New Jersey Beach Profile Network

Ocean County

Manasquan Inlet to Little Egg Inlet

NJBPN Profile #'s 156 - 234

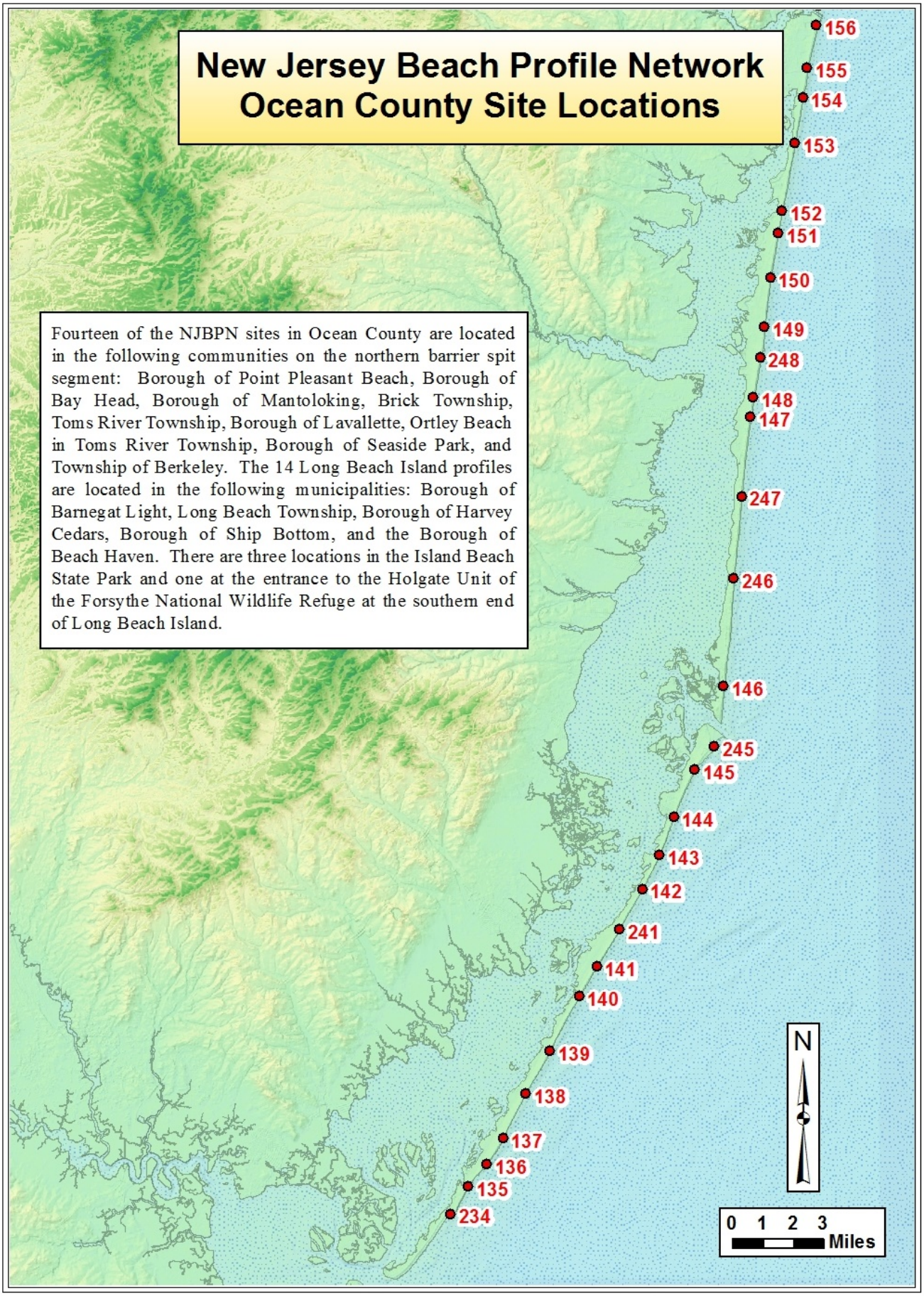


Figure 106. Locations of the 28 NJBPN profile stations in Ocean County, NJ.

2016-2017 Beach Fills in Ocean County:

The federal/state/local storm damage reduction project (beachfill) between Manasquan Inlet and Barnegat Inlet commenced in May 2017 in Dover Township (Ortley Beach- NJBPN #149) via a betterment option funded by the state and municipality. This action was taken because of scheduling delays and the need to protect the most vulnerable oceanfront community while waiting for construction of the designed dune and berm. The entire federally-designed beachfill is expected to place approximately 10 million cubic yards of sand on nearly 14 miles of ocean shoreline between Point Pleasant Beach and Berkeley Township (USACE Project Fact Sheet, 2017 http://www.nap.usace.army.mil/Missions/Factsheets/Fact-Sheet-Article-View/Article/490786/new-jersey-shore-protection-manasquan-inlet-to-barnegat-inlet-nj/). The reach that includes Island Beach State Park is not included in this storm damage reduction project. Because of project delays, the CRC focused its 2017 surveying efforts in northern Ocean County to obtain pre-beachfill project elevations. The CRC collected post-beach fill elevations only at NJBPN #153. The USACE posts the construction status at http://www.nap.usace.army.mil/Missions/Civil-Works/Manasquan-Inlet-to-Barnegat-Inlet/

State/municipal and federal/state/municipal beachfills were completed on Long Beach Island in 2016-2017 in response to damages from storms. The USACE posts the construction status of the LBI project at http://www.nap.usace.army.mil/Missions/Civil-Works/Long-Beach-Island-Storm-Damage-Reduction/

Individual Site Descriptions:

Point Pleasant Beach, Water Street and Maryland Avenue; #156 and #155;
The recreational beach at Water Street has no dune due to local custom and high volume beach use during the tourist season. The Maryland Avenue location has had a long-established dune with a crest near 16 ft NAVD88. Berm elevations at both sites approach 10 ft NAVD88.

Bay Head, Johnson Avenue; #154;
The site is backed by a rock revetment that was constructed after the 1962 March northeaster and has had an erratic history of shoreline stability. Berm widths varied from 75-100 feet over the past year and the nearshore slope was steep with no evidence of nearshore bars.

Mantoloking, 1117 Ocean Avenue; #153;
The steel vertical sheet-pile wall was installed here in 2014 and has been exposed to wave action by even modest storms. Completed at top elevation of 16.0 feet NAVD 88, this wall was initially buried in recovery sand making up a “dune” containing the wall as a core. Northeast storm Jonas, January 23, 2016 exposed 85% of the wall’s length leaving between 6 and 22 feet of vertical surface exposed above either a wet beach at low tide or a sand surface below the elevation of low tide. By the fall 2017 survey, the site received sand from the initial construction of the federal beachfill. This event expanded the base width of the dune and berm by 200 feet and elevated the berm to nearly 7.0 ft NAVD88.

Brick Township, Public Beach #3, #152;
The steel wall extends south past this site and in spring 2016 was covered with sand through local efforts. The resulting new dune was seaward of the previous and raised to approximately 25 ft. The remaining profile is characterized by a steep, narrow berm. A nearshore sandbar was measured in the fall 2017 survey indicating cross-shore transport.

Toms River Township (Normandy Beach, Ortley Beach), 1st Avenue and 8th Avenue; #151 and #149;
These sites were in desperate need of sand prior to the construction of the federal beachfill. Through a betterment, funding was available to place sand at the Ortley Beach location in May 2017. This included sand for the berm only. Dune and berm restoration will occur during the scheduled construction. The Normandy profile is characterized by a small, narrow dune at elevation 18 ft NAVD88 and a narrow berm.

Lavallette; White Avenue; #150;
The post-Sandy dune reaches nearly 23 ft, but is less than 100 ft at its base. In late 2017, the berm width expanded to 200 ft, possibly due to sand that was added to the littoral system in Ortley Beach in May 2017.

Seaside Heights; Franklin Avenue; #248;
This site does not include a dune due to local management efforts and the heavy beachgoer use. This site posted the greatest seasonal volume losses of all the Ocean County sites (between fall 2016 and spring 2017) but regained more sand over the summer 2017 to finish with a net volume gain over the year.

Seaside Park; 4th Avenue; #148;
The Seaside Park profile contains a stable dune over 25 ft high and a moderate-width (100 ft) berm. Local efforts via sand fencing have incrementally moved the base of the dune seaward. Nearshore sand bars are a typical occurrence.

Midway Beach (Berkeley Township); 6th Avenue; #347
The profile at Midway Beach contains an impressive dune (> 25 ft and 150 ft wide) and a berm that measured over 100 ft. The berm was lowered by the January 2017 northeaster and did not regain its pre-storm elevation.

Island Beach State Park; Sites #247, #246, and #146;
All three locations recorded volume gains over the 2016-2017 time frame, with the greatest gains occurring at the southernmost profile location (#146). The dunes remained in the same position and elevation, and most changes occurred in the seaward portion of the berm and in the nearshore.

Barnegat Light Borough; 10th Street and 26th Street; #245 and #145;
The Barnegat Light Borough locations display different profile features. The 10th Street site is comprised of an extensive dune system (1200 ft) and very narrow berm, while the 26th Street site contains a 350 ft wide dune and 400 ft berm. Both lost sand volume from the January 2017 northeaster. Over the 2016-2017 time period, the 10th Street profile losses were greater than at the 26th Street site which regained much of the lost sand by the fall 2017.

Long Beach Township (Loveladies); La Baia Street; #144;
Sand was added to the Loveladies section of the Township in the summer of 2016. The result was an engineered dune at 22 ft NAVD88 that was placed seaward and dwarfed the previous dune system. In the 2016-2017 time period, most of the volume changes occurred below the 0.0 ft datum.

Harvey Cedars; 73rd Street and Tranquility Drive; #143 and #142;
A small state-funded beachfill occurred at the NJBPN #143 site in October 2016, but not at Tranquility Drive which received sand from the neighboring beachfills.

Surf City; 20th Street; #241;
The 20th Street site in Surf City was included in the initial construction of the federal beachfill in 2007 and later restored to the design template in 2013 following the passage of PL 113-2. While there has been changes to the berm since the last restoration, the engineered dune has remained intact and at the design elevation and position.

Ship Bottom; 8th Street; #141;
The Ship Bottom profile has retained its 150-ft wide dune and at least a 150-ft wide berm since the spring 2015 beachfill. Even with the volume loss in 2016-2017, the site has gradually accreted since 2012.

Long Beach Township (Brant Beach, 32nd St; #140; Beach Haven Crest, 81st St; #139; Spray Beach) Old Whaling Rd; #138;
All of the Township NJBPN locations received post-Sandy restoration to the template design in 2015 or 2016 and each engineered dune has remained as designed and constructed. All of the sites showed seasonal changes

in the beachface and nearshore. NJBPN #139 measured the greatest volume loss of the three sites in 2016-2017 but the berm was nearly 200 ft wide by the fall 2017 survey.

Beach Haven; Taylor Ave; #137 and Dolphin Ave; #136;
Both of the Beach Haven sites are located within the federal beachfill and initial construction was completed by 2016. Over the 2016-2017 time period, site #137 appeared to be the more stable profile of the two. The Dolphin Avenue site has a narrower berm and showed larger swings in volume gains and losses, mostly below the 0.0 ft datum.

Long Beach Township (Holgate); Webster Ave; #135;
Initial construction of the engineered dune and berm was completed in summer 2016. Even with erosion of the beachface, the site gained in volume following the January 2017 northeaster. These gains occurred primarily below the datum.

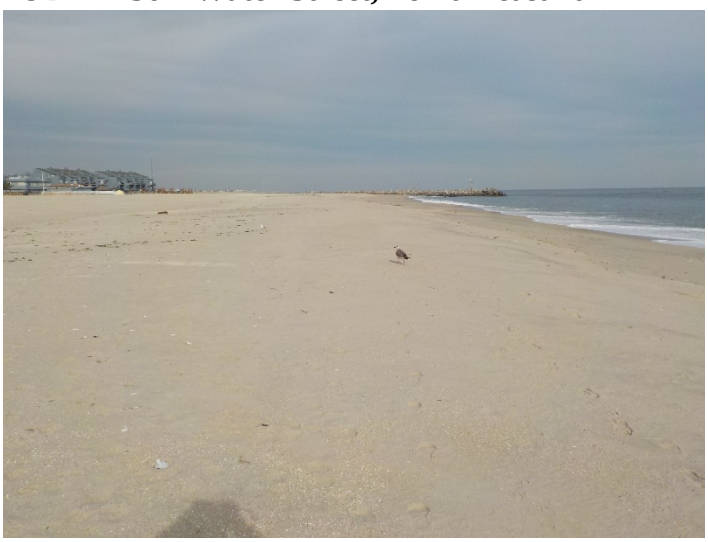
Forsythe National Wildlife Refuge; Located at the northern boundary with LBT; #234;
Since commencement of the federal beachfill in Beach Haven and the Holgate section of the Township in 2016, this site has shown significant changes in the beachface and nearshore depending on when and where the sand was placed updrift of the site. The profile is located within the project's "taper" section immediately south of the Holgate terminal groin.

2017 Storm Activity

The only significant storm to affect the Ocean County shoreline was the January 24, 2017 northeaster which brought strong onshore flow and tidal flooding (NOAA Storm Events Database, 2017) https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2017&endDate_mm=11&endDate_dd=15&endDate_yyyy=2017&county=OCEAN%3A29&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=34%2CNEW+JERSEY All of the NJBPN sites in Ocean County showed the effects of the storm.

Hurricane Jose passed offshore New Jersey during a spring high tide in September (18-19) but damages to the shoreline were not observed.

NJBPN 156 – Water Street, Point Pleasant



The Water Street site is located near the south end of the Point Pleasant Beach boardwalk and 1,400 ft south from the Manasquan Inlet jetty. The lack of dunes on the profile is the result of local beach maintenance activities. Between fall 2016 and fall 2017, the shoreline moved seaward (46 ft). This accumulation is barely visible in the photos above (left photo taken December 21, 2016 and right photo taken November 2, 2017).

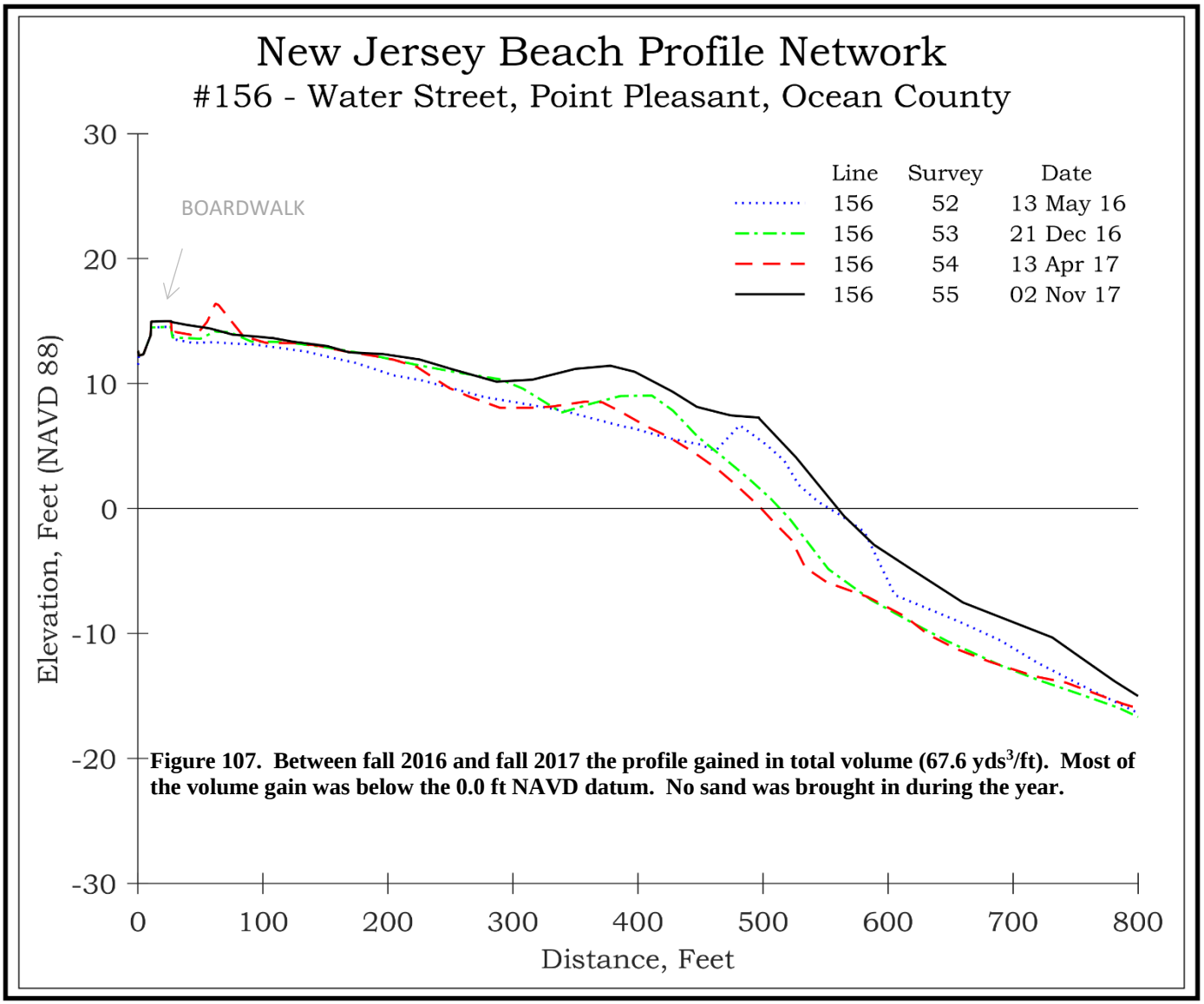


Figure 107. Between fall 2016 and fall 2017 the profile gained in total volume (67.6 yds^3/ft). Most of the volume gain was below the 0.0 ft NAVD datum. No sand was brought in during the year.

NJBPN 155 – Maryland Avenue, Point Pleasant

The Maryland Avenue profile is located over a mile south of Manasquan Inlet. The photos (left taken December 21, 2016 and right taken November 2, 2017) show little change in the backshore as most of the annual change occurred at the beachface.

