South Carolina

Annual State of the Beaches Report

2007

Ocean and Coastal
Resource Management

Introduction

The following report summarizes changes to South Carolina's beaches during 2006 (January to December). The results are based on beach profile surveys conducted during 2006 at 221 monitoring stations throughout the state using 243 unique beach profiles. Surveys start at a benchmark located landward of the primary dune or seawall, and at most stations continue down the beach face to a depth of -25 ft or an offshore distance of 3,000 ft, whichever is reached first. Across the dune, data are collected on foot using a Global Positioning System (GPS) receiver. On the upper beach and intertidal beach at low tide, data are collected using a GPS receiver carried on a pole mount or mounted on an ATV 4-wheeler. For the offshore portion of the profile, data are collected from a boat with a GPS receiver and fathometer. These three data sets can then be integrated into one seamless beach profile, which shows a cross-section of the beach shape at the time of the survey. The data can then be compared to similar data from previous years to determine what changes have occurred to the beach profile.

The reference elevation used for data collection and for all elevations discussed in this report is the North American Vertical Datum of 1988 (NAVD88), which is approximately the same as mean sea level. Profiles are analyzed for dune erosion or scarping, changes in beach slope, and changes in unit-width sand volume, the amount of sand from the dune down to a chosen cutoff elevation per linear ft of shoreline. The presence or absence of a berm, the shelf of dry sand between the dune and the high-water mark, is noted, as well as any sand bars and corresponding troughs. Berm width is particularly important, since it represents the amount of recreational dry-sand beach seaward of the dune that is available at high tide.

Most beaches in South Carolina go through a yearly cycle of profile change. In the summer, smaller waves tend to push sand up the beach, forming a wider berm and a steeper beach slope below mean high water. In the winter, higher energy waves erode sand from the berm and move it to an offshore bar, resulting in a narrower high-tide beach and a more gently sloping beach below mean high water. In many cases this seasonal profile variation is greater in magnitude than the long-term trend for a particular

island or beach—that is, the change observed from October to April and then from April back to October can be greater than the change observed for consecutive Aprils or Octobers.

As called for under the Beachfront Management Act, all beaches in the state have been classified as standard zones or inlet zones. Inlet zones are regions in close proximity to a tidal inlet, where the presence of the inlet plays a dominant role in erosion or accretion patterns on the beach. Most inlet zones are unstabilized, meaning the inlet channel is not anchored by jetties or groins, and the surrounding shoreline is often quite dynamic. In general, the larger Sea Islands in Charleston and Beaufort counties consist of a standard zone in the central portion of the island and an inlet zone at either end. The smaller Sea Islands are entirely inlet zones. In the Grand Strand, the shoreline is a continuous standard zone, interrupted by small inlet zones at the swashes.

The remainder of this report contains individual summaries for each island or beach in the state surveyed during the past year. The area from Capers Island to North Island is essentially undeveloped and is not surveyed. Summaries are presented in a south-to-north progression. The geographic setting of each beach is discussed, along with any significant long-term trends. A location map is also provided showing survey monument locations. Finally, a state-wide summary is found at the end of the report.

Plots for any individual monitoring station can be viewed on the internet at http://gis.coastal.edu/pmas, a web site developed and maintained by Dr. Scott Harris at Coastal Carolina University in Conway, SC. Please see the DHEC website at http://www.scdhec.net/environment/ocrm/ for information about any changes to this beach profile data website as well as information about the beachfront permitting process.

Regional Summaries

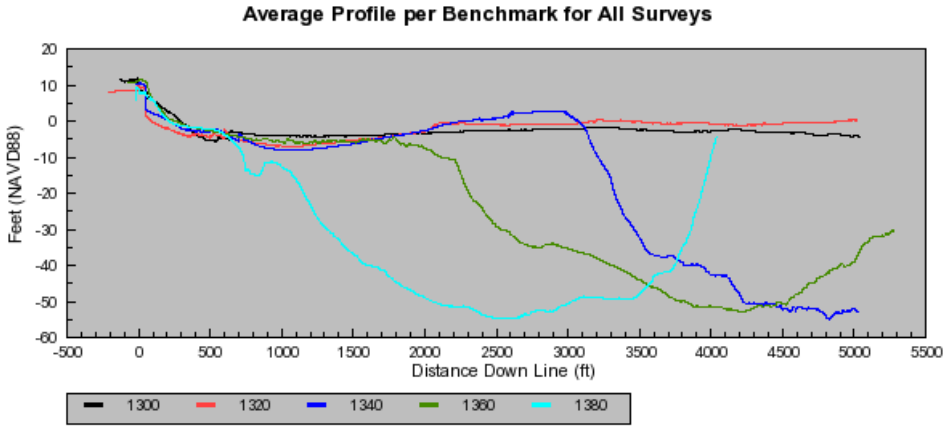
Daufuskie Island

Daufuskie Island is located to the south of Hilton Head Island, between Calibogue Sound to the northeast and Mungen Creek to the southwest. The entire island has been classified as an unstabilized inlet zone. A renourishment project was constructed here in December 1998, and has performed very well over the past 8 years. Long-term erosion rates on the island average -4 to -5 ft per year but go as high as -10 to -11 ft per year in places. Beginning at the northeast end of the island in the Melrose Tract and moving southwest, erosion rates begin at -1 ft per year but quickly increase to -7 ft per year near the clubhouse, then reach a maximum of -11 ft per year along the southern end of the Melrose Tract and in the northern end of the Oakridge Tract. There is a wooden bulkhead approximately 4,000 ft long in this area.

Benchmark	Profiles Collected in 2006	Profiles Collected in 2005	First Survey Year	Total Profiles through 2006
1380	None	08/05	1988	21
1360	None	08/05	1988	25
1340	None	08/05	1988	22
1320	None	08/05	1988	25
1300	None	08/05	1988	23

At the southwest end of the Oakridge Tract the long-term erosion rate decreases to about -6 ft per year, and continues to decrease to about -4.5 ft per year through much of the Bloody Point tract. At the southern end of the Bloody Point tract, at Bloody Point, the rate increases again to a maximum of approximately -8.5 ft per year. This area is very dynamic; it experienced extreme short-term erosion during much of 2001 and 2002, and then became highly accretional in 2003.

There are a total of 12 monitoring stations on Daufuskie Island, with the earliest beach survey data collected in 1988. Five of these 12 stations were surveyed most recently in October 2002 and August 2005. At station 1300, in the Oak Ridge tract just south of the bulkhead, the beach is still 100 ft wider and 8 ft higher than it was prior to renourishment. At station 1320, in the Melrose Tract about 1200 ft north of the southern end of the bulkhead, the beach is also still 100 ft wider and 8 ft higher than it was prior to renourishment. At 1340, the other station along the bulkhead in the Melrose Tract, the renourishment sand berm has cut back to about half its original width but is still about 75 ft wide. North of the bulkhead station 1360 has been fairly stable since 2002 and still shows a substantial beach renourishment sand berm. At station 1380, located at the northeast end of the development, the renourishment sand berm is also still 150 ft wide and 6 ft high.

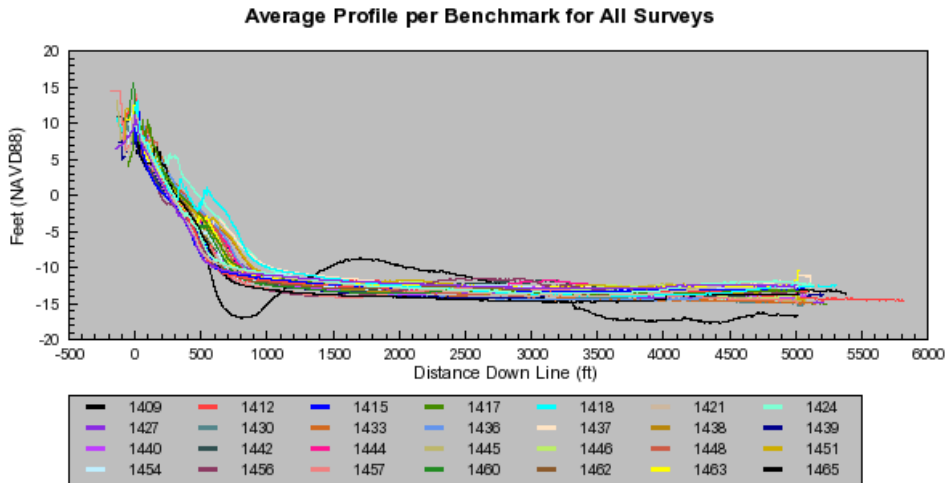


Hilton Head Island

Hilton Head Island, located between Calibogue Sound to the southwest and Port Royal Sound to the northeast, is one of the state's largest barrier islands. Hilton Head Island can be divided into five geomorphologic reaches, which are each discussed below. A beach renourishment project placed 2.5 million cubic yards of sand on the Hilton Head shoreline between May and November 1997, and another project of similar magnitude was constructed during the summer of 2006, which prevented beach survey data from being collected. Most recent beach survey data was collected in August 2005.

Benchmark	Total Profiles Collected in 2006	Total Profiles Collected in 2005	First Survey Year	Total Profiles
1478	None	None	1988	31
1477	None	None	1990	24
1475	None	08/03	1988	35
1474	None	08/03	1990	23
1472	None	08/03	1988	29
1468	None	08/03	1998	6
1466	None	08/03	1998	6
1465	None	08/03	1998	7
1463	None	08/03	1988	30
1462	None	08/03	1990	30

1460	None	08/03	1988	31
1457	None	08/03	1988	30
1456	None	08/03	2002	3
1454	None	08/03	1988	36
1451	None	08/03	1988	31
1448	None	None	1998	1
1446	None	08/03	1990	24
1445	None	08/03	1988	36
1444	None	08/04	1990	23
1442	None	08/04	1988	31
1440	None	08/04	1990	25
1439	None	08/04	1988	31
1438	None	08/04	1990	30
1437	None	08/04	1990	12
1436	None	08/04	1998	7
1433	None	08/04	1988	32
1430	None	08/04	1988	36
1427	None	08/04	1988	30
1424	None	08/04	1998	7
1421	None	08/04	1988	30
1418	None	08/04	1988	36
1417	None	08/04	1990	23
1415	None	None	1988	29
1412	None	None	1988	32
1409	None	None	1998	5



The portion of Sea Pines Plantation bordering on Calibogue Sound is an unstabilized inlet zone, subject to the influence of the Sound. The long-term shoreline change rate is 2 to 5 ft per year of accretion. This area experienced moderate erosion during the mid 1990's and was not renourished as part of the big 1997 project, but was renourished in the winter of 1999. SCCC monuments 1400-1409 are located here. As a result of the 1999 renourishment the beach width here was increased by as much as 250

ft, and even with some erosion over the past 5 years is still more than adequate. Most stations here were stable to slightly accretional during the most recent survey period.

The second zone on Hilton Head is a 10 mile-long standard zone that extends from station 1412 in Sea Pines Plantation to station 1469, just south of the Folly. This area includes South Forest Beach, North Forest Beach, and Palmetto Dunes. Both North Forest Beach and Palmetto Dunes were included in the 1997 renourishment project, which began at the Hilton Head Inn. Long-term shoreline change rates vary in this zone--they are accretional south of Coligny Circle and erosional north of Coligny Circle, with the rate of erosion increasing with distance from the Circle and reaching a maximum of -6 ft per year in Palmetto Dunes.

All stations in Sea Pines, from monument 1412 through 1424, were stable or showed slight accretion on the intertidal beach. This area is generally the most stable to accretional section of Hilton Head Island, and has a well-established dune. Most stations in South Forest Beach, 1427 through 1436, also showed a trend of minor upper-beach accretion last year. This area is also stable in the long-term, with a well-established dune.

