



New Jersey Beach Profile Network

Ocean County

**Manasquan Inlet
to Little Egg Inlet**

**NJBPN Profile #'s
156 - 234**

New Jersey Beach Profile Network Ocean County Site Locations

Fourteen of the NJBPN sites in Ocean County are located in the following communities on the northern barrier spit segment: Borough of Point Pleasant Beach, Borough of Bay Head, Borough of Mantoloking, Brick Township, Toms River Township, Borough of Lavallette, Ortley Beach in Toms River Township, Borough of Seaside Park, and Township of Berkeley. The 14 Long Beach Island profiles are located in the following municipalities: Borough of Barnegat Light, Long Beach Township, Borough of Harvey Cedars, Borough of Ship Bottom, and the Borough of Beach Haven. There are three locations in the Island Beach State Park and one at the entrance to the Holgate Unit of the Forsythe National Wildlife Refuge at the southern end of Long Beach Island.

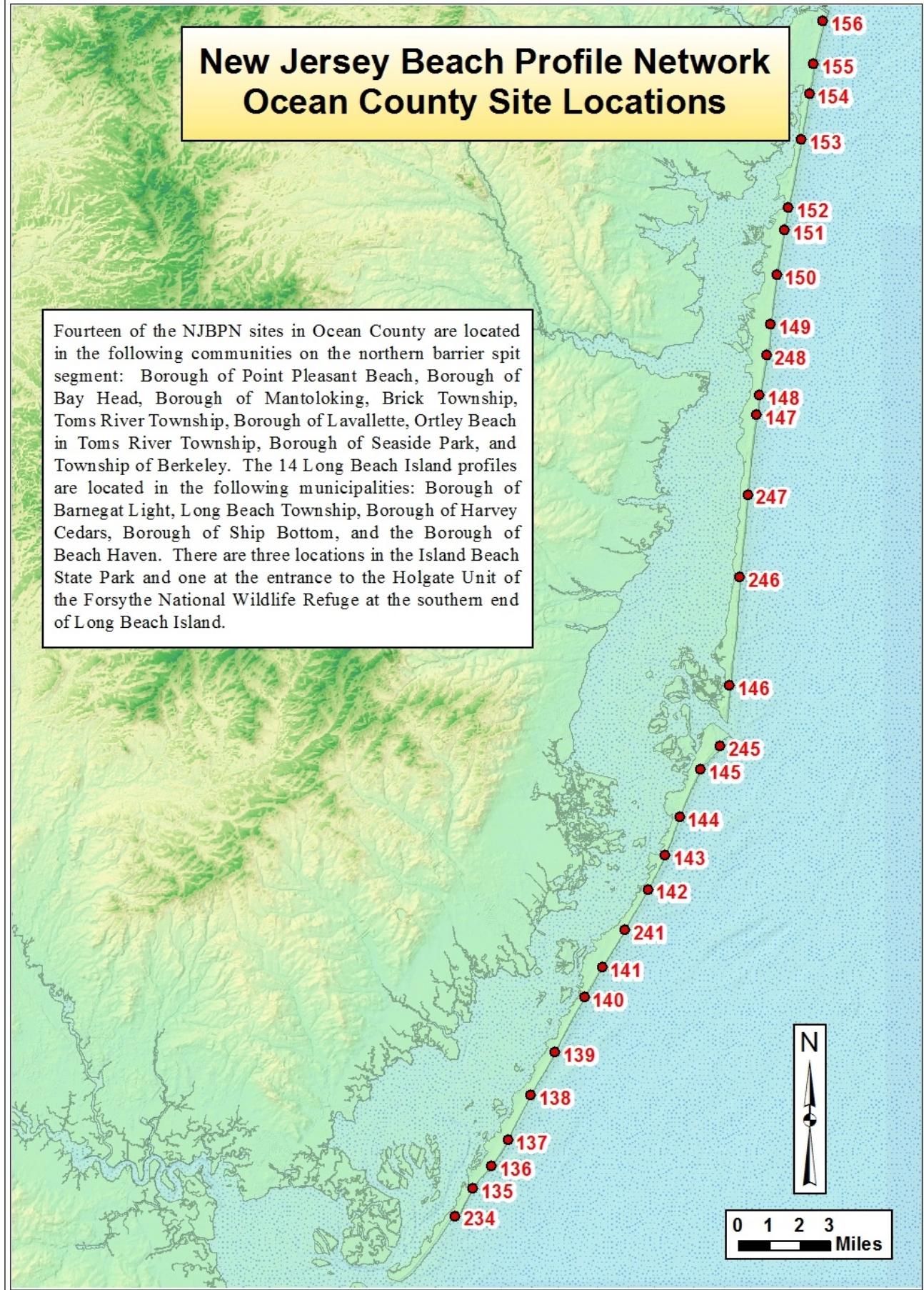


Figure 105. Locations of the 28 NJBPN profile stations in Ocean County, NJ.

2018 Beachfills in Ocean County:

The federal/non-federal *Manasquan Inlet to Barnegat Inlet Coastal Storm Risk Management Project* (beachfill) commenced in May 2017 in Dover Township (Ortley Beach- NJBPN #149) and continued through 2018. Communities receiving sand in 2018 were Brick Township, Toms River South (Ortley Beach), Mantoloking Northern Area, and Toms River North. Upon completion, approximately 11 million cubic yards of sand will be placed on nearly 14 miles of ocean shoreline between Point Pleasant Beach and Berkeley Township (USACE Project Fact Sheet, 2018 https://www.nap.usace.army.mil/Portals/39/docs/Civil/Manasquan_to_Barnegat/MIBI-Factcard-April-2018-Reduced.pdf). Figure 107 shows the beach profile template for the project.

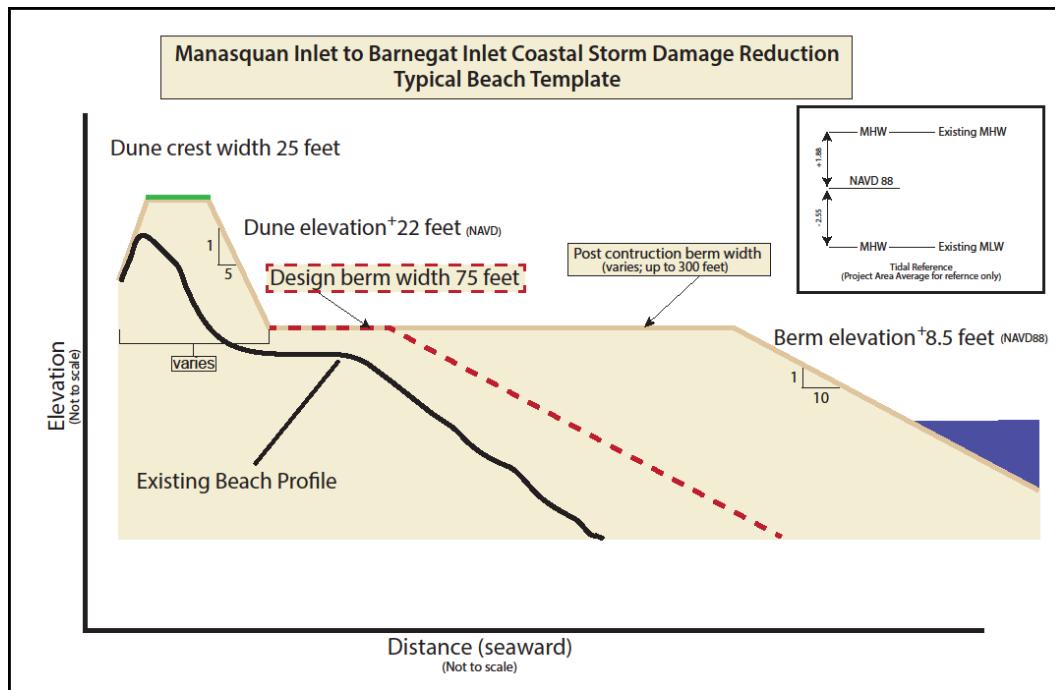


Figure 106. Design profile for the Manasquan Inlet to Barnegat Inlet beachfill (USACE, 2018).

Island Beach State Park was not included in the storm damage reduction project (NJBPN sites #247, #246, and #146). The CRC 2017 surveys represent pre-beachfill project elevations and offer a nice comparison to the 2018 surveys which in some areas captured close to as-built conditions. The USACE posts the construction status of the Northern Ocean County Coastal Storm Risk Management project at <https://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 2018 in response to damages from storms and addressing erosion hot spot areas. The USACE posts an overview of the LBI project at <https://www.nap.usace.army.mil/Missions/Civil-Works/Long-Beach-Island-Storm-Damage-Reduction/>. Information regarding 2018 activities is provided in the site descriptions below.

Individual Site Descriptions:

Point Pleasant Beach, Water Street and Maryland Avenue; #156 and #155;

The recreational beach at Water Street does not include a 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 are above the design elevation though neither site received pumped sand in 2018.

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 100-150 feet over the past year and the nearshore slope was steep. A low sandbar was measured in the fall 2018 survey. Sand placement began in May 2019.

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. Figure 108 below emphasizes the difference made by the federal project. Sand placement was completed in December 2018.



Figure 107. Direct comparison between a post-Jonas northeast storm on January 26, 2016, and post- beachfill project of the same three homes as of March 28, 2019 with the grass and fencing installed in Mantoloking near Herbert Street. The steel wall, installed in 2014 remains under the new dune crest as a final barrier to shoreline retreat.

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. By August 2018, federal sand placement was completed.

Toms River Township, Normandy Beach 1st Avenue #151 and Ortley Beach 8th Avenue #149;

Significant changes were made to the beaches by the federal project at both Township locations and included an engineered dune up to 23 ft NAVD88. Sand placement was completed in Ortley Beach (#149) in November 2018 and in December 2018 at Normandy Beach (#151). Both sites posted the greatest annual volume gain of all the Ocean County sites (193 yds³/ft).

Lavallette, White Avenue #150;

The post-Sandy dune reaches nearly 23 ft, but is less than 100 ft at its base. Sand placement did not occur in 2018, but is expected to be complete by April 2019.

Seaside Heights, Franklin Avenue #248;

This site does not include a dune due to local management efforts and the heavy beachgoer use. Sand placement did not occur in 2018, but is expected to be complete by January 2019.

Seaside Park, 4th Avenue #148;

The Seaside Park profile contains a stable dune over 25 ft high and a moderate-width (100 ft) berm. Nearshore sand bars are a typical occurrence. Sand placement did not occur in 2018, but is expected to be complete by January 2019.

Berkeley Township, South Seaside Park 6th Lane #347 (formerly #147);

The profile at Midway Beach contains an impressive dune (> 25 ft and 150 ft wide) and a berm that measured over 100 ft. Sand placement did not occur in 2018, but is expected to be complete by February 2019.

Island Beach State Park, Sites #247, #246, and #146;

Over the 2017-2018 time frame, only the central IBSP location (NJBPN #246) exhibited volume gains while the other two park locations lost volume. The federal storm damage reduction project did not extend to the park locations.

Barnegat Light Borough, 10th Street #245 and 26th Street #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 and exhibited the greatest annual volume loss (-57.6 yds³/ft) of all the Ocean County sites between fall 2017 and fall 2018. The 26th Street location posted moderate volume gain during the same time period.

Long Beach Township, Loveladies La Baia Street #144;

In the 2017-2018 time period, most of the volume changes occurred below the 0.0 ft datum.

Harvey Cedars, 73rd Street #143 and Tranquility Drive #142;

Sand was placed in Harvey Cedars in spring/summer of 2018. This placement extended into the Long Beach Township communities of Loveladies and North Beach.

Surf City, 20th Street #241;

The 20th Street site in Surf City received sand in the June-July 2018 supplemental beach fill. This event extended the berm by nearly 200 feet from its spring 2018 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. Trapped windblown sand added elevation to the seaward base of the dune.

Long Beach Township, Brant Beach 32nd St #140, Beach Haven Crest 81st St/Massachusetts Ave #139, and Beach Haven Terrace 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. The Brant Beach location received sand in April 2018 to extend the shoreline position seaward 74 ft from its spring 2018 pre-fill position. All of the sites showed sand deposition at the seaward base of the dune. NJBPN #139 measured the greatest volume loss of the three sites in 2017-2018.

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. The design dune at the Dolphin Avenue location was modified and sand dredged from Little Egg Inlet was added to the berm in winter 2018. This led to the volume gain between fall 2017 and fall 2018. Minimal volume losses were recorded at the Taylor Avenue location throughout the 2017-2018 study period.

Long Beach Township, Holgate, Webster Ave #135;

Initial construction of the engineered dune and berm was completed in summer 2016. The site gained volume across the profile, however the majority of the volume gain was below the datum. A trend at this location since 2016.

Long Beach Township/Forsythe National Wildlife Refuge boundary #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. During the 2017-2018 time period, the profile lost volume in spring to fall survey comparisons and gained volume in fall to spring and fall to fall survey comparisons (opposite of typical seasonal responses).

2018 Storm Activity

Several weather events were recorded for eastern Ocean County in 2018. None of the 2018 named tropical systems directly impacted the New Jersey coast. Table 1 lists the events that were extracted from the NOAA Storm Events Database plus observations by the CRC (NOAA Storm Events Database, 2018)

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2018&endDate_mm=12&endDate_dd=30&endDate_yyyy=2019&county=OCEAN%3A29&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=34%2CNEW+JERSEY

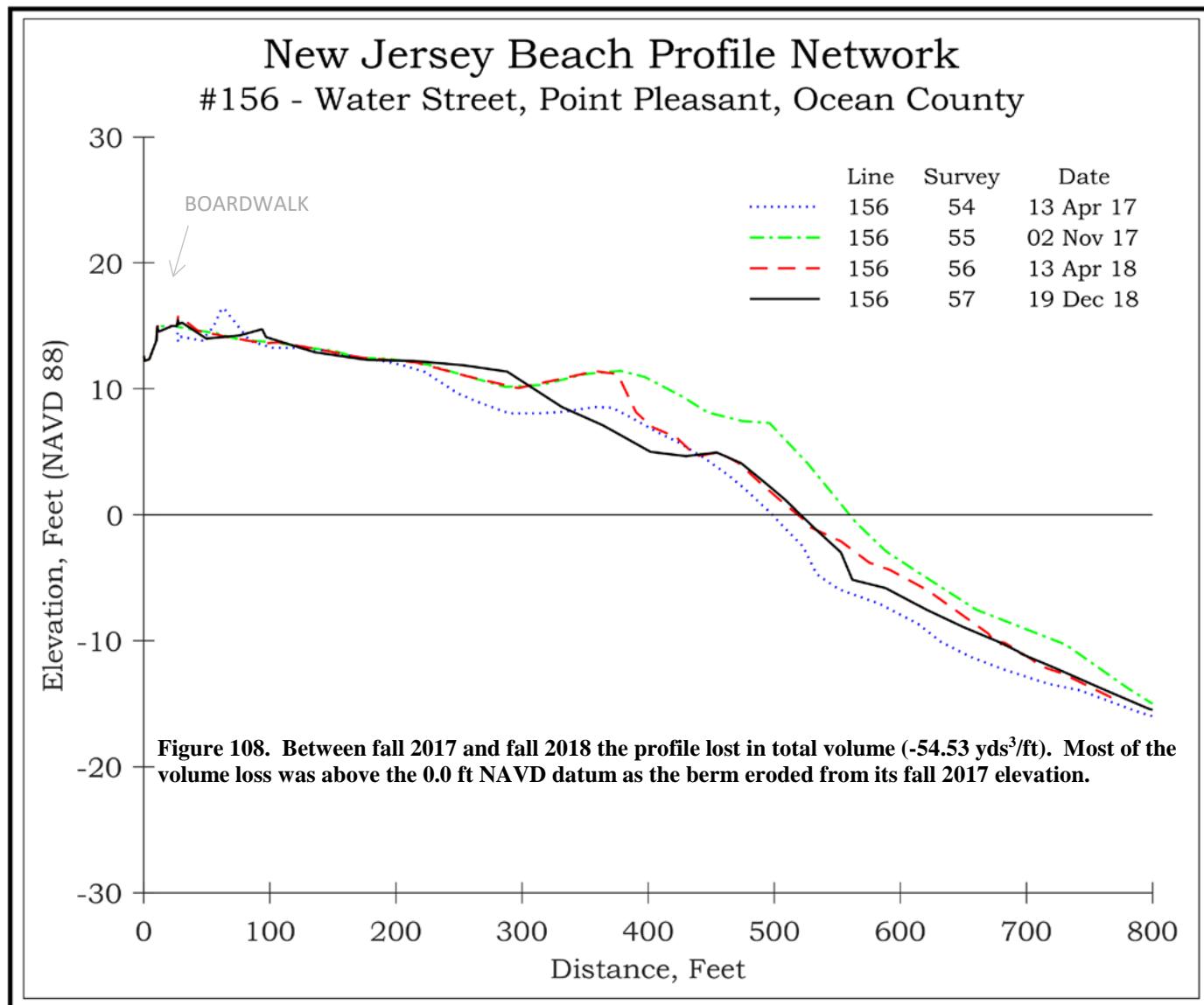
Table 1. 2018 Storm Information

Eastern Ocean County Storm Activity -2018	
4 January	Winter Storm
2 March	Northeaster - Wind
3-4 March	Coastal Flood
21-22 March	Winter Storm & Coastal Flood
9-10 September	Coastal Flood
27 September	High Waves - CRC observation, not in NOAA database
27 October	High Wind & Coastal Flood
10-11 December	Coastal Storm - CRC observation, not in NOAA database