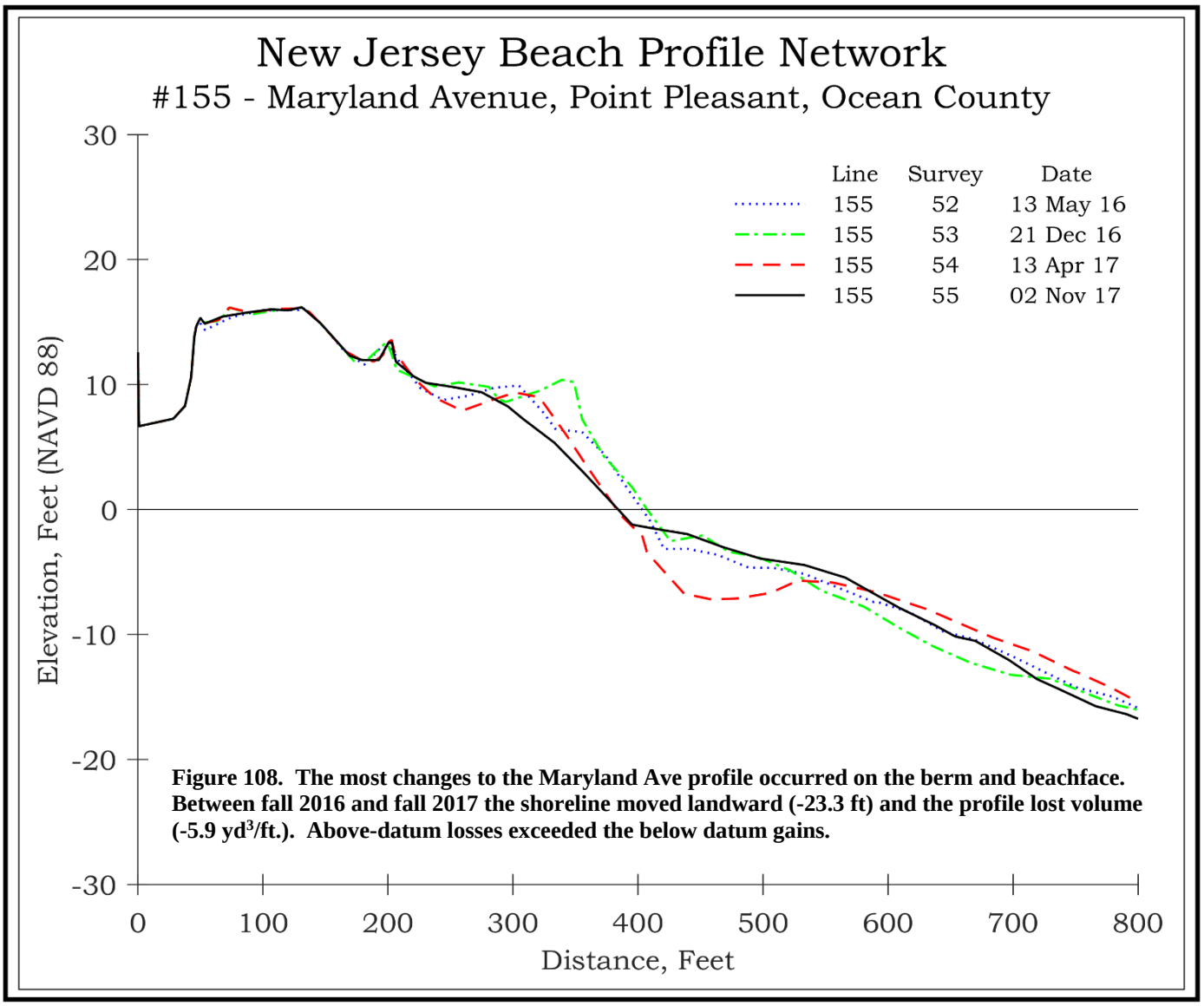
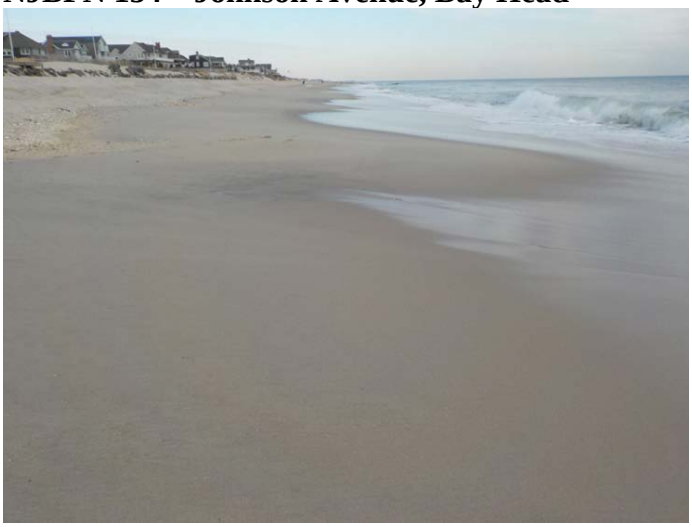


Figure 108. The most changes to the Maryland Ave profile occurred on the berm and beachface. Between fall 2016 and fall 2017 the shoreline moved landward (-23.3 ft) and the profile lost volume (-5.9 yd^3/ft.). Above-datum losses exceeded the below datum gains.

NJBPN 154 – Johnson Avenue, Bay Head



The Johnson Avenue profile shows a narrow berm and steep nearshore (left taken December 22, 2016 and right taken January 19, 2018). The position of the 0.0 ft NAVD shoreline fluctuated by 20 ft throughout the year but arrived at in the same location in January 2018.

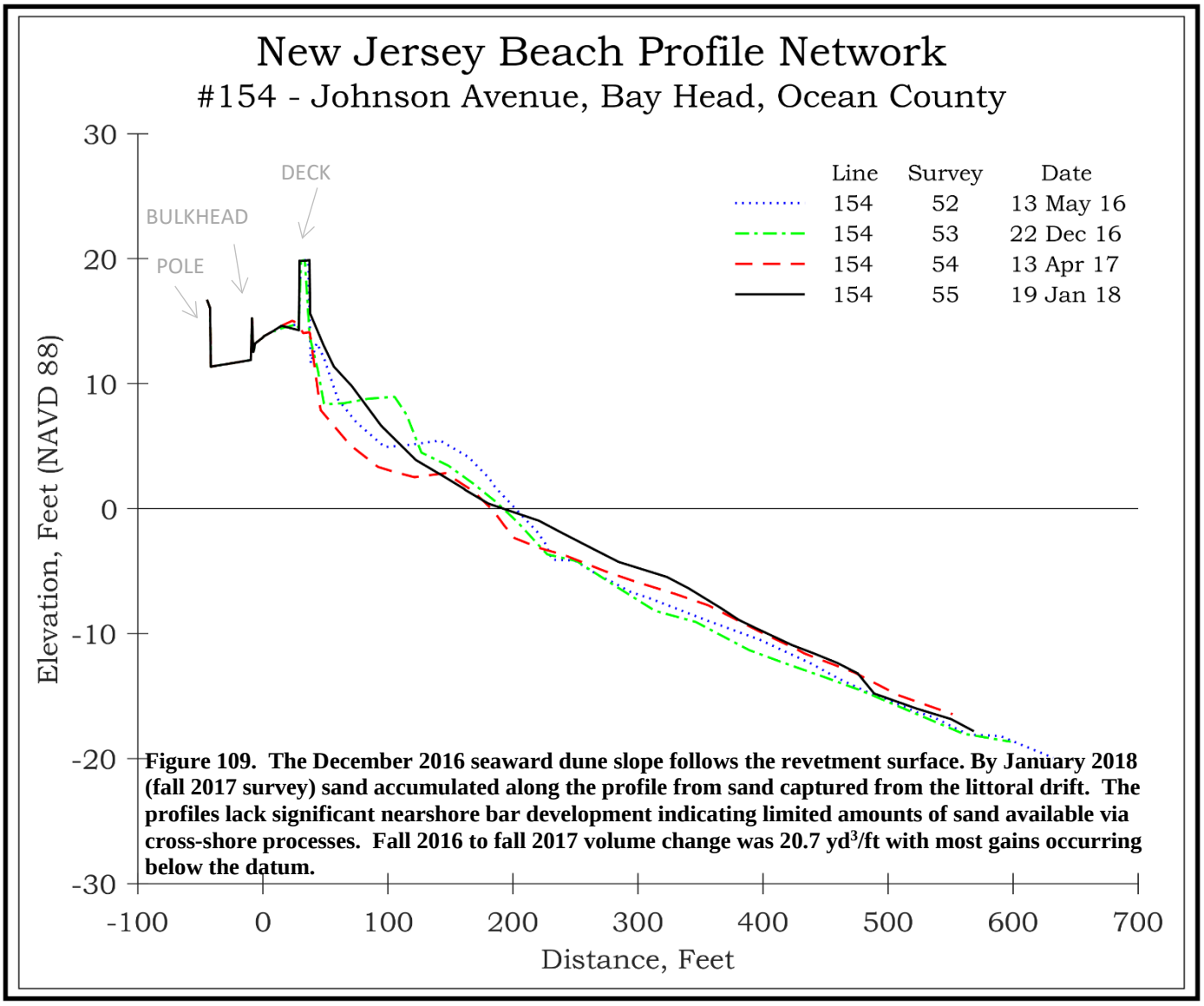


Figure 109. The December 2016 seaward dune slope follows the revetment surface. By January 2018 (fall 2017 survey) sand accumulated along the profile from sand captured from the littoral drift. The profiles lack significant nearshore bar development indicating limited amounts of sand available via cross-shore processes. Fall 2016 to fall 2017 volume change was 20.7 yd^3/ft with most gains occurring below the datum.

NJBPN 153 – 1117 Ocean Avenue, Mantoloking

At the Mantoloking Ocean Avenue location, the left photo (taken October 17, 2016) shows a narrow dry beach. In contrast, the right photo (taken December 21, 2017) shows the results of the federal/state/municipal beach fill that was completed before the fall 2017 survey. The 0.0 ft NAVD shoreline was moved seaward by 184.5 ft from its fall 2016 position.

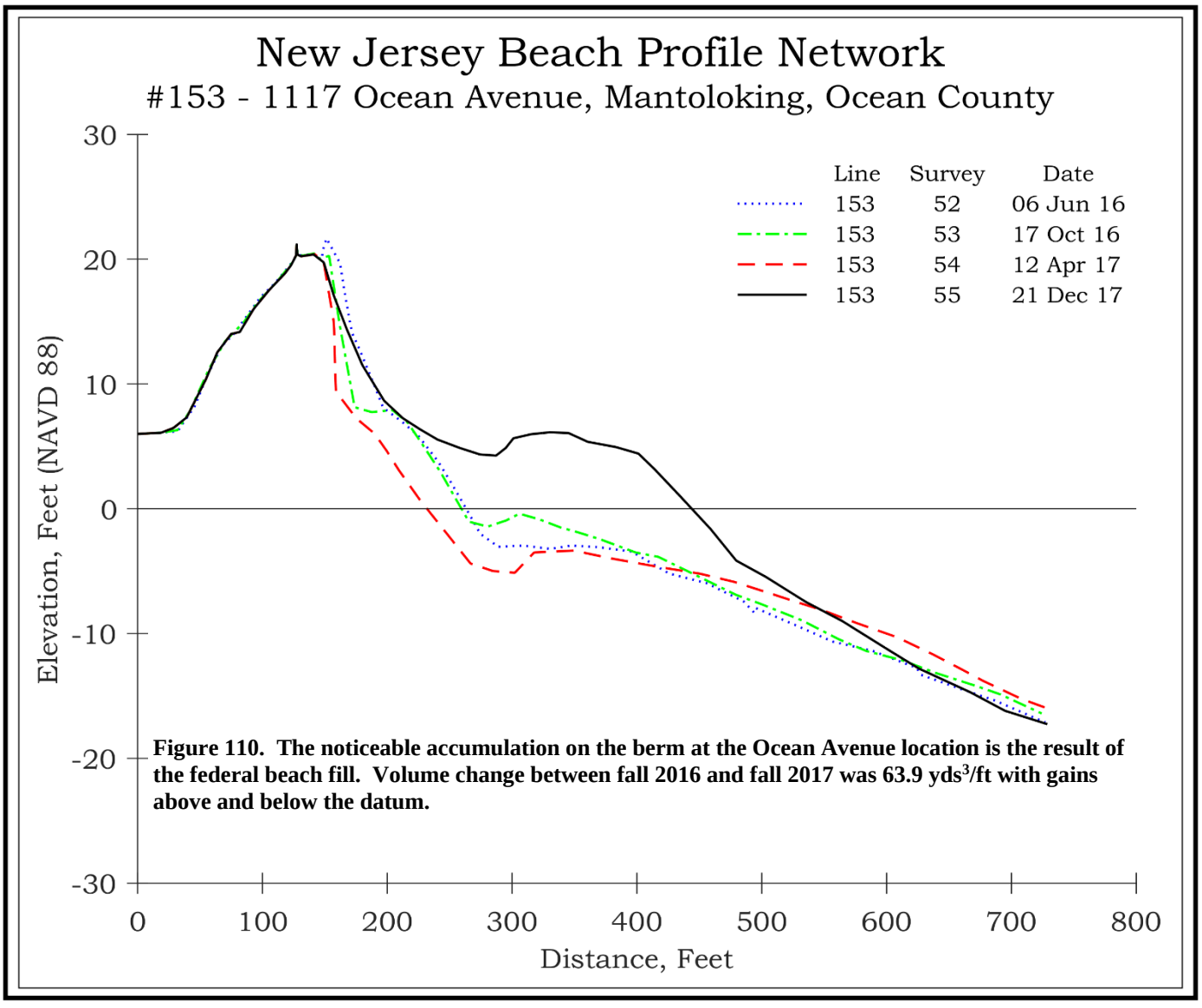


Figure 110. The noticeable accumulation on the berm at the Ocean Avenue location is the result of the federal beach fill. Volume change between fall 2016 and fall 2017 was 63.9 yds^3/ft with gains above and below the datum.

NJBPN 152 – Public Beach #3, Brick Township

The photos of the Brick Township Public Beach #3 profile site show the change in the dune between December 22, 2016 (left) and November 1, 2017 (right). Sand was pushed from the berm to protect the existing dune. This site is scheduled to receive sand from the federal/state beachfill during the spring/summer of 2018.

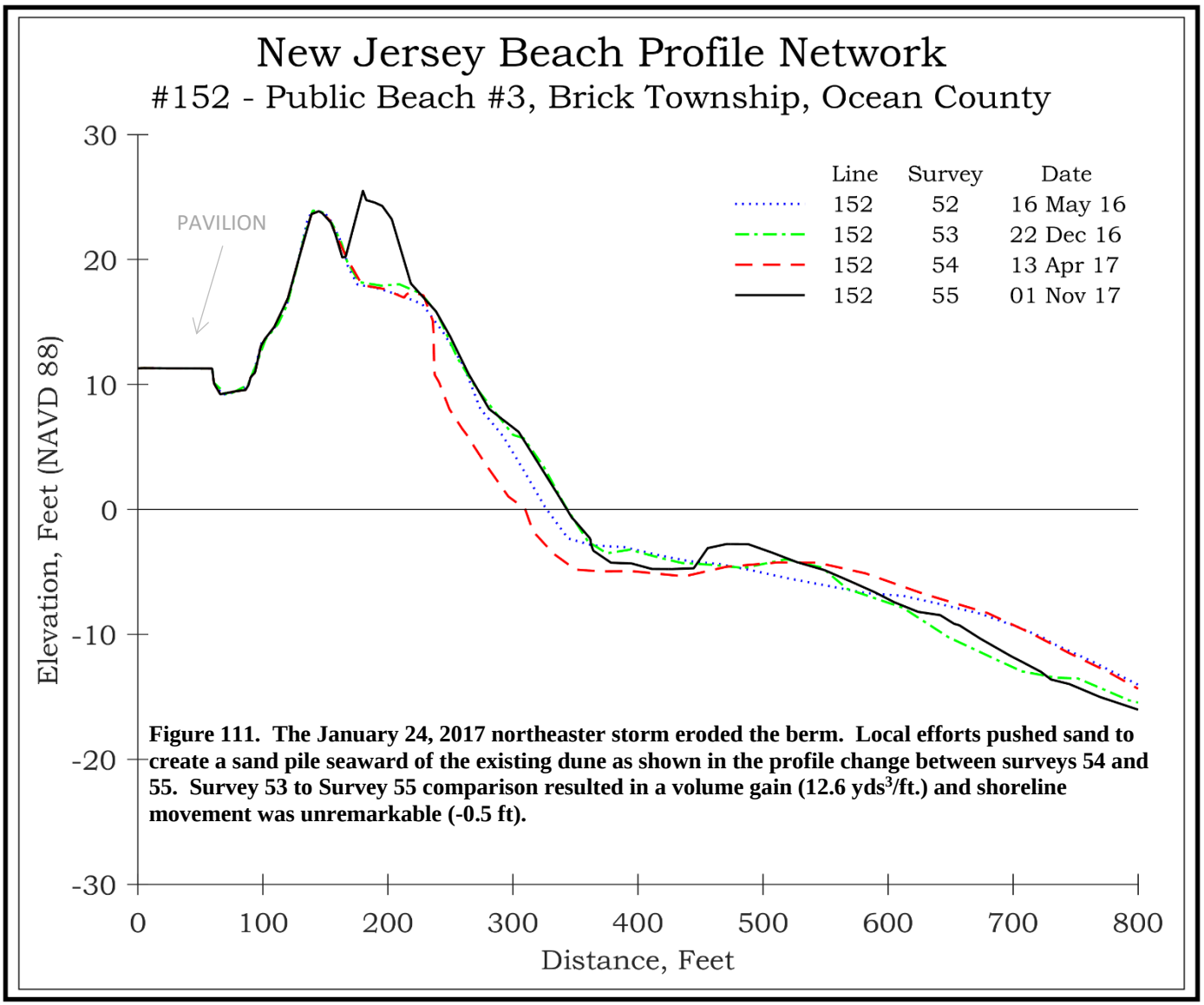


Figure 111. The January 24, 2017 northeaster storm eroded the berm. Local efforts pushed sand to create a sand pile seaward of the existing dune as shown in the profile change between surveys 54 and 55. Survey 53 to Survey 55 comparison resulted in a volume gain (12.6 yds^3/ft.) and shoreline movement was unremarkable (-0.5 ft).

NJBPN 151 – 1st Avenue, Normandy Beach

The photos of the Normandy Beach profile show the conditions of the backshore adjacent to the dune fencing (left taken December 22, 2016 and right taken November 1, 2017) and do not show the effects of the January 2017 northeaster. The Normandy Beach portion of the federal/state beach fill is scheduled for summer 2018.