In North Forest Beach and Palmetto Dunes the long-term shoreline change rates become erosional. Beach profiles here showed sand deficits prior to renourishment, but unit-width volumes increased dramatically as a result of the 1997 beach fill project. Stations 1437 through 1448, located in North Forest Beach, showed substantial erosion of the renourishment berm between September 1998 and November 1999, but only minimal loss of renourishment sand since then. The area became more erosional during the past year, with most stations losing 20 to 50 ft of upper beach berm.

Stations 1451 through 1466 are located in Palmetto Dunes, where long-term erosion rates range from -5 to -6 ft per year. These stations showed the same general trend as North Forest Beach—most stations had been stable from 2000 through July 2004 but experienced 20 to 40 ft of upper-beach berm erosion through August 2005.

The third zone on Hilton Head is a 2,200-ft long unstabilized inlet zone, located on either side of the Folly. Stations 1468, 1469 and 1472 are the monitoring stations in this reach, which historically was very dynamic because of the inlet channel. However, a

small jetty constructed on the south side of the Folly in 1997 has helped stabilize this region. Long-term erosion rates here are around -2 ft per year. During the past year these stations showed erosion along the dune and upper-beach berm.

The fourth zone is a 1.3 mile-long standard zone that extends from just north of Burke's Beach Road to the Westin Hotel and includes stations 1474 through 1478. Long-term shoreline change rates here are stable. In the short-term, 1475 showed some berm erosion and a stable dune, while the other stations farther to the northeast were stable.

The fifth zone is an unstabilized inlet zone that includes all of the Port Royal Plantation shoreline. Survey stations 1481 through 1496 are located here. This region shows two distinct shoreline trends, with long-term accretion along the Atlantic shoreline to station 1484, and erosion of -3 to -4 ft per year along Port Royal Sound. This section of Hilton Head Island was not surveyed in 2005 but qualitative observations show continued accretion along the Atlantic shoreline at stations 1481 and 1484, while the Port Royal shoreline was stable or slightly erosional.

Fripp Island

Fripp Island is a three-mile long barrier island located between Pritchards Island and Skull Inlet to the southwest, and Hunting Island and Fripp Inlet to the northeast. Development on the island is primarily single family residential, and the island is almost continuously armored with revetments. The central portion of the island is classified as a standard zone, with an unstabilized inlet zone at the southwest end and a stabilized inlet zone at the northeast end. An analysis of long-term erosion trends has shown the island to be stable, although sand-bypassing events across Fripp Inlet, with a period of decades, can cause significant changes to the beach profiles on the island.

Benchmark	Profiles Collected in 2006	Profiles Collected in 2005	First Survey Year	Total Profiles
1765	None	07/13	1998	3
1760	None	07/13	1998	3
1755	None	07/13	1990	23
1745	None	07/13	1988	33
1735	None	07/13	1989	21
1730	None	07/13	1988	26
1720	None	07/13	1989	36
1715	None	07/13	1988	30

There are 15 beach survey monuments located on Fripp Island. Most recent profile data was collected at most of these stations during July 2005. Station 1700, on Skull Inlet, is sheltered from the open ocean and shows virtually no change from year to year. Stations 1715 through 1735 face the Atlantic Ocean along the southern half of Fripp Island. The beach width is narrower here, and at high tide there is little to no dry sand seaward of the substantial rock revetment. This beach is also fairly stable, and from June 2004 to July 2005 the profile data shows only minor changes on the intertidal beach.

The beach condition changes at station 1745, on Winter Trout Rd. Northeast of here and up to station 1760 at house #763 on Marlin Drive, the beach has been strongly accretional in recent years. A large offshore sand shoal attached to the shoreline here in 2004, and as a result the beach gained a tremendous amount of sand. This section of beach is hundreds of ft wider than along the southern half of the island. At station 1745 the dune field is over 200 ft wide but actually decreased in width by about 50 ft from 2004 to 2005. Station 1750 on Seahorse Drive showed a similar trend. The apex of the shoal attachment was located at station 1755 on Tautog Drive, where the increase in beach width reached a maximum. The northeastern limit of the sand shoal attachment is located at station 1760, near house 763 Marlin Drive, where the beach width has decreased considerably in the past year since shoal attachment.

Stations 1765 to 1790, on the northeastern end of the island, are the last two monitoring stations that face the Atlantic Ocean. During the mid-1990's a massive sand bar attached onto the beach here, increasing the beach width by hundreds of ft, but during the late 1990's that sand was eroded away. At present the beach is very narrow, with no dry-sand beach seaward of the revetment at high tide and very little beach even at low tide. The final two monitoring stations on Fripp Island are 1795 and 1798, located on Fripp Inlet. These stations show typical inlet profiles—very steep, no dry-sand beach, and only minor changes from year to year.

Hunting Island

Hunting Island is a state park located between Fripp Island and Harbor Island. The island has historically been very erosional, with long-term rates ranging from -7 up to -15 ft per year. Short-term erosion rates over the past few years have been even higher. The central portion of the island is a standard zone, while the southern end along Fripp Inlet is an unstabilized inlet zone and the northern end along St. Helena Sound is an inlet zone stabilized by an 800-ft terminal groin. Hunting Island has been renourished several times in the past 20 years. A renourishment project was constructed in 2006 but no post-construction beach survey data was collected.

Benchmark	Profiles Collected in 2006	Profiles Collected in 2005	First Survey Year	Total Profiles
1895	None	None	1988	19
1890	None	None	1988	17
1880	None	None	1988	20
1870	None	None	1988	18
1860	None	None	1988	23
1850	None	None	1988	29

1840	None	None	1988	27
1830	None	None	1988	34
1820	None	None	1988	29
1810	None	None	1988	20
1800	None	None	1988	10

The 11 beach monitoring stations on Hunting Island are unique in that their identification numbers increase from north to south. The most recent surveys, conducted during June and December 2004, show that the beach at Hunting Island continues to wash away. Almost all stations experienced erosion, typically ranging in magnitude from 10 to 50 ft. Erosion was slightly less at the northern end of the island, at station 1800, which benefits from the stabilizing effect of the terminal groin about 500 ft to the north.

With the exception of the extreme southwest and northeast ends of the island there are no sand dunes or high-tide beach at Hunting. Instead, the subtropical maritime forest vegetation literally falls off into the ocean, creating a bone yard of tree trunks and overturned root systems on the beach.

In order to protect Cabin Road, the beachfront access road to the southern end of the island and the houses located there, the US Army Corps of Engineers has conducted two Emergency Shoreline Protection Projects over the past few years along a 2,500 ft section of beach where the road is threatened. This work involves dredging about 250,000 cubic yards of sand from Fripp Inlet and pumping it onto the beach at Cabin Road. In addition to this work the SC Dept. of Parks, Recreation and Tourism, as owner of the island, is planning a large-scale renourishment project that was under construction in 2006. Prior to renourishment Hunting Island was one of the state's most critically eroded beaches.

Harbor Island

Harbor Island is located between Hunting Island and Johnson Creek to the southwest and St. Helena Sound to the northeast. Beachfront development is primarily single-family residential, with a few condominium buildings. The entire island is classified as an unstabilized inlet zone, and while the shoreline is very dynamic it is generally accretional in the long term. The beach width decreases dramatically from south to north. There are a total of six beach monitoring stations on Harbor Island. Beach survey data was not collected here during the past year, so comments on the relative condition of the beach are based on recent qualitative field observations.

Stations 1900 and 1930 are located at the southern end of the island, where the beach is wide and the long-term trend is accretional. Station 1900 is located closest to Johnson Creek and the beach profile here is extremely wide, over 2,000 ft. A series of intertidal sand bars and troughs are constantly shifting back and forth in this area, changing the shape of the lower beach profile. At present a moderate-sized sand bar located offshore at the heel of the island is in the process of welding onto the intertidal beach. At station 1930, near the multi-family units, the beach sand volume is also greater than average and the profiles appear to be accretional. The northern end of the offshore sand bar is located just southwest of this station.

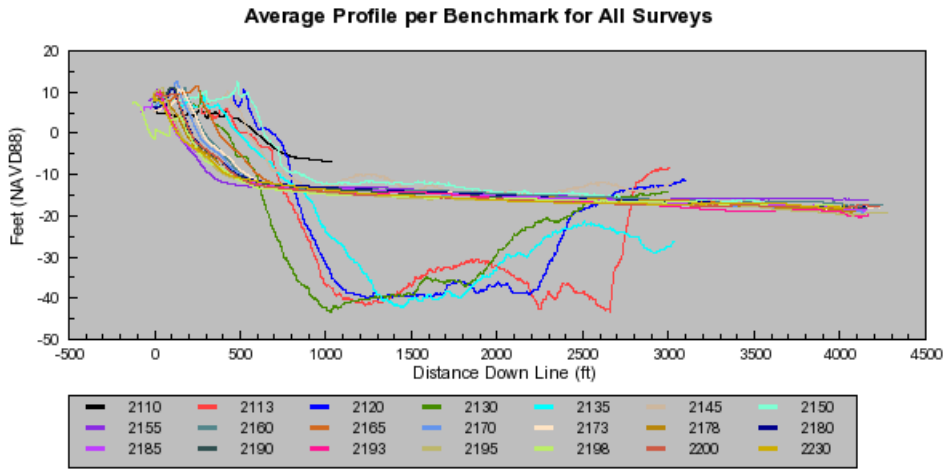
The beach width narrows significantly to the north at stations 1960 and 1980, on Harbor Island Drive North. The beach here goes through cycles of erosion and accretion that typically last for a few years. It was erosional during the late 1990's, stabilized in 2001, accreted some during 2002, and is now somewhat erosional again. There is still no sand dune here, no dry-sand beach, and the high-tide swash line comes very close to several houses. At station 1995, located where the shoreline begins to curve onto St. Helena Sound, the dune field is wider, with a series of small, well-vegetated dunes. The intertidal beach is fairly narrow but this is typical of an inlet vs. open-coast shoreline. This section appears to be accreting. Station 1998 is also located within the lower wave energy environment of St. Helena Sound, so that the beach profile drops off fairly rapidly. The beach here shows only minor changes from year to year and is stable at present.

Edisto Beach

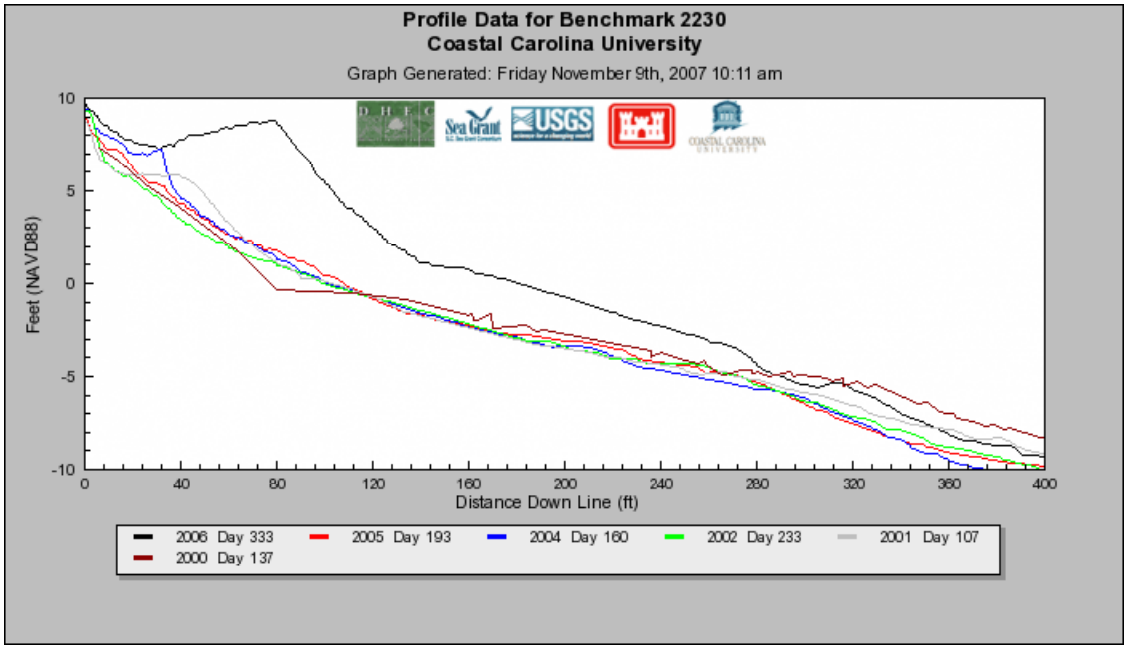
Edisto Beach is a barrier island situated between the South Edisto River and Jeremy Inlet. The northeastern portion of Edisto Beach is a state park, which includes camping sites, while the remainder of the island is primarily single-family residential. An extensive groin field on the island serves to stabilize the shoreline position. South of station 2160 (Marianne St.), the island is classified as an unstabilized inlet zone and is slightly accretional. The rest of the island, including the state park, is a standard zone with low long-term erosion rates but a chronic lack of sand. There are 27 beach survey monuments on Edisto Beach, which were surveyed in August 2004, July 2005, and November 2006. A renourishment project during the summer of 2006 placed 875,00 cubic yards of sand on the beach and increased the beach width by about 100 ft.