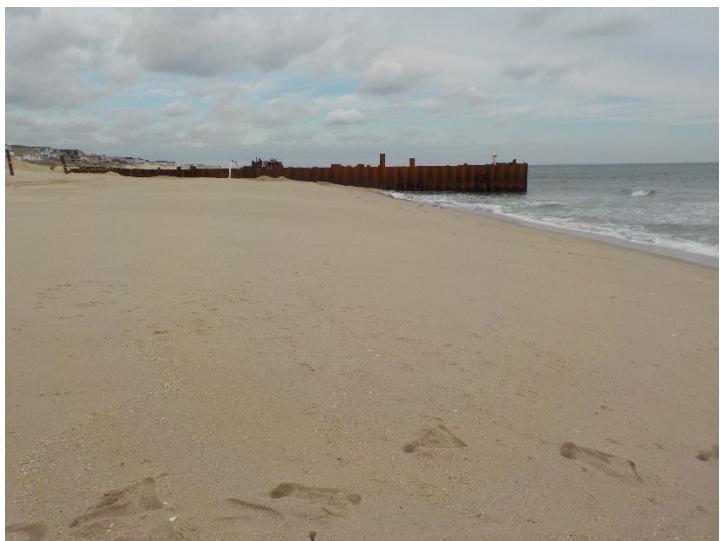
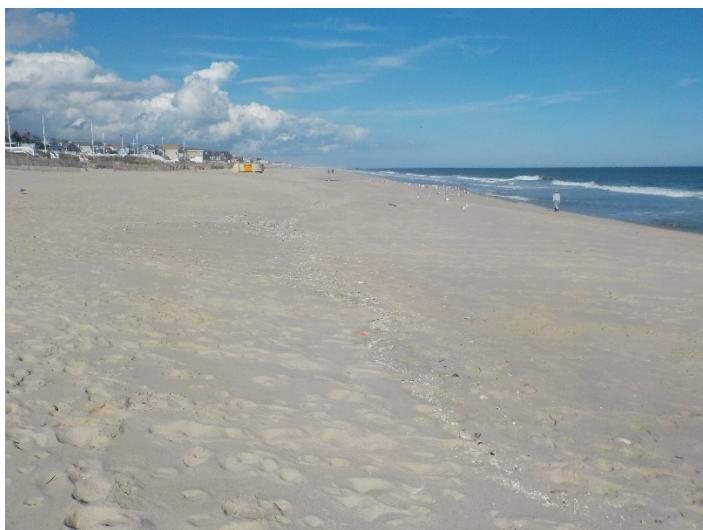
NJBPN 156 – Water Street, Point Pleasant Beach



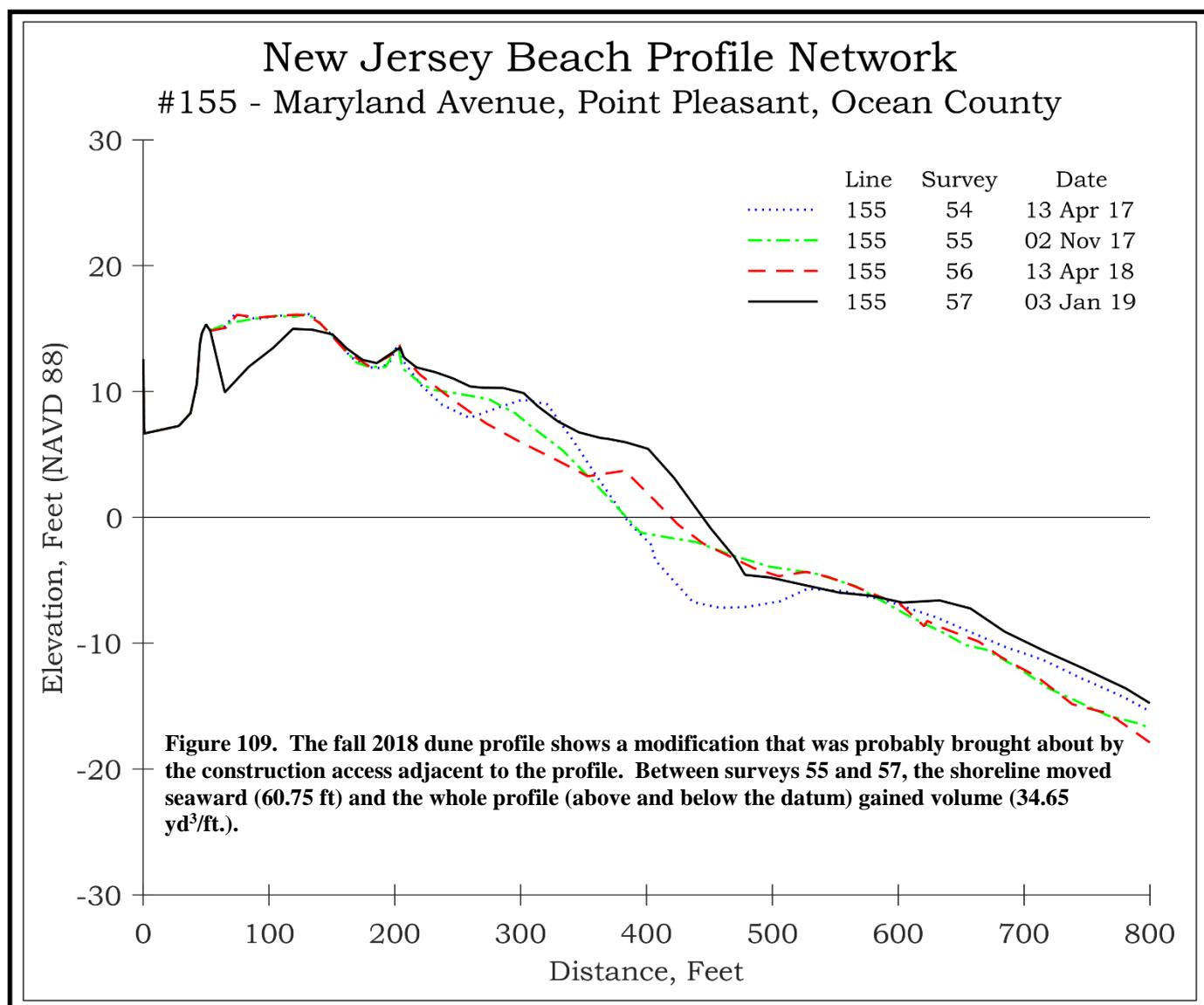
The Water Street site is located near the south end of the Point Pleasant Beach boardwalk and 1,400 ft south from the Manasquan Inlet jetty. The lack of dunes on the profile is the result of local beach maintenance activities. This NJBPN location was not included in the federal project. Between fall 2017 and fall 2018, the shoreline moved landward (-39 ft) (left photo taken November 2, 2017 and right photo taken December 19, 2018).



NJBPN 155 – Maryland Avenue, Point Pleasant



The Maryland Avenue profile is located over a mile south of Manasquan Inlet. The left photo (taken November 2, 2017) shows the beach condition before demolition of the Maryland Ave bulkhead and outfall. The photo on the right (taken January 3, 2019) shows the cofferdam that was constructed for the demolition work. This site was scheduled for beachfill in spring 2019.

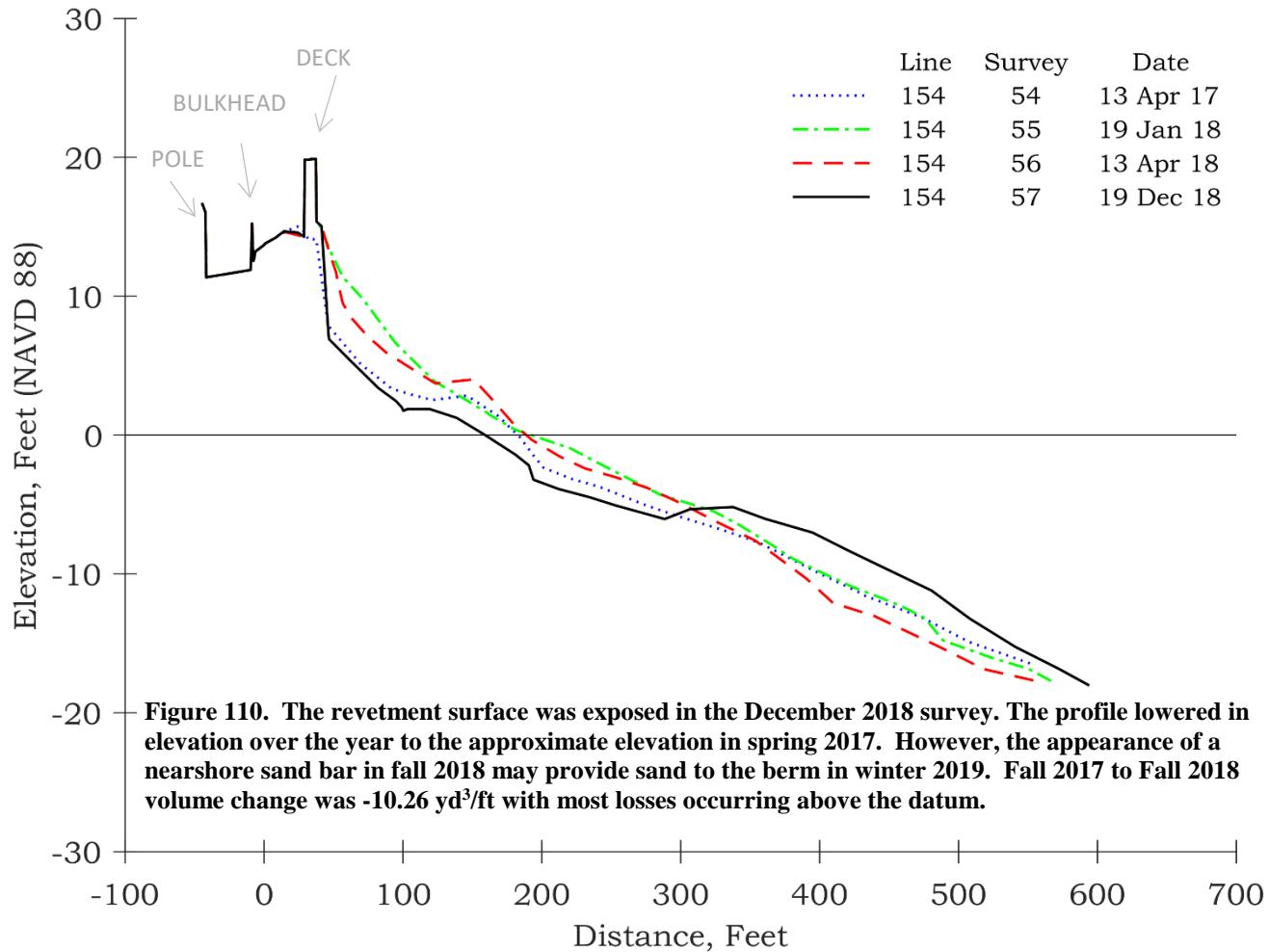


NJBPN 154 – Johnson Avenue, Bay Head



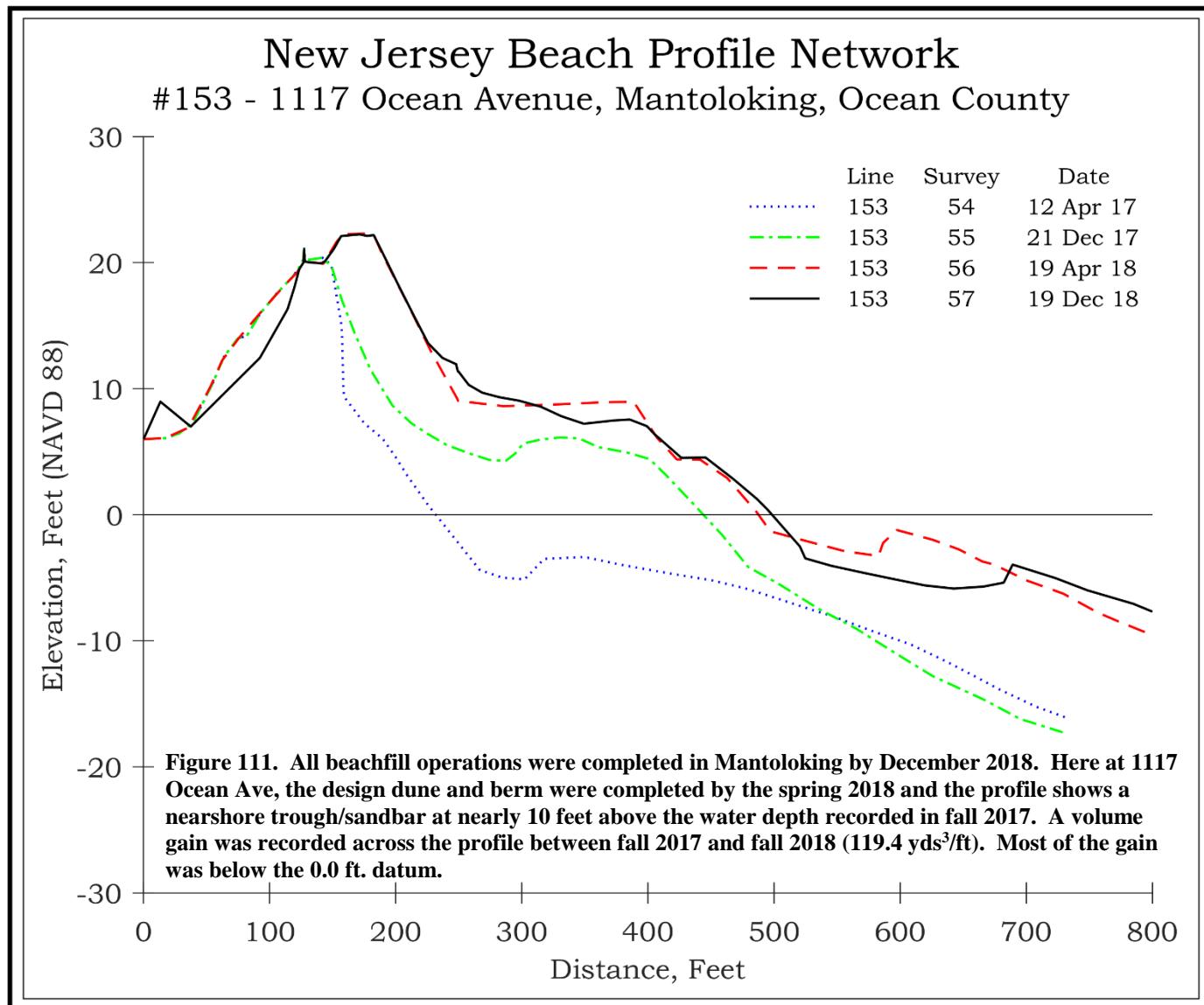
The Johnson Avenue profile contains no dune and a narrow beach (left photo taken January 19, 2018). The right photo (taken December 19, 2018) shows the exposed rock revetment. The position of the 0.0 ft NAVD shoreline moved landward (-33.0 ft) between surveys 55 and 57 and the berm lowered in elevation. Beach nourishment is scheduled for spring 2019.

New Jersey Beach Profile Network #154 - Johnson Avenue, Bay Head, Ocean County





At 1117 Ocean Ave. in Mantoloking, the left photo (taken December 21, 2017) shows the view of the dune and berm from the instrument station located on top of the steel wall that is buried below the sand. The right photo (taken December 19, 2018) shows vegetation that was planted on the seaward portion of the dune following the beachfill. The 0.0 ft NAVD shoreline was moved seaward by 54.5 ft from its fall 2017 position.