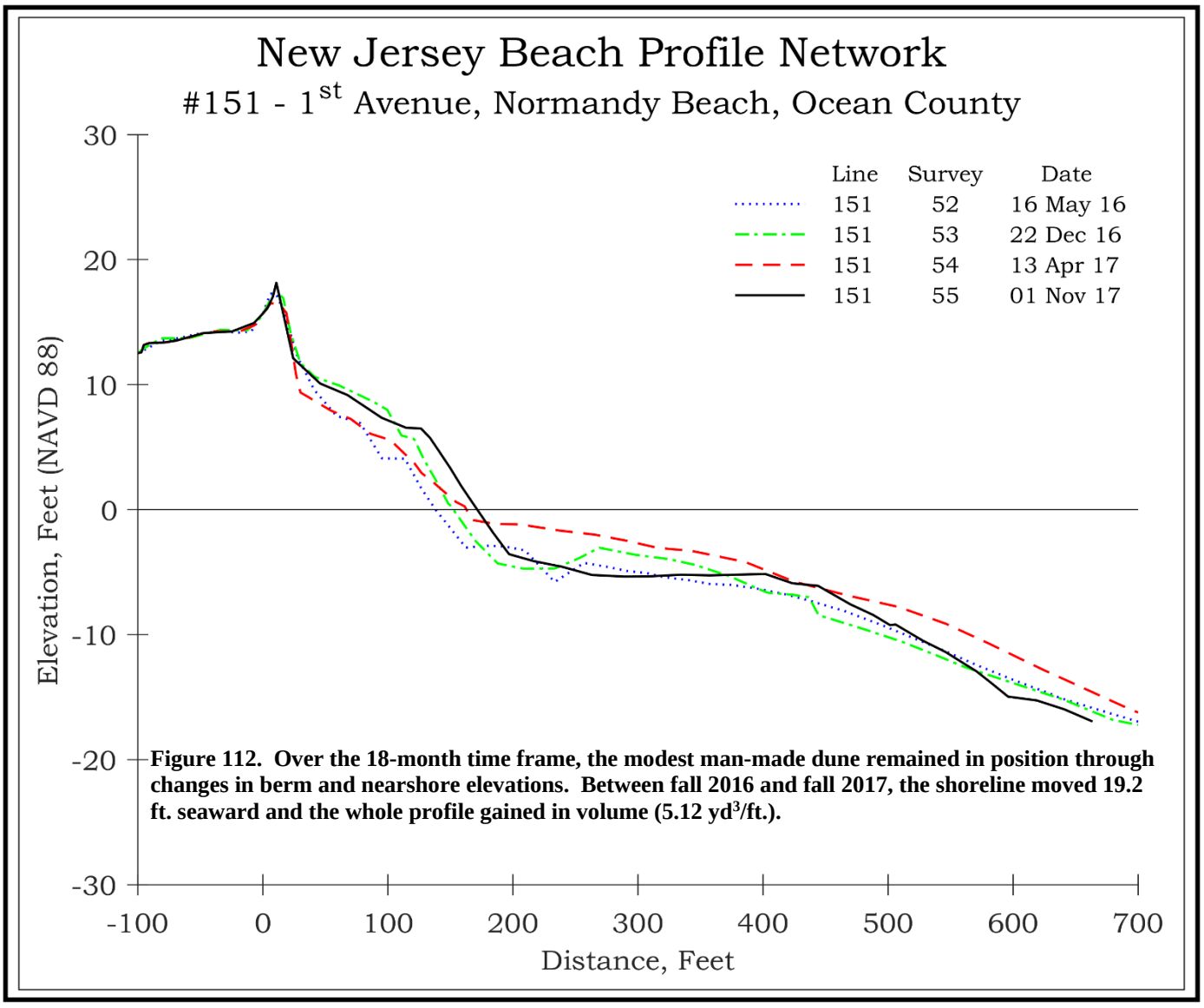
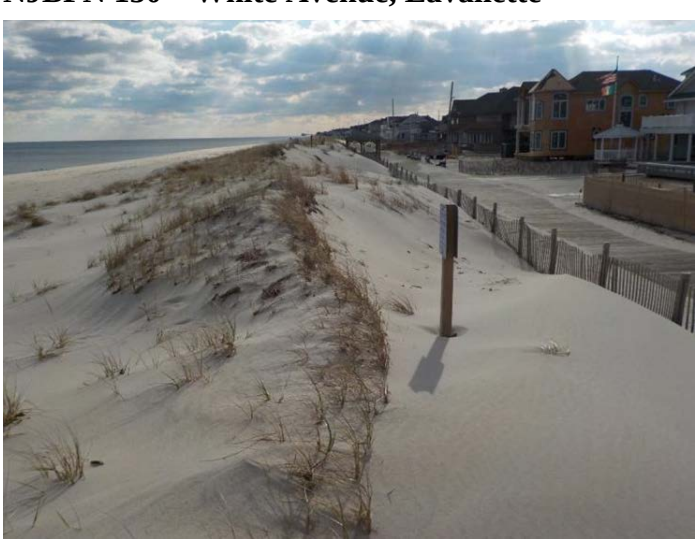


Figure 112. Over the 18-month time frame, the modest man-made dune remained in position through changes in berm and nearshore elevations. Between fall 2016 and fall 2017, the shoreline moved 19.2 ft. seaward and the whole profile gained in volume (5.12 $yd^3/ft.$).

NJBPN 150 – White Avenue, Lavallette



The photos of the dune at White Avenue show little changes inflicted by the January 2017 northeaster (left taken December 9, 2016 and right taken November 1, 2017). This location is scheduled for beach nourishment in late summer/fall of 2018.

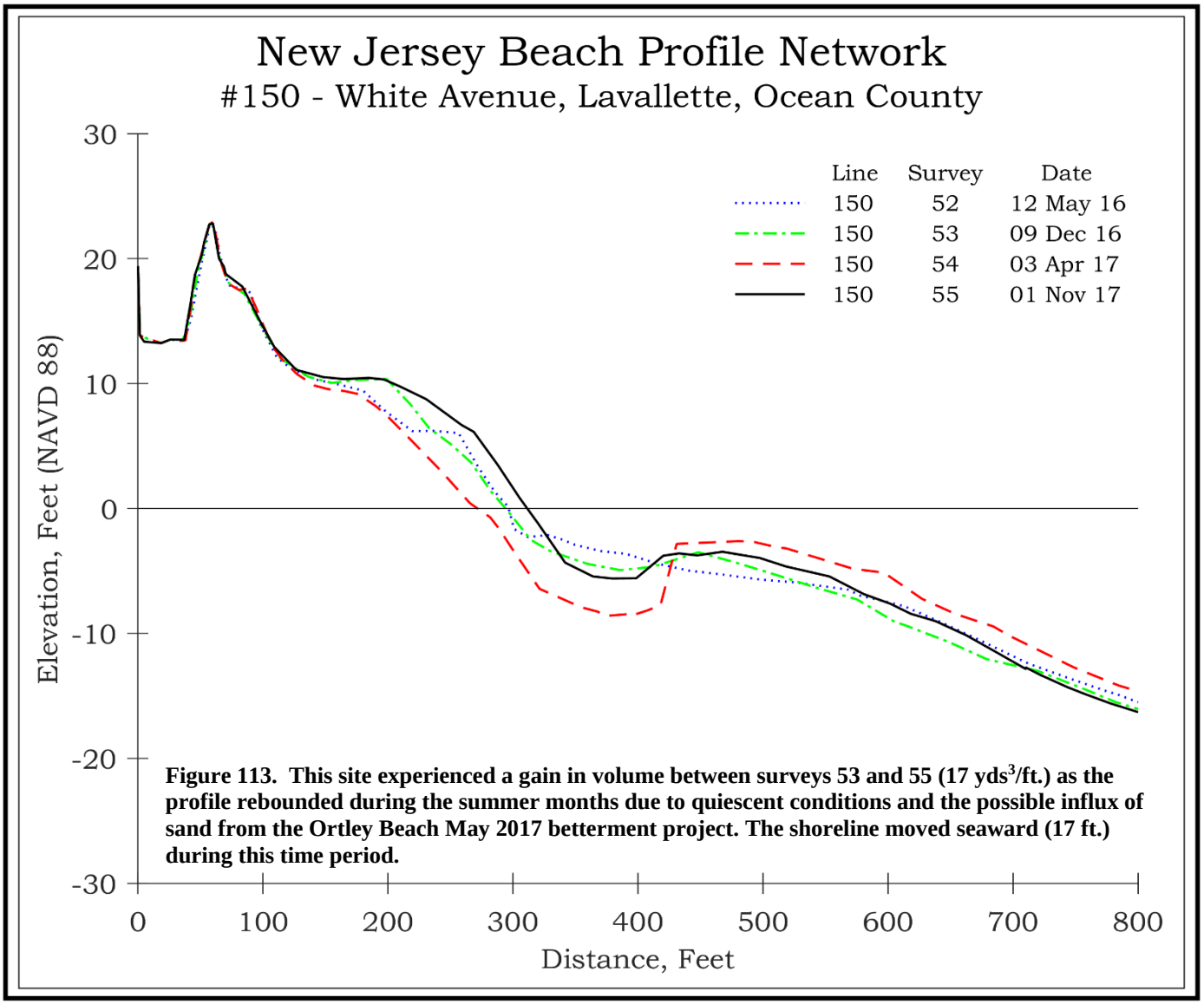
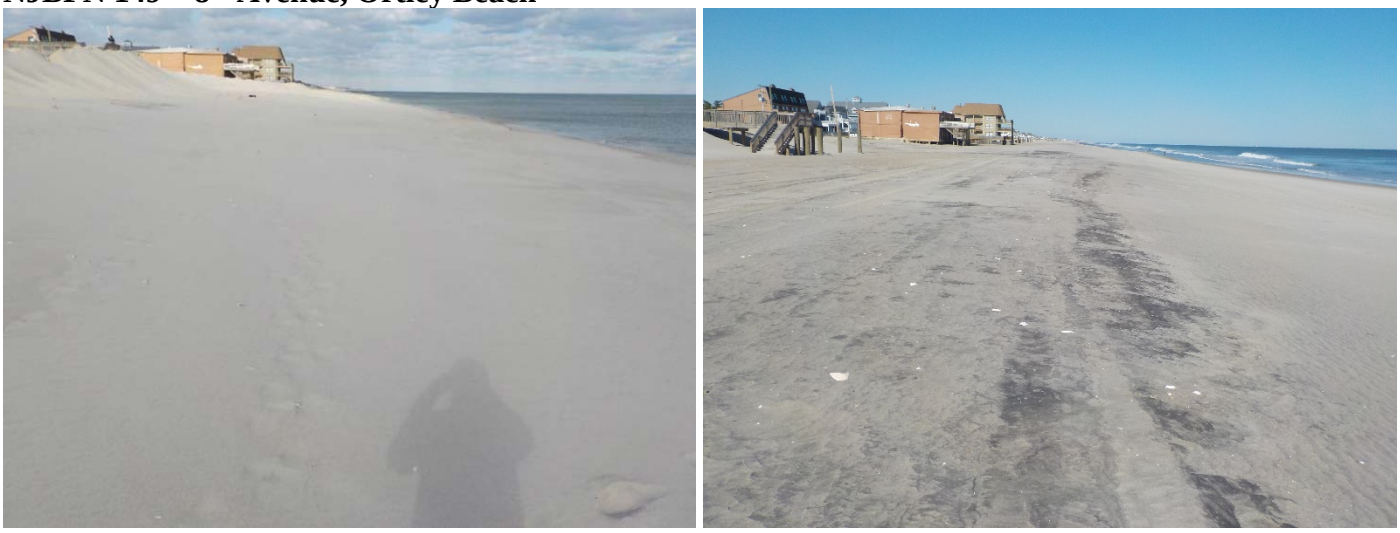


Figure 113. This site experienced a gain in volume between surveys 53 and 55 (17 yds^3/ft.) as the profile rebounded during the summer months due to quiescent conditions and the possible influx of sand from the Ortley Beach May 2017 betterment project. The shoreline moved seaward (17 ft.) during this time period.

NJBPN 149 – 8th Avenue, Ortley Beach



The left photo (taken December 9, 2016) shows the mounds that were created from sand scraped from the lower berm through local efforts. By October 31, 2017 (right photo) this accumulation was gone but there was a gain in the berm elevation due to state/local efforts to place 267,400 cy of sand in Ortley Beach berm ahead of the federal schedule. The beach fill template will be completed via the federal project in summer 2018.

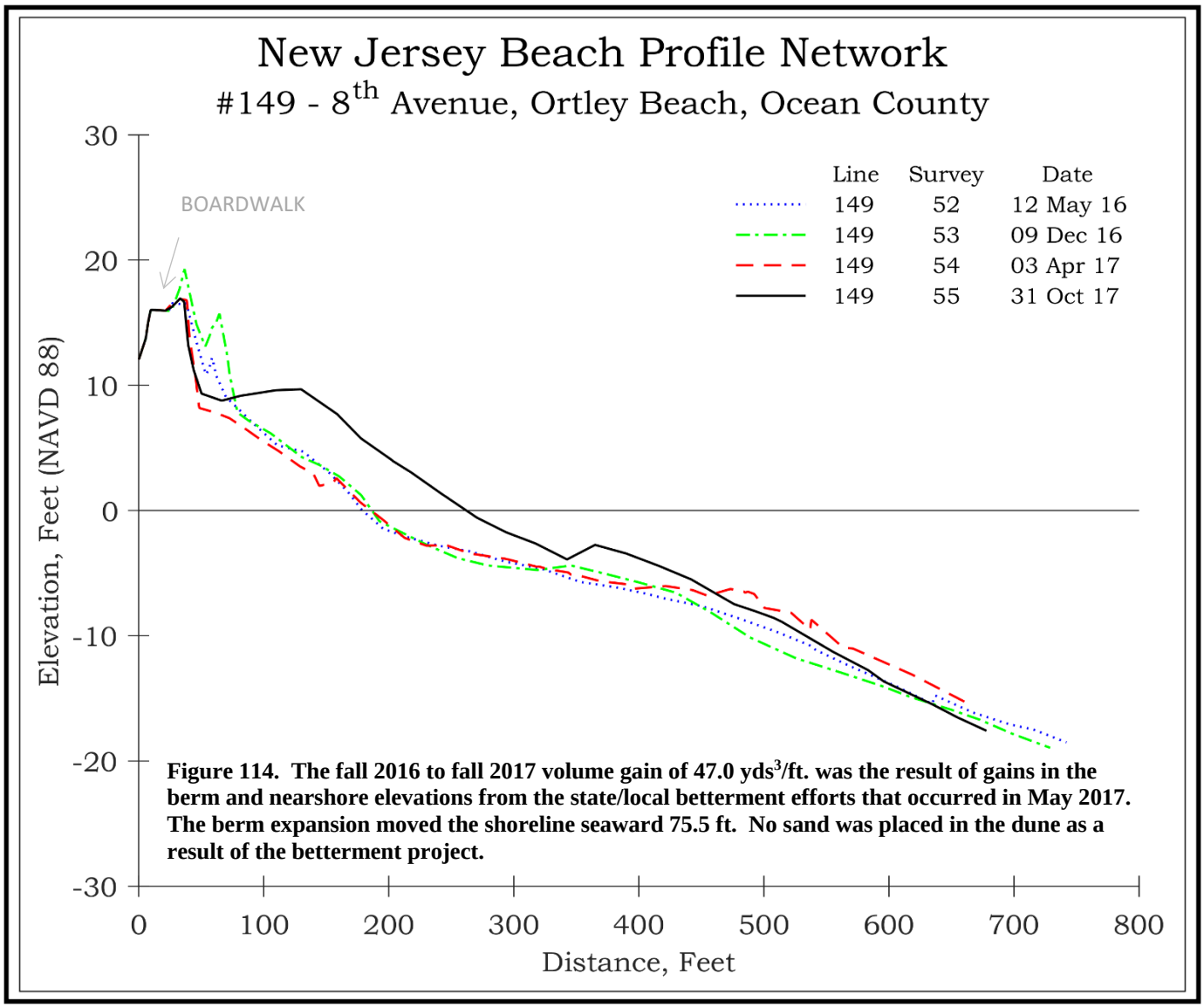


Figure 114. The fall 2016 to fall 2017 volume gain of 47.0 yds^3/ft. was the result of gains in the berm and nearshore elevations from the state/local betterment efforts that occurred in May 2017. The berm expansion moved the shoreline seaward 75.5 ft. No sand was placed in the dune as a result of the betterment project.

NJBPN 248 – Franklin Avenue, Seaside Heights

The two annual photos at the Franklin Avenue site show a nearly identical berm shape and extent (left taken December 7, 2016 and right photo taken October 31, 2017). The beach fill will commence at this location in fall 2018.