Benchmark	Profiles Collected in 2006	Profiles Collected in 2005	First Survey Year	Total Profiles
2230	11/29	07/12	1988	37
2200	11/29	07/12	1988	35

2198	11/29	None	1998	5
2195	11/29	07/12	1988	36
2193	11/29	07/12	1990	31
2190	11/29	07/12	1988	34
2185	11/29	07/12	1990	32
2180	11/29	07/12	1988	36
2178	11/29	07/12	1990	31
2173	11/29	07/12	1990	30
2170	11/29	07/12	1988	23
2165	11/29	07/12	1990	21
2160	11/29	07/12	1988	22
2155	11/29	07/12	1990	19
2150	11/29	None	2006	1
2145	11/29	None	2006	1
2135	11/29	None	2006	1
2130	11/29	None	2006	1
2120	11/29	None	2006	1
2113	11/29	None	2006	1
2110	None	None	1988	22



Stations 2110-2130 are located along the South Edisto Inlet shoreline. These stations are sheltered from the open ocean and generally experience only modest seasonal changes on the intertidal beach. Stations 2135 at Edisto Street and 2140 at Billow Street are located on The Point, the shoreline curve between the South Edisto River and the Atlantic Ocean. Historically this section of beach can be very dynamic but has remained stable in recent years. Profile 2230 has exhibited a slow and minor decrease in volume since 1990, from approximately 70 cubic yards per ft of beach to 50 cubic yards per ft of beach across the entire profile. However between July 2005 and late November 2006, the profile has migrated seaward approximately 70 ft.



The oceanfront southern half of Edisto Beach, from stations 2145 to 2165, has the widest oceanfront beach on Edisto. Most stations here experience only minor seasonal changes and benefited from the summer 2006 renourishment project, which increased beach widths by about 100 ft. The northern half of developed Edisto Beach, from station 2170 to station 2200 at the Pavilion, has historically been one of the most critically eroded sections of beach anywhere in the state. Prior to renourishment all stations in this reach suffered from a considerable sand deficit, with virtually no beach at high tide and no protective dune between the ocean and the development. This area has benefited tremendously from the 2006 renourishment project which created a dry-sand berm approximately 100 ft wide, providing storm damage reduction, a wider recreational beach, and increased turtle nesting habitat.

Stations 2200 to 2230 in Edisto Beach State Park are comparable to the northern half of Edisto Beach. Prior to renourishment the beach width was minimal, the sand dune was maintained by periodic sand scraping, and the campsites and access roads in the park were very vulnerable to erosion. The 2006 renourishment project increased the beach width by 60 to 75 ft here.

Seabrook Island

Seabrook Island is a barrier island approximately 4 miles long, situated between North Edisto Inlet and Captain Sams Inlet. Development on the island is a mix of single-family and multi-family structures. A continuous 5,000-ft section of shoreline is armored with rock revetments and a few seawalls. The entire island is classified as an inlet zone—the armored portion is a stabilized inlet zone, while the remainder is unstabilized. Shoreline change patterns have been quite dynamic over the past 50 years with long-term erosion rates of -2.6 ft per year along the revetment and a "stable" rate to the northeast. There are 11 beach monitoring stations on Seabrook Island. Three of them, stations 2545, 2565, and 2570, were surveyed during June 2004 and September 2005.

Benchmark	Profiles collected in 2006	Profiles collected in 2005	First Survey Year	Total Profiles
2570	None	09/03	1998	6
2565	None	09/03	1998	6

2545	None	09/03	1998	6

Station 2515, at Beach Club Villas along the North Edisto River, is a typical inlet profile—very steep and fairly stable. Stations 2520 through 2540 are located along the revetment, from the Beach Club to Renken Point. This section of Seabrook Island has lacked a dry-sand beach for many years, but the artificial movement of sand to this area from the intertidal portion of the beach to the north has corrected this situation and a minimal dry-sand beach now exists. In addition, changes to the northern marginal flood channel of the North Edisto River are benefiting the beach. The channel has historically been fairly deep and pinched in very close to the shoreline, creating a steep profile and making it difficult to retain a dry-sand beach, but within the past few years the channel has filled in, decreasing in depth from -20 ft to -5 ft. As this trend continues it will be easier to maintain a dry-sand beach seaward of the revetment here.

In the North Beach area, from station 2545 to 2575, the high-tide beach averages over 500 ft in width. This area is closer to Captain Sam's Inlet and its nearness to the inlet causes the shoreline to be more dynamic, experiencing episodes of moderate erosion or accretion from one year to the next. However, the substantial width of the dry-sand beach makes these changes of less concern than they might be elsewhere. In 2005 station 2545, near Cobia Court, showed a stable dune field and moderate changes on the intertidal beach. At station 2565 near Seascape Court the dune was stable but the beach seaward of the dune eroded back about 100 ft. Station 2570 off Oyster Catcher Court experienced some dune erosion and also lost about 75 ft of beach seaward of the dune.

Kiawah Island

Kiawah Island is a ten-mile long barrier island, located between Seabrook Island and Captain Sams Inlet to the west, and Stono Inlet and Folly Beach to the east. Kiawah is one of the most stable barrier islands in the state, although the eastern and western ends of the island are more dynamic due to their proximity to inlets. Most oceanfront development here is single-family residential, although there are some multi-family residential buildings, commercial structures, a golf course, and a public park. The long-term erosion rate averages a half-foot per year for most of the island.

Benchmark	Profiles Collected in 2006	Profiles Collected in 2005	First Survey Year	Total Profiles
2775	None	None	2001	2
2765	None	None	1999	5
2760	None	None	1999	5
2755	None	None	2001	1

2750	None	05/31	1998	6
2735	None	05/31	1998	5
2730	None	05/31	1998	7
2725	None	05/31	1998	7
2720	None	05/31	1998	7
2715	None	05/31	1998	7
2705	None	05/31	1998	7
2700	None	05/31	1998	6
2695	None	05/31	1998	7
2690	None	05/31	1998	7
2685	None	05/31	1998	7
2680	None	None	1998	6
2675	None	06/01	1998	7
2665	None	None	1998	5
2660	None	06/01	1998	7
2645	None	06/01	1998	7
2640	None	06/01	1998	7
2635	None	06/01	1998	6
2630	None	06/01	1998	6
2625	None	06/01	1998	6

Eighteen beach monitoring stations on Kiawah Island were most recently surveyed in June 2004 and May and June 2005. Stations 2615 through 2645 are located at the western end of Kiawah, where land use consists of undeveloped property, a beach park, single-family homes, and some multi-family structures. This is usually one of the most stable sections of Kiawah Island. For all stations here the primary dune was stable and the beach profile seaward of the dune showed either no change or minor erosion.

The area from station 2660, near the middle of Eugenia Ave., through station 2680, at the eastern end of Windswept Villas, experienced significant erosion in 1995 and 1996, stabilized from 1997 through 1999, became erosional again in 2000 and 2001, and was accretional between 2002 and 2004. Through June 2005 the dune field was stable but the beach seaward of the dune showed minor erosion. Other stations to the northeast, from 2685 on Turtle Beach Lane to 2735 at the Kiawah Beach Club, also showed a stable dune and minor changes seaward of the dune.

The condition of the beach changes along the Ocean Course golf course, from station 2745 to 2780, which historically has been the most unstable section of Kiawah Island. Stations 2750, 2760 near the 18th fairway and 2765 near the Clubhouse all experienced significant erosion beginning in 2005. The erosion worsened at stations 2775 and 2780, where emergency sand scraping was repeatedly performed during the fall

of 2005. During the spring of 2006 a large-scale sand scraping project using land-based equipment re-aligned a nearshore channel and placed 550,000 cubic yards of sand on the eroded beach along the Ocean Course golf course, resolving the erosion problem. The last two Kiawah Island monitoring stations, 2785 and 2790, are located along the Stono Inlet shoreline far from any development and have not been surveyed in recent years.

Folly Beach

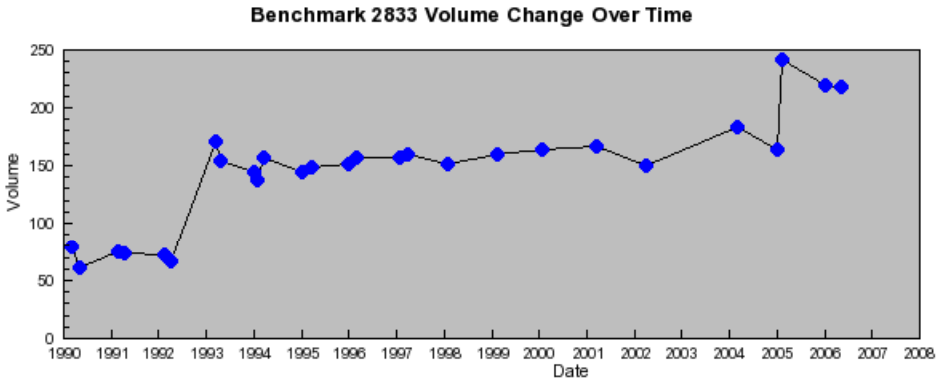
Folly Beach is located between Stono Inlet and Kiawah Island to the southwest, and Lighthouse Inlet and Morris Island to the northeast. Nearly all of Folly's shoreline is armored and contains groin fields. Oceanfront development is mostly single-family residential, with one large condominium and one large hotel in the center of the island, a public park at the southwest end, and a large tract of undeveloped property at the northeast end. Long-term erosion rates are -1 to -3 ft per year, although in recent years the northeast end of the beach has been highly erosional. The 33 monitoring stations at Folly Beach were surveyed in January 2005, January 2006, and at most stations in December 2006. A major beach renourishment project placed over 2 million cubic of sand from an offshore borrow source on the beach at Folly during the summer and fall of 2005, which is documented with the 2006 survey data.

Benchmark	Profiles Collected in 2006	Profiles Collected in 2005	First Survey Year	Total Profiles
2890	01/24	04/13	1988	22
2885	01/24	04/13	1988	27
2883	01/24	04/13	1988	30
2880	01/24	04/13	1988	32
2878	01/24	04/13	1988	30
2873	01/24	04/13	1988	31
2867	01/24	04/13	1990	18
2865	01/24	04/13	1988	29
2863	01/24	04/13	1990	28
2860	01/24	04/13	1998	11
2855	01/24	04/13	1988	29
2850	01/24	04/13	1988	33
2843	01/24	04/13	1988	28
2840	01/24	04/13	1988	23
2838	01/25	04/13	1988	29
2835	01/25	04/13	1988	30
2833	01/25	04/13	1988	29
2832	None	None	1988	18
2830	01/25	04/13	1988	29
2828	01/25	04/22	1988	32
2825	01/25	04/22	1998	11
2823	01/25	04/22	1998	11
2820	01/25	04/22	1999	9
2818	01/25	04/22	1999	10
2815	01/25	04/22	1999	10
2813	01/25	04/22	2000	7
2810	01/25	04/22	1999	7
2805	01/25	04/22	1999	8
2803	01/25	04/22	1999	6

Station 2803 is located at the western end of the county park, station 2805 is in the middle of the park, and 2810 is located the western end of the county park at the gatehouse. This area experienced significant erosion from 1995 through 2003 but has since stabilized, and gained approximately 200 ft in beach width during the 2006 renourishment project. Most other stations on the western section of Folly Beach, from station 2813 just outside the park to station 2825 at 3rd St. West, were fairly stable during the last few years and also gained about 200 ft in beach width during the renourishment project. Most properties here have a line of revetments or seawalls that are buried under

or just landward of the sand dune. Station 2828 is located at the Holiday Inn seawall, which extends almost 100 ft seaward from the walls on either side. This station had virtually no dry-sand beach at high tide prior to renourishment but gained 120 ft of dry-sand beach during the project. Station 2830, immediately northeast of the seawall, gained about 180 ft of berm width during the project.