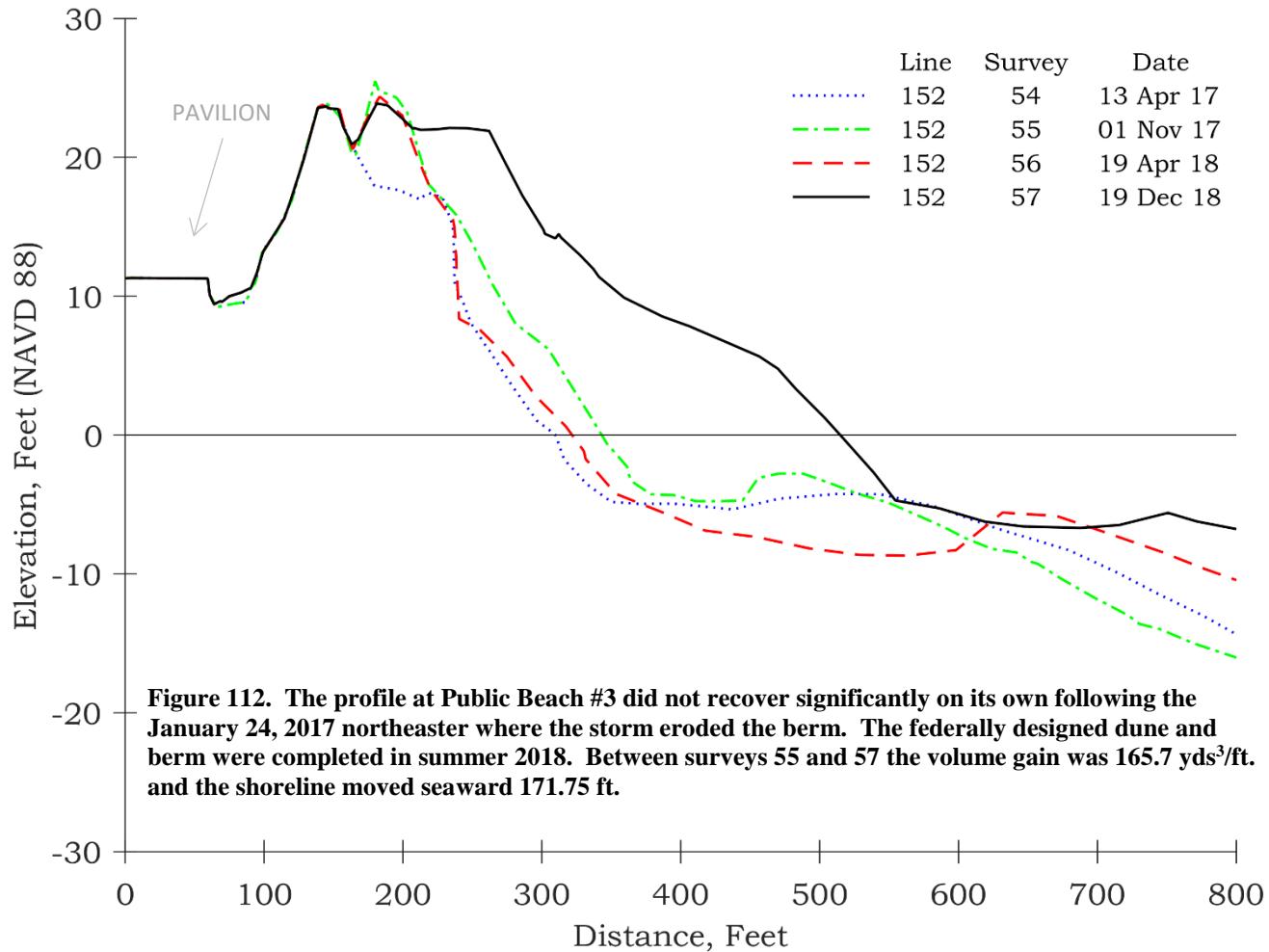


NJBPN 152 – Public Beach #3, Brick Township



The beachfill was completed at the Brick Township Public Beach #3 profile site in summer 2018. The left photo (taken November 1, 2017) shows the bare seaward dune face. The right photo (taken December 19, 2018) shows the same location planted with vegetation and the new accessway over the dune.

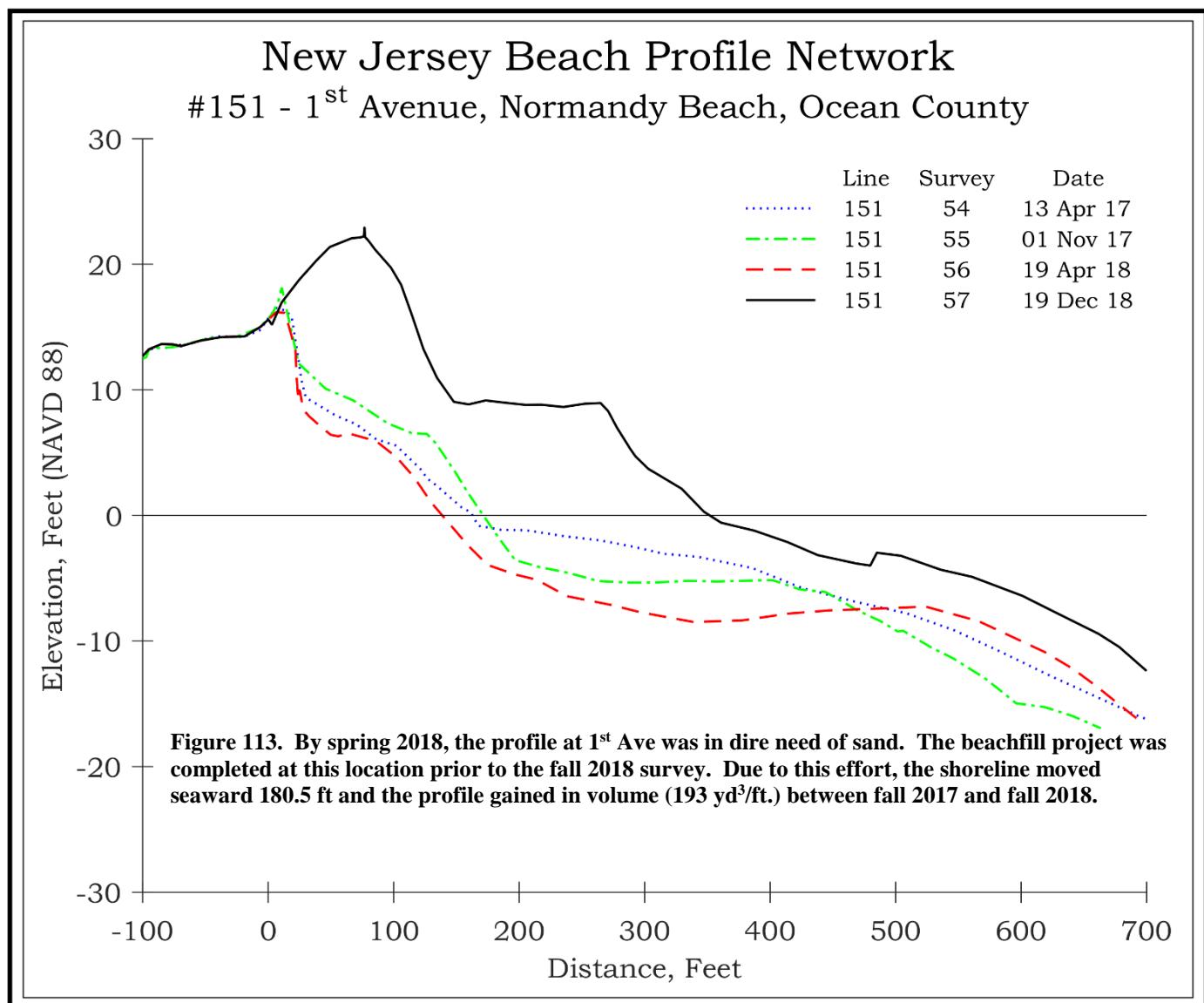
New Jersey Beach Profile Network #152 - Public Beach #3, Brick Township, Ocean County



NJBPN 151 – 1st Avenue, Normandy Beach



The photos of the Normandy Beach profile show the conditions of the backshore (left photo taken November 1, 2017) and at the seaward toe of the new engineered dune (right photo taken December 19, 2018). Sand placement was completed in December 2018.

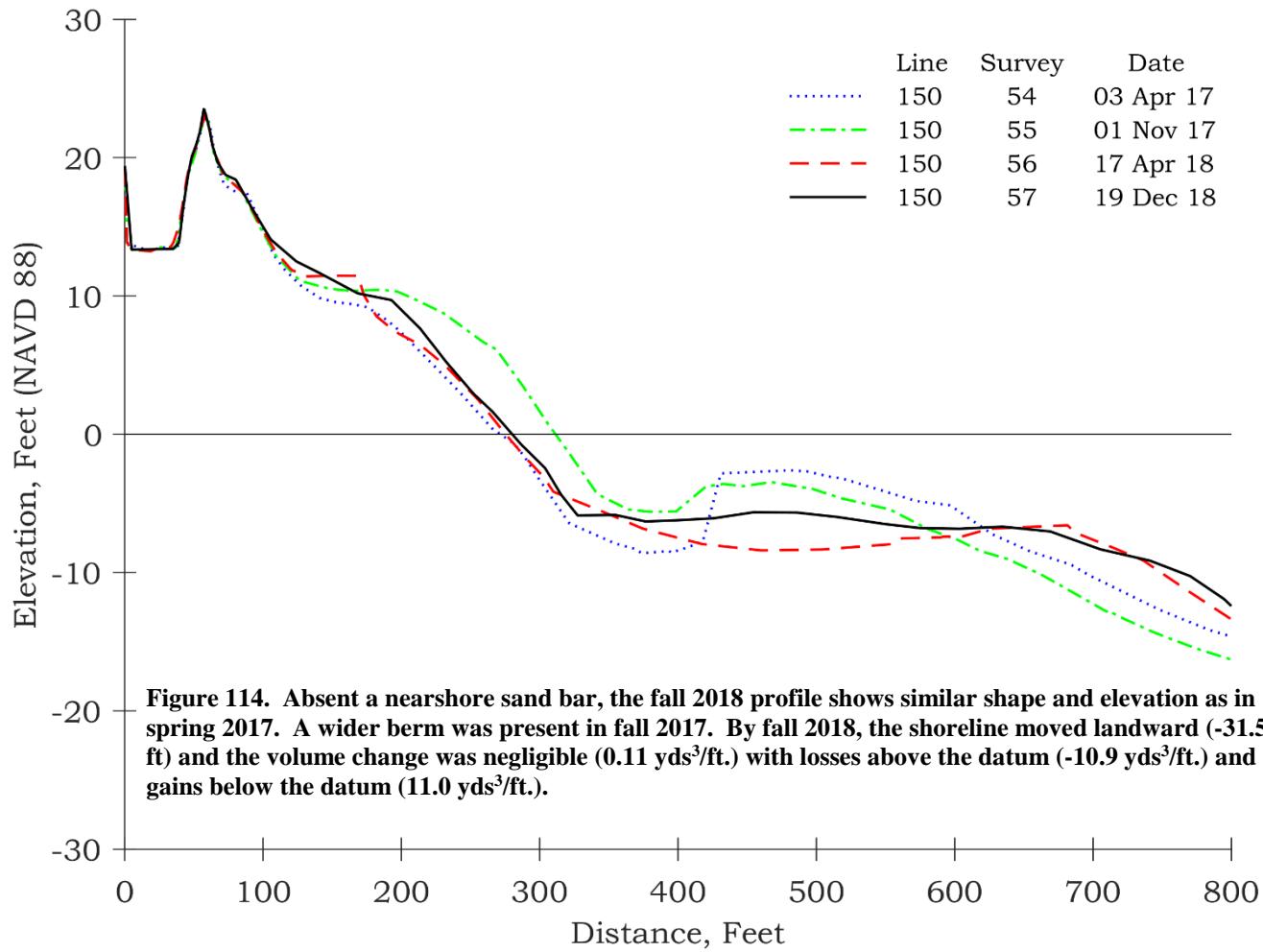


NJBPN 150 – White Avenue, Lavallette



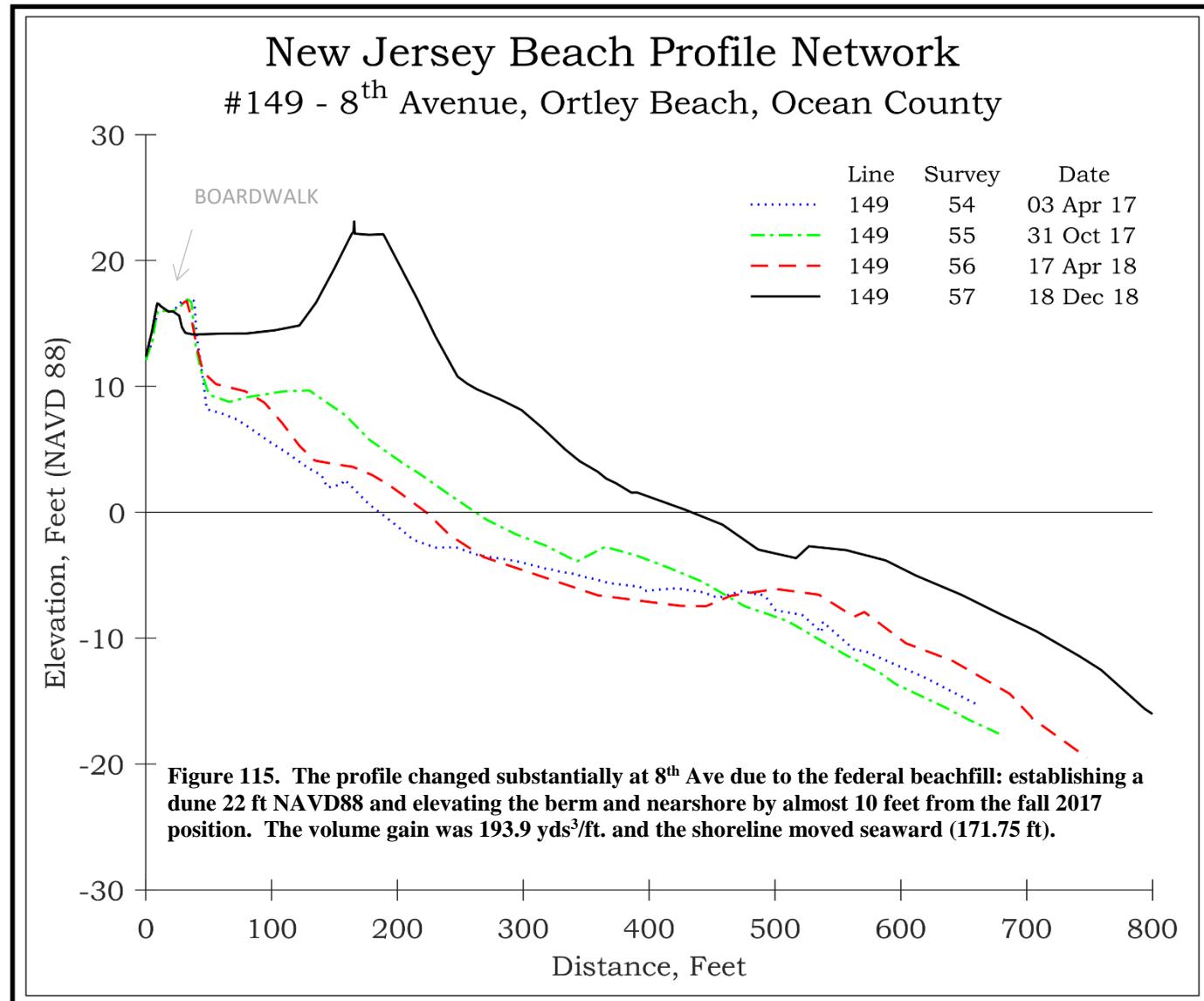
The dune shows no change between fall 2017 and fall 2018 (left taken November 1, 2017 and right taken December 19, 2018). This location is scheduled for sand placement in 2019.

New Jersey Beach Profile Network #150 - White Avenue, Lavallette, Ocean County





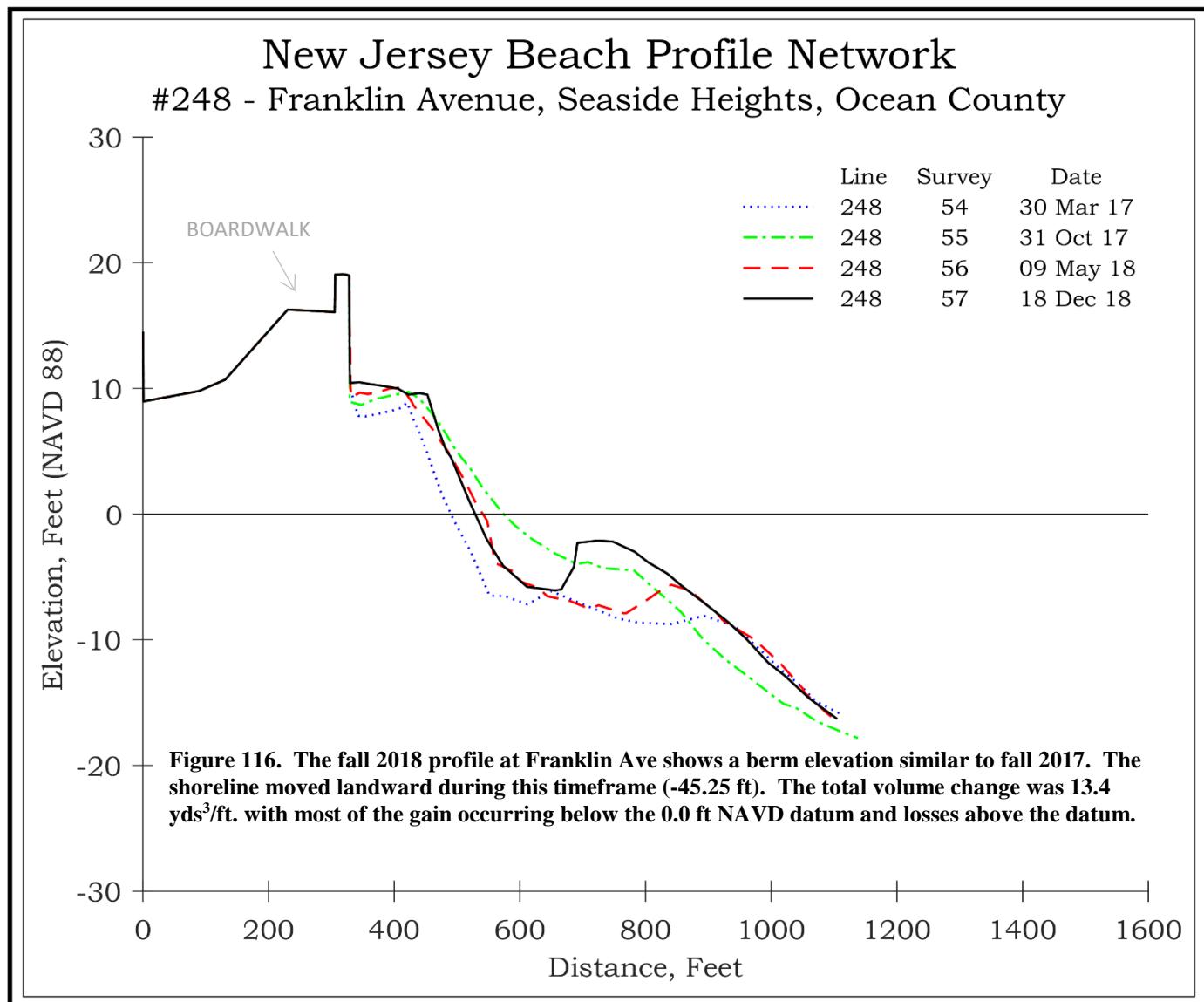
The left photo taken October 31, 2017 shows the berm as a result of the state/local “betterment” that occurred in May 2017 (after the CRC spring 2017 survey). The right photo (taken December 18, 2018) was taken from the crest of the new engineered dune located over 100 feet seaward of the fall 2017 dune. The beachfill was completed at this location by November 2018.