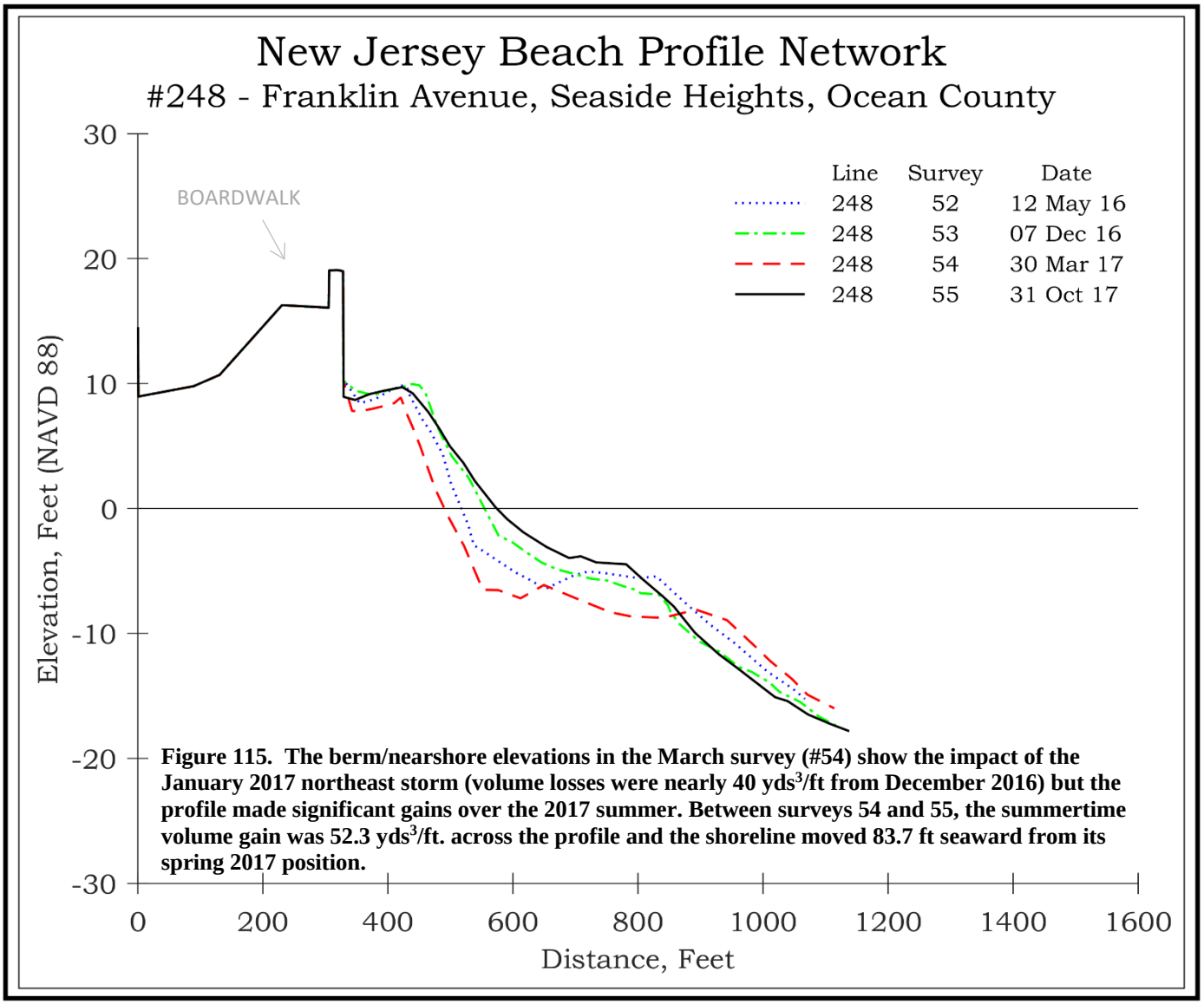


Figure 115. The berm/nearshore elevations in the March survey (#54) show the impact of the January 2017 northeast storm (volume losses were nearly 40 yds^3/ft from December 2016) but the profile made significant gains over the 2017 summer. Between surveys 54 and 55, the summertime volume gain was 52.3 yds^3/ft. across the profile and the shoreline moved 83.7 ft seaward from its spring 2017 position.

NJBPN 148 – 4th Avenue, Seaside Park

The dune at 4th Avenue remained in the same condition and size (left photo taken December 9, 2016, and right photo taken October 31, 2017). This Seaside Park location is scheduled for beach fill in fall 2018.

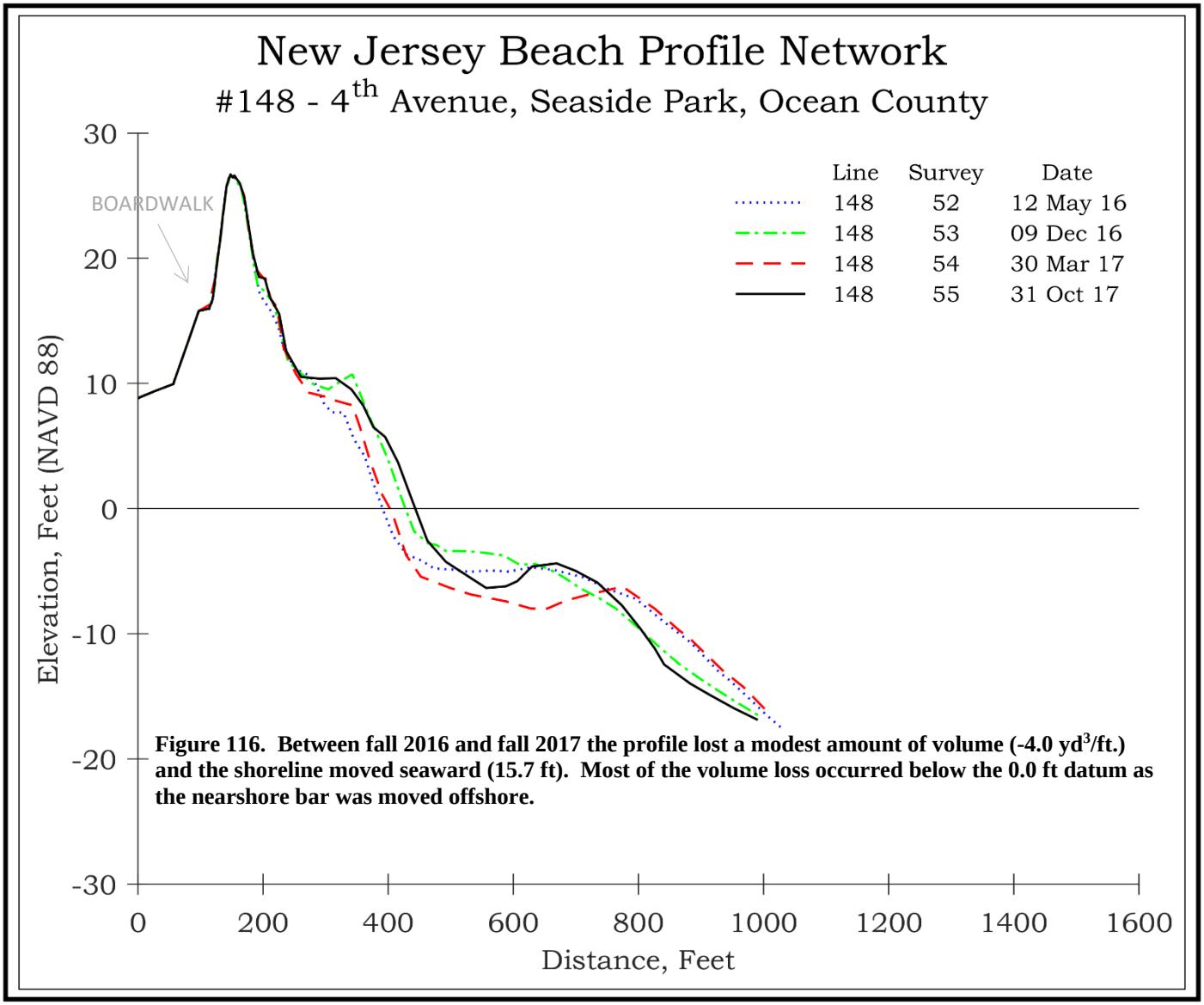


Figure 116. Between fall 2016 and fall 2017 the profile lost a modest amount of volume (-4.0 yd^3/ft.) and the shoreline moved seaward (15.7 ft). Most of the volume loss occurred below the 0.0 ft datum as the nearshore bar was moved offshore.

NJBPN 147 – 6th Lane, Midway Beach

At the 6th Lane location, both photos (left taken December 9, 2016 and right taken October 26, 2017) show the dune toe and a berm that is approximately 200-ft wide. The position of the 0.0 ft NAVD88 shoreline moved landward (-17.8 ft.) during this time period.

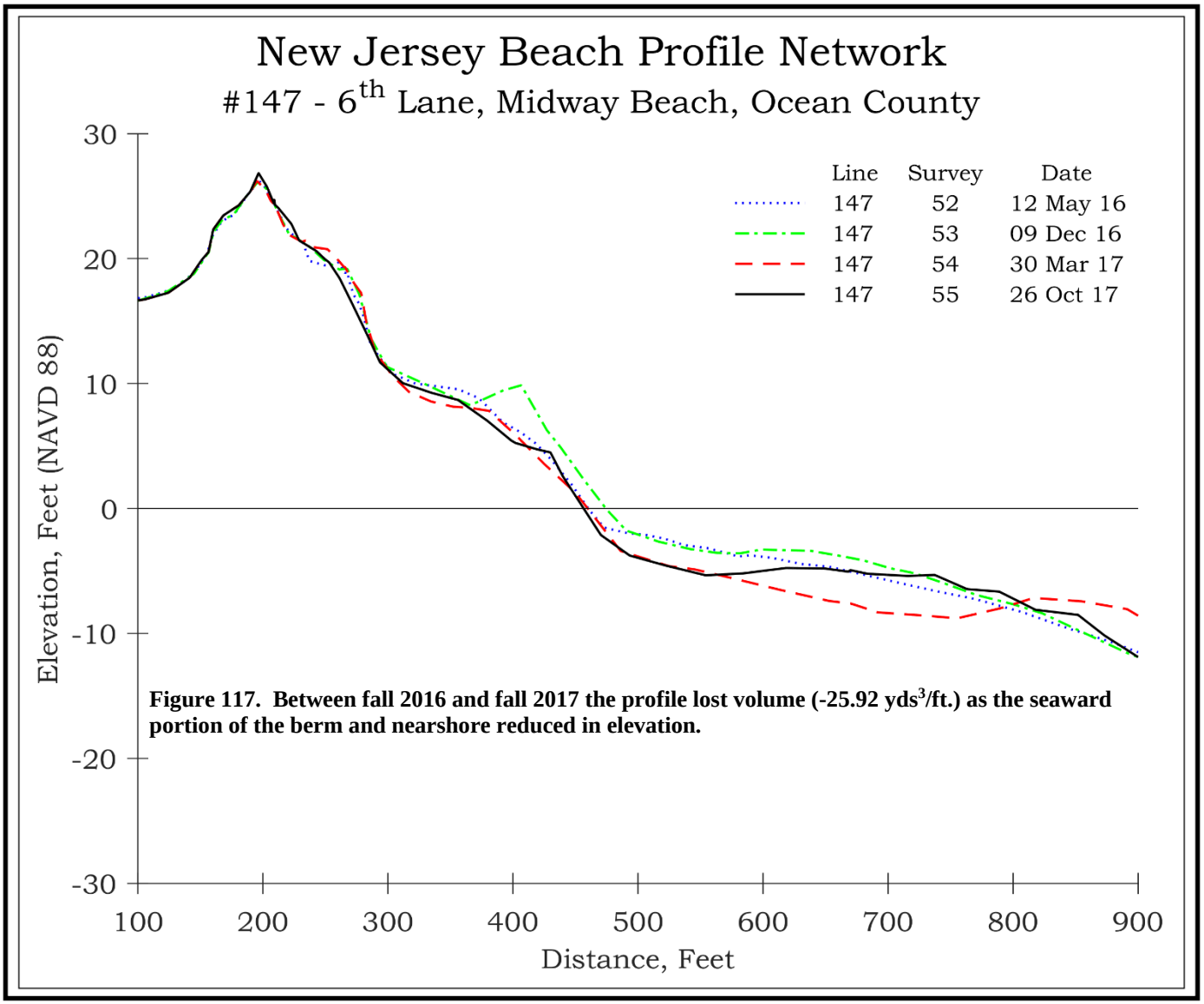


Figure 117. Between fall 2016 and fall 2017 the profile lost volume (-25.92 yds^3/ft.) as the seaward portion of the berm and nearshore reduced in elevation.

NJBPN 247 – North End, Island Beach State Park

The shape of the dune including the seaward scarp remained consistent over the past year (left photo taken December 8, 2016 and right photo taken December 18, 2017). The shoreline moved seaward (43.8 ft.) during this timeframe.

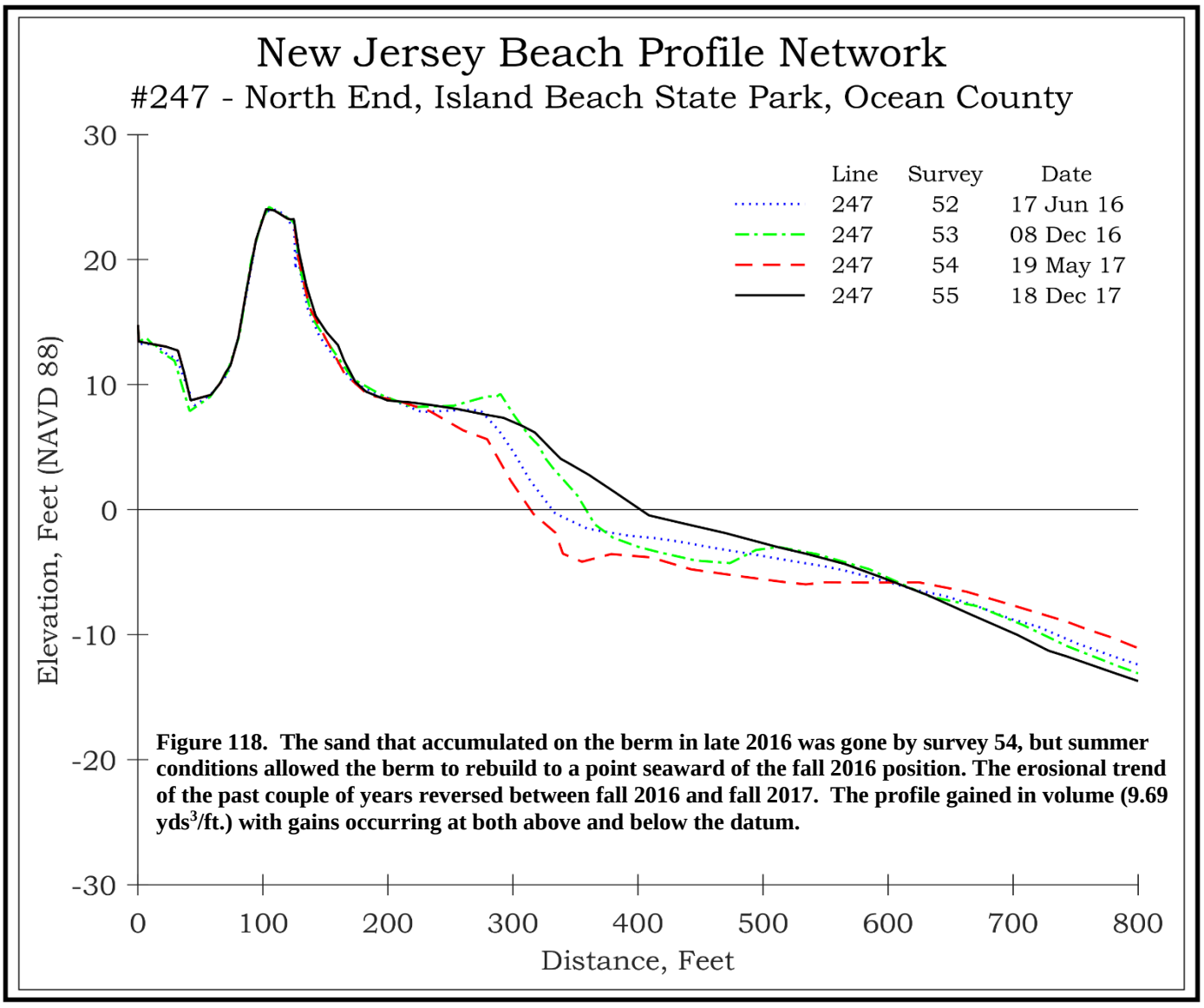


Figure 118. The sand that accumulated on the berm in late 2016 was gone by survey 54, but summer conditions allowed the berm to rebuild to a point seaward of the fall 2016 position. The erosional trend of the past couple of years reversed between fall 2016 and fall 2017. The profile gained in volume (9.69 yds^3/ft.) with gains occurring at both above and below the datum.

NJBPN 246 – Parking Lot A7, Island Beach State Park

The sand fencing shown in both photos was responsible for trapping windblown sand and contributing to the small volume gains along the seaward portion of the dune (left photo taken December 8, 2016 and right photo taken December 18, 2017). However, dune elevations remained the same during this period of evaluation (12.6 ft. NAVD88) and still nearly 4 ft. below the pre-Sandy elevation.

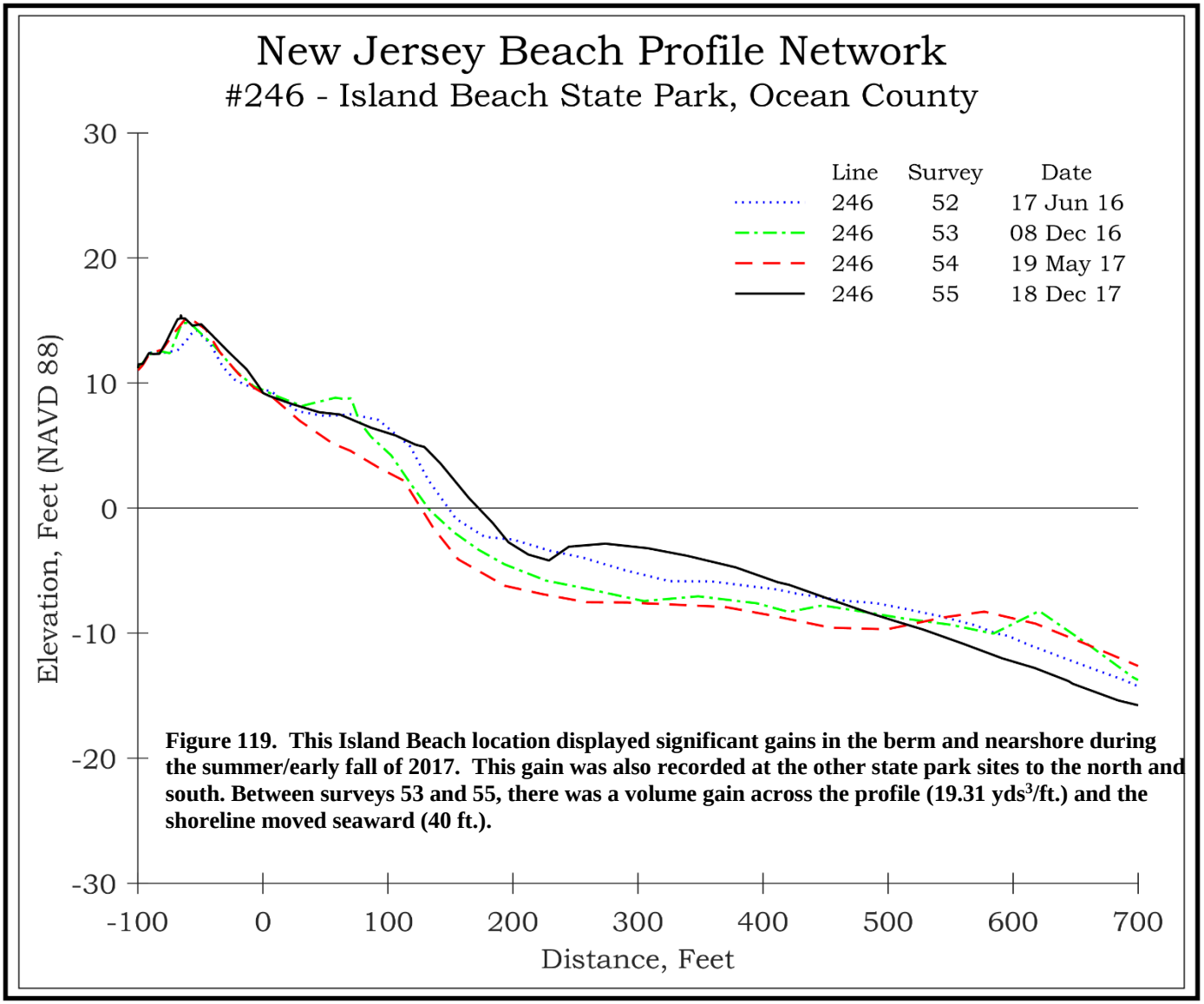


Figure 119. This Island Beach location displayed significant gains in the berm and nearshore during the summer/early fall of 2017. This gain was also recorded at the other state park sites to the north and south. Between surveys 53 and 55, there was a volume gain across the profile (19.31 yds^3/ft.) and the shoreline moved seaward (40 ft.).