The next section of beach is the first eight blocks east of the Holiday Inn, from station 2833 up to 2843 at 8th St. East. This area has a moderate dune over or seaward of the line of rock revetments. Almost all profiles in this area were stable prior to renourishment and gained 180 to 200 ft of berm width during the project.



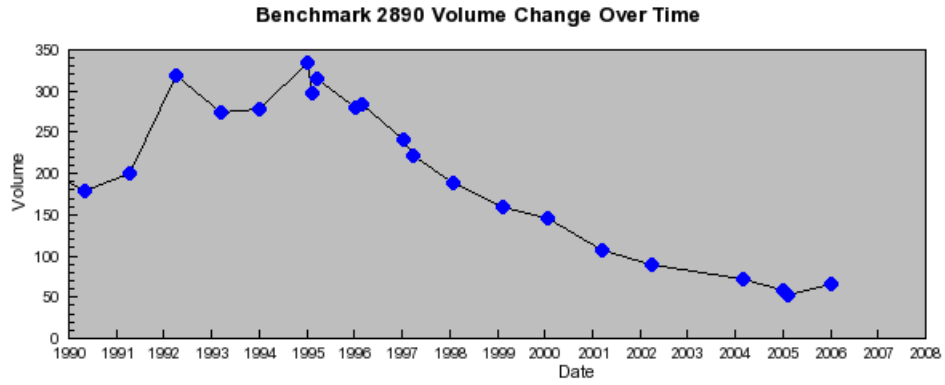
The section of beach closer to the area commonly referred to as the Washout is historically more erosional. During the year 2005, prior to renourishment, stations 2850 at 10th St. East, 2855 at 12th St. East, 2860 at 13th St. East, and 2863 near the last house before the Washout all experienced erosion, but all these stations gained 150 to 180 ft of beach during the renourishment project.

Stations 2865 and 2867 are located squarely in the middle of the Washout, where the ocean is closest to the road and there are no residential lots on the seaward side of Ashley Ave. Both of these stations had a minimal beach width but were stable in 2005, then gained 100 ft of renourishment sand through January 2006.

During the past ten years the beach on the northeast side of the Washout has been the most erosional section of Folly Beach, with the rate of erosion increasing with distance from the Washout. In the region from station 2873, just east of the Washout, to

2885, near the Sumter Drive beach access parking area, all stations have experienced a general trend of dune scarping and erosion on the upper beach and intertidal beach in recent years. This area received renourishment sand in the summer of 2005 but most of it was gone by January 2006, primarily due to the effects of Tropical Storm Ophelia in September 2005 and Tropical Storm Tammy in October 2005. As a result the Corps of Engineers conducted follow-up renourishment at the northeast end of Folly Beach to replace the sand lost during these two storms.

The last monitoring station, 2890 on the former Coast Guard base property, also showed considerable dune scarping and erosion on the upper and intertidal beach during the last ten years. The volume of sand present in the profile has steadily declined since the mid 1990's, and most of the 2005 renourishment project sand has been eroded away.



Sullivans Island

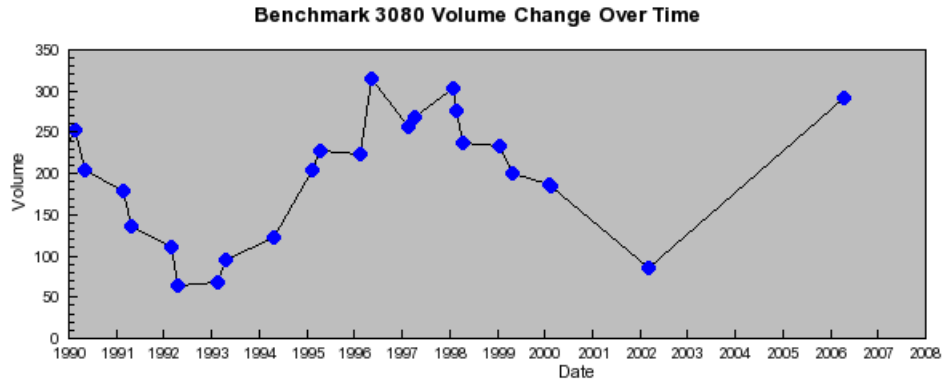
Sullivans Island is located between Charleston Harbor and Breach Inlet. The Charleston Harbor north jetty, which comes ashore on Sullivans Island, has caused the long-term shoreline trend to be stable or accretional for much of the island. Periodic shoal attachment and movement of the channel at Breach Inlet can cause the shoreline in this region to be quite dynamic, and the long-term erosion rate here is -2 ft per year. Beach surveys were conducted at Sullivans Island in October 2006.

Benchmark	2006	2005	First Survey Year	Total Profiles
3095	None	None	1988	19
3092	10/25	None	1990	18
3090	None	None	1990	20
3085	10/25	None	1990	21
3083	10/25	None	1990	21
3080	10/25	None	1988	26
3065	10/25	None	1988	25

3050	10/25	None	1988	24
3035	10/25	None	1988	20
3020	10/25	None	1988	17
3010	10/25	None	1988	22

Survey monuments 3010-3035, between Station 16 and Station 19, are located within the Charleston Harbor north jetty. This area is extremely accretional in the long-term but has been stable to slightly erosional for the past several years. However, the tremendous beach buildup over the past century still leaves this as one of the widest beaches in South Carolina, as measured from the row of oceanfront houses out to the high-tide swash line.

Survey monuments 3050-3080 are located along the center section of Sullivans Island. The area is outside the north jetty and sand shoals from Breach Inlet periodically attach to the beach here, so that long-term trends are accretional but the shoreline is quite dynamic. A massive sand bar welded onto the beach in this area during 2006, increasing the beach width by up to 500 ft. The long period of data collection in this region suggests an approximately ten year cycle between maximum beach widths, particularly adjacent to 3080 and 3085 and this variability is associated with bar-welding to the beach.



Monument 3083 at Station 29 marks the transition point between the accretional center section of the island and the erosional northeastern end of the island along Breach Inlet, where the long-term erosion rate is -2 ft per year. The beach at 3083 has been fairly stable in recent years but the beach at 3085 near Station 30, 3090 near Station 31,

and 3092 near Station 32 has been seriously eroded for several years. These survey monuments are all located close to Breach Inlet and continue to show steep and narrow inlet profiles with a sand deficit, no dune, and no high-tide beach. This 3-block section of Sullivans Island, about 2,000 ft long, is one of the most critically eroded beaches in Charleston County.

Isle of Palms

The Isle of Palms is located between Breach Inlet and Sullivans Island to the southwest, and Dewees Inlet and Dewees Island to the northeast. The island is generally accretional, primarily because the downdrift Charleston Harbor jetties interrupt the longshore flow of sand from north to south, and the official long-term shoreline change rate is stable to accretional. The northeastern end of the island, near Dewees Inlet, is extremely dynamic and can experience hundreds of ft of beach erosion or accretion over a few years. There are 22 monitoring stations on the Isle of Palms, most of which were surveyed in August 2004, May 2005 and October 2006.

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Benchmark	2006	2005	First Survey Year	Total Profiles
3190	None	None	1987	21
3185	None	None	1987	25
3183	None	None	1990	22
3180	None	05/24	1987	30
3178	10/26	05/24	1990	28
3175	10/26	05/24	1987	35
3173	10/26	05/24	1990	30
3170	10/26	05/24	1987	33
3167	10/26	05/24	1990	31
3165	10/26	05/24	1987	23
3160	None	None	1987	21
3159	10/26	05/24	1990	28
3157	10/26	05/24	1990	28
3155	10/26	05/24	1996	15
3150	10/26	05/24	1987	30
3145	10/26	None	1987	22
3140	10/26	05/24	1996	15
3135	10/26	05/24	1987	30
3130	10/26	05/24	1987	24
3125	10/26	05/24	1987	28
3120	10/25	05/24	1987	32
3115	10/25	05/24	1987	30
3110	10/25	None	1987	30
3105	10/25	None	1990	20
3100	10/25	None	1987	24

Stations 3100-3110, from Breach Inlet to 3rd Ave., are influenced by the inlet's channels and shoals and are usually more dynamic than the central portion of the island. This area is strongly accretional in the long term but experienced some upper beach erosion during the past year.

Stations 3115-3155, from 6th Ave. to the Citadel Beach Club, are located along the more stable portion of shoreline in the center of the island. Beach profiles here typically show a well-defined primary sand dune and only minor to moderate seasonal variations from year to year. This area was stable to slightly accretional during the past year, with some stations experiencing dune and upper beach accretion.

Beginning at station 3159 near 53rd Ave. and continuing on into Wild Dunes, beach profiles are close enough to Dewees Inlet to be effected by periodic bar bypassing from the inlet shoal complex, and as a result profiles here are more dynamic than the rest of the island. These shoal attachment episodes cause extreme accretion in the area of shoal attachment and severe but localized erosion immediately adjacent to the attachment site. These shoal attachment episodes generally occur about every 6-8 years and last about 18 months. The previous shoal attachment episode terminated in the fall of 1996, and the area is currently experiencing a shoal attachment that began in 2005 and is still ongoing, resulting in extreme changes to the beach.

Station 3159 near 53rd Ave. was fairly stable through 2006 but the dynamics of the inlet-dominated shoreline became apparent beginning at station 3165 near 57th Ave. This station is located in the erosional arc on the southwest side of the attaching sand bar and experienced 100 ft of erosion during 2006. The next three monitoring stations, 3167 at the southwest end of Beachwood East, 3170 at the northeast end of Beachwood East, and 3173 near the Property Owners Clubhouse, are located in the accretional zone directly in front of the attaching sand shoal and all three experienced up to 150 ft of beach accretion during 2006.

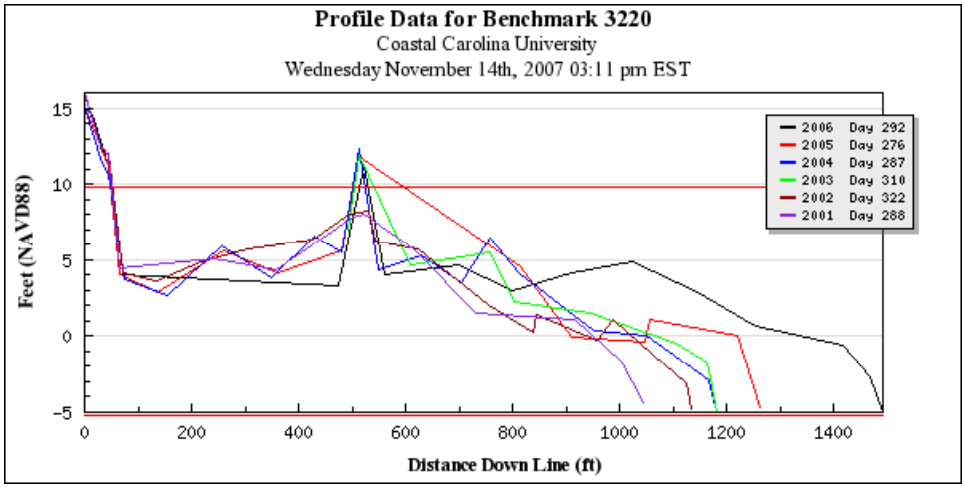
Station 3175 near Mariners Walk is located at the edge of the accretional zone and was fairly stable through 2006. Erosion picked up again in the erosional arc located on the other side of the attaching sand bar, beginning at station 3178 near SummerHouse condominiums. Extensive erosion continued from here through station 3180 at Port O'Call condominiums, station 3183 near the golf course 18th green, and 3185 near the 18th fairway. The erosion here reached a critical point in 2005 and emergency beach renourishment, sand scraping, and sand bagging have all been performed to keep the ocean from encroaching under several condominiums buildings, single-family residences, and the golf course.

