

Inquiry Image Investigation Answer Sheet

1. This feature is a spit. Longshore transport has caused accretion, or the buildup of sand, on the southeastern end of the island.
2. This structure is a groin. The direction of the longshore current is east to west (looking at this picture). Buildup of sediment is on the right side of the groin, while the beach on the left side is being deprived of sediment. Groins are temporary solutions for sediment stabilization, and interfere with the natural processes of barrier island dynamics. Stabilization implemented on one barrier island eventually deprives sediment transport to adjacent islands. Thus, facilitating erosion.
3. These features are washover fans. Washover fans are composed primarily of sand, and form from large storms which transport sand from the oceanside of the island to the backside. Washover fans are characteristic of transgressive barrier islands.
4. These sediments appear out of place on the beach front. This sediment is evidence of ancient marsh which was carried from the backside of the island to the frontside. These areas show evidence of transgression, and indicate that the island is eroding extremely fast.
5. These areas represent overwash on the beach front dunes which have been severely eroded. The increased erosional state of Folly Island's south end was determined to be the result of the U.S. Army Corps of Engineers renourishment project.
6. The Morris Island Lighthouse is currently located offshore of Morris Island due to three factors: rise in sea-level, subsidence of the land, and the cut off of sediment due to construction of the Charleston Harbor Jetties.
7. This walkover was originally constructed to cross over the dunes to get to the beachfront.. The dune system underneath has been eroded, leaving the walkover in the middle of the beach. This erosion was induced by the Army Corps of Engineers' renourishment project.
8. This structure is a seawall. Seawalls are constructed in front of buildings located on the beachfront and are intended to prevent erosion. Incoming waves are partially reflected and the sediment in front of the wall is removed. Larger seawalls must replace the former ones to replace the loss of beach.
9. The presence of a groin on any island is indicative of measures taken to account for erosion.
10. The "Washout" area is a thin, narrow part of Folly Island that has been breached by storm surge that deposited sand on the backside of the island.
11. These are located on the adjacent ends of barrier islands. Students should notice sand bars and waves. The function of tidal inlets in barrier island processes includes providing sand that will be deposited on the front side of the island; And it also serves to remove excess water and sediment from storm surge.
12. The blue profile represents a wider and more continuous beach profile than the red one. A wider profile indicates that the benchmark is located in a relatively stable area (low wave energy). The red profile represents a steeper beach face indicating an area of the beach that experiences more wave energy.
13. The blue profile represents the south end of Folly Beach which is eroding faster than the north end.
14. The red profile represents the beach after Hurricane Hugo which indicates a steeper profile.