



# New Jersey Beach Profile Network

## Ocean County

Manasquan Inlet  
to Little Egg Inlet

NJBPN Profile #'s  
156 - 234

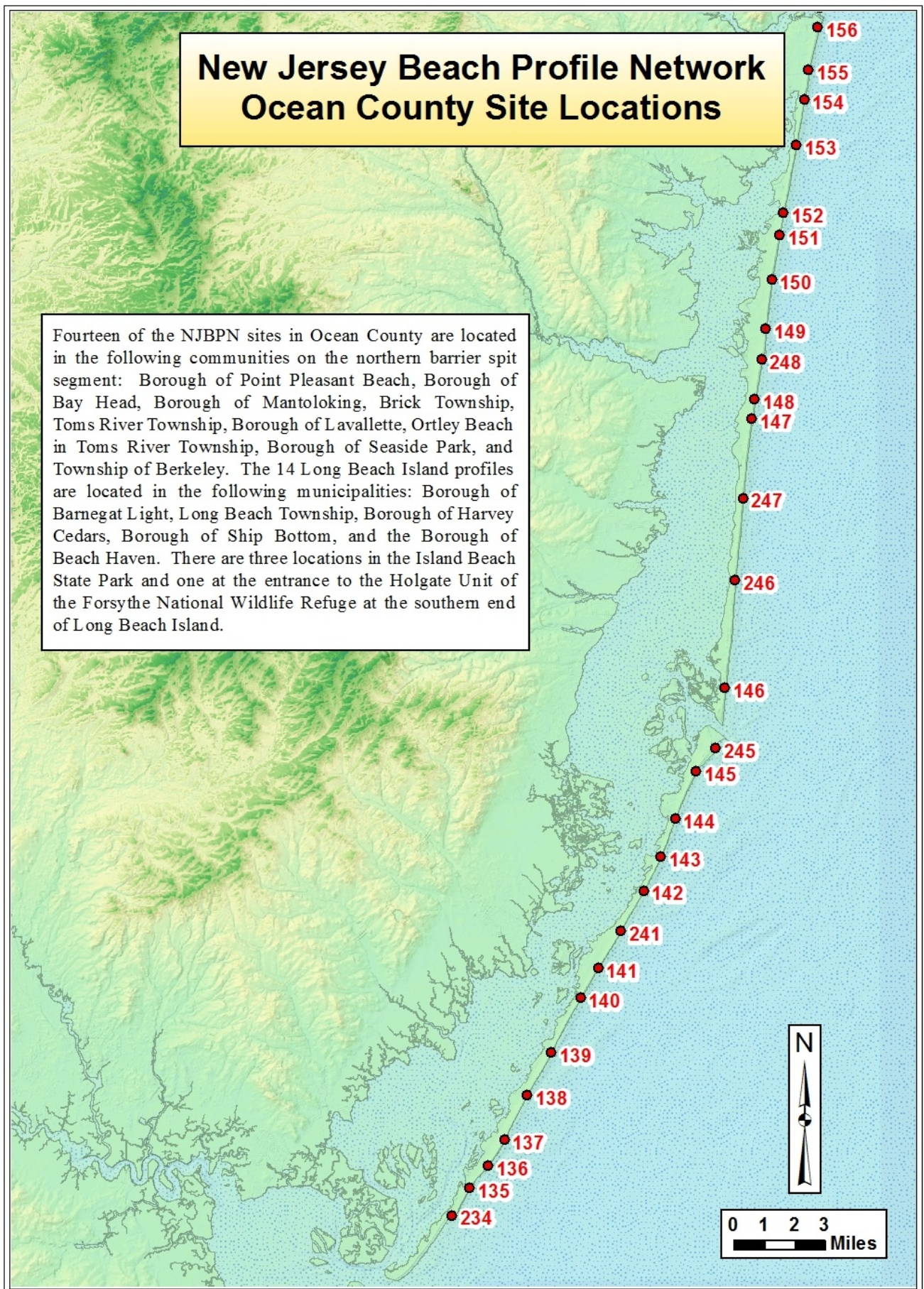


Figure 105. Locations of the 28 NJBPN profile stations in Ocean County, NJ.

## 2018-2019 Beach Fills 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 finished in Point Pleasant Beach in July 2019. More than 11 million cubic yards of sand were placed on nearly 14 miles of ocean shoreline between Point Pleasant Beach and Berkeley Township (USACE Project Fact Sheet, 2019 <https://www.nap.usace.army.mil/Missions/Factsheets/Fact-Sheet-Article-View/Article/490786/new-jersey-shore-protection-manasquan-inlet-to-barnegat-inlet-nj/>). Figure 106 shows the beach profile template for the project. Island Beach State Park was not included in the storm damage reduction project (NJBPN sites #247, #246, and #146) due to its natural habitat status.

