

Coastal Protection





Protection Methods

- **Structural Methods**
- **Non structural Methods**

Structural Methods

- Seawalls
- Bulkheads
- Revetments
- Dikes and Levees
- Breakwater
- Groins
- Jetties and Piers

Seawalls

- separating land and water areas.
- massive structures.
- resisting the full force of waves.
- to prevent coastal erosion.
- to prevent damage due to wave action and flood.

Seawalls



Bulkheads

- smaller than seawalls.
- not to resist coastal erosion.
- to prevent the sliding of land at the transition between land and the sea.
- vertical wall build in concrete, stone, steel, timber.

Bulkheads



Revetments

- sloping structure construct using natural stones, concrete blocks.
- only protects against erosion, not flood.
- used at locations exposed to erosion.
- absorb the energy of water.
- negative impact on the sediment budget along adjacent shorelines.

Revetment



Dikes and Levees

- embankment, flood bank or stop bank.
- boundary line of the sea.
- build in dry stones.
- to prevent the soil erosion.
- to prevent land slide.
- regulates water levels.
- parallel to the course of a river.

Dike and Levee



Breakwater

- small structures.
- fixed or floating, impermeable or permeable to allow sediment transfer shoreward of the structure.
- parallel or perpendicular to the coast.
- reduces the power of wave so wont eroded the cliffs as much.

Breakwater



Groins

- fences that go along the beach at angles to prevent long shore drift.
- absorb energy of coming water.
- catches and traps sediment to prevent it from moving up the beach.
- replaced every 15-20 years.
- build in timber, steel, concrete, stones.

Groins

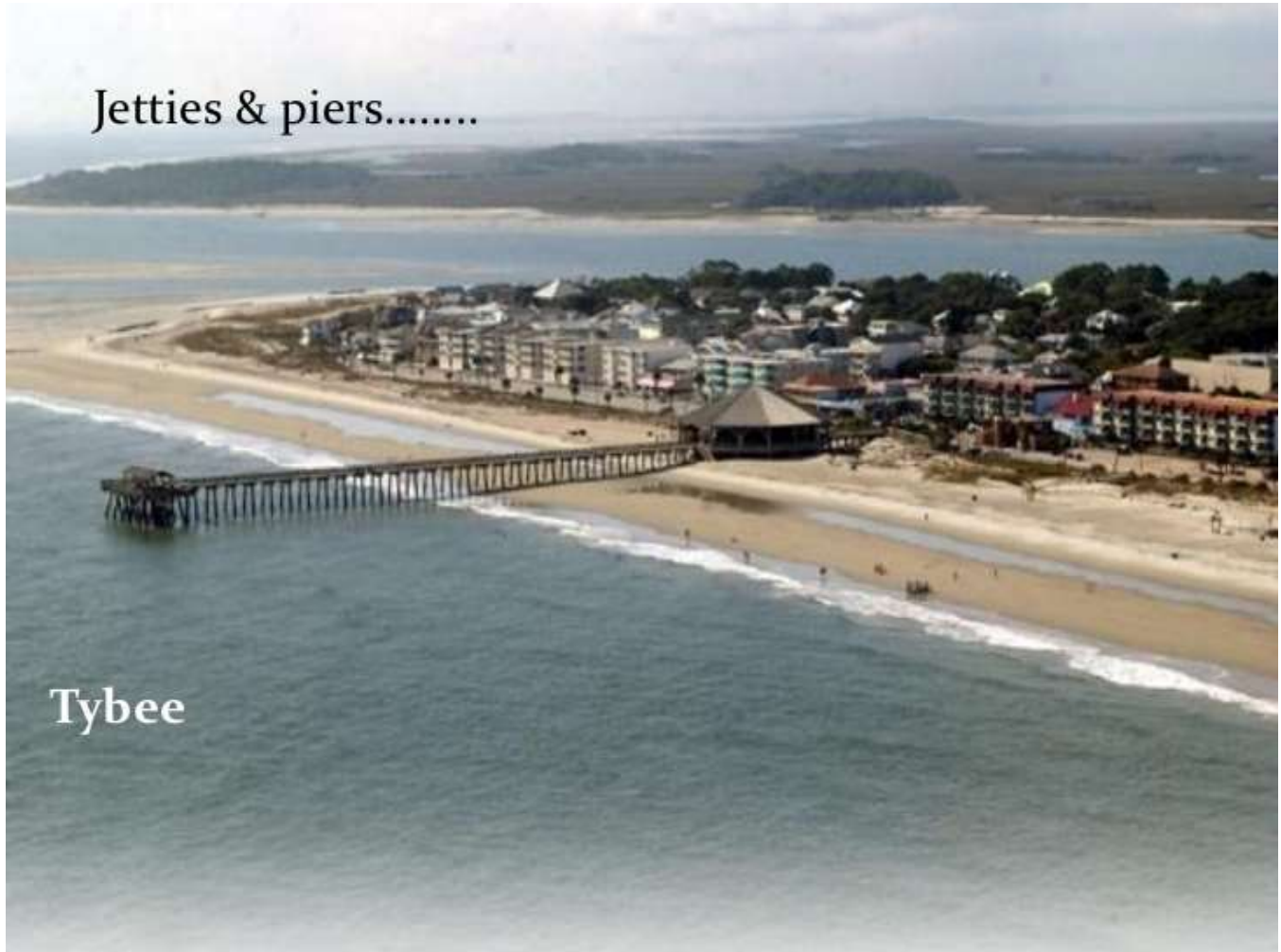


Jetty and Pier

- long, narrow structure.
- made of stone, concrete.
- protect the shoreline of the body of water by acting as a barrier against from currents, tides, waves.
- connect with deep water (docking ships)

Jetty and pier

Jetties & piers.....



Tybee



Non structural methods

Non structural methods

- Vegetation planting.
- Beach nourishment.

Vegetation planting

- best natural protective measures against coastal flooding.
- trap and hold the sand.
- important role in stabilizing the surface against wind erosion and provides habitat for wildlife.
- provides a source of sand to replenish the beach during periods of erosion.

Vegetation Planting



Beach Nourishment

- another name-Beach filling.
- adding large quantity of sand or sediment to beaches.
- to resist erosion and increase the beach width.
- not a long term solution to beach erosion.
- the sudden input of massive amount of sand can kill all the animals living on the beach.

Beach Nourishment





THANK
YOU