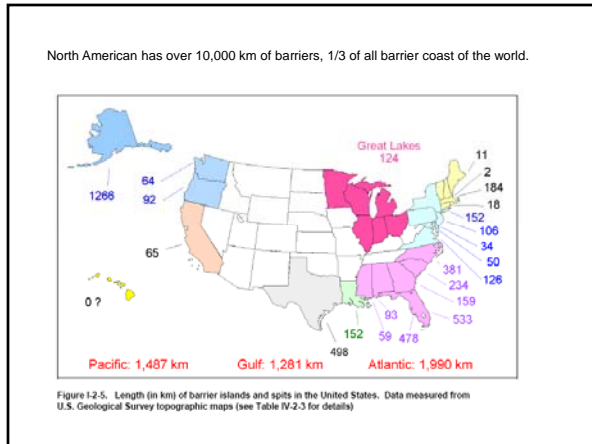


- Coasts are deeply indented and bordered by numerous rocky islands.
- The embayments usually have straight sides and deep water as a result of erosion by the glaciers.
- Uplifted terraces as a result of isostatic rebound.
- Moraines, drumlins, and sand dunes, the result of reworking outwash deposits, are common features.
- Glaciated coasts in North America extend from the New York City area north to the Canadian Arctic, on the west coast, from Seattle, Washington, north to the Aleutian Islands, and in the Great Lakes. (Shepard 1982).



- The Atlantic coastal plain, features almost continuous barriers interrupted by inlets and by large embayments with dendritic drowned river valleys, the largest being Delaware and Chesapeake Bays.
- Extensive wetlands and marshes mark much of the coast, where sediment and marsh vegetation have partly filled the lagoons behind the barriers.
- The best exhibit of cusped forelands in the world extends from the mouth of Chesapeake Bay to Cape Romain, South Carolina.
- Extensive development along the southeast coast of Florida.
- From Miami through eastern Louisiana, coastal characteristics alternate between swamped coast and white sand barriers.



The Atlantic & Gulf of Mexico: Coral and Mangrove Coasts



Figure 1.2.1. Atlantic coast characteristics

•The barrier islands change from quartz sand south of Miami to carbonate-dominated sand, eventually transforming into coral keys and mangrove forest.

•Live reefs along the east and south side of the keys and the shallows of Florida Bay studded with mangrove islands extending north and west into the Everglades and the Ten Thousand Islands area that comprises the lower Florida Gulf of Mexico coast.

Gulf of Mexico: Wetland Mangrove, and Barrier Coasts



Figure 1.2.8. Gulf of Mexico coastal characteristics

Sand supply is limited (limestone bedrock), so barriers are present only where there is a significant source, otherwise the coast is characterized by swamps.

Enclosed bays usually have an abundance of mangrove islands and the topography is low with many lakes and marshes.

Low wave energy environment.

The Mississippi River has built a series of deltas into the Gulf of Mexico, the most recent Balize Delta (bird foot) has an average age of 1500 years.

Most of the greater Mississippi delta is marshland and mud flats, with numerous shallow lakes and intertwining channels.

Gulf of Mexico West: Barrier Coast

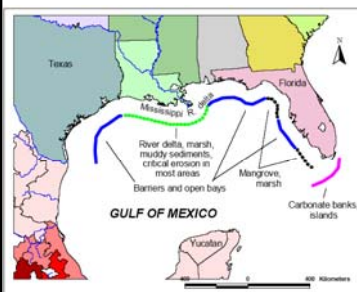


Figure 1.2.8. Gulf of Mexico coastal characteristics

•Barrier Island become the dominant coastal feature from the Mississippi Delta through Texas.

•Some of the longest barrier islands in the world are located along the Texas coast. Padre Island and Mustang Island, combined, extend for 208 km and feature extensive dune fields behind the broad beaches. The dunes rarely rise more than 10 m in height, and many marshy wash-over deltas have extended into the large lagoons behind the barriers.

•Extreme wind driven circulation. A large part of Laguna Madre is only inundated during flood periods or when the wind blows water from Corpus Christi Bay onto the flats.

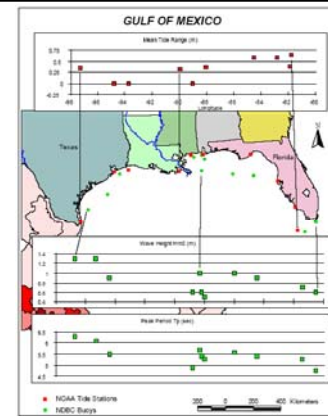


Figure 1.2.9. Tide and wave characteristics of the Gulf Coast

Pacific: Sea Cliffs and Terraced Coasts

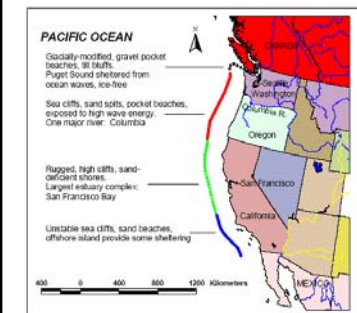


Figure 1.2.10. Pacific coastal characteristics

•Low sea cliffs bordered by terraces and a few coastal plains and deltas compose the coasts of southern California.

•Sea cliffs in this area are actively eroding, particularly in areas where they have been cut into alluvium.

•Despite the presence of a series of regional mountain ranges that cut across the coast, the rugged central and northern California coast is one of the straightest in the world. This area has high cliffs with raised marine terraces. A few broad river valleys interrupt the mountainous coast. Washington were founded in sheltered water bodies.