NJBPN 248 – Franklin Avenue, Seaside Heights

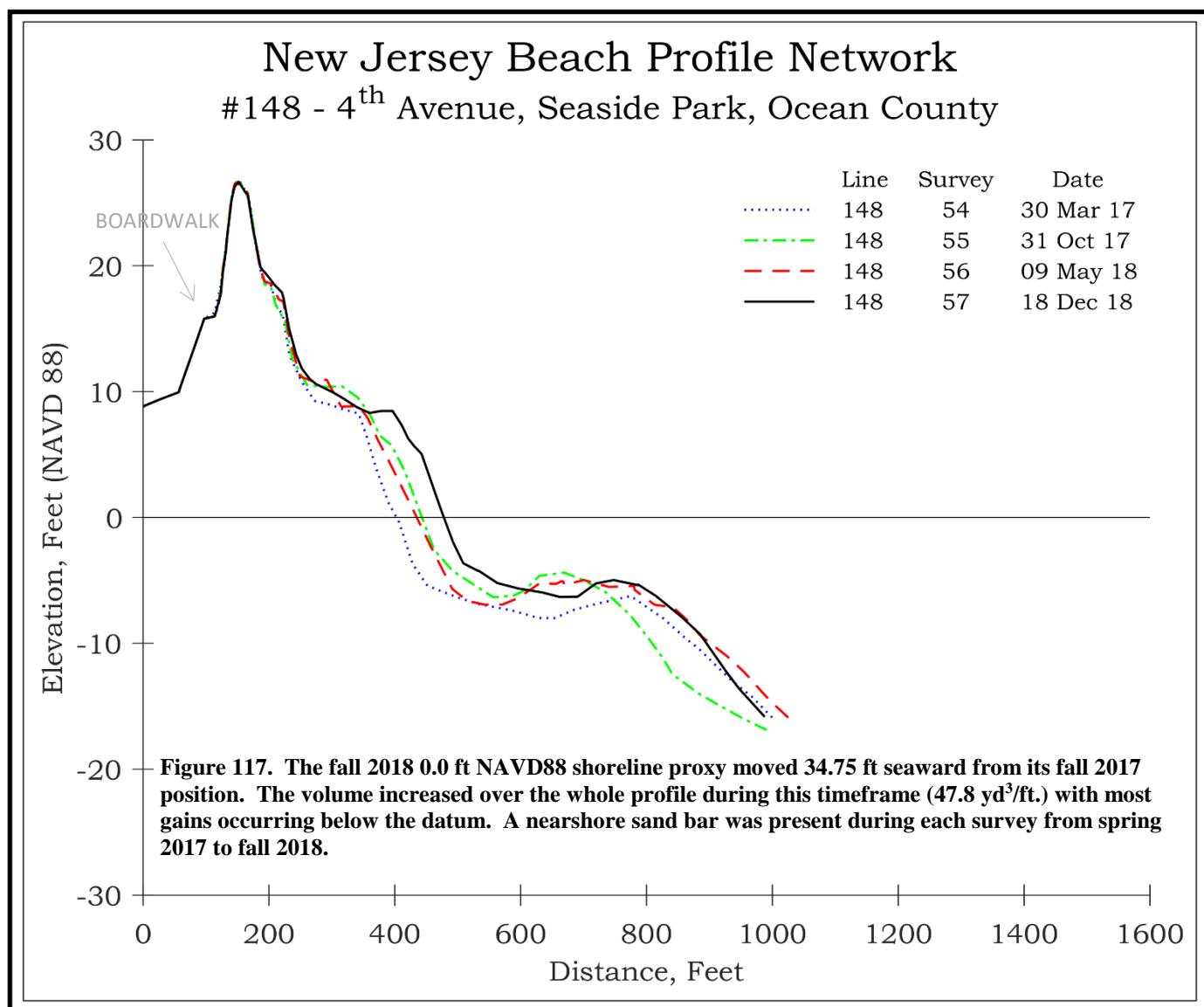


The fall 2018 berm at the Franklin Avenue site was of similar shape and elevation as in 2017 (left taken October 31, 2017 and right taken December 18, 2018). This location does not include an engineered dune. Beachfill activities finished in January 2019.





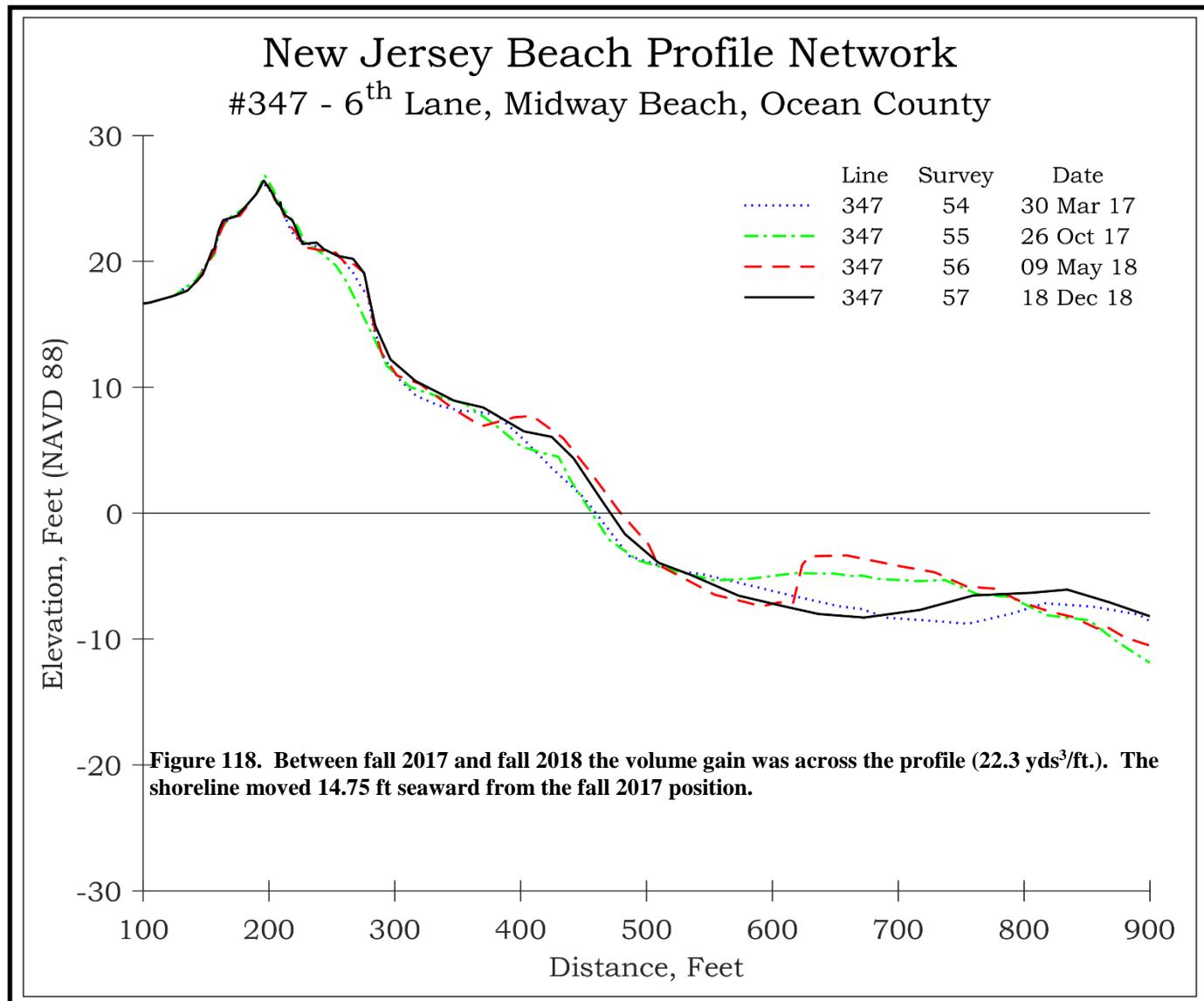
There was little change in the dune at 4th Avenue between fall 2017 and fall 2018 (left photo October 31, 2017 and right photo taken December 18, 2018). Beachfill at this Seaside Park location was completed in January 2019.



NJBPN 347 (formerly 147) – 6th Lane, Midway Beach (S. Seaside Park)



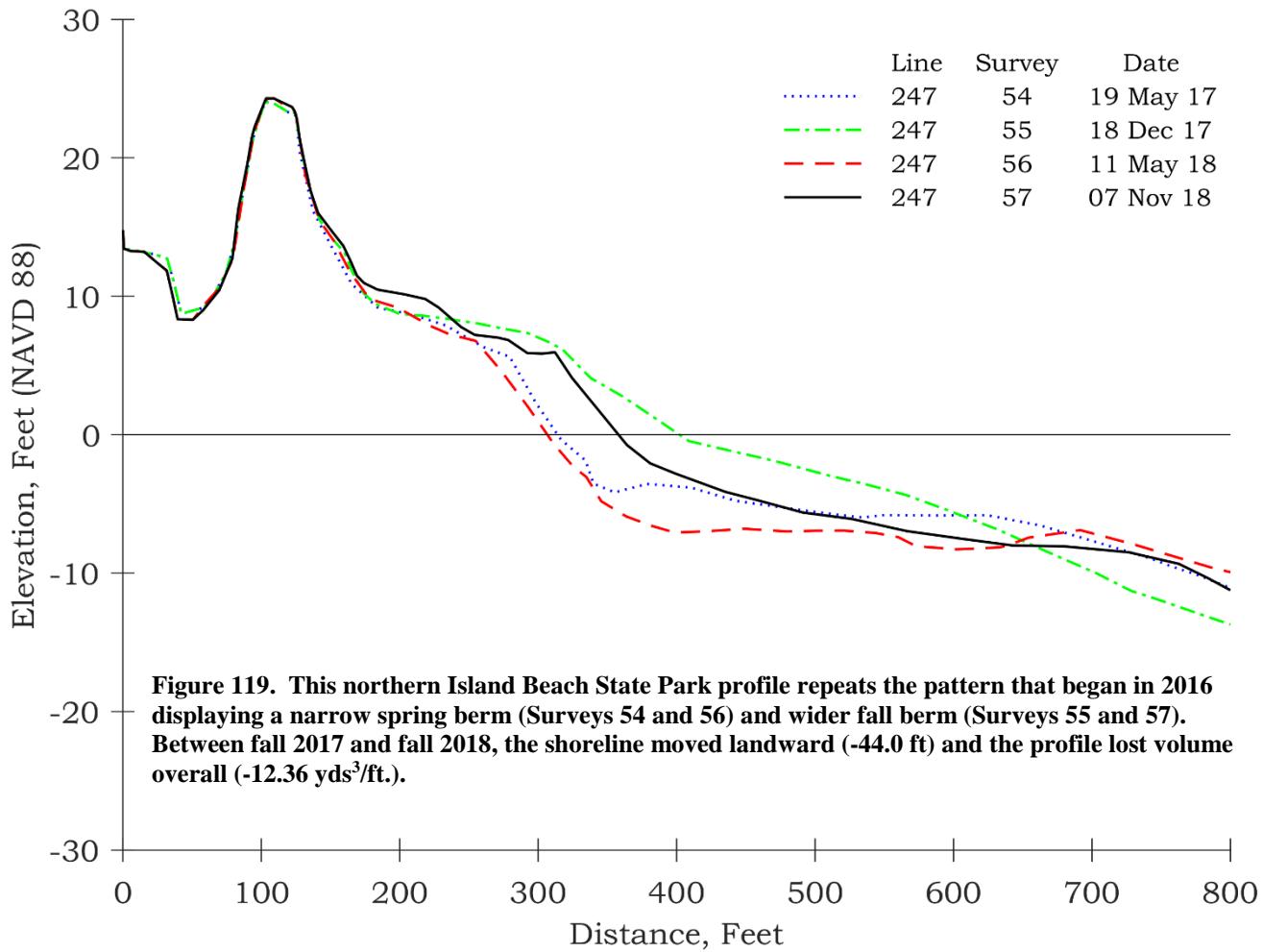
Beach and dune conditions were comparable over the 2017-2018 survey timeframe at the 6th Lane location (left photo taken October 26, 2017 and right taken December 18, 2018). Beach nourishment activities were completed in February 2019.



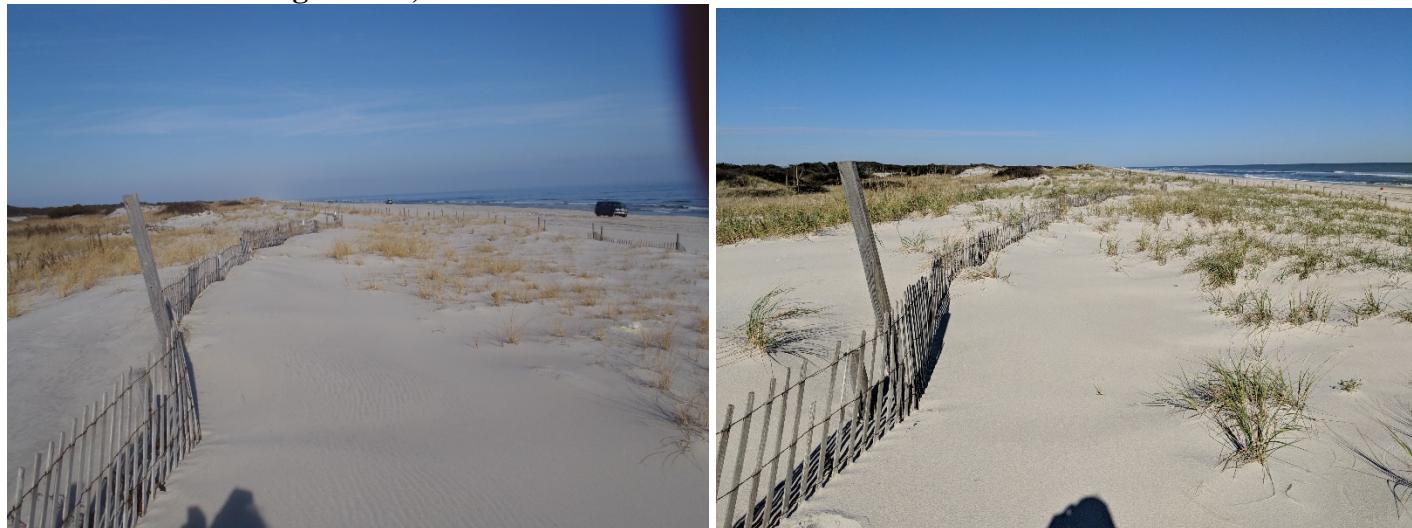


There has been no change in the dune shape or elevation at the Gillikin Access site since the seaward dune face was scarped during Hurricane Sandy in 2012 (left photo taken December 18, 2017 and right photo taken November 7, 2018). The Island Beach State Park profile locations are not included in the federal beachfill project.