NJBPN 146 – South End, Island Beach State Park

At the southern Island Beach State Park site there was little change to the dune or backshore between 2016 and 2017 (left photo taken December 8, 2016 and right photo taken December 18, 2017). Most changes occurred at the berm and below the shoreline elevation.

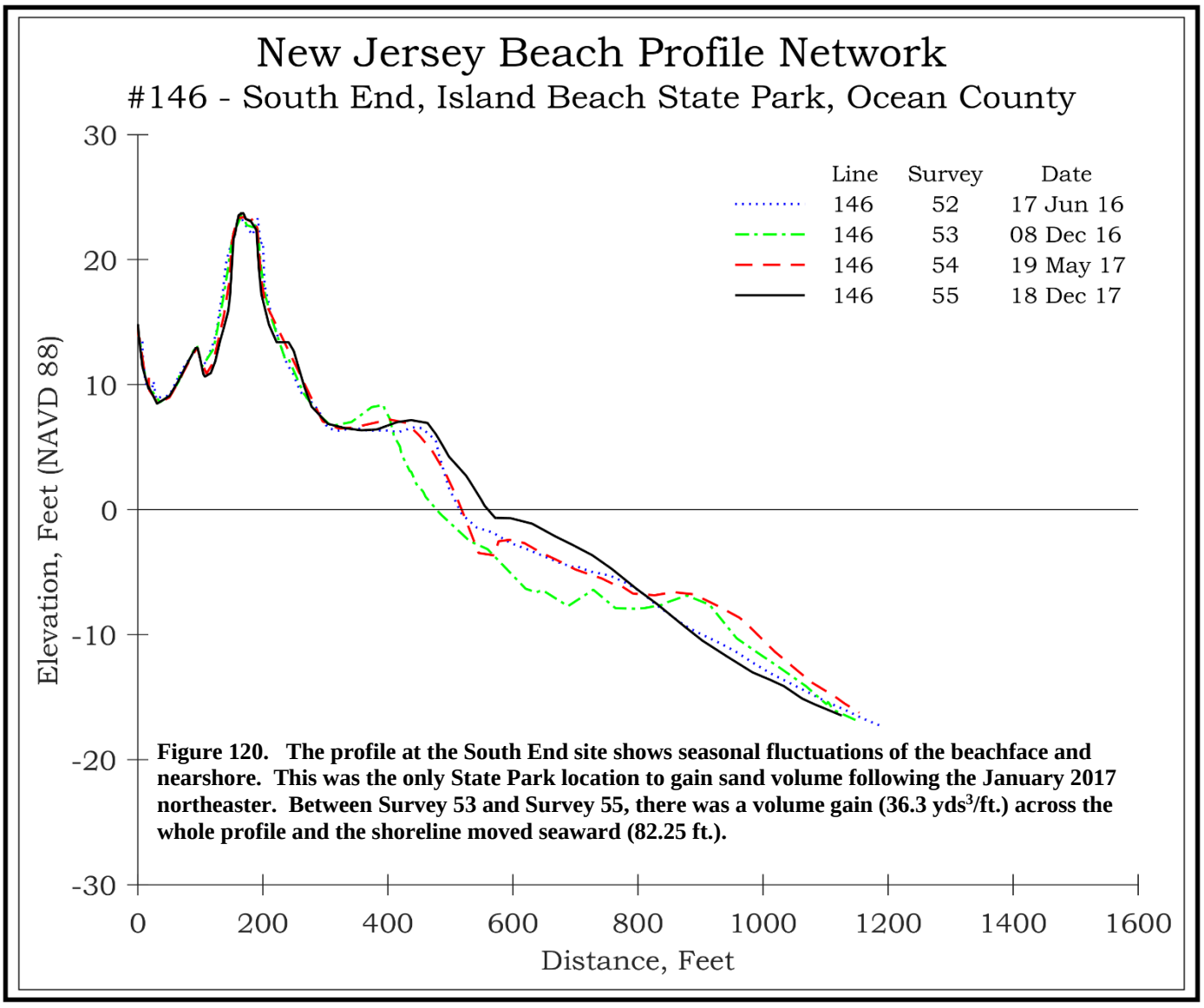
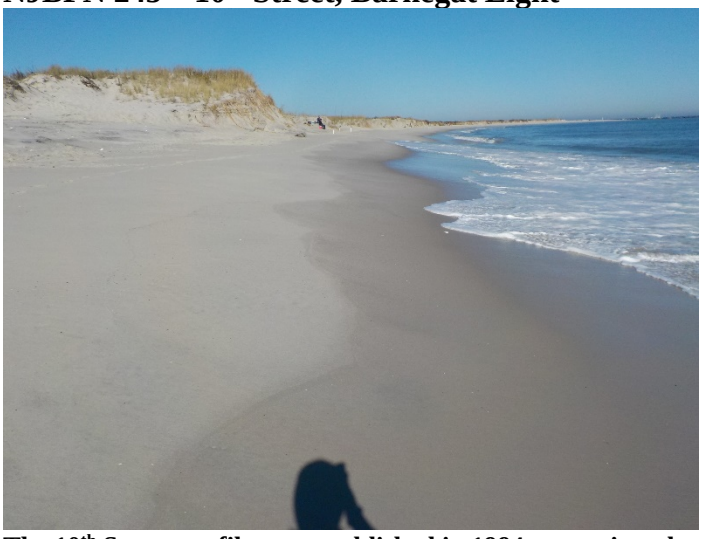


Figure 120. The profile at the South End site shows seasonal fluctuations of the beachface and nearshore. This was the only State Park location to gain sand volume following the January 2017 northeaster. Between Survey 53 and Survey 55, there was a volume gain (36.3 yds^3/ft.) across the whole profile and the shoreline moved seaward (82.25 ft.).

NJBPN 245 – 10th Street, Barnegat Light



The 10th Street profile was established in 1994 to monitor the changes following the reconfiguration of the Barnegat Inlet jetties. After the fall 2016 survey, the foredune eroded landward and reduced in elevation (left photo taken November 18, 2016 and right photo taken September 14, 2017).

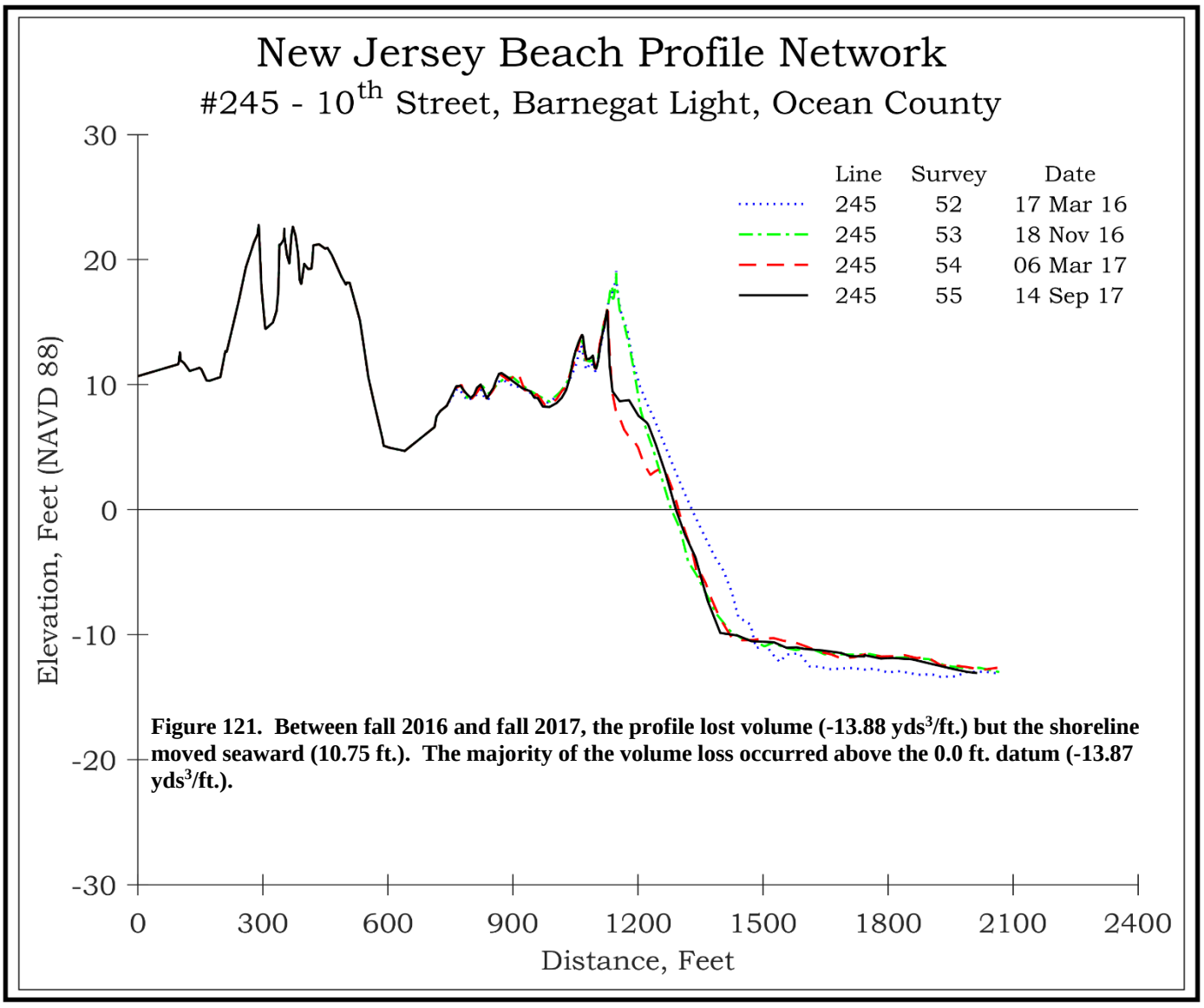


Figure 121. Between fall 2016 and fall 2017, the profile lost volume (-13.88 yds^3/ft.) but the shoreline moved seaward (10.75 ft.). The majority of the volume loss occurred above the 0.0 ft. datum (-13.87 yds^3/ft.).

NJBPN 145 – 26th Street, Barnegat Light

The natural foredune at the 26th Street profile is over 20 ft and remained stable in 2016-2017 (left photo taken November 18, 2016 and right photo taken September 17, 2017). The stability is attributed to the profile's position with respect to the Barnegat Inlet south jetty which traps the northward-driven littoral drift.

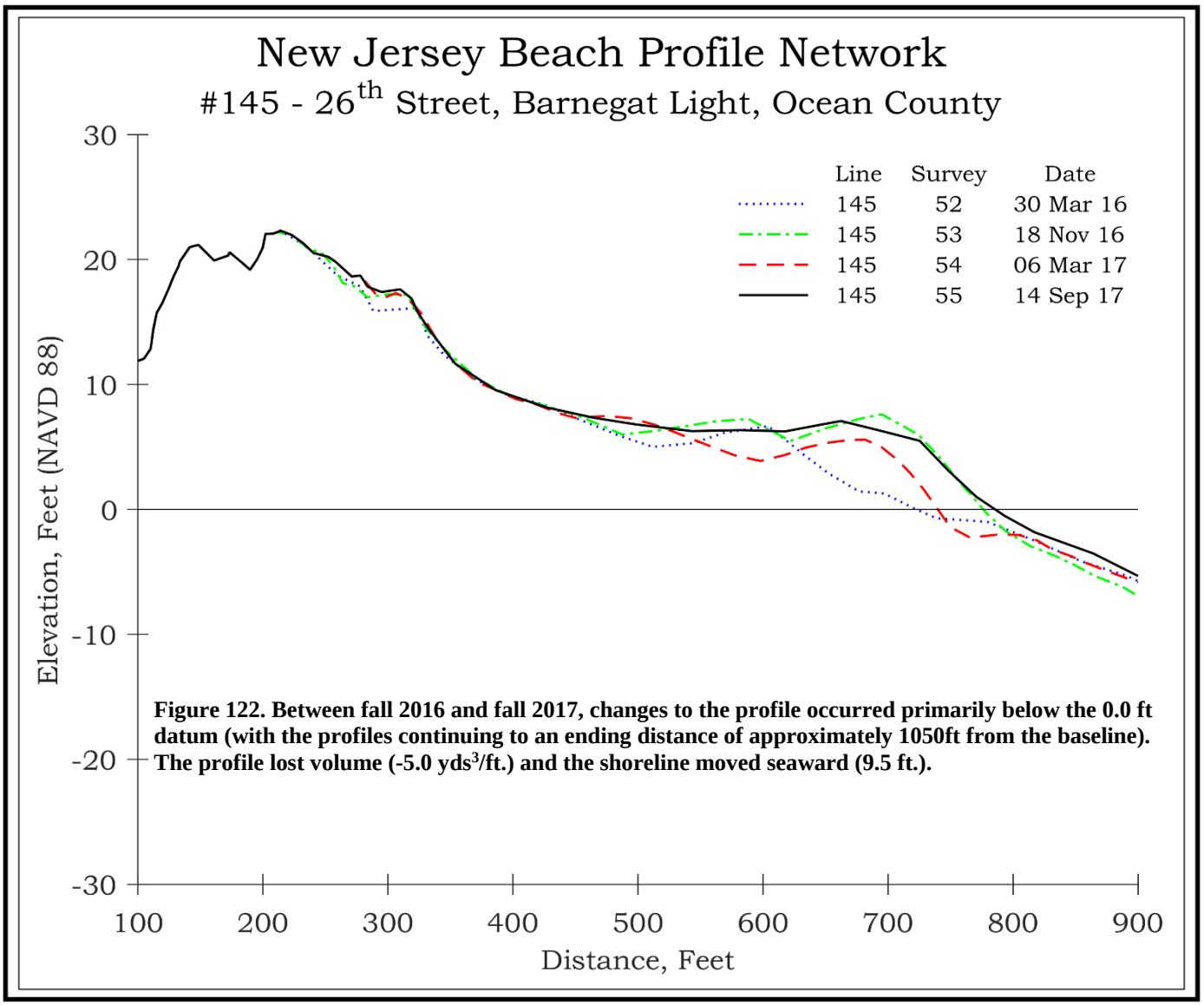
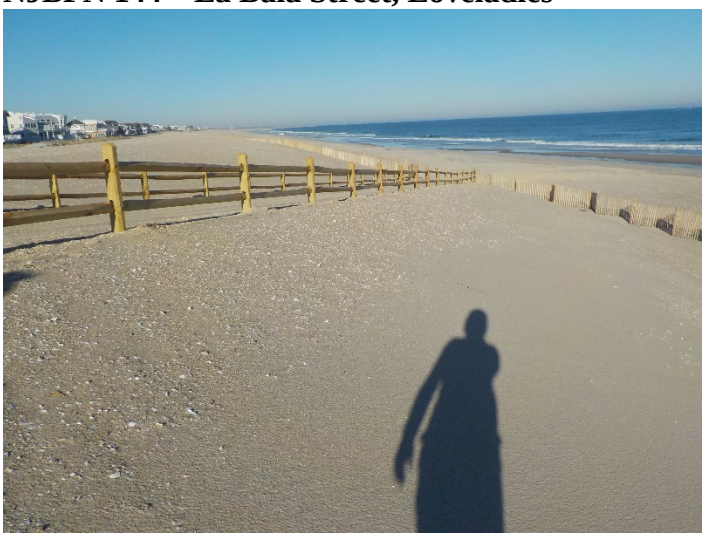


Figure 122. Between fall 2016 and fall 2017, changes to the profile occurred primarily below the 0.0 ft datum (with the profiles continuing to an ending distance of approximately 1050ft from the baseline). The profile lost volume (-5.0 yds^3/ft.) and the shoreline moved seaward (9.5 ft.).

NJBPN 144 – La Baia Street, Loveladies



In 2016, the USACE completed the construction of a beach fill and engineered dune at the La Baia Street profile (left photo taken November 18, 2016 and right photo taken September 15, 2017).

