

Inland Sea and Barrier Islands



Barrier islands are long, narrow, offshore deposits of sand or sediments that parallel the coast line. Some barrier islands can extend for 100 miles (160 km) or more. The islands are separated from the main land by a shallow sound, bay or lagoon. Barrier islands are often found in chains along the coast line and are separated from each other by narrow tidal inlets, such as the Outer Banks of North Carolina.

The formation of barrier islands is complex and not completely understood. The current theory is that today's barrier islands were formed about 18,000 years ago when the last Ice Age ended. As the glaciers melted and receded, the sea levels began to rise, and flooded areas behind the beach ridges at that time. The rising waters carried sediments from those beach ridges and deposited them along shallow areas just off the new coast lines. Waves and currents continued to bring in sediments that built up, forming the barrier islands. In addition, rivers washed sediments from the mainland that settled behind the islands and helped build them up.

Barrier-island Zones

The structure of a typical barrier island consists of the following zones, from the ocean side toward the sound:

- **Beach** - consists of sand deposited by the actions of waves
- **Dunes** - formed from sand carried and deposited by winds. Dunes are stabilized naturally by plants (sea oats, bitter panicum) and artificially by fences. The primary dune faces the ocean and may be followed by secondary and tertiary dunes inland.
- **Barrier flat** - (also called backdune, overwash or mud flat) formed by sediments that get pushed through the dune system by storms, such as hurricanes. Grasses grow and stabilize these areas.
- **Salt marsh** - a low-lying area on the sound-side of a barrier island. Salt marshes are generally divided into high and low marsh areas. High marsh areas get flooded twice each month with the spring tides, while low marsh areas get flooded twice daily with the high tides. Cord grasses stabilize the salt marsh area, which are one of the most ecologically productive areas (amount of vegetation per acre) on Earth. In fact, the salt marsh ecosystems of the islands and the coast help to purify runoffs from mainland streams and rivers.