New Jersey Beach Profile Network #247 - Gillikin Access, Island Beach State Park, Ocean County

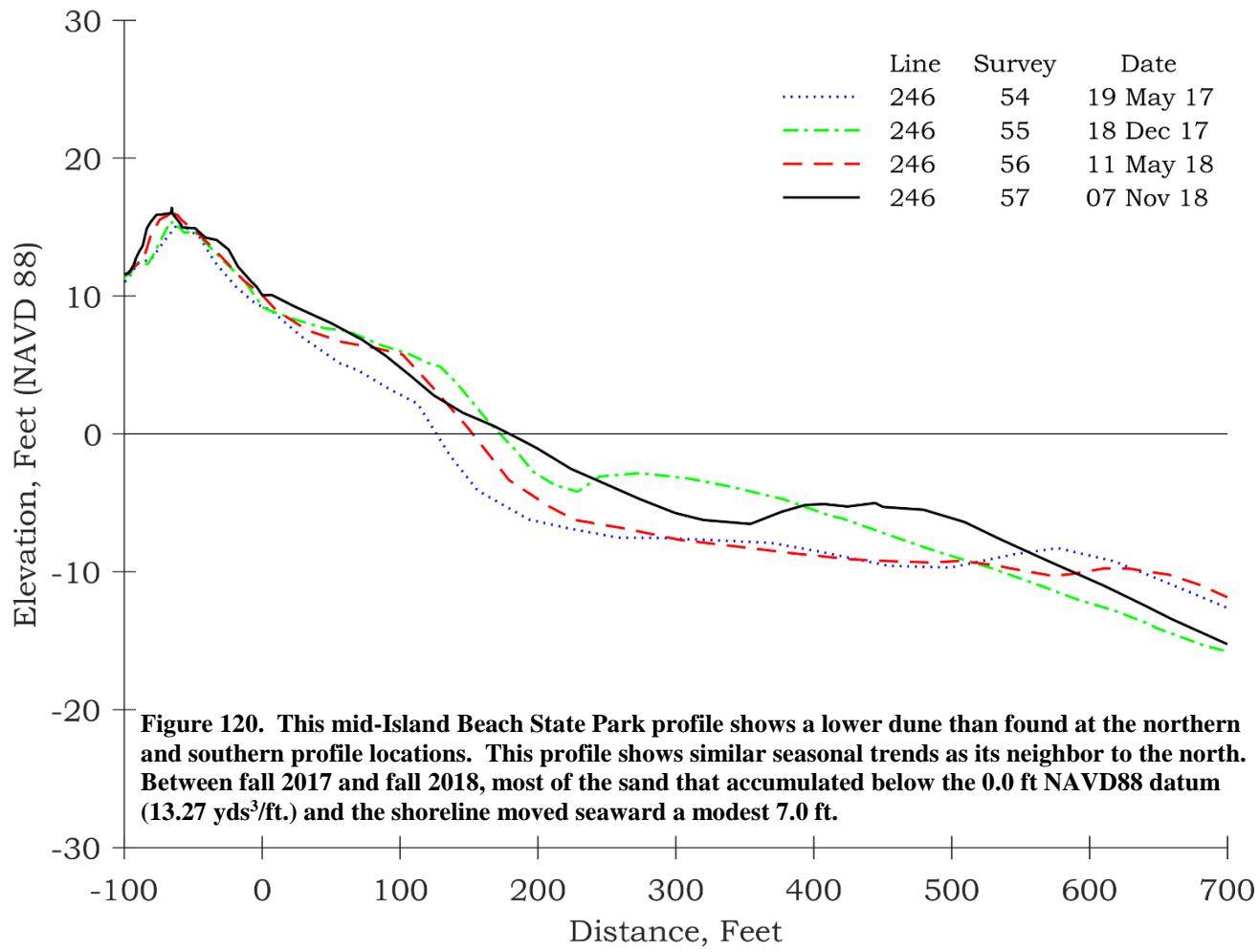


NJBPN 246 – Parking Lot A7, Island Beach State Park



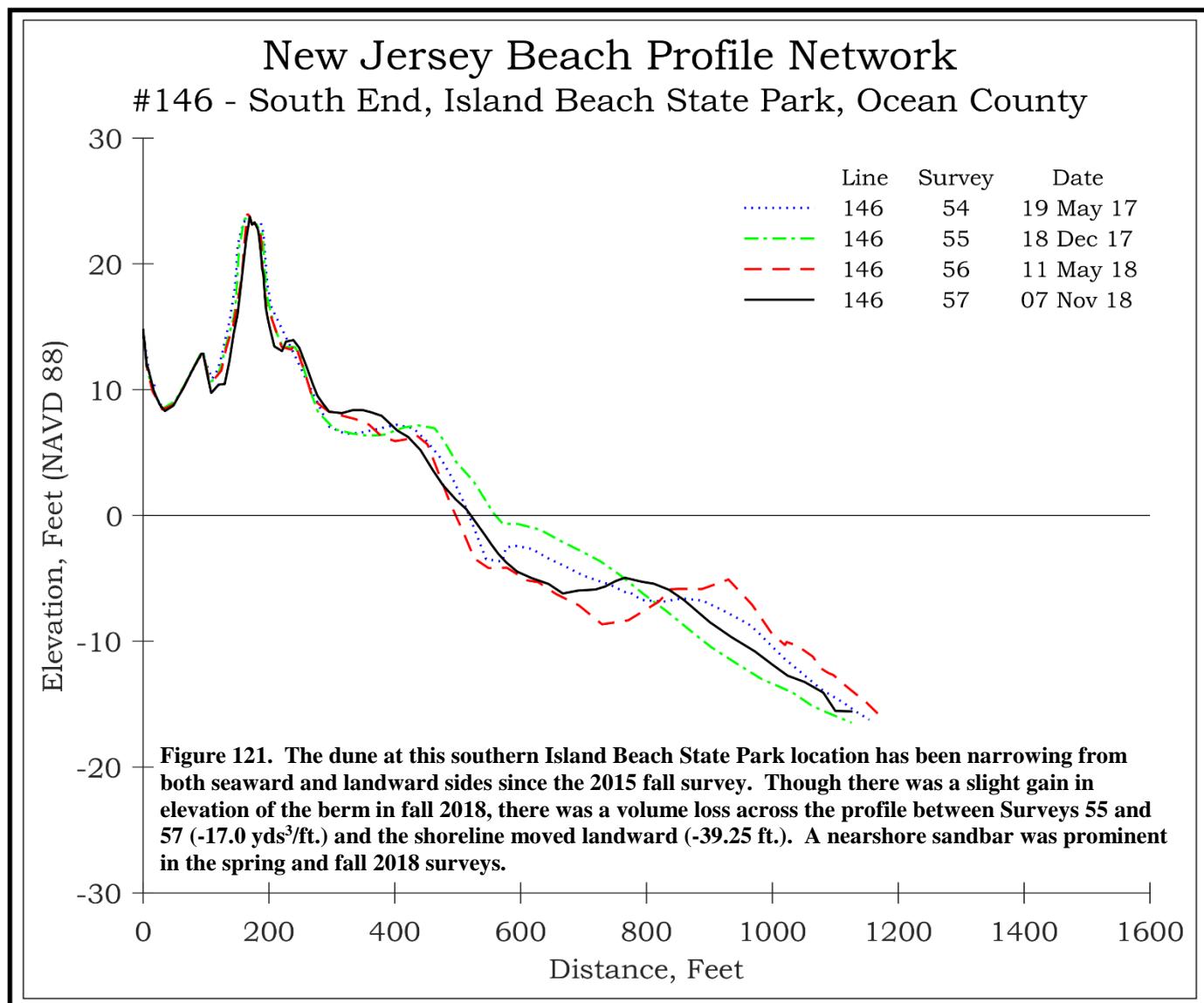
The photos at the Parking Lot A7 site show little visible changes to the dunes seaward of the sand fencing (left photo taken December 18, 2017 and right photo taken November 7, 2018).

New Jersey Beach Profile Network #246 - Parking Lot A7, Island Beach State Park, Ocean County





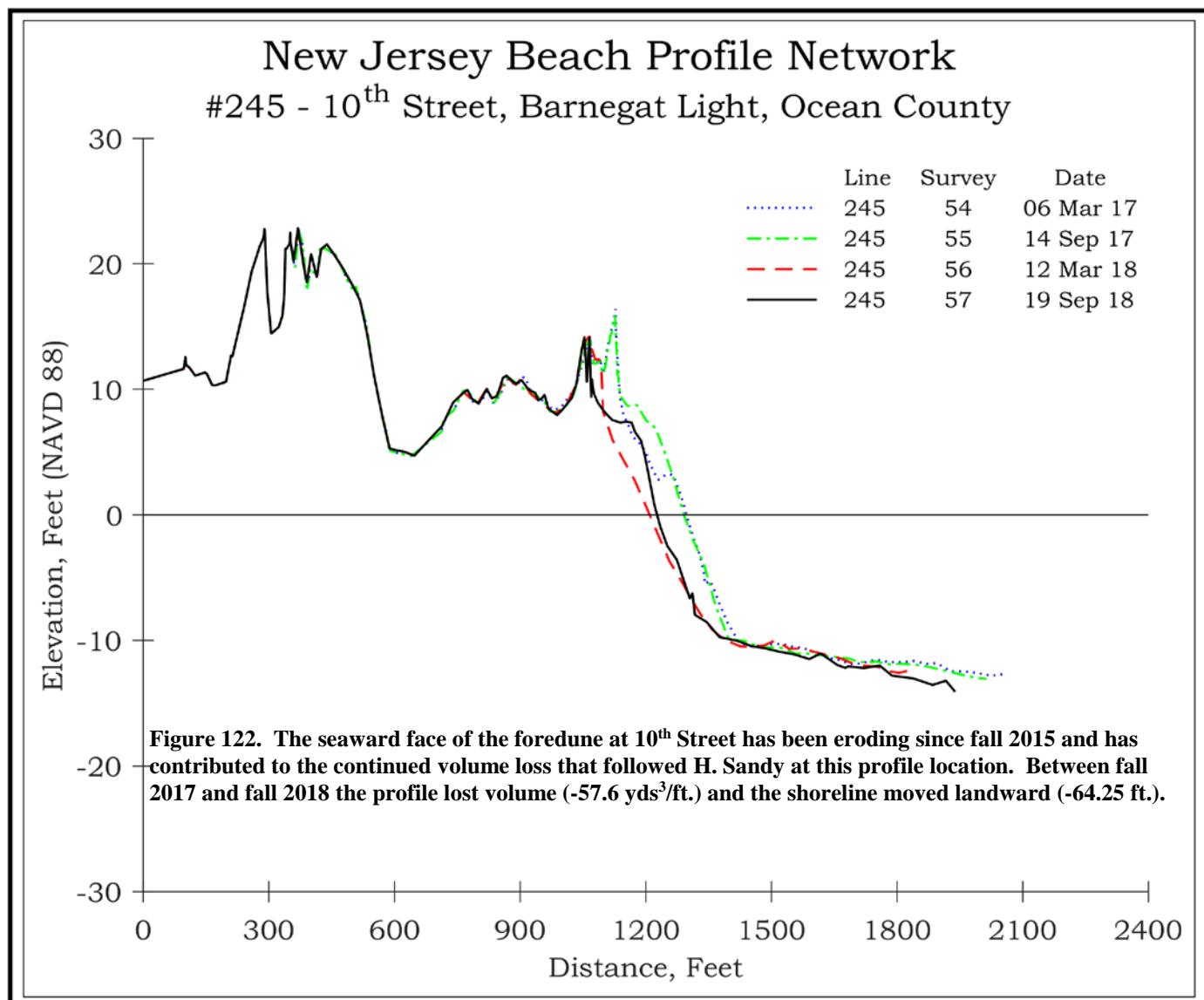
At the Island Beach State Park southernmost profile, the photos show the view from the backshore and the berm which was wider and lower in 2017 (left photo taken December 18, 2017) and higher and narrower in 2018 (right photo taken November 7, 2018).



NJBPN 245 – 10th Street, Barnegat Light



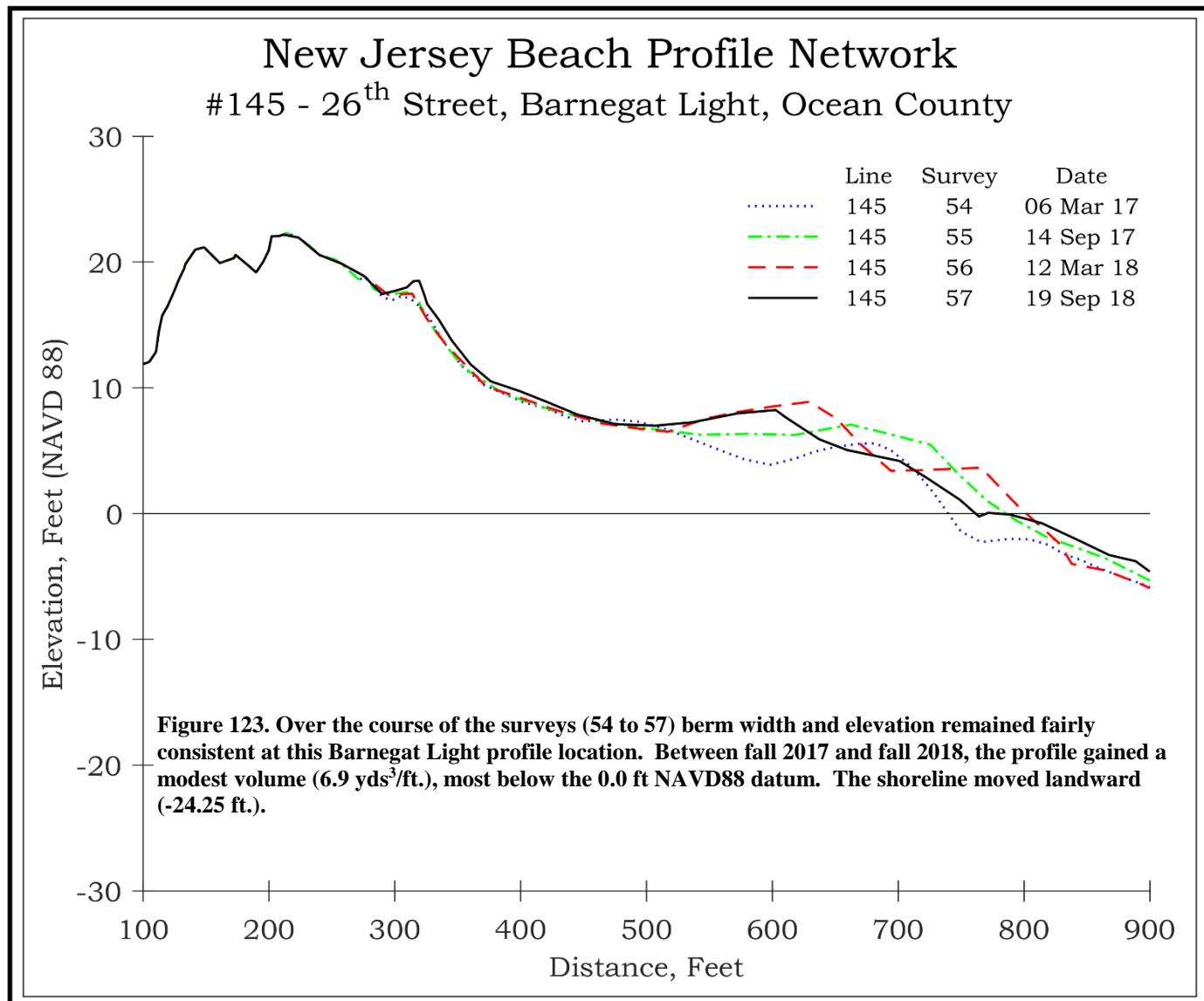
The 10th Street profile is characterized by a wide dune field and narrow berm. The foredune at 10th Street profile has been eroding and moving landward since the fall 2015 survey (left photo taken September 14, 2017 and right photo taken September 19, 2018).