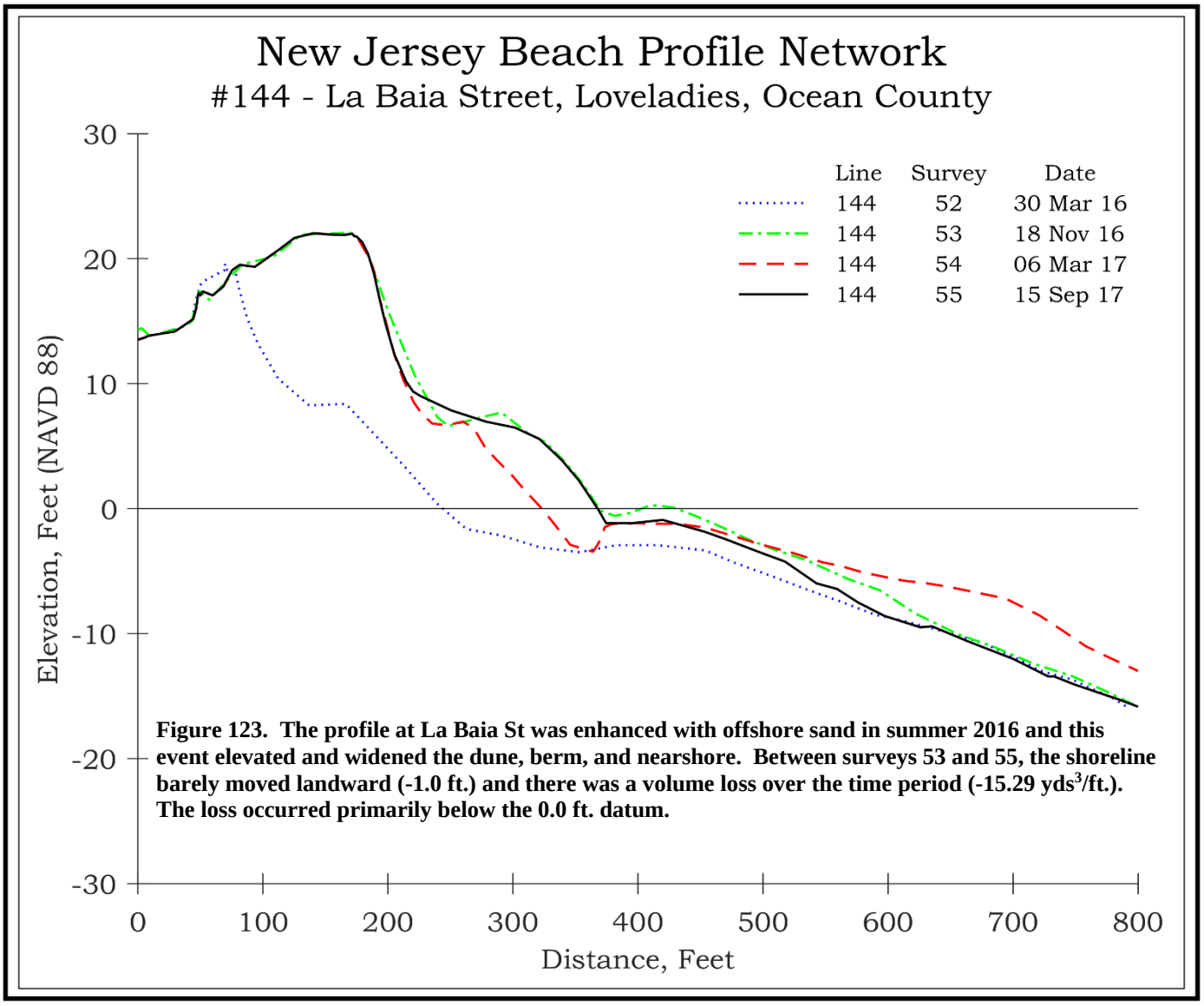


Figure 123. The profile at La Baia St was enhanced with offshore sand in summer 2016 and this event elevated and widened the dune, berm, and nearshore. Between surveys 53 and 55, the shoreline barely moved landward (-1.0 ft.) and there was a volume loss over the time period (-15.29 yds^3/ft.). The loss occurred primarily below the 0.0 ft. datum.

NJBPN 143 – 73rd Street, Harvey Cedars

At the 73rd Street profile, the engineered dune that was created in the 2009 federal beach fill remained in relatively the same position, though the seaward toe accumulated sand due to the presence of the sand fencing (left photo taken November 18, 2016 and right photo taken September 15, 2017).

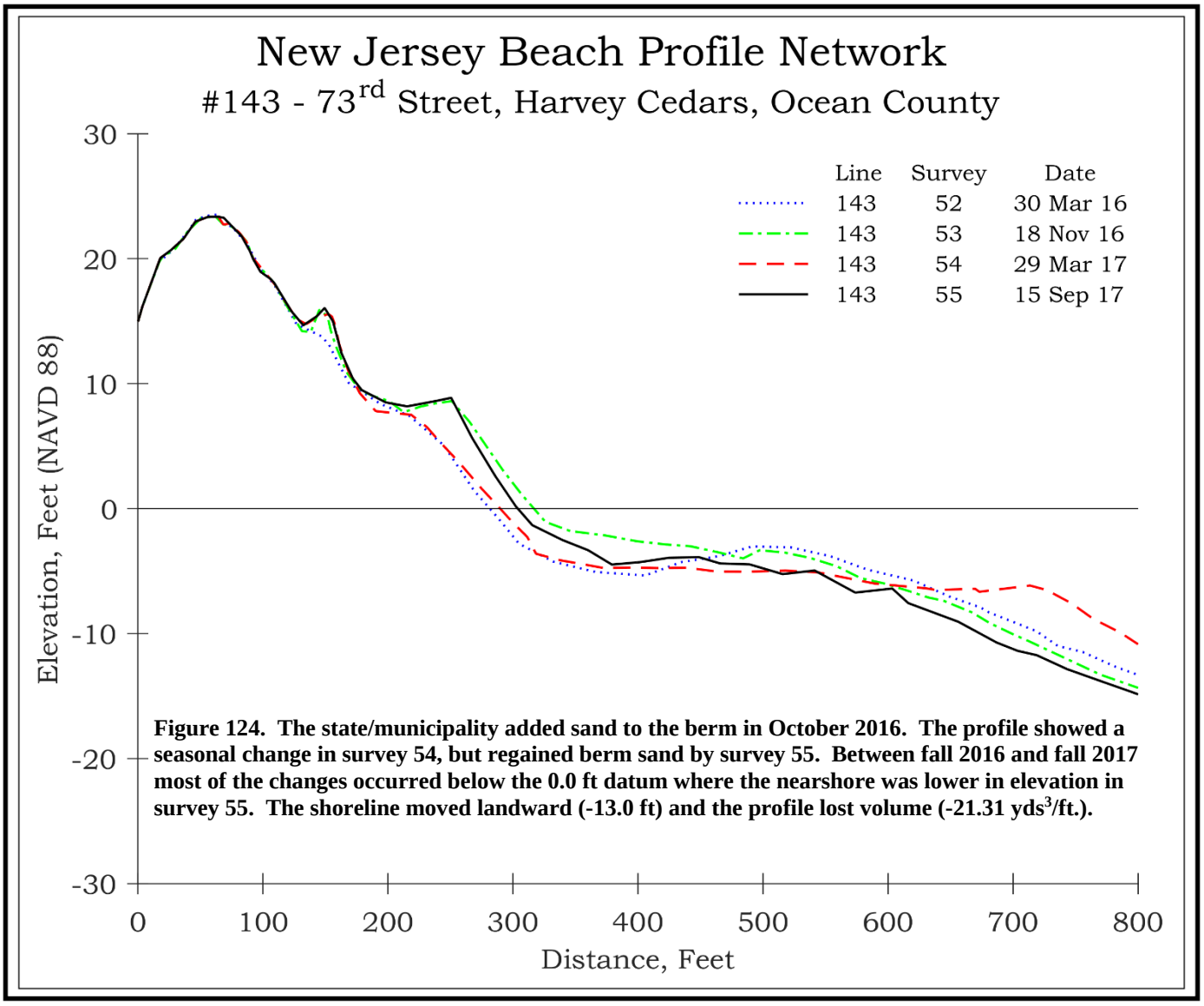


Figure 124. The state/municipality added sand to the berm in October 2016. The profile showed a seasonal change in survey 54, but regained berm sand by survey 55. Between fall 2016 and fall 2017 most of the changes occurred below the 0.0 ft datum where the nearshore was lower in elevation in survey 55. The shoreline moved landward (-13.0 ft) and the profile lost volume (-21.31 yds^3/ft.).

NJBPN 142 – Tranquility Drive, Harvey Cedars

The photos from the dune crest at the Tranquility Drive location (left taken October 28, 2016 and right taken September 15, 2017) show no change in the engineered dune that was constructed in spring 2013.

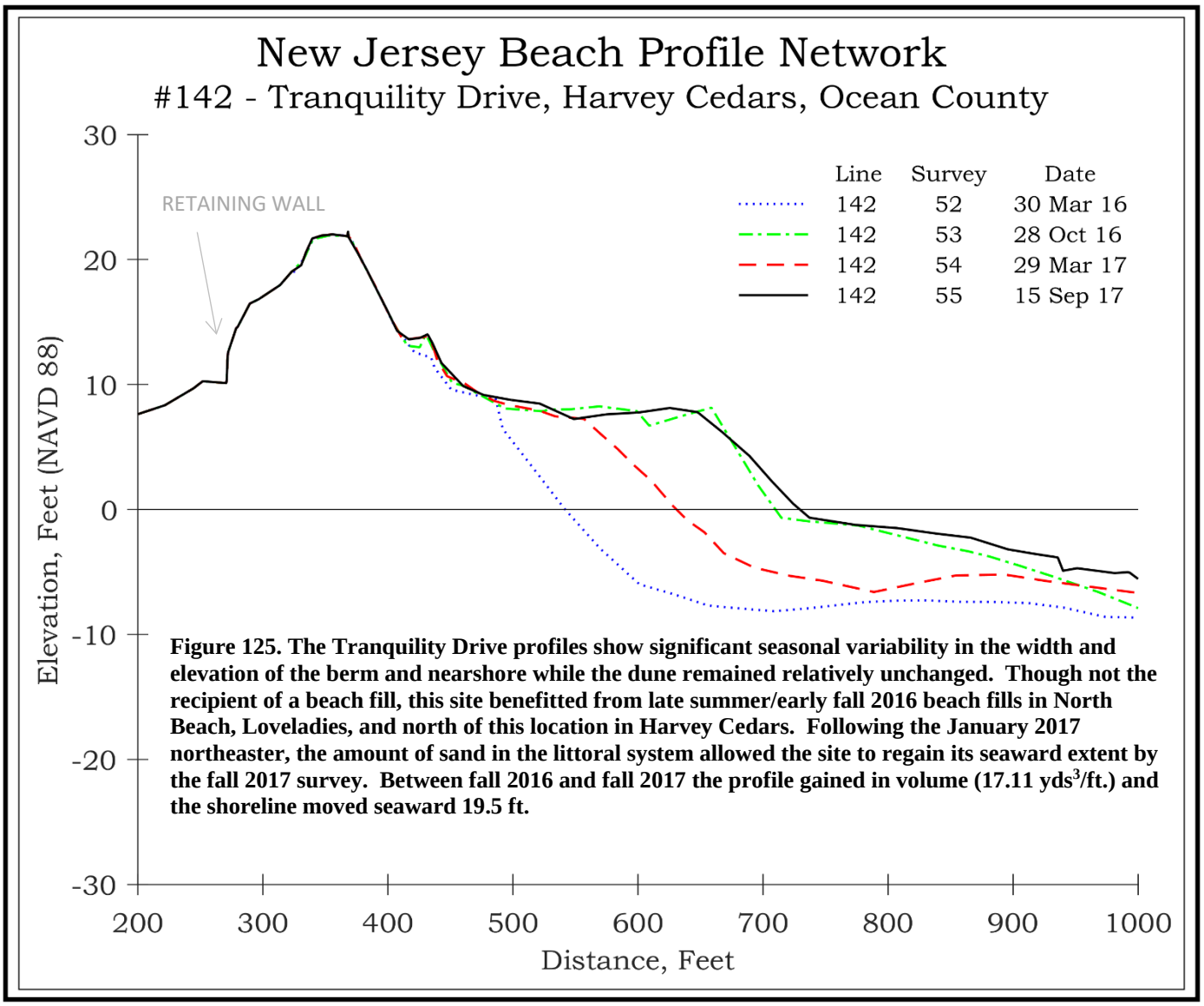


Figure 125. The Tranquility Drive profiles show significant seasonal variability in the width and elevation of the berm and nearshore while the dune remained relatively unchanged. Though not the recipient of a beach fill, this site benefitted from late summer/early fall 2016 beach fills in North Beach, Loveladies, and north of this location in Harvey Cedars. Following the January 2017 northeaster, the amount of sand in the littoral system allowed the site to regain its seaward extent by the fall 2017 survey. Between fall 2016 and fall 2017 the profile gained in volume (17.11 yds^3/ft.) and the shoreline moved seaward 19.5 ft.

NJBPN 241 – 20th Street – Surf City

This Surf City profile shows relatively no change in the berm elevation between the fall surveys (October 28, 2016 [left] and September 15, 2017 [right]) though the shoreline moved 40.0 ft seaward over that time frame. This site has not received sand via beach fill since September 2013.

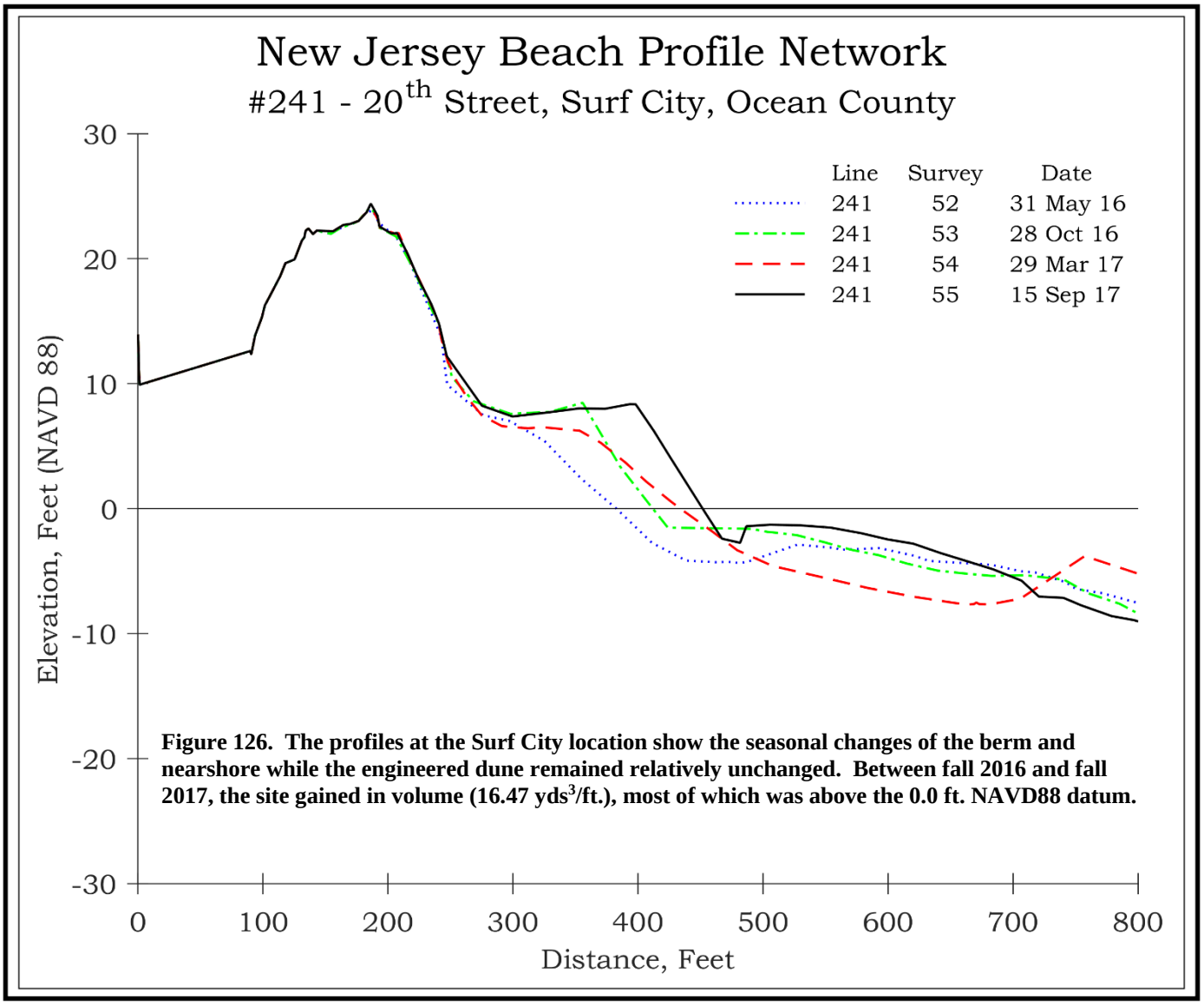


Figure 126. The profiles at the Surf City location show the seasonal changes of the berm and nearshore while the engineered dune remained relatively unchanged. Between fall 2016 and fall 2017, the site gained in volume (16.47 yds^3/ft.), most of which was above the 0.0 ft. NAVD88 datum.

NJBPN 141 – 8th Street, Ship Bottom

The Ship Bottom profile location has retained the dune position and a wide berm since the spring 2015 beach fill (left photo taken October 28, 2016 and right photo taken September 14, 2017).

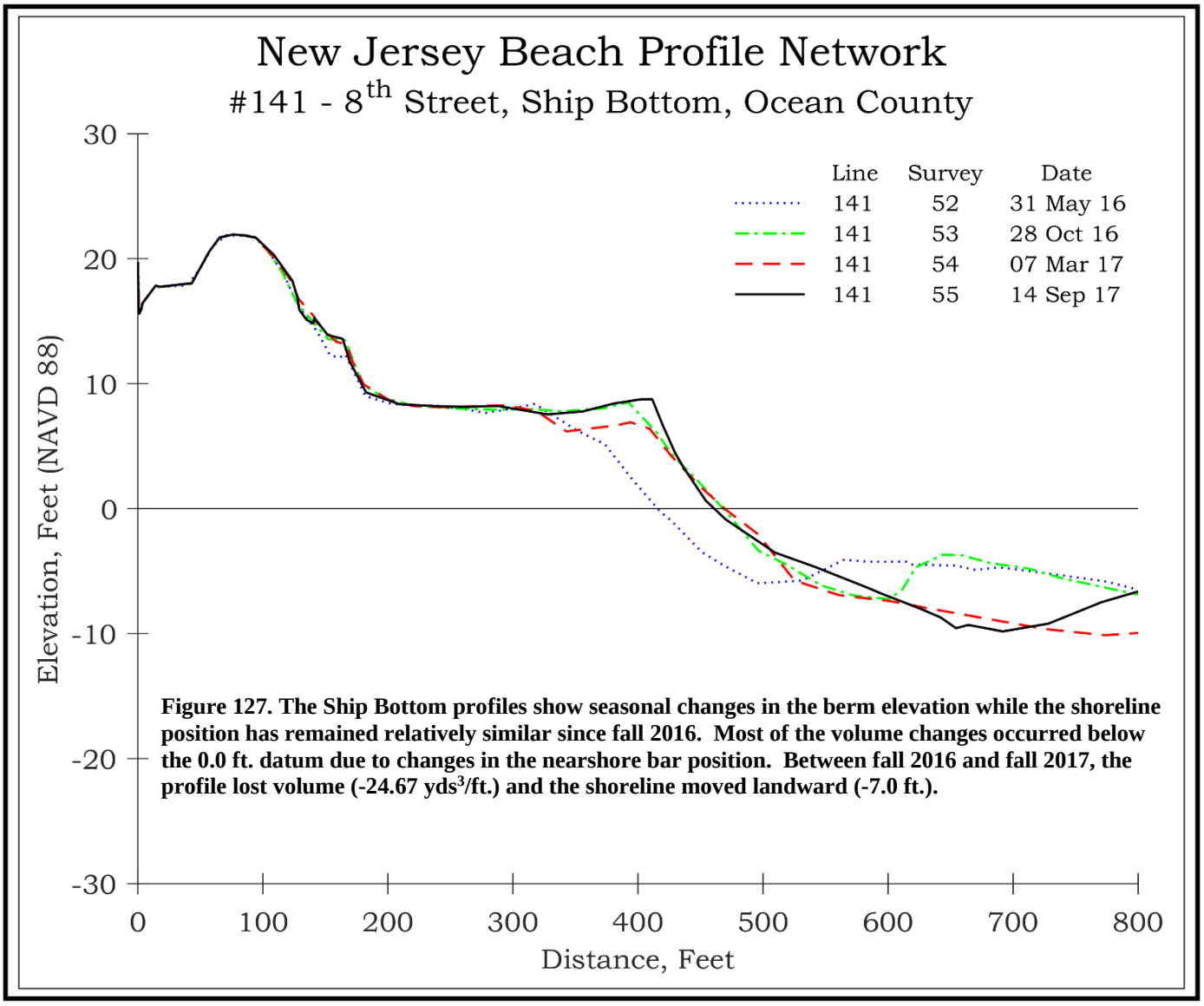


Figure 127. The Ship Bottom profiles show seasonal changes in the berm elevation while the shoreline position has remained relatively similar since fall 2016. Most of the volume changes occurred below the 0.0 ft. datum due to changes in the nearshore bar position. Between fall 2016 and fall 2017, the profile lost volume (-24.67 yds^3/ft.) and the shoreline moved landward (-7.0 ft.).