Dewees Island

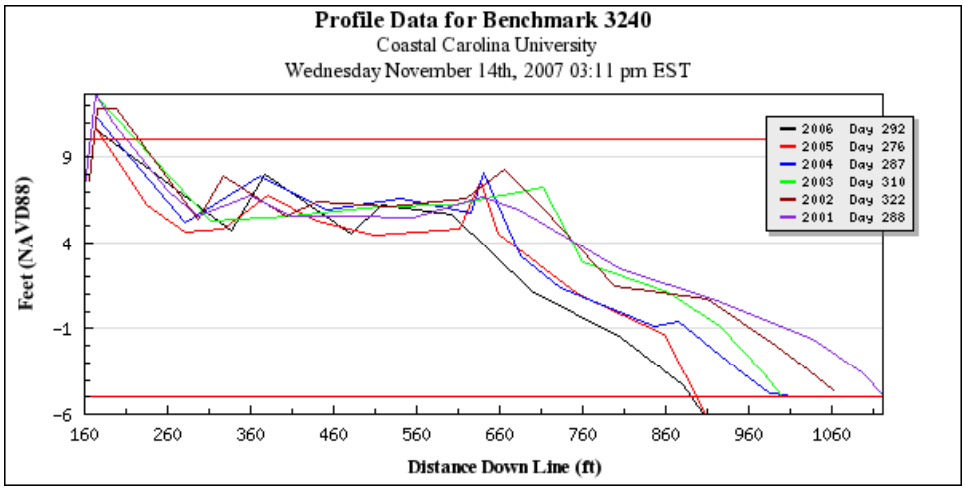
Dewees Island is located between Dewees Inlet to the southwest, and Capers Inlet to the northeast. The island is approximately two miles long, and is classified as an unstabilized inlet zone. The shoreline is very dynamic, with long-term erosion rates of -3 to -12 ft per year, although in recent years the entire island has been accreting. There is limited single-family development here. There are 9 monitoring stations on Dewees Island, which were most recently surveyed in October 2005 and October 2006.

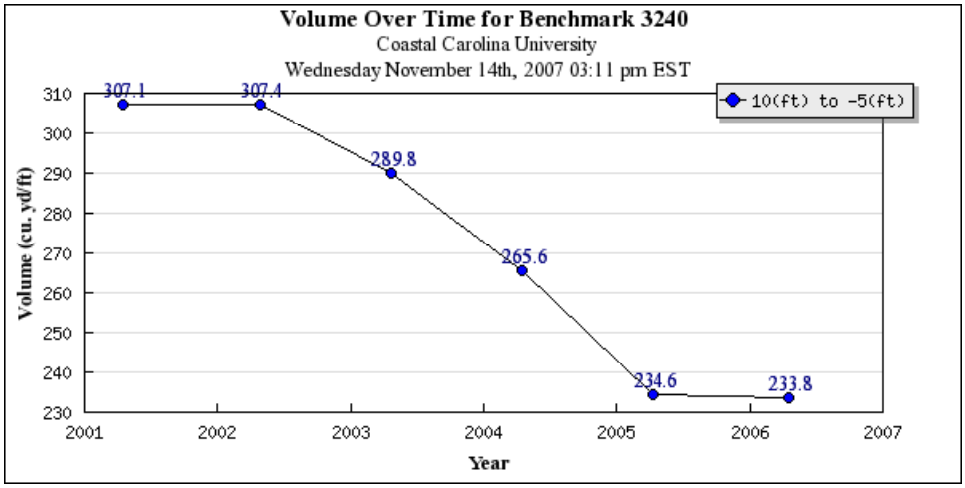
Benchmark	2006	2005	First Survey Year	Total Profiles
3290	10/19	10/03	1992	19
3280	10/19	10/03	1992	19
3270	10/19	10/03	1992	18
3263	None	None	1992	1
3260	10/19	10/03	1992	19
3257	None	None	1992	5
3255	10/19	10/03	1992	18
3250	10/19	10/03	1991	22
3240	10/19	10/03	1991	22
3230	10/19	10/03	1991	22
3220	10/19	10/03	1991	21

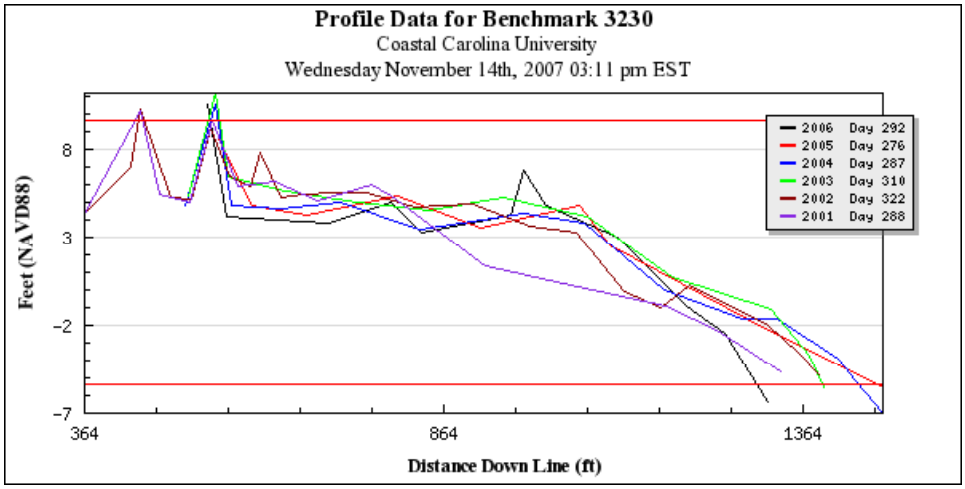
Station 3220 is located on top of a bluff along Dewees Inlet. The beach here can be very dynamic but was fairly stable in 2004 and showed only minor accretion at the seaward end of the profile.



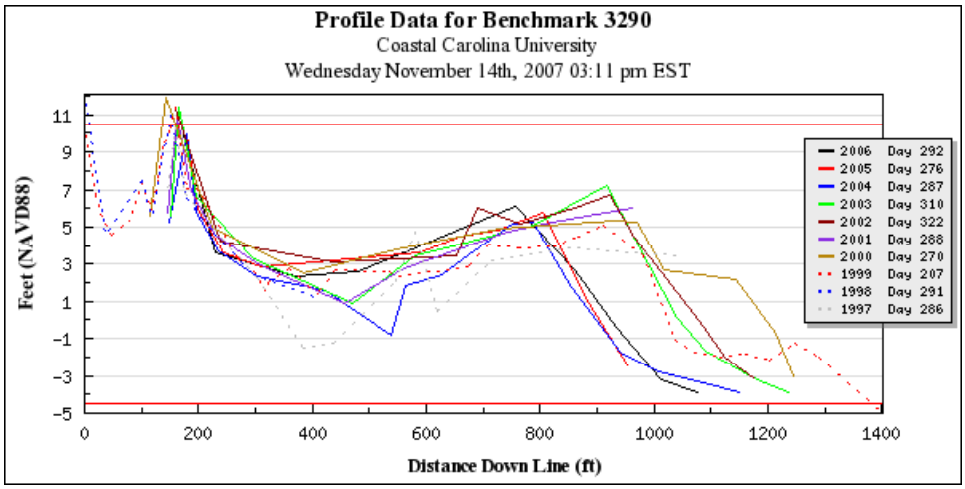
Along the developed southern half of Dewees, station 3220 showed significant accretion through October 2006. Stations 3230, 3250, and 3255 all experienced some erosion at the seaward end of the profile, between the 0 and -5 ft contours, but maintained a net increase in sand across the entire profile. Station 3240 has experienced continuous loss in the profile since 2002, with a landward shift in the berm between 2004 and 2005 and relative stability into October 2006.







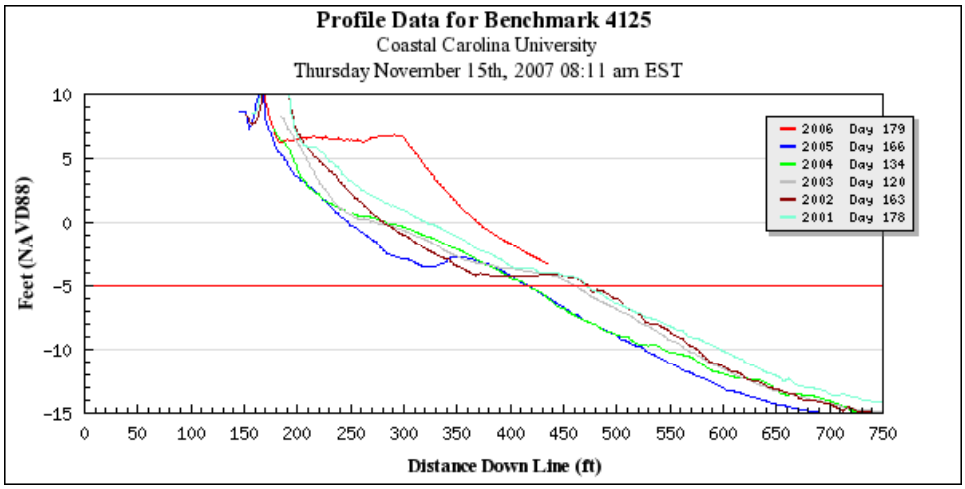
Along the undeveloped northern half of Dewees Island, station 3260 showed slight erosion just seaward of a sizable primary dune, while 3270 showed slight erosion along this same portion of the profile. Station 3280 is closer to Capers Inlet and has a very wide profile that extends several hundred ft offshore. This station showed slight erosion from 2005 to 2006. The last monitoring station, 3290, is located on Capers Inlet. The primary dune here is usually quite stable, while seaward of the dune a large sand flat, most of it intertidal, extends offshore for hundreds of ft. During the past year the primary dune was again very stable and the large offshore sandbar that attached to the beach here the previous year has exhibited little change.



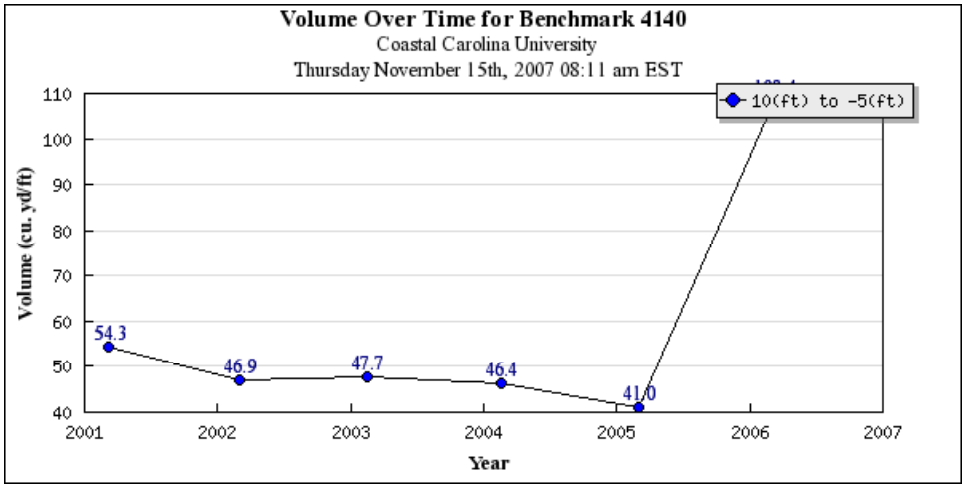
Debidue Beach

Debidue Beach, located between North Inlet and Pawleys Inlet, is the southernmost of the Grand Strand beaches. The central portion of Debidue is armored with a continuous 4,500-ft long bulkhead. The area south of the bulkhead has experienced long-term erosion rates of -8 to -12 ft per year, while the area north of the bulkhead is stable to accretional. The southern half of Debidue Beach was renourished in the spring of 2006. Stations here were surveyed in June 2006.