Pacific: Sea Cliffs and Terraced Coasts

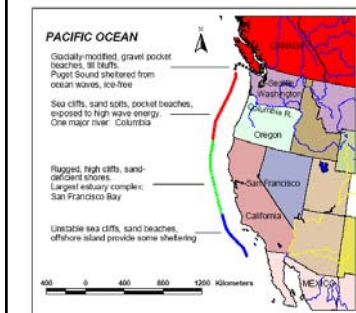
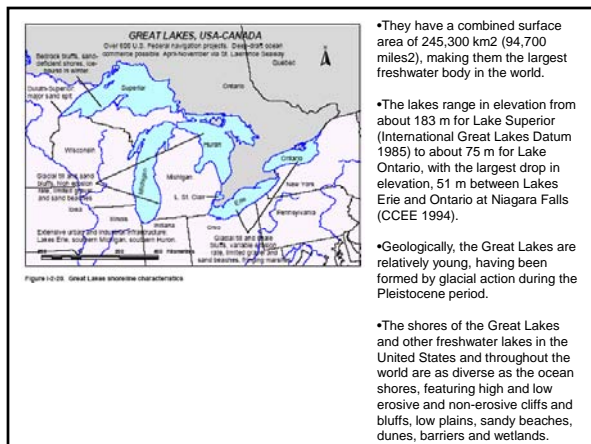
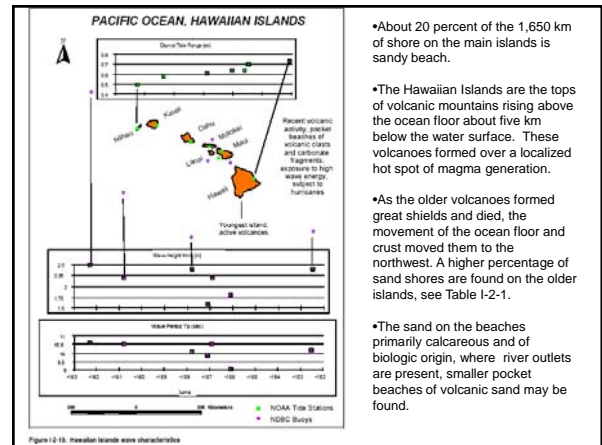
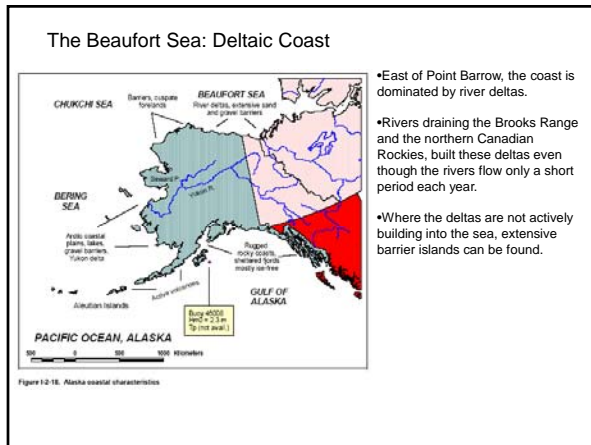
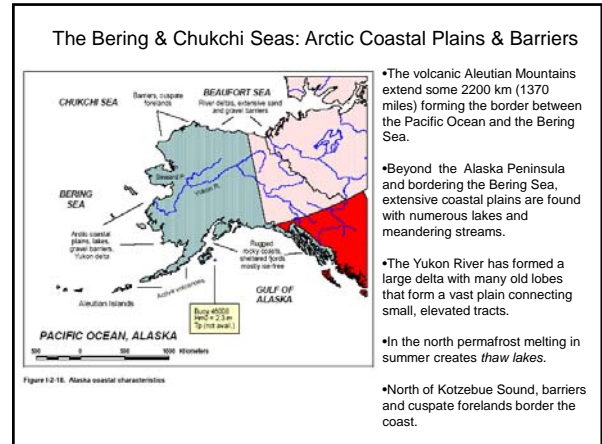
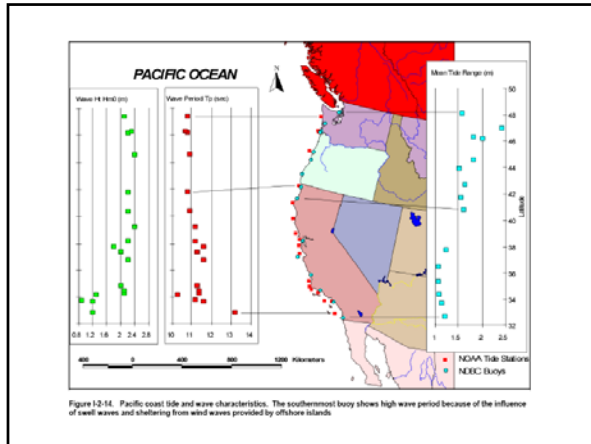


Figure 1.2.10. Pacific coastal characteristics

•North of Cape Mendocino, the coast trends almost directly north, through Oregon and Washington, to the Strait of Juan de Fuca. Barriers or spits have formed at river mouths.

•Because of the North Pacific Ocean harsh wave climate, all of the major cities in Oregon and Washington were founded in sheltered water bodies.



- They have a combined surface area of 245,300 km² (94,700 miles²), making them the largest freshwater body in the world.
- The lakes range in elevation from about 183 m for Lake Superior (International Great Lakes Datum 1985) to about 75 m for Lake Ontario, with the largest drop in elevation, 51 m between Lakes Erie and Ontario at Niagara Falls (CCEE 1994).
- Geologically, the Great Lakes are relatively young, having been formed by glacial action during the Pleistocene period.
- The shores of the Great Lakes and other freshwater lakes in the United States and throughout the world are as diverse as the ocean shores, featuring high and low erosive and non-erosive cliffs and bluffs, low plains, sandy beaches, dunes, barriers and wetlands.