NJBPN 140 – 32nd Street, Long Beach Township

The backshore photos in Long Beach Township show little change in of the seaward dune toe and berm (left taken September 23, 2016 and right taken September 14, 2017).

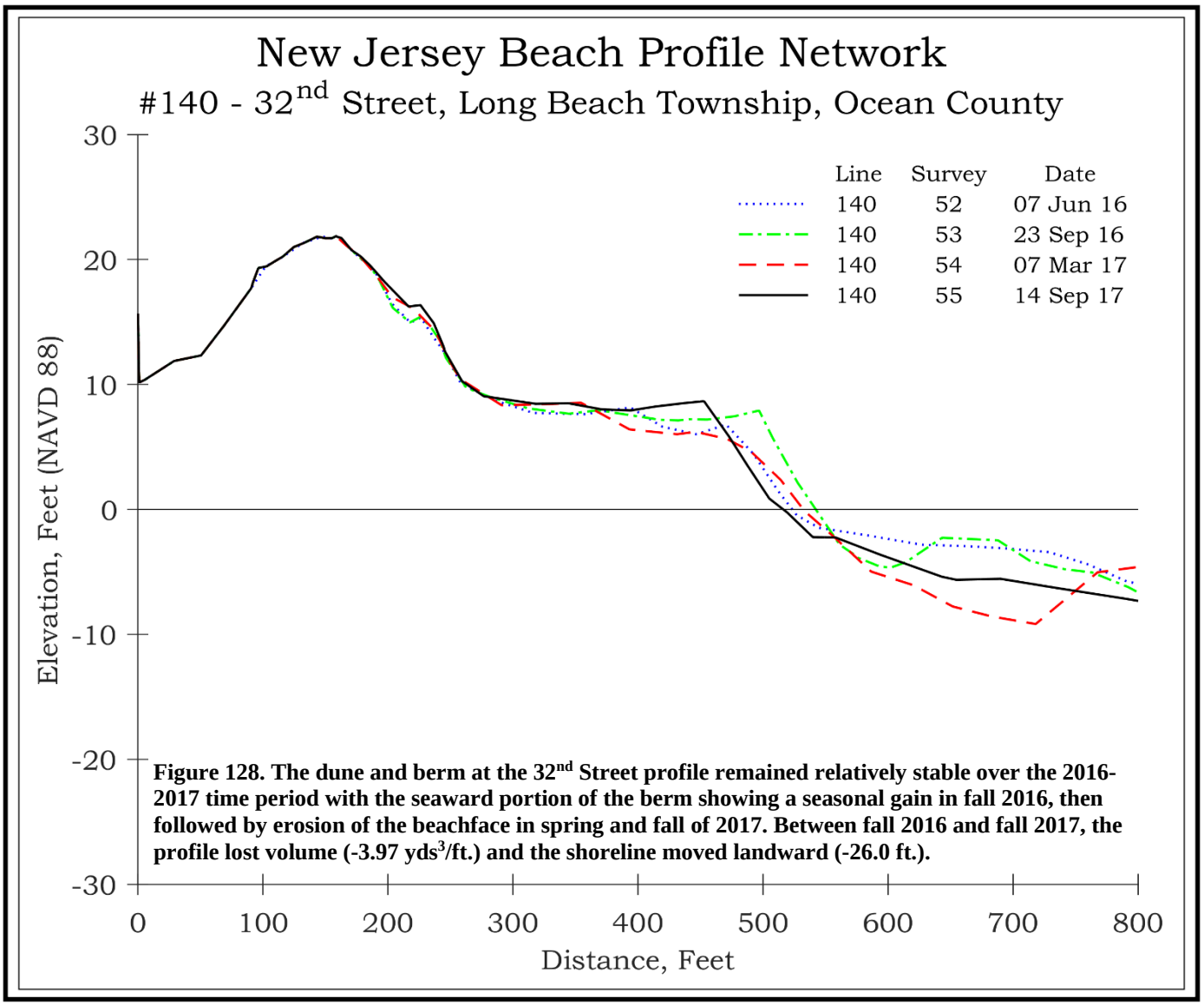


Figure 128. The dune and berm at the 32nd Street profile remained relatively stable over the 2016-2017 time period with the seaward portion of the berm showing a seasonal gain in fall 2016, then followed by erosion of the beachface in spring and fall of 2017. Between fall 2016 and fall 2017, the profile lost volume (-3.97 yds^3/ft.) and the shoreline moved landward (-26.0 ft.).

NJBPN 139 – 81st Street, Long Beach Township

The 81st Street profile in Long Beach Township received sand via federal beach fill in summer 2015 and planting of the dune vegetation was completed by fall 2017. The dune remained stable over the time period (left photo taken October 28, 2016 and right photo taken September 14, 2017, both views from the dune crest).

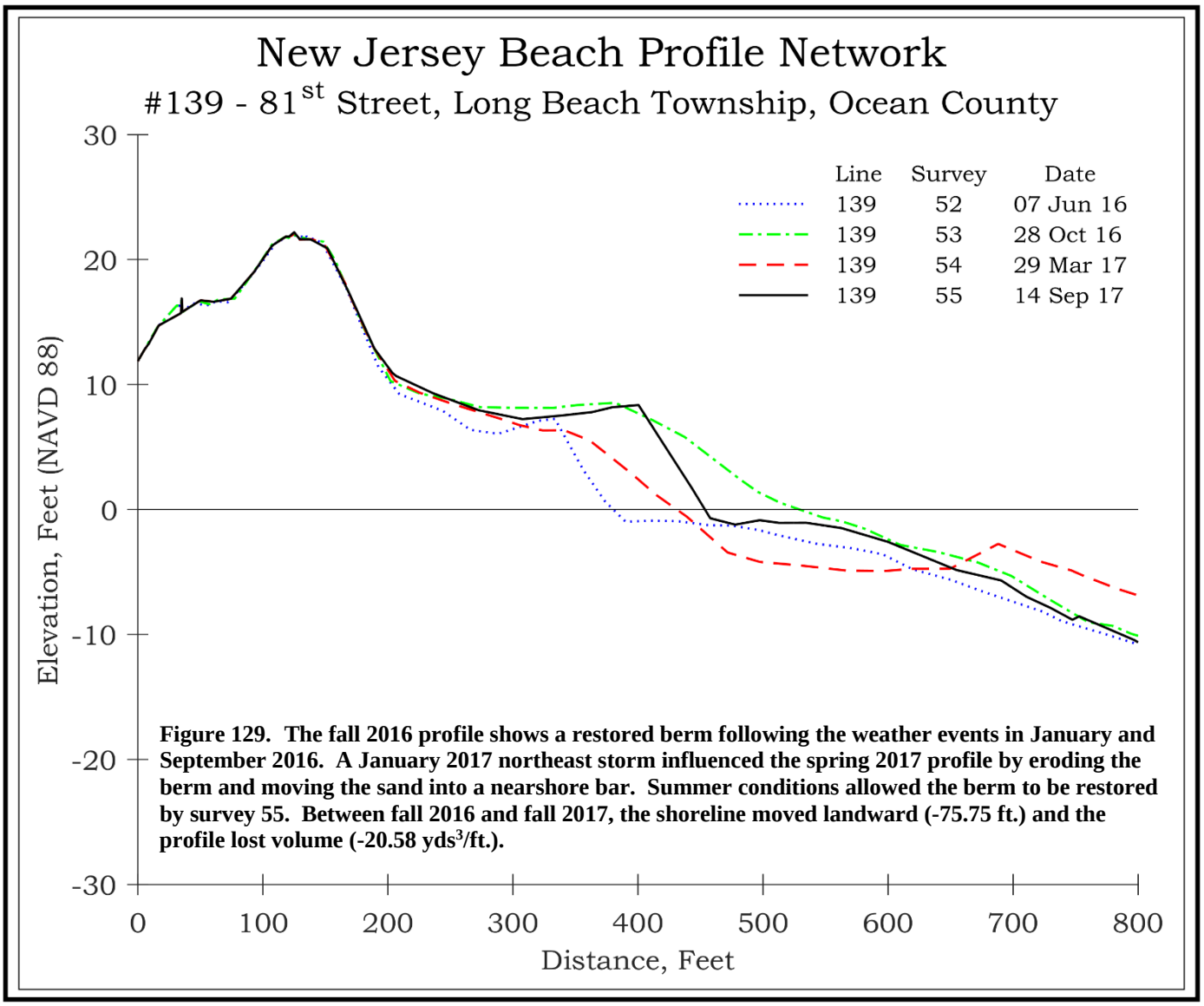


Figure 129. The fall 2016 profile shows a restored berm following the weather events in January and September 2016. A January 2017 northeast storm influenced the spring 2017 profile by eroding the berm and moving the sand into a nearshore bar. Summer conditions allowed the berm to be restored by survey 55. Between fall 2016 and fall 2017, the shoreline moved landward (-75.75 ft.) and the profile lost volume (-20.58 yds^3/ft.).

NJBPN 138 – Old Whaling Road (124th Street), Long Beach Township

The photos from the 124th Street location (left taken September 23, 2016 and right taken September 14, 2017) show the conditions of the seaward dune toe and backshore which gained in elevation due to sand trapped by vegetation.

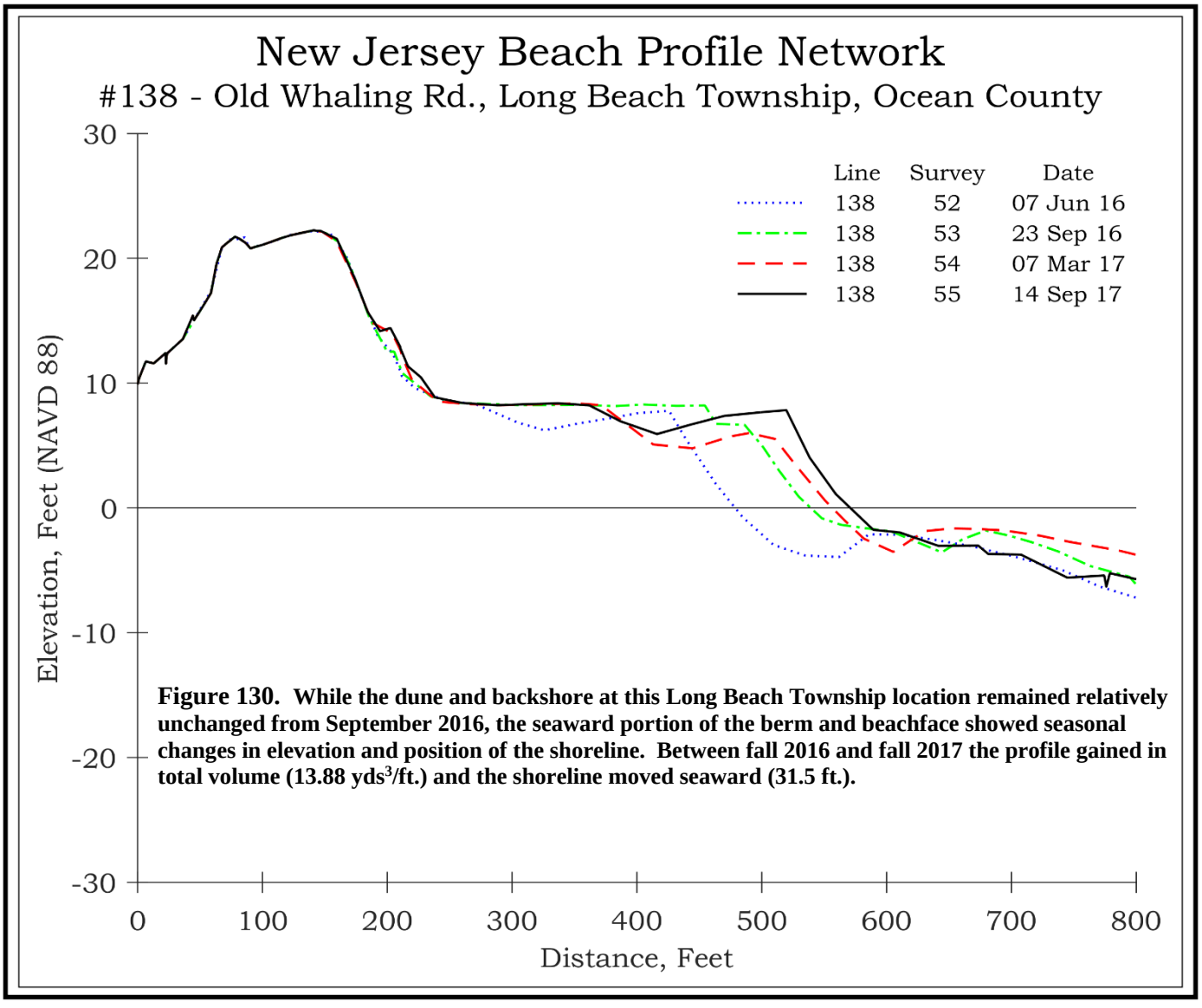
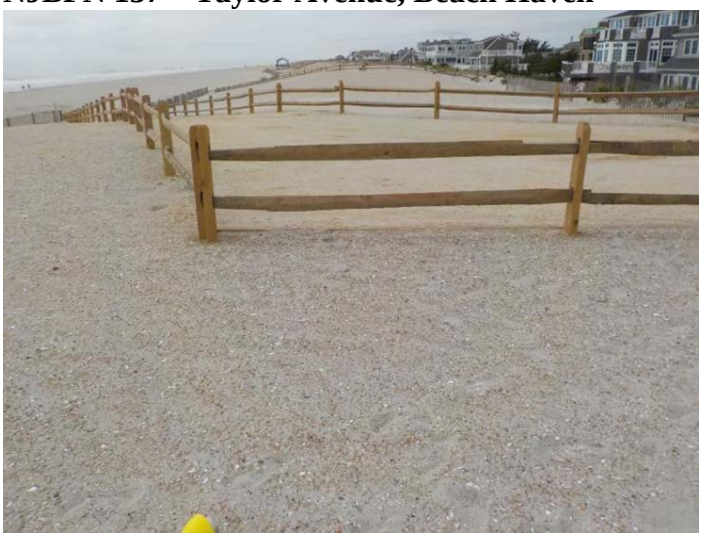


Figure 130. While the dune and backshore at this Long Beach Township location remained relatively unchanged from September 2016, the seaward portion of the berm and beachface showed seasonal changes in elevation and position of the shoreline. Between fall 2016 and fall 2017 the profile gained in total volume (13.88 yds^3/ft.) and the shoreline moved seaward (31.5 ft.).

NJBPN 137 – Taylor Avenue, Beach Haven



By the fall 2017 survey, planting of the engineered dune was completed at the Taylor Avenue location (photos from dune crest taken September 23, 2016 and right taken September 13, 2017).

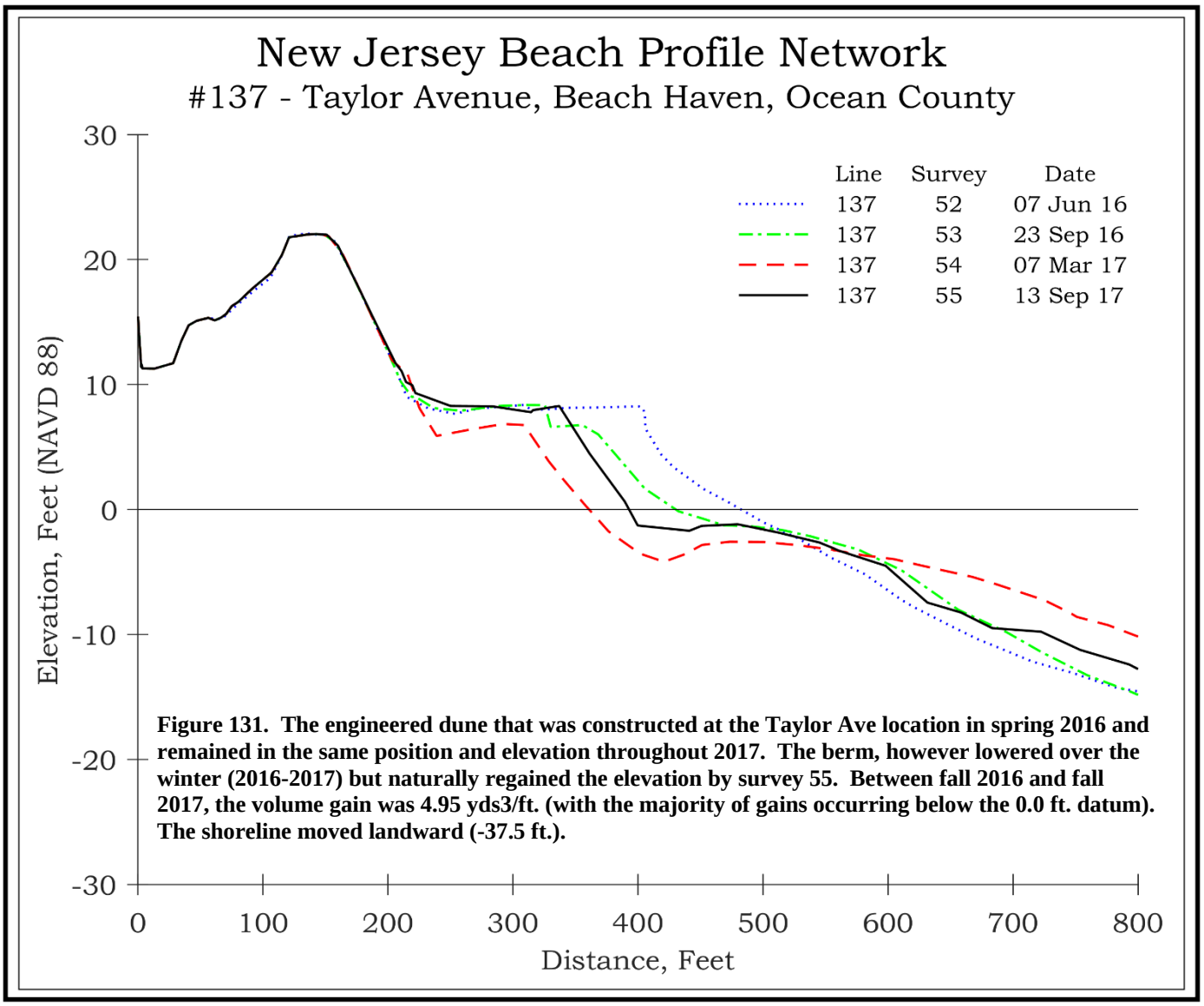


Figure 131. The engineered dune that was constructed at the Taylor Ave location in spring 2016 and remained in the same position and elevation throughout 2017. The berm, however lowered over the winter (2016-2017) but naturally regained the elevation by survey 55. Between fall 2016 and fall 2017, the volume gain was 4.95 yds3/ft. (with the majority of gains occurring below the 0.0 ft. datum). The shoreline moved landward (-37.5 ft.).