At station 4115, located near the southern end of the maritime forest closest to North Inlet, the upper beach has continued to erode and cut back by about 10 ft during the past year. At station 4125, about 1,000 ft south of the bulkhead, the long-term trend is erosional. The beach profile collected in June 2006 shows the wedge of renourishment material merging with the shoreface at –5 ft and extending the beach approximately 125 ft seaward. At the south end of the bulkhead station 4130 reflects the creation of a larger dune and extension of the profile seaward almost 200 ft due to the renourishment. This south bulkhead section of beach has historically been the most critically sand-starved beach profile at Debidue.



Station 4140, near the northern end of the bulkhead, is the “pivot point” on Debidue—the beach typically erodes to the south and accretes to the north. During the previous year this station saw erosion between the +7 ft and –2 ft contours, as the beach cut back by up to 25 ft. The renourishment project added approximately 200 ft of beach to the profile with approximately 68 cubic yards of fill material per ft of beach.



Stations 4150-4180 are located north of the bulkhead. This is a mostly undeveloped area with an extensive dune field, and historically the beach is usually quite stable. From June 2005 to June 2006 the dune field here once again remained unchanged. Station 4150 also received renourishment sand, extending the profile 150 ft seaward. Station 4160 experienced some minor berm and upper beach accretion from the renourishment spillover, while 4170 experienced some accretion on the berm and lower beachface.

Pawleys Island

Pawleys Island is located between Pawleys Inlet and Midway Inlet. Groin fields on Pawleys have counteracted a slight erosional trend to produce a stable shoreline with an official long-term erosion rate of zero. The southern portion of Pawleys is low-lying, with little or no sand dunes. The central portion has some of the highest dunes in the state, while the northern, accretional end has a wide field of low dunes. A beach renourishment project using sand borrowed from the sand spit at the southern end of the island was completed in 1999. Fourteen monitoring stations at Pawleys were surveyed in July 2006 and twelve were surveyed in June 2005.

Benchmark	Profiles collected in 2006	Profiles collected in 2005	First Survey Year	Total Profiles
4295	None	None	1987	22
4290	07/06	06/30	1987	32
4285	07/06	06/30	1990	31
4280	07/06	None	1987	19
4275	07/06	06/30	1989	31
4270	07/06	None	1987	28
4260	07/06	06/30	1987	34
4245	07/06	06/30	1987	37
4240	None	None	1989	25
4230	07/06	06/30	1987	28
4220	07/06	06/30	1989	33
4215	07/06	06/30	1987	34
4210	07/06	06/30	1989	30
4205	07/06	06/30	1987	37
4203	07/06	06/30	1989	29
4200	07/06	06/30	1987	31

While there are no monitoring stations at the southern end of the island, it is apparent from visual observations that the dune in the public parking area has been

chronically eroded for the past few years, and the southernmost groin cell, where the last 13 houses on Pawleys are located, still has no sand dune. Stations 4200-4220 are the 6 monitoring sites located north of this groin cell, in the developed, low-lying southern end of Pawleys Island. In this region station 4200 experienced some minor dune erosion, the berm at stations 4203 and 4205 accreted slightly, and the other stations saw some minimal erosional and accretional changes on the intertidal beach between the +3 ft and the -5 ft contours.

The central portion of Pawleys Island, with a large primary dune, is represented by stations 4230-4280. All of the profile stations here were fairly stable, with some experiencing minor berm erosion and most gaining or losing a small amount of sand on the intertidal beach. Historically, this entire section of beach has always been the most stable portion of Pawleys Island. It shows little change from year to year, has an adequate sand volume, and, in most places, also has one of the largest sand dunes in the state. Between July 2005 and July 2006, the small runnel on the intertidal beach filled and the berm generally enlarged, increasing the total volume on the beach in this area.

Stations 4285 to 4295 are located closest to Midway Inlet, where the beach is much wider and is generally more dynamic. The long-term trend here is accretional, and most houses are several hundred ft landward of the high-tide water line. The entire beach profile was fairly stable here, with some changes on the intertidal beach. Station 4285 did experience some accretion on the seaward side of the primary sand dune and erosion between 0 ft and -5 ft. Station 4290 experienced minor accretion throughout the profile down to -5 ft, with minor erosion of the profile from -5 ft to -10 ft.

Litchfield Beach/Huntington Beach State Park

Litchfield Beach, North Litchfield, and Huntington Beach State Park represent a continuous, uninterrupted sediment budget compartment. This area is bounded by Midway Inlet to the south, and Murrells Inlet to the north. The southern spit at Litchfield is a low-lying area with a small dune field, while the central portion of this reach contains a large, well-defined primary dune, one of the largest in the state. The official long-term shoreline trend is “stable” for this entire area, and in fact, Litchfield Beach and North Litchfield Beach are among the most stable beaches in South Carolina. All stations here

have a significant primary dune that generally shows no sign of erosion from year to year, and changes to the beach profile are usually limited to minor sand gains or losses on the active beach seaward of the dunes. The northern reach, in the state park, is directly influenced by Murrells Inlet and the south inlet jetty.

Litchfield Beach

Litchfield Beach is covered by stations 4300 to 4495; three profiles were collected in July 2006 and seven in July 2005.

Benchmark	Profiles collected in 2006	Profiles collected in 2005	First Survey Year	Total Profiles
4495	None	None	1987	20
4490	None	07/01	1987	35
4430	None	07/01	1987	31
4400	None	07/01	1987	31
4395	None	07/01	1987	32
4390	07/12	07/01	1987	31
4360	07/12	07/01	1987	30
4330	07/12	07/01	1987	33
4315	None	None	1988	21

4300	None	None	1992	12

During the past year stations 4330 to 4390 were surveyed and indicate an extremely stable dune field. Seaward of the dune, a moderate-size berm about 35 ft in width that formed between 2003 and May 2004 was eroded away by June 2005, as the upper-beach profile returned to its 2003 shape. Between 2005 and 2006, the beach between 0 ft and -5 ft eroded, while above and below these levels accretion occurred.

Huntington Beach

Stations 4500-4565 are located in Huntington Beach State Park. In the southern end of the park, stations 4500, 4515, and 4525 are morphologically similar to North Litchfield Beach. They have a stable, well-defined dune and experienced some moderate changes on the intertidal beach.

Benchmark	Profiles Collected in 2006	Profiles Collected in 2005	First Survey Year	Total Profiles

4575	None	None	1987	17
4565	07/20	06/16	1987	33
4555	07/20	06/16	1987	33
4550	None	None	1988	1
4545	07/20	06/16	1988	32
4535	07/20	06/16	1988	31
4525	None	06/16	1988	35
4515	None	06/16	1987	33
4500	None	06/16	1987	29

As proximity to Murrells Inlet increases the primary dune becomes somewhat smaller and the shoreline can become more dynamic, although the inlet itself is stabilized by jetties that were constructed in the early 1980's. At station 4535, a small dune formed 25 ft seaward of the 2005 position; however the profile exhibited erosion from +5 ft to 0 ft and accumulated below -1 ft. Station 4545 showed similar erosion of the upper shoreface with a slight increase in elevation of the primary dune. Stations 4555 and 4565 were more dynamic, experiencing erosion from the seaward dune face down to the –5 ft contour and movement of the dune approximately 10 ft landward.

Garden City Beach

This section of shoreline begins at Murrells Inlet and extends northward to the southern limit of the Town of Surfside Beach. The southern half of Garden City, from station 4900 to 4955, contains few shore-protection structures, while in the northern half, between stations 4960 and 5030, seawalls and bulkheads become predominant. Generally, sand volumes are adequate in the unarmored section of Georgetown County, begin to decrease in the armored section of Georgetown County, and reach a minimum in the armored section of Horry County. The long-term erosion rate is about -1.5 ft per year. Much of Garden City was renourished in 1998 as part of the Army Corps of Engineers Grand Strand Renourishment Project, and the very southern end of Garden City, closest to Murrells Inlet, was renourished with 100,000 cubic yards of sand in 2003. There are 24 monitoring stations here, which were surveyed in May and November 2004 and March 2006.

Benchmark	Profiles collected in 2006	Profiles collected in 2005	First Survey Year	Total Profiles
4980	03/30	None	1987	40
4975	03/30	None	1989	29
4970	03/30	None	1987	36
4965	03/30	None	1989	30
4960	03/30	None	1987	36
4955	03/30	None	1989	29
4950	03/30	None	1987	35
4940	03/30	None	1988	33
4935	03/30	None	1989	33
4930	03/30	None	1987	35
4925	03/30	None	1989	31
4920	03/30	None	1987	38
4915	03/30	None	1989	34
4910	None	None	1987	25
4905	None	None	1989	20
4900	None	None	1987	26
4800	None	None	1989	1

Most stations in the standard zone from 4900 through 4955 are unarmored, have a well-defined dune, and are fairly stable. Historically the only exception is found along a 2,000 ft section of beach south of Pompano Drive, between stations 4910 to 4920, where

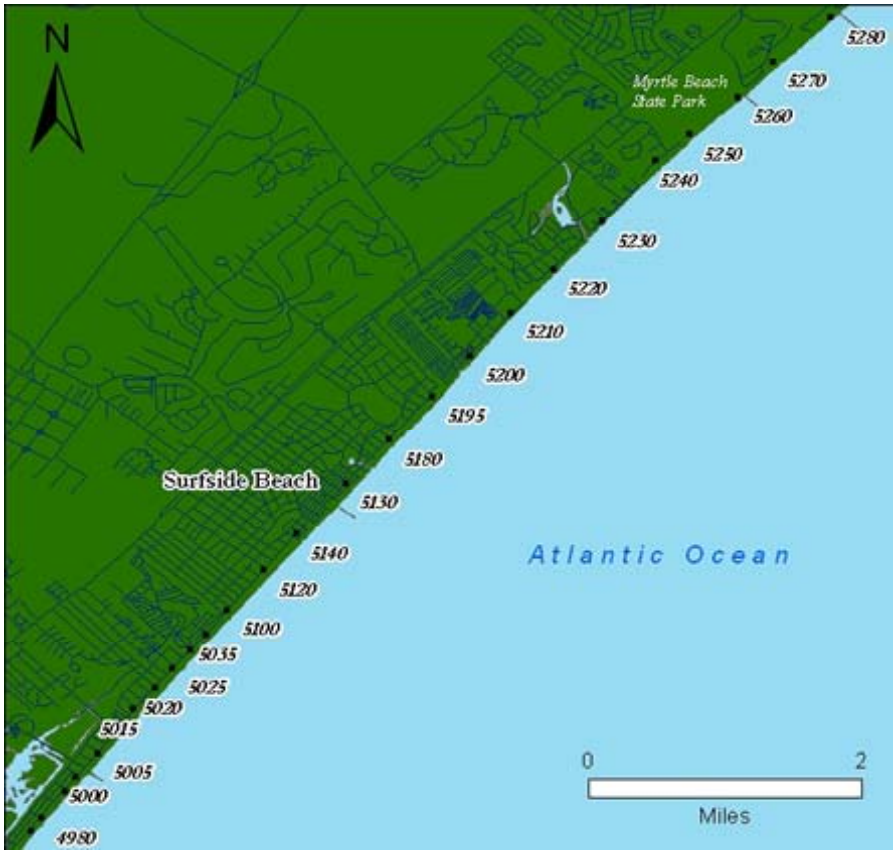
the shoreline is armored and curves seaward and the beach is narrower and more vulnerable. This is the area that was renourished in 2003, and while some of this renourishment sand was quickly lost the remaining berm has stabilized and showed approximately 20 ft of loss from +7 ft to 0 ft between 2004 and 2006. The other monitoring stations in this general area all experienced minor berm accretion but also lost sand on the lower beach between the +5 and 0 ft contours. Station 4935 showed major accumulation between +7 and 0 ft since 2004 while 4940 increased vertically approximately 2 ft between +7 and +5 ft.