NJBPN 145 – 26th Street, Barnegat Light

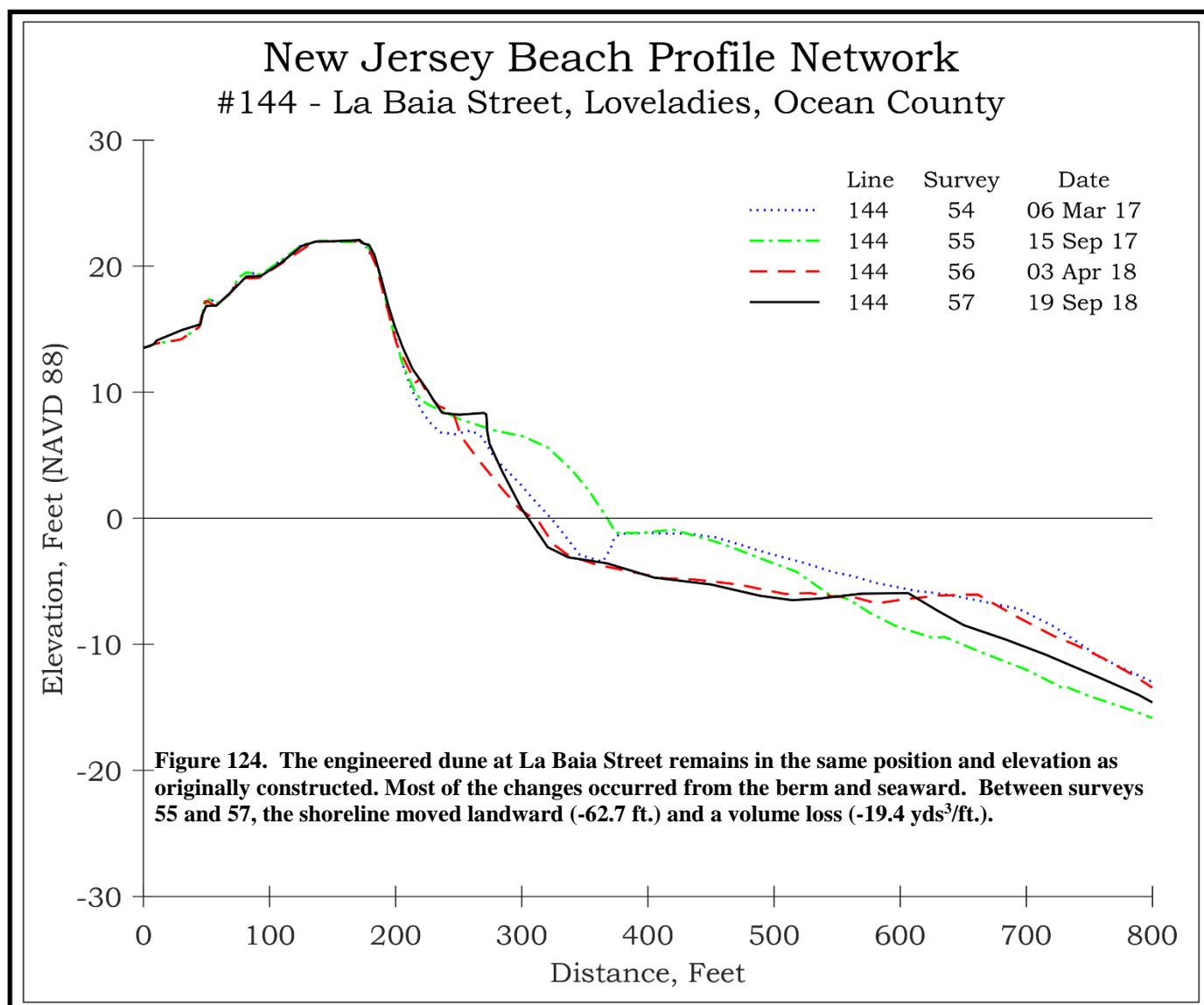


The extensive foredune at the 26th Street profile remained in similar size and elevation during the 2017-2018 timeframe (left photo taken September 17, 2017 and right photo taken September 19, 2018). The stability is attributed to the profile's position with respect to the Barnegat Inlet south jetty which traps the northward-driven littoral drift.





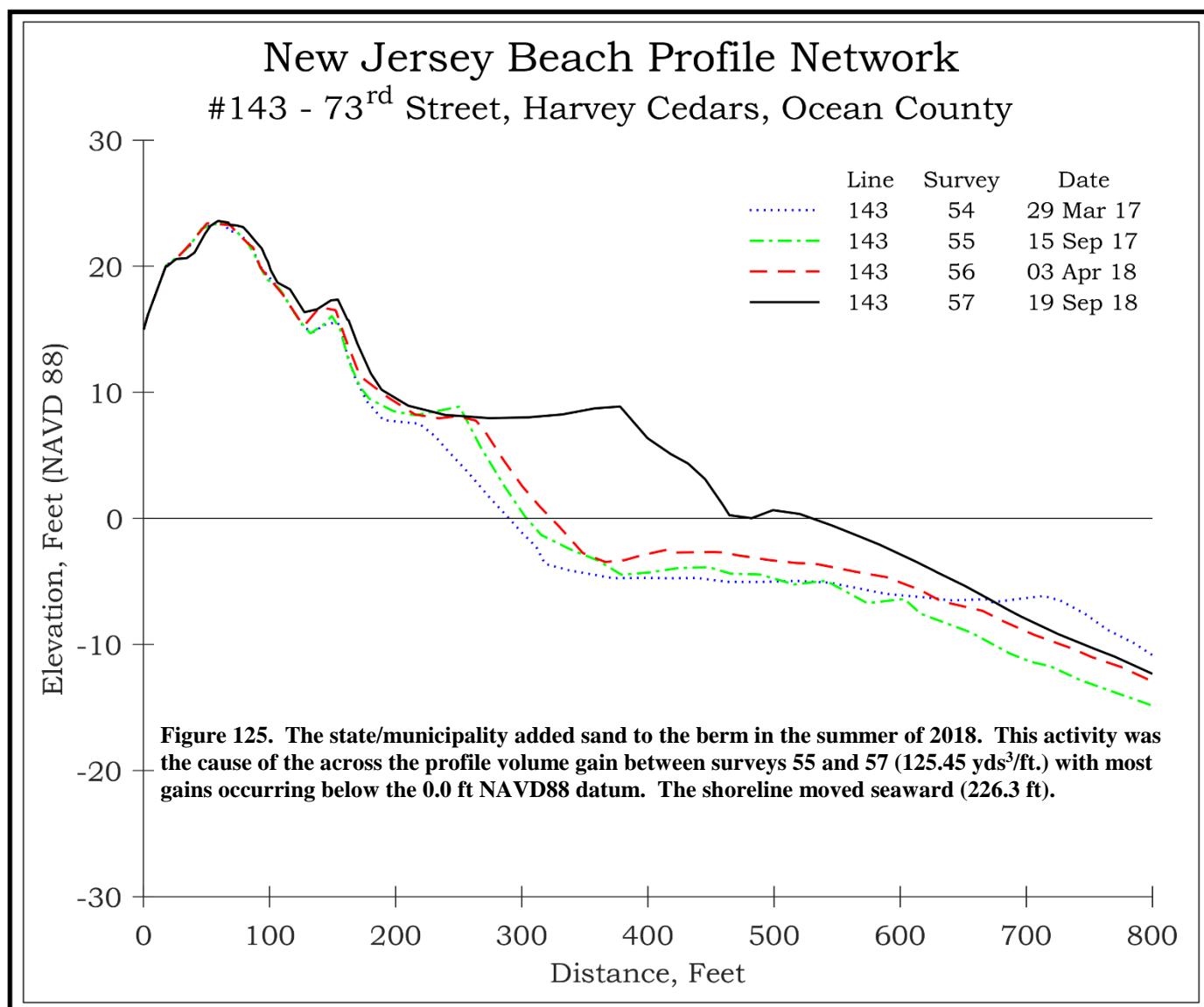
The photos show the vegetated engineered dune that was constructed at La Baia Street in 2016 (left photo taken September 15, 2017 and right photo taken September 19, 2018).



NJBPN 143 – 73rd Street, Harvey Cedars



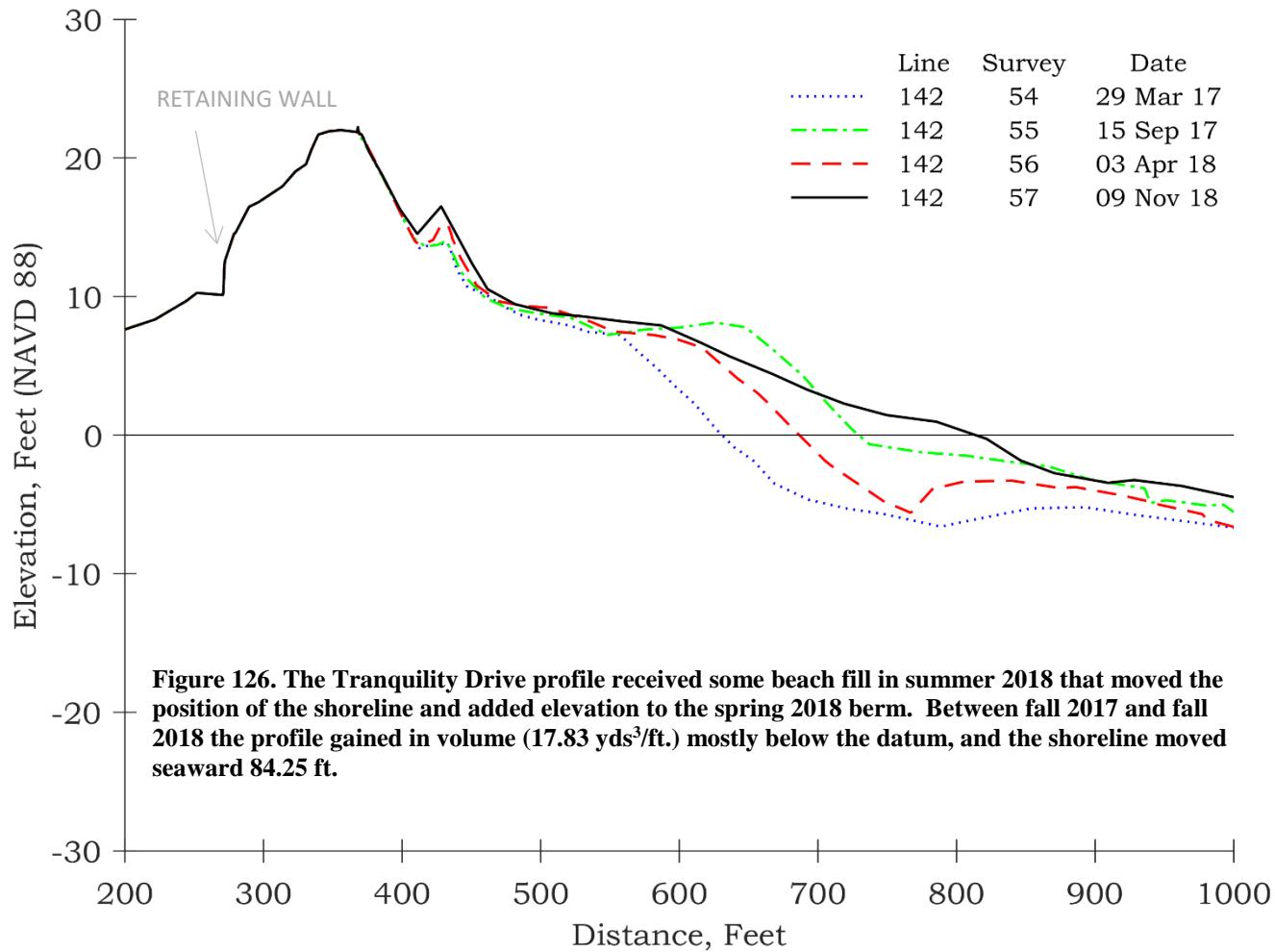
Sand accumulated landward of the dune fencing at the 73rd Street location adding elevation and volume to the seaward portion of the dune (left photo taken September 15, 2017 and right photo taken September 19, 2018).



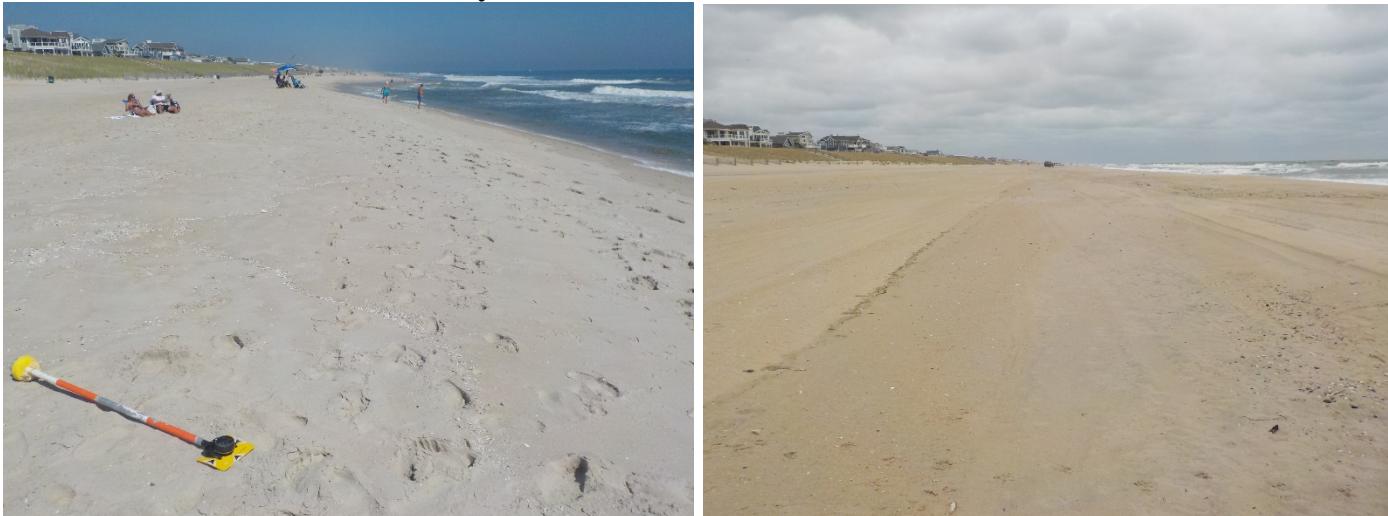


View to the south from the dune crest at the Tranquility Drive location (left taken September 15, 2017 and right taken November 9, 2018). The engineered dune remained in position with the seaward edge gaining in elevation as the result of wind-blown sand that was trapped by dune fencing.

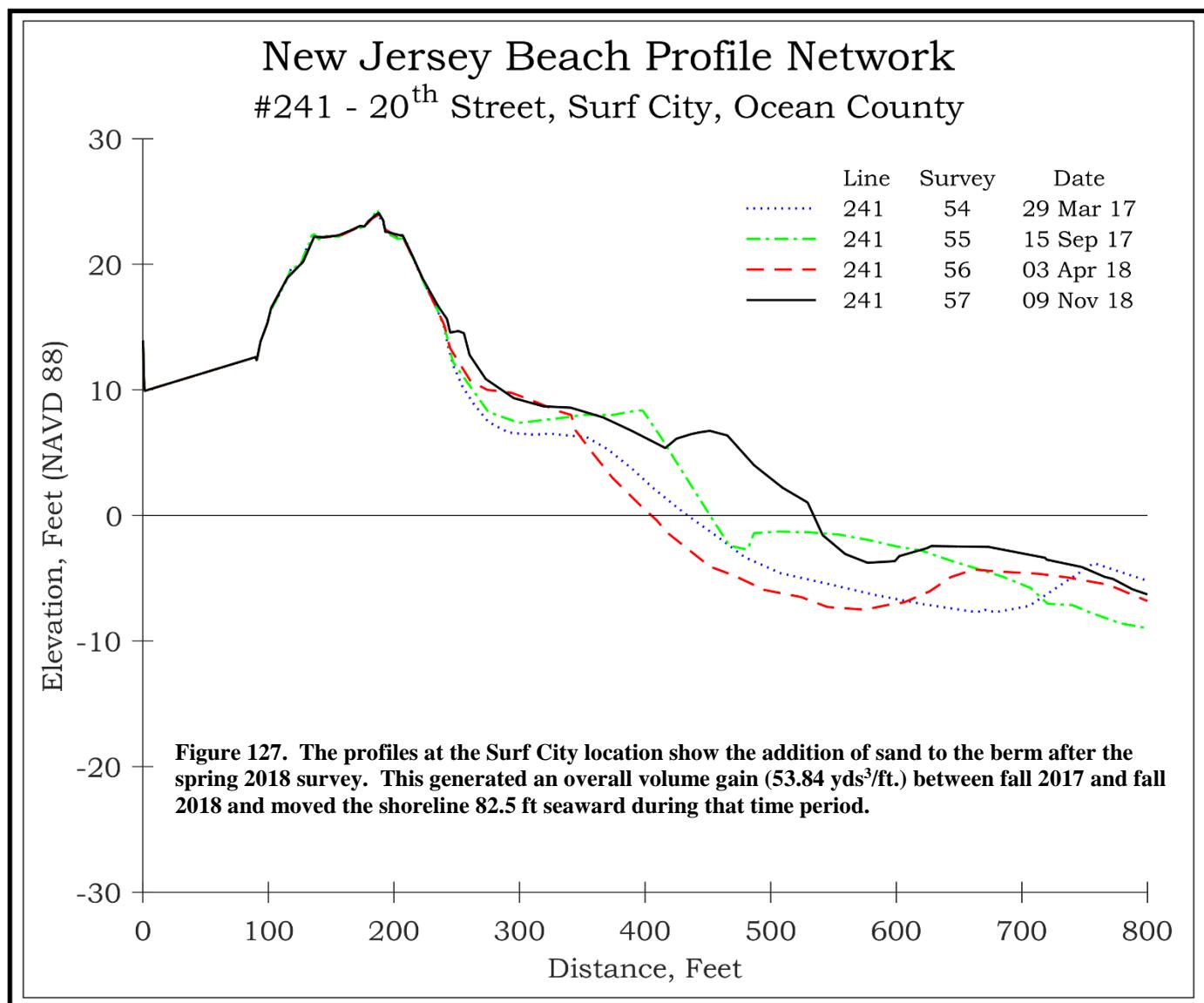
New Jersey Beach Profile Network #142 - Tranquility Drive, Harvey Cedars, Ocean County