NJBPN 136 – Dolphin Avenue, Beach Haven

The photos at the Dolphin Avenue profile show the change in the berm width (left taken September 21, 2016 and right photo taken September 13, 2017). Planting of the engineered dune with vegetation was completed by the fall 2017 survey.

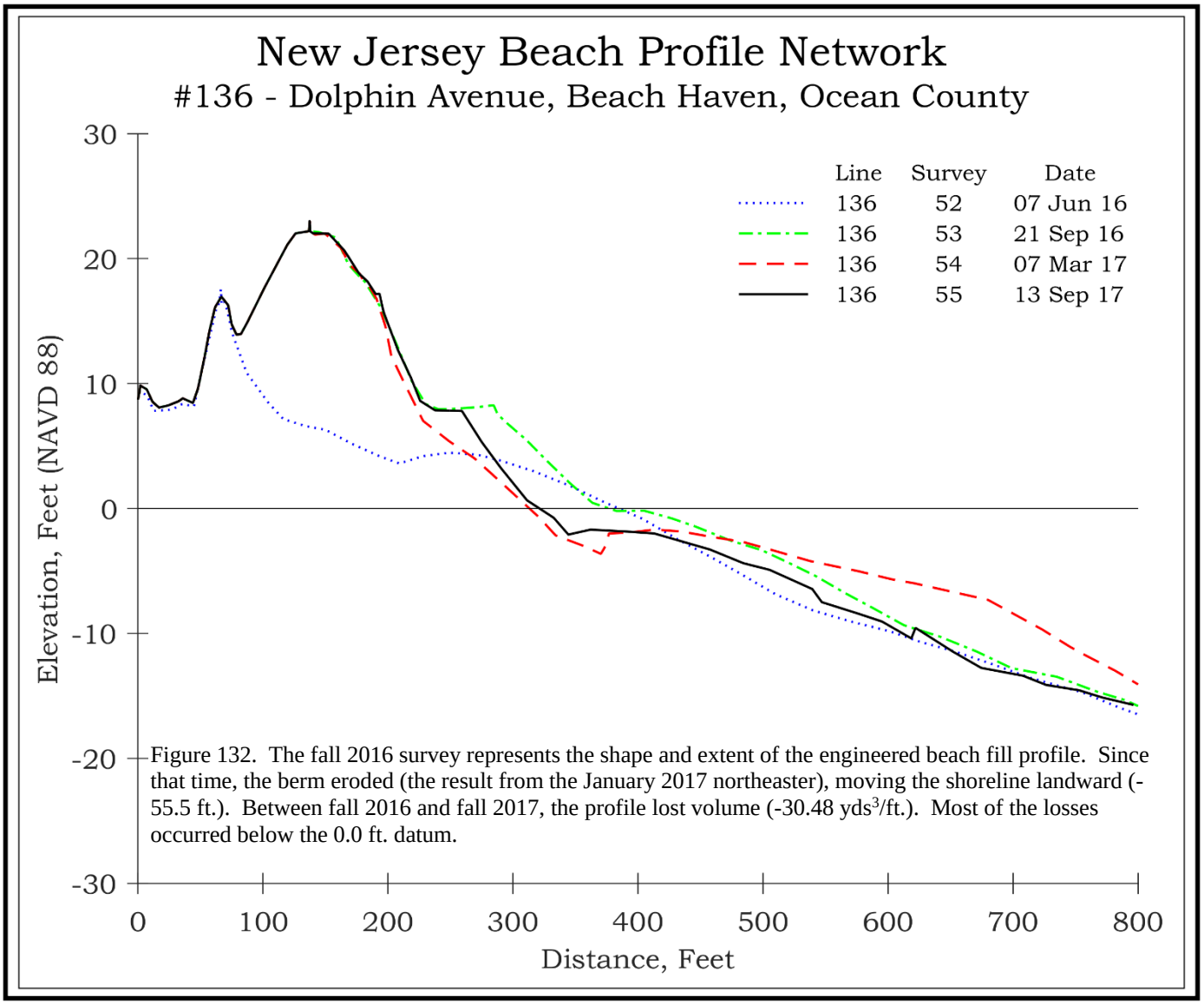
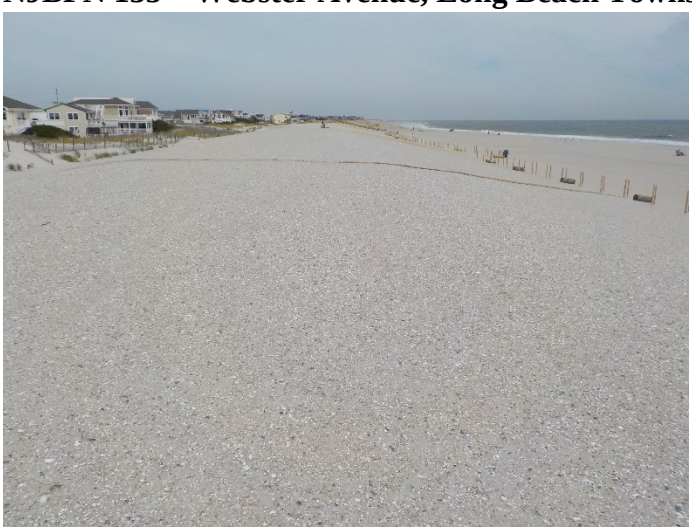


Figure 132. The fall 2016 survey represents the shape and extent of the engineered beach fill profile. Since that time, the berm eroded (the result from the January 2017 northeaster), moving the shoreline landward (-55.5 ft.). Between fall 2016 and fall 2017, the profile lost volume (-30.48 $yds^3/ft.$). Most of the losses occurred below the 0.0 ft. datum.

NJBPN 135 – Webster Avenue, Long Beach Township



The Webster Avenue photos show the unvegetated and vegetated dune crest (left taken September 21, 2016 and right taken September 13, 2017). Some sand accumulated at the seaward base of the dune between fall 2016 and fall 2017 as a result of sand trapped by fencing.

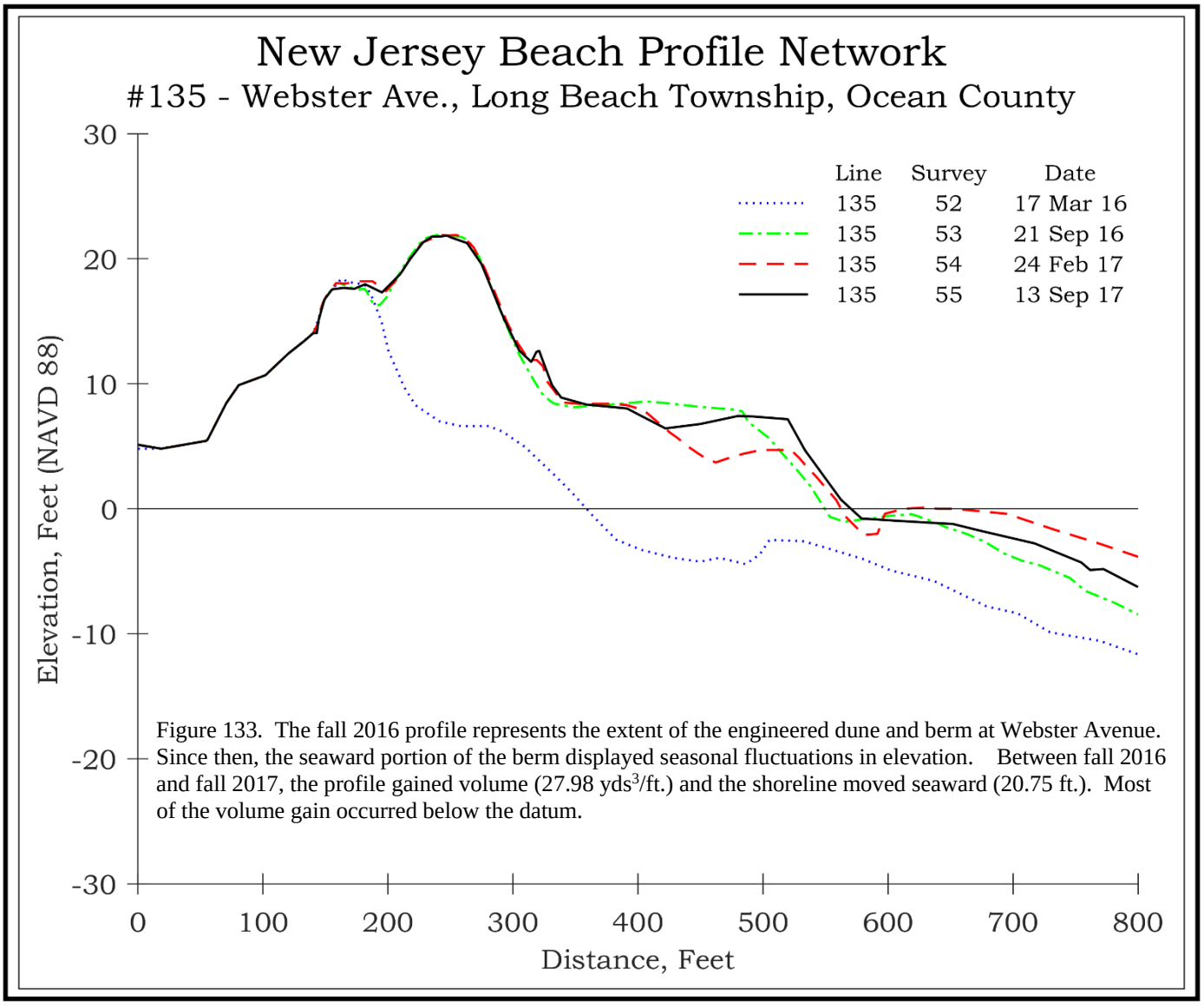


Figure 133. The fall 2016 profile represents the extent of the engineered dune and berm at Webster Avenue. Since then, the seaward portion of the berm displayed seasonal fluctuations in elevation. Between fall 2016 and fall 2017, the profile gained volume (27.98 yds^3/ft.) and the shoreline moved seaward (20.75 ft.). Most of the volume gain occurred below the datum.

NJBPN 234 – Forsythe National Wildlife Refuge, Holgate Entrance, Long Beach Township

The photos above show the seaward portion of the berm immediately downdrift of the Holgate terminal groin (left photo taken September 21, 2016 and right photo taken September 13, 2017). The profile is located within the taper area of the federal beachfill.

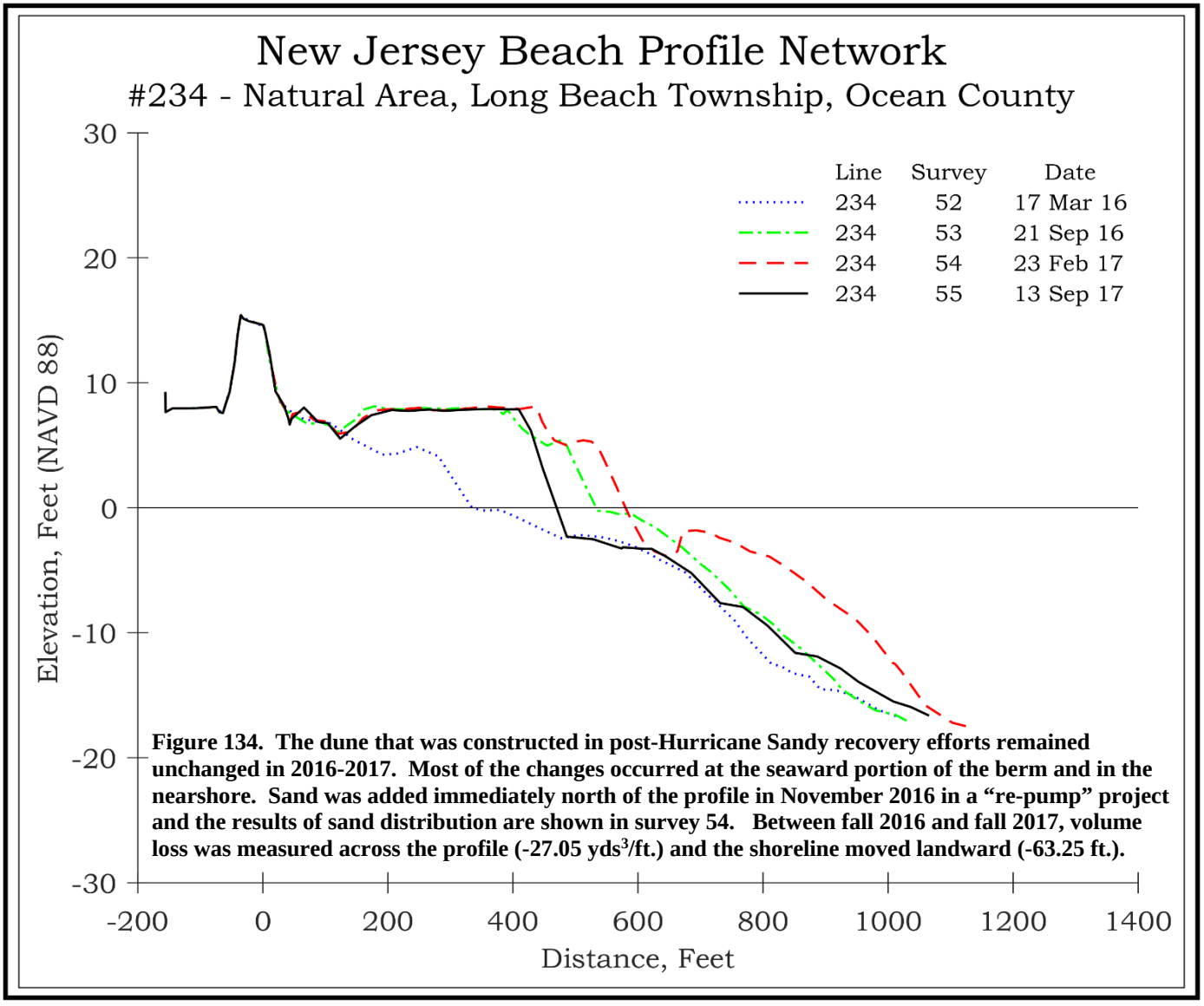


Figure 134. The dune that was constructed in post-Hurricane Sandy recovery efforts remained unchanged in 2016-2017. Most of the changes occurred at the seaward portion of the berm and in the nearshore. Sand was added immediately north of the profile in November 2016 in a "re-pump" project and the results of sand distribution are shown in survey 54. Between fall 2016 and fall 2017, volume loss was measured across the profile (-27.05 yds^3/ft.) and the shoreline moved landward (-63.25 ft.).

Summary & Conclusions

The northern Ocean County federal flood and coastal storm damage reduction project (beachfill) is a much-welcomed event in protecting landward properties and infrastructure. The project commenced in Ortley Beach in May 2017 as a betterment to address the vulnerable shoreline conditions in the municipality. The Mantoloking beaches were the first to receive sand in the designed template and this is shown in the fall 2017 survey at NJBPN #153. Completion of the 14-mile initial construction of the federal project is scheduled for winter 2018/2019. With the exception of the fall 2017 Ortley Beach and Mantoloking profiles, the CRC fall surveys represent pre-project conditions.

On Long Beach Island (LBI), several NJBPN sites received sand either in a federal repair from the January 2017 storm event or in a state/municipal beachfill. The LBI 2017 fall surveys were completed in September to capture the summer "inflated" profile.

All of the NJBPN sites in Ocean County showed the effects of the January 2017 northeast storm. Appendix Tables 4 and 5 provide the seasonal and annual profile volume and shoreline changes for Ocean County. At most sites, the berms were lowered from the fall 2016 position. (Note changes between Survey 53 and Survey 54.) The two sites with the greatest volume loss from this event were at NJBPN #248 (Seaside Heights) and NJBPN #142 (Harvey Cedars). NJBPN #146 (Island Beach State Park), NJBPN #135 (Long Beach Township), and NJBPN #234 (Long Beach Township) recorded the greatest gains during this seasonal time period. The state park profile is closest to the Barnegat Inlet north jetty and probably benefitted from the southerly littoral transport and sand trapping by the jetty. The Webster Avenue profile showed gains below the datum in a nearshore bar, and the southernmost LBI profile gained volume both above and below the datum. This significant gain at NJBPN #234 is attributed to the additional sand in the littoral system. In November 2016, the beaches immediately north of the profile received a "re-pump" of approximately 300,000 cubic yards of sand. The greatest annual change in the position of the 0.0 ft. NAVD88 shoreline (fall 2016 to fall 2017) occurred at the Mantoloking profile site (184.5 ft.) and was directly related to the beachfill event in summer 2017. The site with the greatest landward movement during this timeframe was at 81st Street in Long Beach Township (-75.75 ft.), and the result of erosion of the shoreline from the January 2017 storm (Appendix B).