North of station 4960 the shoreline is predominantly armored and the beach width decreases. Stations 4950 through 4975 have lost the berm established between +5 and 0 ft prior to 2004. Stations 4960 through 4999, in Georgetown County, and station 5000, in Horry County just south of the pier, still show a minimal dry sand beach seaward of a small dune or bulkhead.

Stations 5005 to 5035, the northernmost section of Garden City in Horry County from the pier to Melody Lane, are mostly armored and lack a dune but have a minimal dry-sand beach. Prior to the 1998 renourishment project this area had a substantial sediment deficit, and the renourishment has not performed as well here. Between May 2004 and April 2006 stations 5005 through 5035 showed significant erosion on the upper beach between the +5 and 0 ft contours. Just north of here all stations showed a continued loss of the renourishment berm, now only 40 ft wide in places, and also erosion along the entire profile out to a depth of –10 ft.

Surfside Beach and Unincorporated Horry County—South

This section of the Grand Strand includes 6 monitoring stations in the Town of Surfside Beach, and 9 stations in the unincorporated region north of Surfside Beach—the campground region, Long Bay Estates, and Myrtle Beach State Park. Surveys here were completed in November 2004 and March/April 2006 (with four profiles in December 2005). The long-term erosion rates here are around one ft per year, and in general the beach is stable.



Stations 5100 at 16th Ave. South through 5195 at 16th Ave. North fall within the Town of Surfside Beach, and almost all stations here have a well-established primary sand dune. Surfside Beach was renourished in 1998 as part of the Army Corps of Engineers Grand Strand Renourishment Project, and the project reached equilibrium within a few years. In the southern portion of Surfside Beach, from station 5100 to 5130, the beach profile experienced erosion from the +7 to the –10 ft contour during the 2004 through April 2006 period while the dune remained stable. North of here, through station 5195, the profiles all showed some minor accretion on the upper beach (+7 to +5 ft), as the berm increased in width by 20 to 30 ft in the current survey period.

Benchmark	Profiles collected in 2006	Profiles collected in 2005	First Survey Year	Total Profiles
5280	None	12/01	1988	29
5270	None	12/01	1988	33
5260	None	12/01	1987	31
5250	None	12/01	1987	35
5242	04/06	None	2006	2
5241	04/06	None	2006	2
5240	04/06	None	1988	31
5230	04/06	None	1988	34

5220	04/06	None	1988	34
5211	04/06	None	2006	2
5210	04/06	None	1988	34
5200	04/06	None	1988	25
5196	04/06	None	2006	2
5195	04/06	None	1987	33
5181	04/06	None	2006	2
5180	04/06	None	1987	38
5140	04/05	None	1988	36
5130	04/05	None	1987	36
5120	04/05	None	1988	37
5100	04/05	None	1988	34
5035	04/05	None	1989	32
5030	04/05	None	1988	26
5025	04/05	None	1989	29
5020	04/05	None	1988	34
5015	04/05	None	1989	29
5010	04/05	None	1988	28
5005	04/06	None	1989	30
5000	03/30	None	1987	32
4999	03/30	None	1989	31

Stations 5200 to 5240 are located in the campground section. Every station here has a well-established dune except for 5220, which is armored with a rock revetment. Through April 2006 the beach profiles for 5200 and 5210 show erosion from the +5 ft contour across the entire shoreface, while the northern section of the campground exhibits erosion from 0 ft down and across the profile. The dune at station 5240 has not moved, however it did experience some height loss.

Stations 5250 through 5270 are located in Myrtle Beach State Park. These profiles all have a well-established dune, and the beach is usually very stable. This area was not directly renourished in 1998, although it probably received an indirect benefit from renourishment to the north and south. These stations have not been surveyed since December 2005, but are scheduled for early 2007.

Myrtle Beach

The next area is the eight-mile section of shoreline within the Myrtle Beach city limits. The long-term erosion rate here is about one-half ft per year due to its natural geologic setting against the headland. Myrtle Beach was renourished between May and December 1997 as part of the US Army Corps of Engineers Grand Strand Renourishment

Project. This fill reached equilibrium within a few years, and has since stabilized. The most recent beach surveys were conducted at 14 stations in 2006 and 43 stations in 2005.

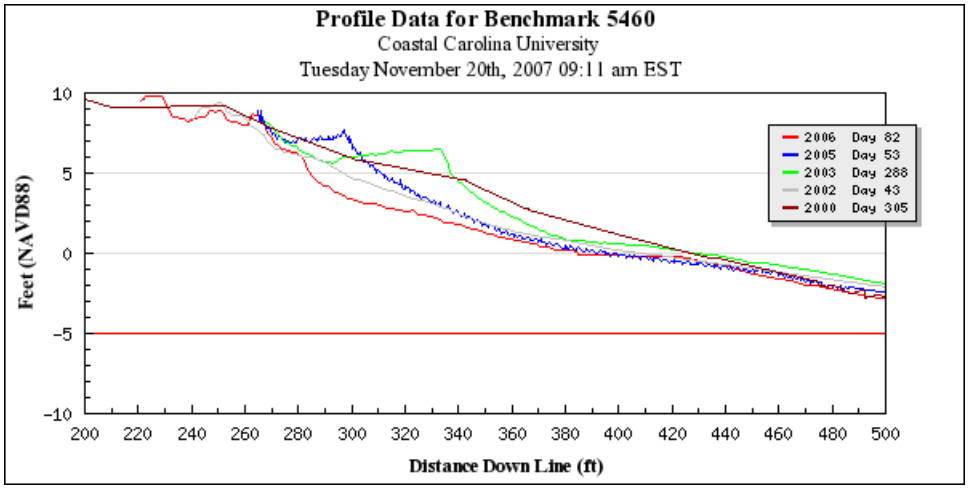
Benchmark	Profiles Collected in 2006	Profiles Collected in 2005	First Survey Year	Total Profiles
5505	03/23	02/22	1988	27
5500	03/23	02/22	1988	31
5480	06/09	02/22	1988	36
5478	06/09	02/22	1999	8
5475	06/09	02/22	1988	35
5473	06/09	02/22	2002	5
5470	06/09	02/22	1988	31
5468	03/23	02/22	1998	5
5465	03/23	02/22	1988	34
5463	03/23	02/22	1998	7
5460	03/23	02/22	1988	29
5458	06/09	02/22	1998	8
5455	None	01/05	1988	33
5453	None	01/05	1998	8
5450	None	None	1988	26
5448	None	01/05	2000	5
5445	None	01/05	1988	31
5443	None	01/05	1998	8

5440	None	01/05	1988	30
5438	None	01/05	1998	7
5435	None	01/05	1988	36
5433	10/12	01/05	1998	8
5430	10/12	01/05	1988	33
5428	None	01/05	1998	8
5425	None	10/12	1988	32
5423	None	10/12	1998	6
5420	None	10/12	1988	36
5418	None	None	1998	5
5415	None	10/12	1988	35
5413	None	10/12	1998	7
5410	None	10/12	1988	30
5408	None	10/12	1998	6
5405	None	None	1988	36
5403	None	10/12	1998	7
5401	None	10/12	1998	5
5400	None	None	1988	23
5350	None	10/12	1988	37
5345	None	12/01	1998	7
5340	None	12/01	1988	33
5335	None	12/01	1998	8
5330	None	12/01	1988	33
5325	None	12/01	1998	6
5320	None	12/01	1988	36
5315	None	12/01	1998	8
5310	None	12/01	1988	32
5305	None	12/01	1998	8
5300	None	12/01	1988	31

Stations 5300-5430, from 29th Ave. South to 31st Ave. North, are located in the southern commercial district. There are many seawalls and bulkheads in this region, and before renourishment sand volumes were relatively low. The 1997 renourishment project stabilized by 2000 and the upper beach berm has lost only a minor amount of sand since then. During the 2005 survey period almost all stations showed accretion on the upper beach as the berm increased in width and also grew vertically by 1 to 2 ft. Stations in the southern section of Myrtle Beach, from 5300 at 29th Ave. South to 5330 at 15th Ave. South, also lost sand from the 0 to -5 ft contour, but north of here the remaining stations were fairly stable on the lower beach. In general the dry-sand berm width here is still adequate and continues to provide storm damage protection and a recreational benefit.

Station 5430 showed erosion between the +7 ft and -5 ft levels from January 2005 through October 2006, losing the berm on the upper beach created from 2003 to 2005.

The area between stations 5435 and 5465, from 31st Ave. North to 67th Ave. North, is primarily a residential section with some commercial sites. There are few bulkheads or seawalls, and although a primary dune exists in many areas there are also unarmored sections where the highland, usually a residential lawn, simply slopes down to the berm. From February 2005 to June 2006, the stretch of coast between stations 5458 and 5468 exhibited a loss of the berm at approximately +7 ft, migrating landward between 20 and 40 ft and losing 2 to 3 ft in elevation.



Stations 5470 - 5480 are located in the northern commercial district, although there are several residential structures here as well. A small but well-defined primary dune exists along most of the beach. Surveys show the beach profile here to be eroding during the survey period similarly to the section to the south, with accumulation of sand between -5 and -10 ft.

Stations 5500 and 5505 are located on Club Road, just north of the City of Myrtle Beach and south of Singleton Swash, where there is little oceanfront development. The beach here has a well-developed primary dune and the shoreline is usually quite stable from year to year. During the recent survey period, the upper beach lost approximately 1 to 2 ft of berm.

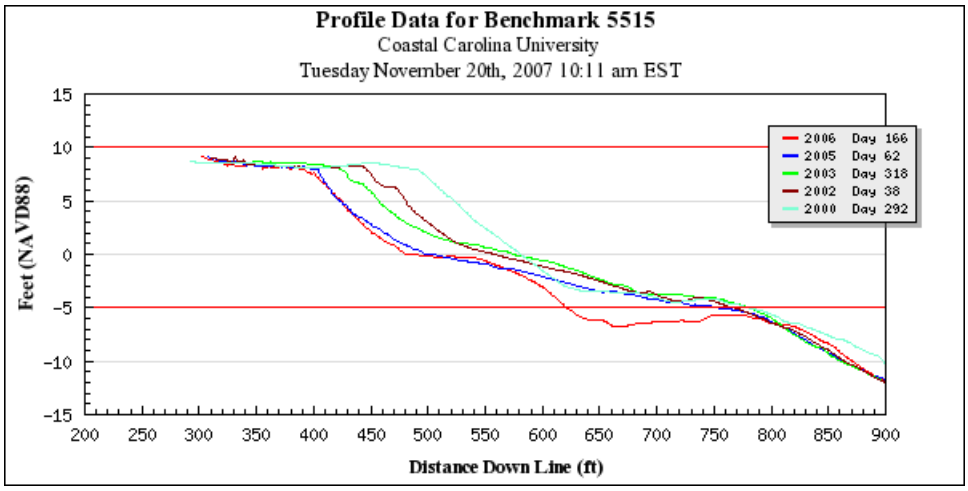
Unincorporated Horry County—North

This area of unincorporated Horry County is located between the City of Myrtle Beach and White Point Swash, and includes the Shore Drive section, Arcadian Shores, the campground section, and Briarcliffe Acres. The long-term erosion rate is about one-half ft per year. There are 14 beach survey monuments located here which were most recently surveyed in November 2003, March 2005, and June 2006.