NJBPN 241 – 20th Street – Surf City

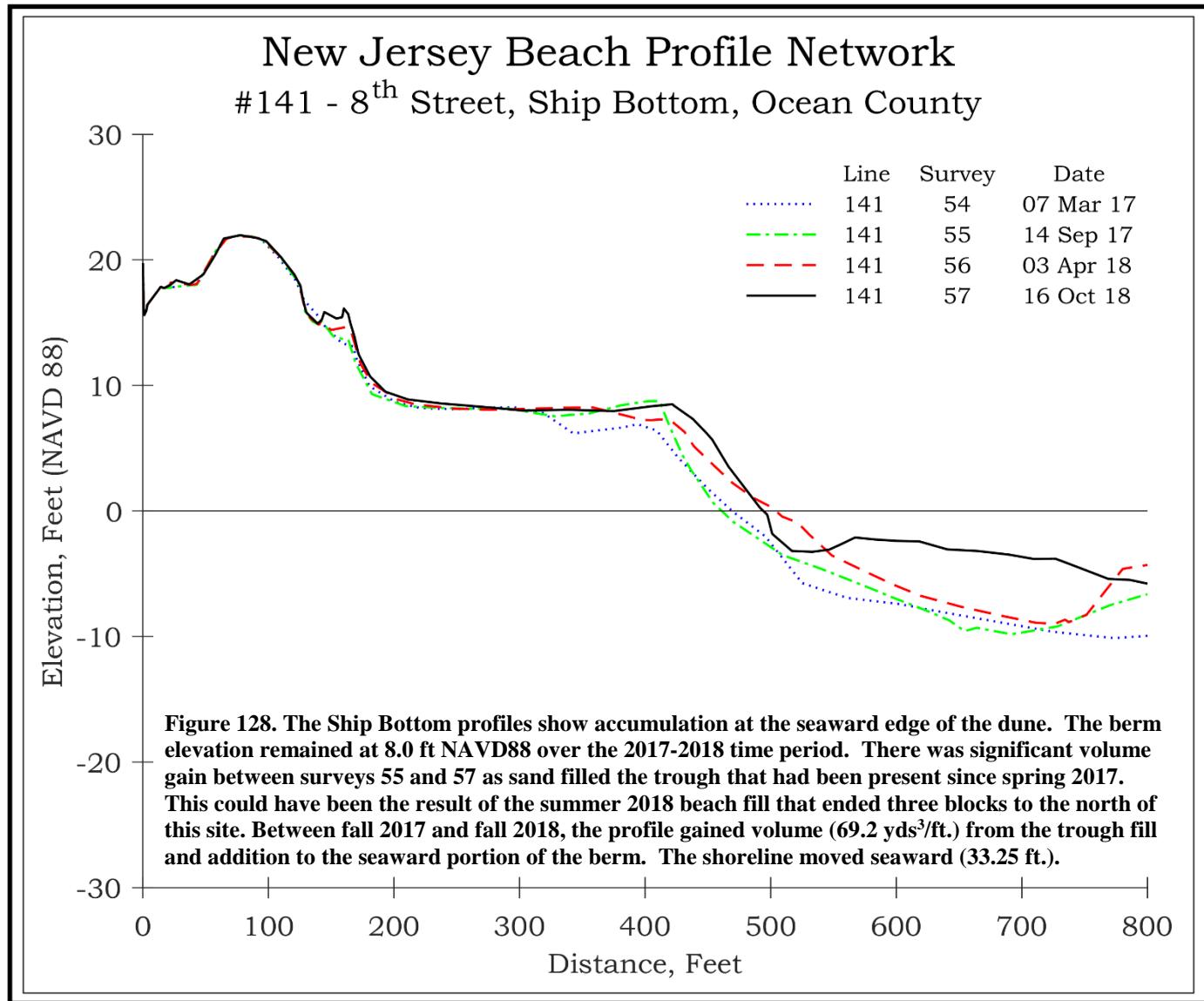


The photos show the difference in berm width between fall 2017 (left photo taken September 15, 2017) and fall 2018 (right taken November 9, 2018) at the 20th Street profile as a result of a small beach fill project in early summer 2018.





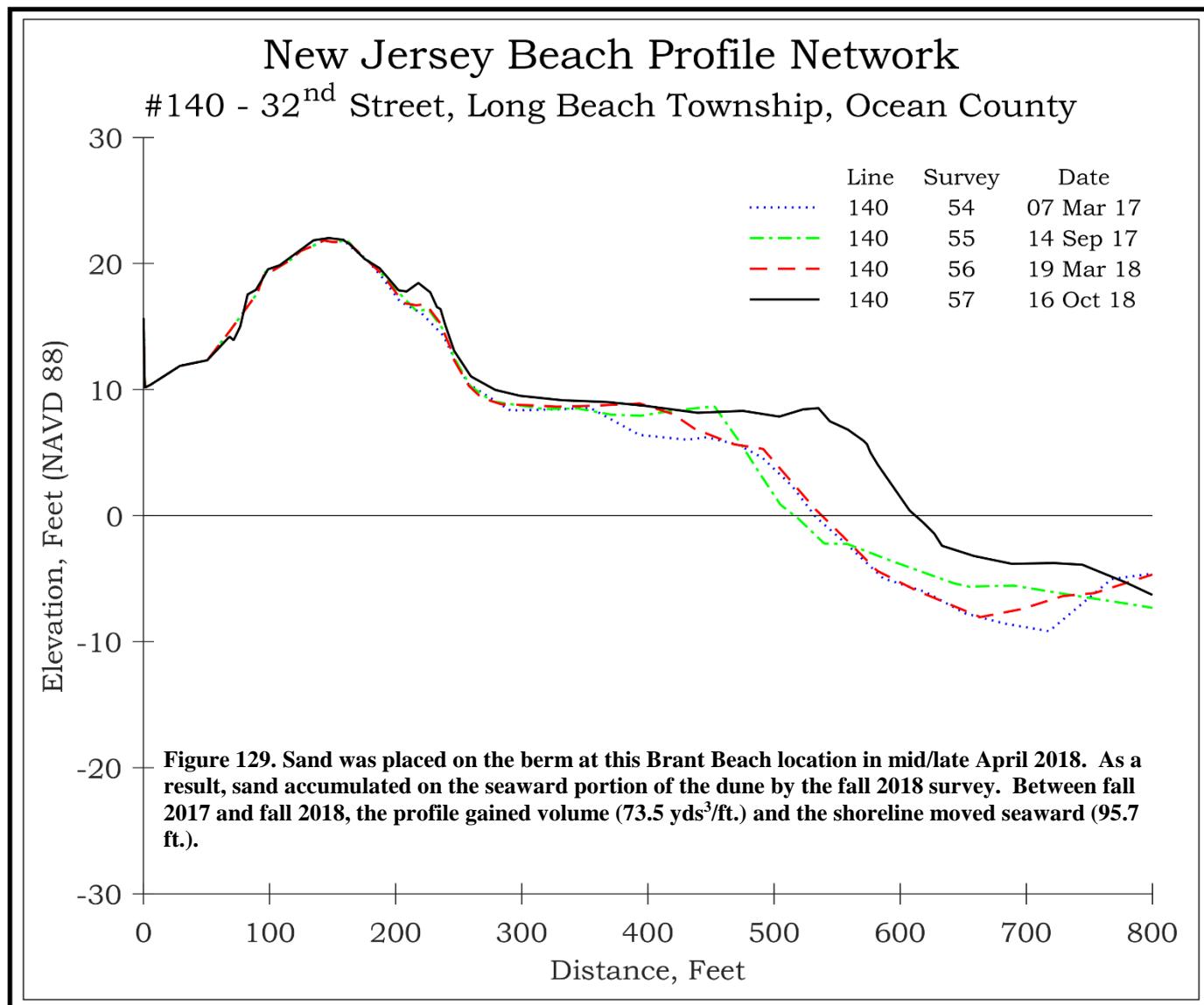
The photos of the 8th Street profile show the seaward dune toe and backshore (left photo taken September 14, 2017). Sand accumulated at the dune toe by fall 2018 (right photo taken October 16, 2018).



NJBPN 140 – 32nd Street, Long Beach Township



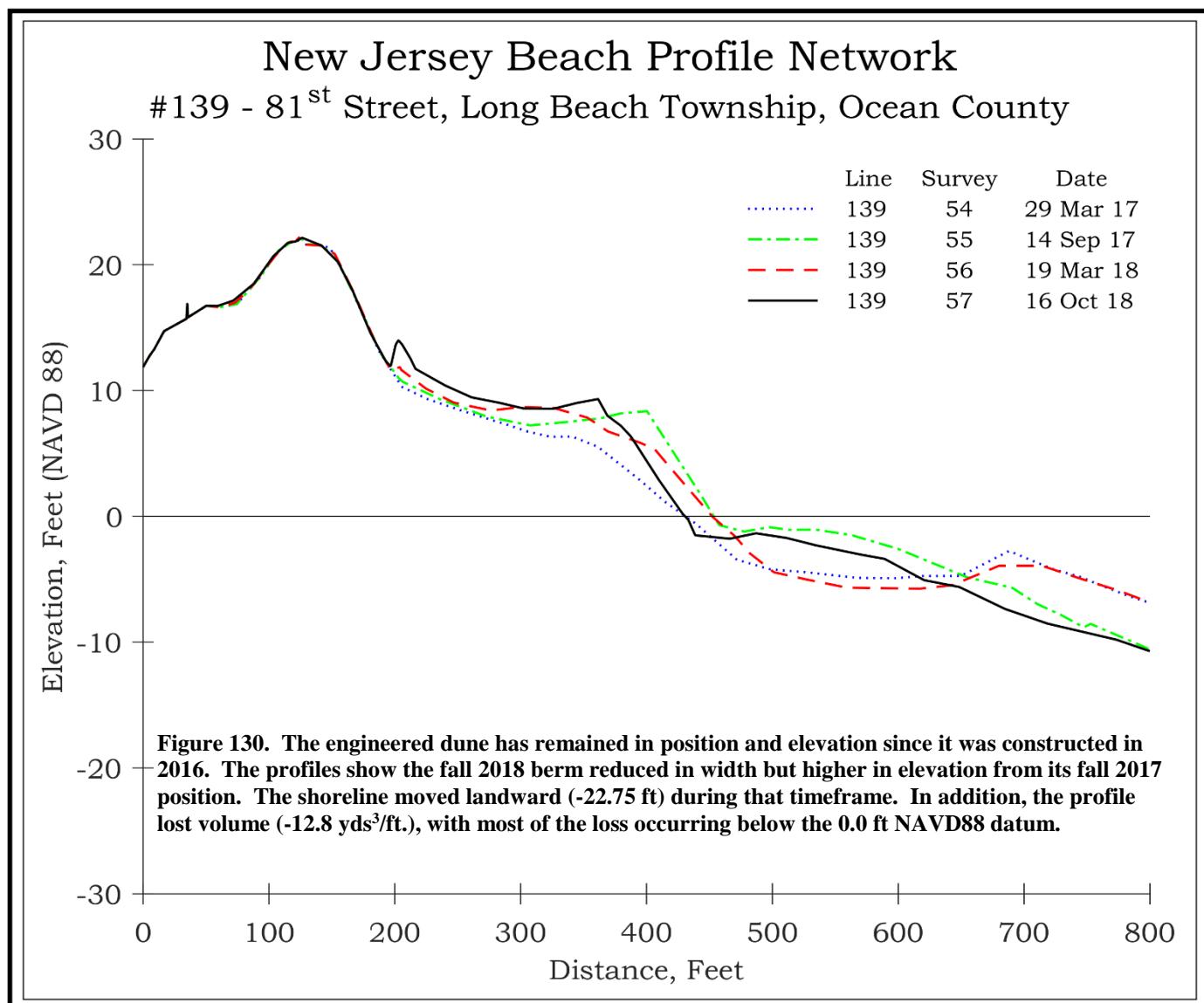
The photos show the view to the north of the dune toe and backshore at 32nd Street in Brant Beach (left taken September 14, 2017 and right photo taken October 16, 2018).



NJBPN 139 – 81st Street, Long Beach Township

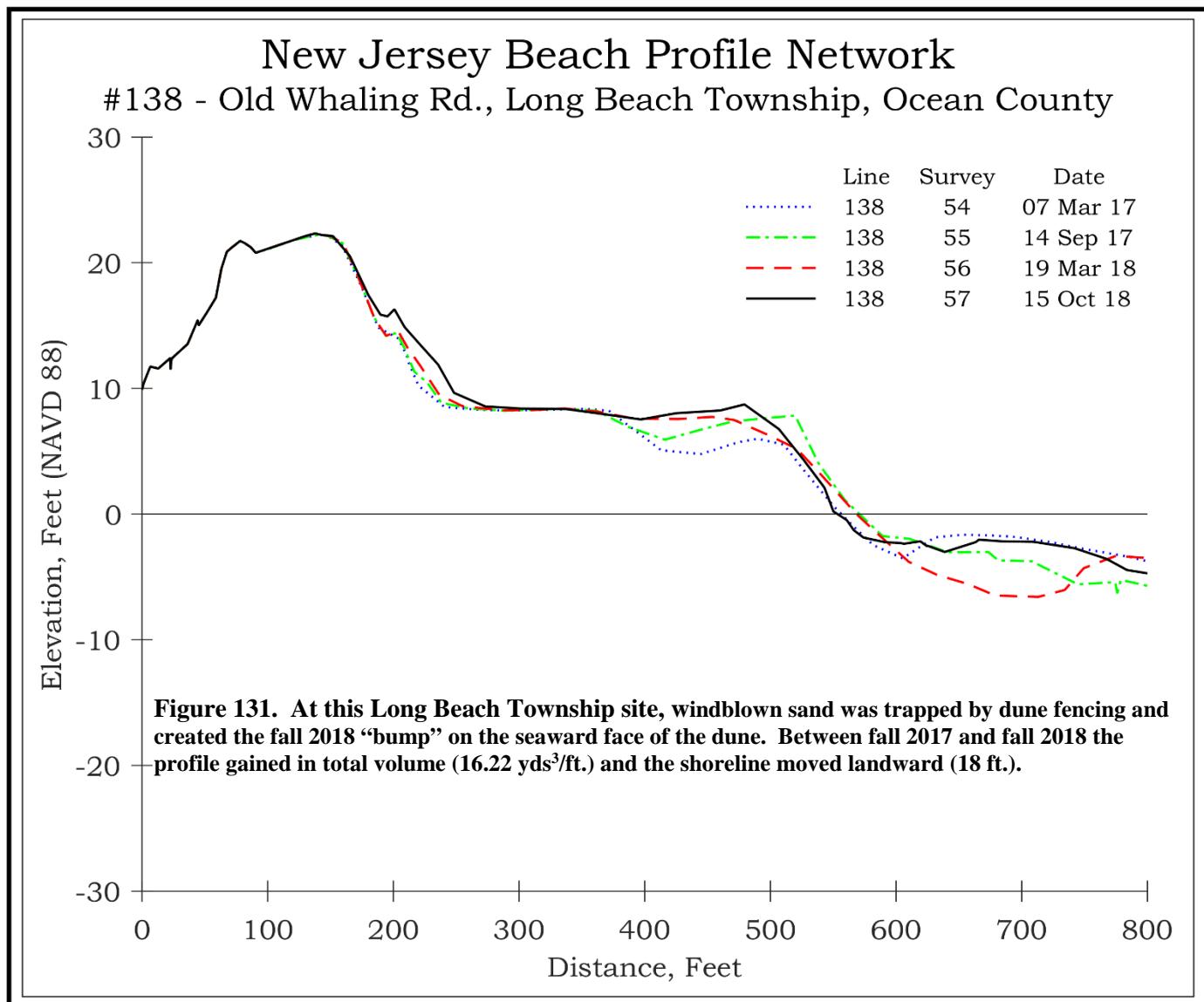


The photos show the view to the south from the dune crest at the 81st Street location (left photo taken September 14, 2017 and right taken October 16, 2018). The right photo shows sand that accumulated landward of the dune fencing. This is displayed in the cross section below.