Benchmark	Profiles collected in 2006	Profiles collected in 2005	First Survey Year	Total Profiles
5590	None	None	1988	19
5585	None	None	2003	1
5580	06/15	03/03	1988	31
5570	06/15	03/03	1988	31
5560	06/15	03/03	1988	33
5555	None	None	2003	1
5550	06/15	03/03	1989	29
5540	06/15	03/03	1988	34
5535	06/15	03/03	1989	30
5530	None	None	1988	25
5528	06/15	03/03	2000	5
5523	06/15	03/03	2000	6
5520	06/15	03/03	1988	30

5519	None	None	2000	4
5518	06/15	03/03	1989	15
5515	06/15	03/03	1988	32
5514	06/15	03/03	2000	7
5513	06/15	03/03	1989	29
5510	06/15	03/03	1988	31

Stations 5510 to 5518 are located north of Singleton Swash along Shore Drive, where shoreline armoring is extensive and a dry-sand beach has generally been absent. This area was renourished by Horry County in 1999, when a 150-ft wide dry sand berm was created. The beach profile here has experienced post-project adjustment ever since, as the renourishment berm has cut back by 20 to 50 ft per year. From November 2003 through March 2005 the upper beach berm moved landward by another 30 to 40 ft. During the period between March 2005 and June 2006, the upper beach in this area consistently eroded between 10 and 20 ft, with a small accumulation of sand between the +1 and -1 ft contours and erosion of the lower beach between -3 and -7 ft.



Stations 5520-5550 are located in the campground section, where oceanfront development is a mixture of campsites and resort hotels. Although this section was not renourished in 1999 it did receive some indirect benefits from the nearby Shore Drive renourishment project. Between the November 2003 and March 2005 surveys, most stations here experienced 40 to 50 ft of berm erosion, and a general loss of sand along the entire profile from the berm down to the –3 or –4 ft contour. The beach has recovered in this section through the June 2006 survey, with 30 to 50 ft accretion of the beach between +7 and 0 ft. A trough formed in the -3 to -6 ft elevations along this portion of the coast.

Stations 5560-5590 are located in Briarcliffe Acres, where the oceanfront is undeveloped and a well-defined primary dune exists with virtually no shoreline armoring. In the previous survey period, this area showed dramatic berm erosion, as the upper beach cut back by 60 ft at station 5570 and 80 ft at station 5580. During the current survey period the beach recovered slightly, adding approximately 15 ft of berm to Station 5560, 25 ft of berm to 5570, and a negligible amount to station 5580. The swale in the lower beach between -5 and -7 ft deepened. Across the entire profile, this section of coast had a net accumulation of sand.

North Myrtle Beach

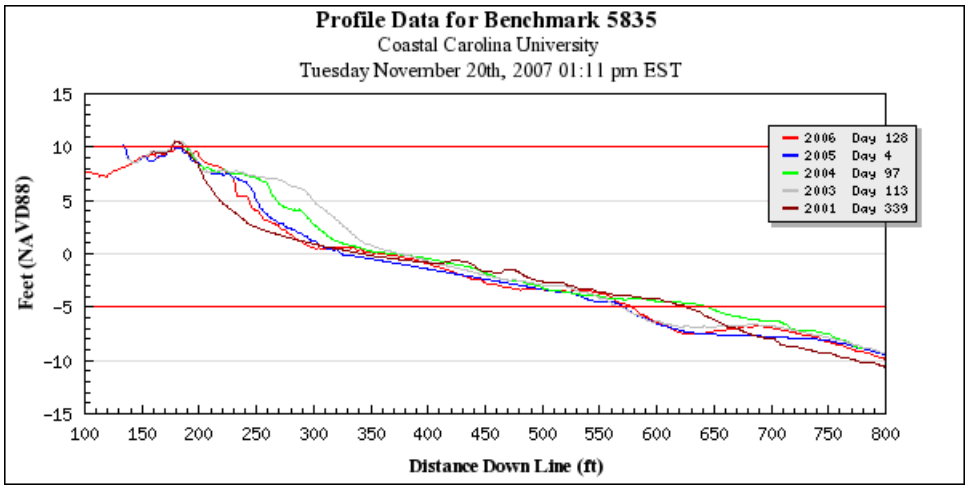
This section includes the City of North Myrtle Beach and Atlantic Beach, from White Point Swash to Hog Inlet. The shoreline is heavily developed and much of it is armored, with alternating zones of commercial and residential structures. The beach at North Myrtle Beach is typically wider and flatter than other Grand Strand beaches. The long-term erosion rate is about a half-foot per year. North Myrtle Beach was renourished by the US Army Corps of Engineers between September 1996 and April 1997, increasing the dry-sand beach width by over 100 ft and unit-width sand volumes by over 70 cubic yards per ft. The renourishment project has since stabilized, and some of the sand still remains on the upper beach. There are 43 beach survey monuments here, which were surveyed in March 2004, January or May 2005, and May 2006.

Benchmark	Profiles collected in 2006	Profiles collected in 2005	First Survey Year	Total Profiles
5895	05/04	01/04	1989	35
5890	05/04	01/04	1988	41
5885	05/04	01/04	1989	35
5880	05/04	01/04	1988	36
5875	05/04	01/04	1989	34
5870	05/04	01/04	1988	39
5865	05/04	01/04	1989	33
5860	05/04	01/04	1988	40
5855	05/04	01/04	1989	33
5850	05/04	01/04	1988	41
5845	05/04	01/04	1989	27
5840	05/08	01/04	1988	33
5835	05/08	01/04	1989	30
5830	05/08	05/18	1988	38
5825	05/08	05/18	1989	32
5820	05/08	05/18	1988	38
5818	05/08	05/18	1989	34
5815	05/08	05/18	1988	37
5810	05/17	05/18	1989	33
5805	05/17	05/12	1988	37
5803	05/17	05/12	1989	31
5800	05/17	05/12	1988	36

5798	05/17	05/12	1989	33
5795	05/17	05/12	1988	36
5790	05/17	05/12	1988	35
5785	05/17	05/12	1989	37
5780	05/17	05/12	1988	33
5775	05/17	05/12	1989	31
5770	05/17	05/12	1988	36
5760	05/17	05/12	1988	39
5755	05/17	05/10	1989	35
5750	05/17	05/10	1988	35
5745	05/17	05/10	1989	35
5740	05/17	05/10	1988	38
5735	05/17	05/10	1989	33
5730	05/17	05/10	1988	38
5725	05/19	05/10	1989	29
5720	05/19	05/10	1988	29
5715	05/19	05/10	1988	38
5705	05/19	05/10	1988	33
5700	05/19	05/10	1988	37
5650	06/09	03/03	1989	25

In the Windy Hill section, the southernmost portion of North Myrtle Beach from 48th Ave. South to 34th Ave. South where stations 5650-5720 are located, the upper beach profile was fairly stable with some accumulation on the upper and lower beach, and erosion on the lower beach at a few stations. In the Crescent Beach section, from 28th Ave. South to 2nd Ave. North where monitoring stations 5730 through 5798 are located, most stations experienced accretion of the profile. In the Ocean Drive section, from 2nd Ave. North to Sea Mountain Highway where stations 5800 to 5830 are located, most stations were stable to slightly erosive at the upper berm (+5 ft), with accumulation of sand between 0 and 5 ft.

In the Cherry Grove section between stations 5835 at Sea Mountain Highway and 5850 at 32nd Ave. North the character of the beach changes. Much of this area is armored and experienced chronic sand deficits prior to renourishment. This same 7-block area south of the Cherry Grove pier has also experienced higher erosion rates following the renourishment project, and the beach here is currently not as wide as the beach north of the pier or south of 28th Ave. North. During the current survey period the profile from the berm down to the 0 ft contour cut back an additional 20 to 30 ft from the previous survey period, where the loss was about 20 ft. North of the pier, from station 5855 at 37th Ave. North to 5890 at 58th Ave. North, a few stations showed berm erosion but most were stable or even accretional on the primary dune and upper beach. Station 5895 on Hog Inlet shows the formation of a new channel and migration of the berm landward 45 ft. The profile is similar to that seen in 2004.



Waties Island

Waties Island (sometimes referred to as Waites Island) is an undeveloped three-mile long barrier island located between Hog Inlet to the southwest and Little River Inlet to the northeast. Little River Inlet was stabilized by the construction of a jetty system between 1981 and 1983. The southwest end of Waties Island is an unstabilized inlet zone, the central portion is a standard zone, and the northeastern section is a stabilized inlet zone. Most of the island has a long-term erosion rate ranging from -4 to -10 ft per year, although jetty construction has helped to stabilize the shoreline and lessen the erosion. During most of the 1990's the Hog Inlet shoreline was extremely erosional, losing several hundred ft, but has changed to an accretional mode in recent years. There are 6 monitoring stations on Waites Island, which were most recently surveyed in May 2004, January 2005, and December 2005.

Benchmark	Profiles collected in 2006	2005	First Survey Year	Total Profiles
5995	None	None	1989	20
5975	None	12/06	1989	28
5960	None	01/03	1988	33
5945	None	01/03	1989	32
5930	None	01/03	1990	30
5915	None	01/03	1988	28
5905	None	01/03	1989	33

No profiles were collected on Waties Island during the current survey period. During the prior survey periods almost all profiles at Waites Island were stable or showed signs of moderate accretion on the upper beach. Station 5905, closest to Hog Inlet at the south end of the island, had showed some signs of erosion and was slightly erosional between 2002 and 2003, but has been accretional since then. During the previous survey period the primary dune here with a crest elevation of +14 ft was stable, while an

emerging dune seaward of the primary dune continued to develop. Station 5915 showed the same characteristics—a stable primary dune at +15 ft and a smaller dune developing on the seaward side of it.

The remaining stations on Waites Island, 5930, 5945, 5960 and 5975, were all quite stable through January 2005, with a minimal gain of sand on the seaward side of the primary dune. The primary dune at Station 5930 grew approximately four ft from January to December 2005, with prominent accretion in the upper beach. In general, it appears the accretional phase that began on much of the island several years ago is continuing. This may be due to the long-term stabilizing influence of the Little River jetties, which may eventually decrease the officially adopted long-term erosion rates on Waties Island.

State-Wide Summary

In 2006 three major disturbances along the coast caused damage to the shore in the state. In late August, tropical storm Ernesto passed offshore, having most impact along the northern coast. Winds reached gusts of 46 mph in Myrtle Beach as it made its way up the coast. In September, Hurricane Florence stayed offshore creating large waves that impacted the regions south of Dewees Island. In late November, a low pressure system developed off Florida, creating strong winds along the entire South Carolina coastline.

During the 2007 hurricane season an early-season sub-tropical storm, Andrea, formed in mid-May off Cape Hatteras and moved southwest toward Daytona Beach. South Carolina experienced 4 days of 20-30 mph winds from the north to northeast, causing tides to run 1-2 ft above normal. The Wild Dunes community at the northeast end of the Isle of Palms, experienced extensive erosion during this period. The remainder of the 2007 hurricane season was quiet, but for six days in late September and early October predicted high tides and strong northeast winds caused significant beach erosion along parts of the SC coast, particularly Hunting Island. The extreme beach erosion in the Wild Dunes section of the Isle of Palms also continued into 2007. This area, as well as the northeast end of Sullivans Island and portions of Harbor Island in Beaufort County, are still significantly eroded.

Inlet zones - those beaches closest to unstabilized tidal inlets – are generally the most dynamic beaches and may experience the greatest shoreline erosion or accretion. Other sections of beach away from tidal inlets can still experience chronic beach erosion. Regardless of its designation as an inlet zone or standard zone, any section of beach with a sand deficit and a minimal beach width should be considered at-risk, since the dunes and dry-sand beach provide a buffer between the ocean and high-ground development.

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This report was prepared by Bill Eiser, staff oceanographer for the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management and Scott Harris, Department of Geology and Environmental Geosciences, College of Charleston and Department of Marine Science, Coastal Carolina University. Funding for beach monitoring was provided by a grant from the U.S. Geological Survey. This report is available on the internet at http://www.scdhec.gov/environment/ocrm