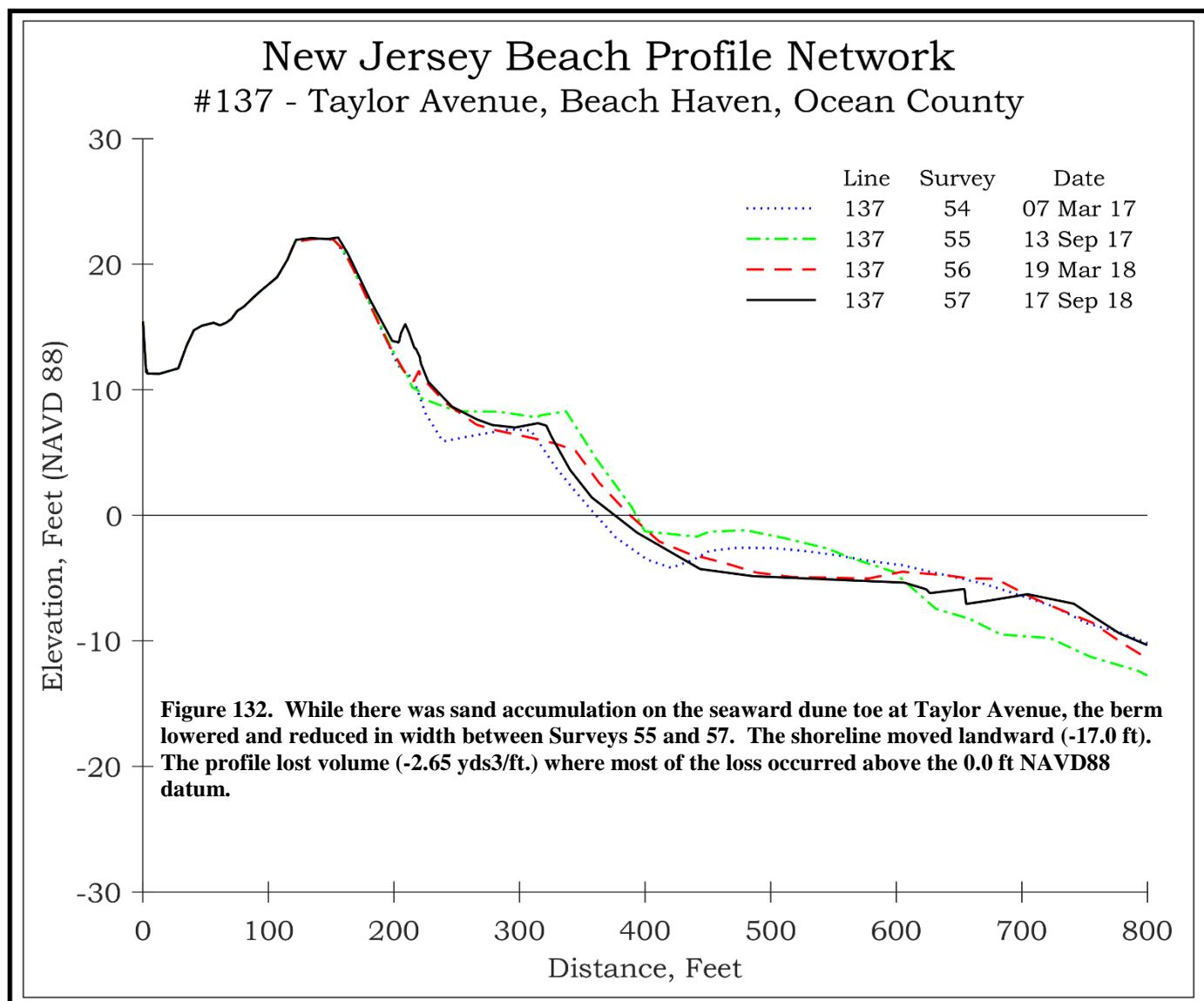
The photos show the view to the north from the dune toe at the Old Whaling Road profile (left taken September 14, 2017, right photo taken October 15, 2018). The profile is characterized by a wide berm in place since 2016.



NJBPN 137 – Taylor Avenue, Beach Haven



The photos show sand accumulations landward of the sand fencing at the Taylor Avenue profile (left taken September 13, 2017 and right taken September 17, 2018). As documented in other areas of Long Beach Island, sand fencing has been an effective method for “building” the seaward portion of the dune.

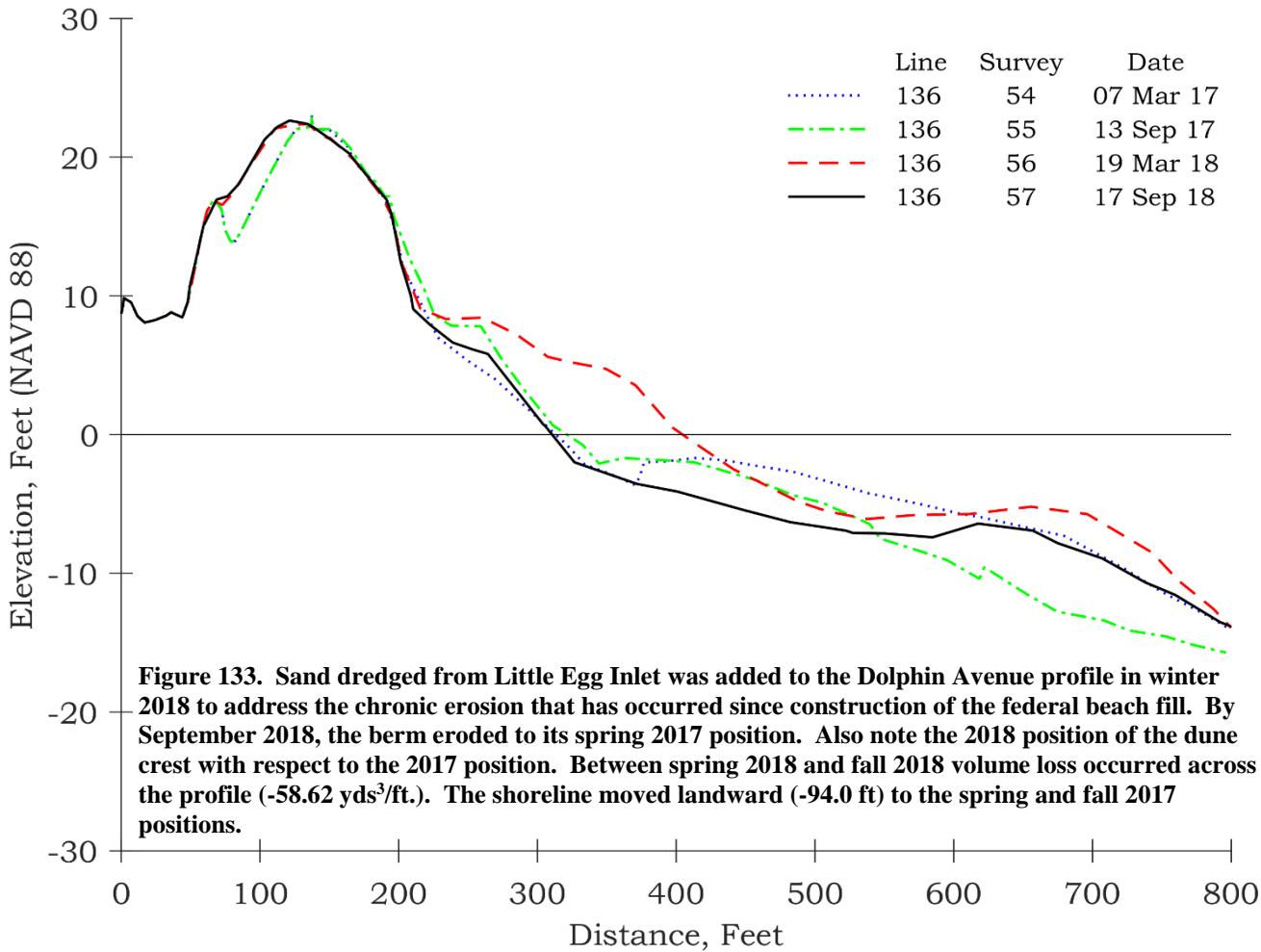


NJBPN 136 – Dolphin Avenue, Beach Haven



The photos at the Dolphin Avenue profile show the alteration of the landward portion of the engineered dune (left taken September 13, 2017 and right taken September 17, 2018). In 2018, the crest was shifted landward to accommodate changes to the USACE dune template. The area was filled with sand and replanted to meet the elevation of the pre-existing dune. The right photo shows a new accumulation of sediment on the dune crest where windblown sand was trapped by vegetation.

New Jersey Beach Profile Network #136 - Dolphin Avenue, Beach Haven, Ocean County

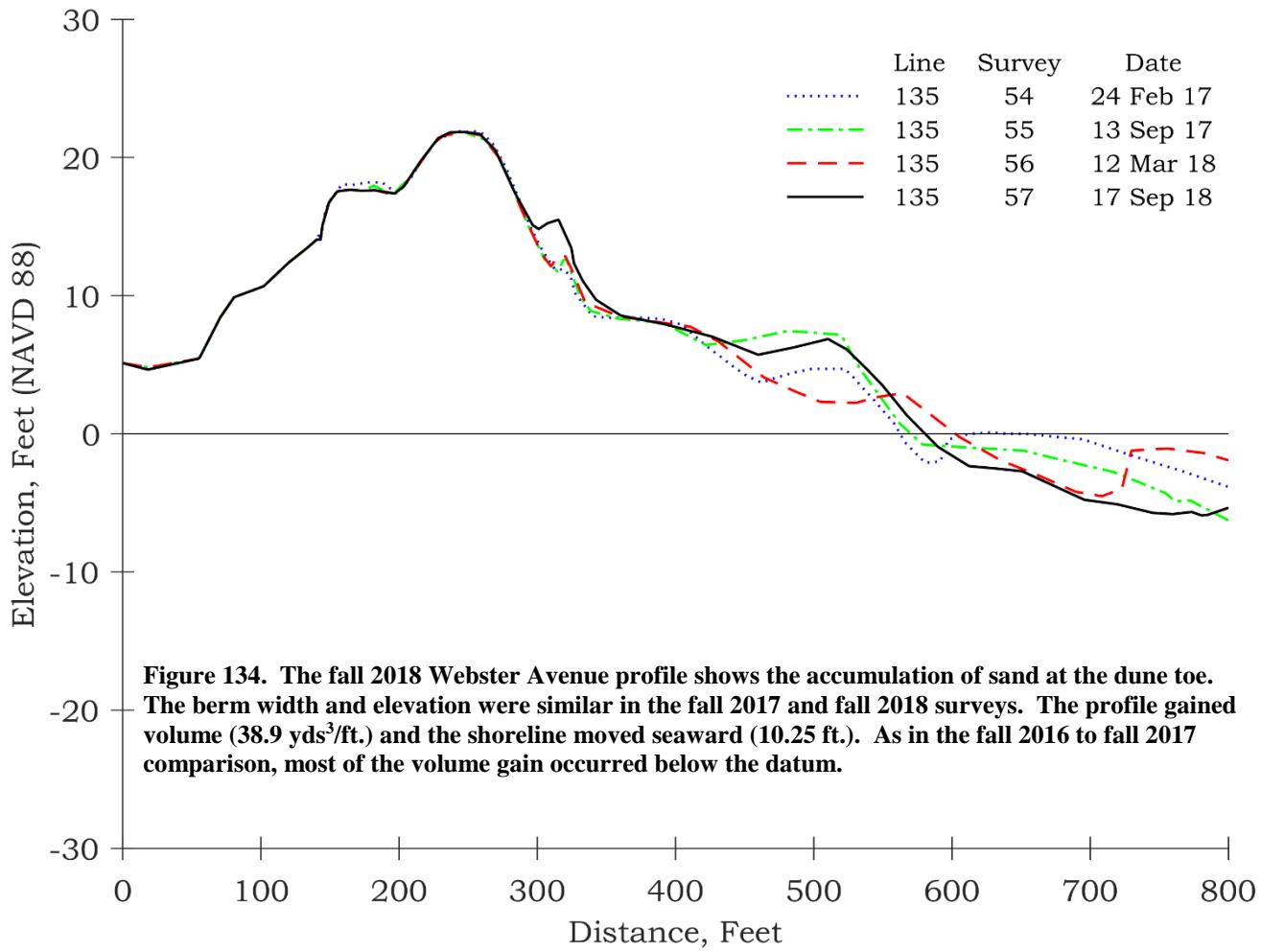


NJBPN 135 – Webster Avenue, Long Beach Township



The Webster Avenue photos show the change in the seaward toe of the dune (left taken September 13, 2017 and right taken September 17, 2018). An accumulation of sand nearly covers the sand fence that is barely visible in the September 2018 photo.

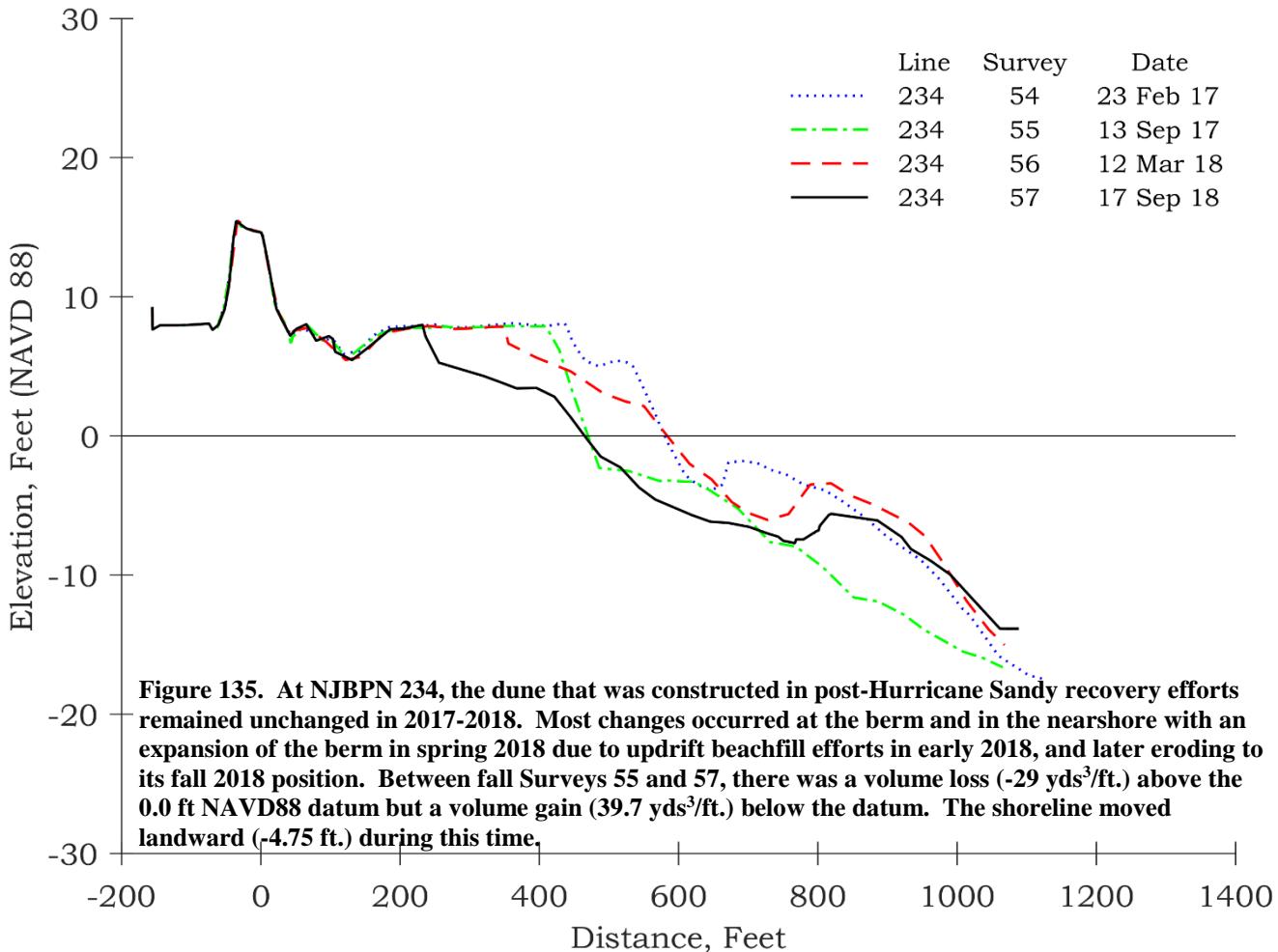
New Jersey Beach Profile Network #135 - Webster Ave., Long Beach Township, Ocean County





The Holgate entrance profile lies immediately downdrift of the Holgate terminal groin and the photos show the changes at the seaward portion of the berm (left photo taken September 13, 2017 and right taken September 17, 2018). By September 2018, the bulkhead at the edge of the municipal parking lot was exposed to wave activity. Also of note is the loss of the engineered dune on the north side of the groin, indicating the structure's inability to hold the beach fill design template.

New Jersey Beach Profile Network #234 - Natural Area, Long Beach Township, Ocean County



Summary & Conclusions

The federal/non-federal *Manasquan Inlet to Barnegat Inlet Coastal Storm Risk Management Project* (beachfill) commenced in May 2017 in Dover Township (Ortley Beach- NJBPN #149) as a project betterment to address the vulnerable shoreline conditions in the municipality. The design template includes a 22-ft (NAVD88) high dune and a berm width of 75-ft. The beachfill continued through 2018 for the beaches in Brick Township, Toms River South (Ortley Beach), Mantoloking Northern Area, and Toms River North and the fall 2018 surveys show many post-construction conditions. The remaining northern Ocean County NJBPN station beaches were expected to receive sand in early 2019.

On Long Beach Island (LBI), several NJBPN sites received sand. In January 2018, the NJDEP commenced dredging of Little Egg Inlet for the purpose of utilizing the sand to address hot spot erosion and maintenance of the federal LBI beachfill. The dredged sand was placed on the beaches in Beach Haven and Long Beach Township (Holgate section). And, the beaches in sections of Loveladies, Harvey Cedars, Surf City, Ship Bottom, and Brant Beach also received sand in 2018 via the federal periodic nourishment schedule.

Appendix Tables 4 and 5 provide the seasonal and annual profile volume and shoreline changes for Ocean County. The greatest volume gains were at the NJBPN locations that received beachfill. Mantoloking, Brick Township, Normandy Beach, Ortley Beach and Harvey Cedars NJBPN sites all measured at greater than 100 yds³/ft. for the annual fall to fall survey comparison. The greatest shoreline gain was at Harvey Cedars (NJBPN #143) at 226.25 ft. The greatest volume losses were found at the Water Street Point Pleasant Beach and Barnegat Light 10th Street locations. The site with the most landward movement of the shoreline was at Barnegat Light (10th Street) at -64.25 between fall 2017 and fall 2018.

The Island Beach State Park profiles did not show any remarkable volume gains from the southerly littoral transport of sand from the federal beachfill. This is to be expected since the beaches from Seaside Heights and south were not filled in 2018.