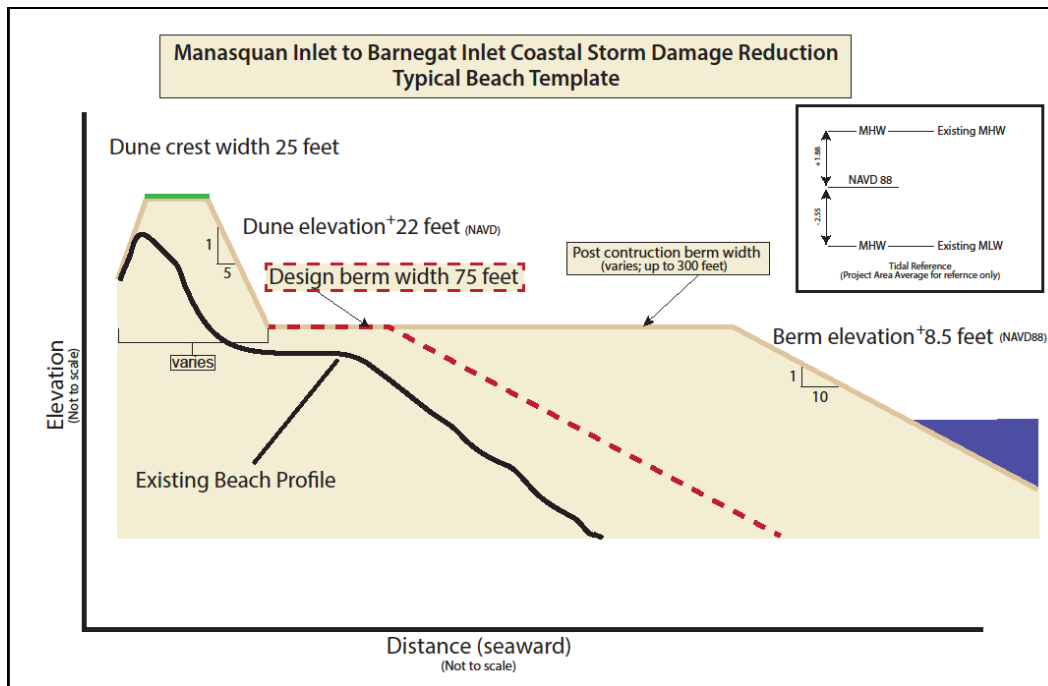


Figure 106. Design profile for the Manasquan Inlet to Barnegat Inlet beachfill (USACE, 2018).

Some of the 2018 and spring 2019 surveys represent pre-beachfill project elevations. The USACE provides the beach fill information for the Northern Ocean County Coastal Storm Risk Management project at <https://www.nap.usace.army.mil/Missions/Civil-Works/Coastal-Storm-Risk-Management/Manasquan-Inlet-to-Barnegat-Inlet/>

No federally-funded sand placement occurred on Long Beach Island in 2019. For more information regarding the Long Beach Island Coastal Storm Risk Management Project visit <https://www.nap.usace.army.mil/Missions/Civil-Works/Coastal-Storm-Risk-Management/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 does not include a dune due to local custom and high-volume beach use during the tourist season. A steel sheet bulkhead and rock toe were placed from the condo unit near the Inlet to about Trenton Avenue. No sand was placed at the Water Street location. The Maryland Avenue location had a long-established dune with a crest near 16 ft NAVD88. The federal beach fill created a 20+ ft high engineered dune incorporating the former dune. Sand placement was complete in July 2019.

**Bay Head, Johnson Avenue #154;**

The site is backed by a rock revetment that was constructed after the 1962 March northeaster. This revetment was extended into Mantoloking to Lyman St. after Hurricane Sandy. This location has had an erratic history of shoreline stability. From spring 2018 to spring 2019 and prior to the beach fill, berm widths varied between 100 and 200 feet. Sand placement was completed in June 2019. This site had the greatest volume change of the Ocean County NJBPN locations between fall 2018 and fall 2019 (188.55 yd<sup>3</sup>/ft) as well as the largest seaward movement of the shoreline (205.5 ft) due to the beach fill activities.

**Mantoloking, 1117 Ocean Avenue #153;**

In 2014, a vertical steel sheet-pile wall was installed at this site with a top elevation of 16.0 ft NAVD88 and buried with sand. In January 2016, a winter storm eroded that sand exposing between 6 and 22 feet of the wall's vertical surface. Sand placement for the federal coastal storm risk management project was completed at this site in December 2018.

**Brick Township, Public Beach #3 #152;**

The vertical steel wall continued from the Mantoloking site extending south past Public Beach #3 and in spring 2016 was covered with sand through local efforts. By August 2018, federal sand placement was completed, and the template berm width and dune elevations remained consistent through 2019.

**Toms River Township, Normandy Beach 1<sup>st</sup> Avenue #151 and Ortley Beach 8<sup>th</sup> 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). Design dune elevations remained at both sites, however berm widths started to diminish during 2019.

**Lavallette, White Avenue #150;**

The federal project created a substantial dune with a base width over 100 ft and incorporated the sand from the dune that was created after Hurricane Sandy. Sand placement was completed in April 2019, extending the berm over 200 ft. seaward from its fall 2018 position.

**Seaside Heights, Franklin Avenue #248;**

Prior to the beachfill, the Franklin Avenue site did not include a dune due to local management and heavy beachgoer use. However, in January 2019, the federal project created a dune with a top elevation to match the boardwalk. The berm was extended over 200 ft from the fall 2018 survey. The amount of profile sand volume gain rivals the Bay Head location (185.12 yd<sup>3</sup>/ft).

**Seaside Park, 4<sup>th</sup> Avenue #148;**

The Seaside Park profile contains a stable dune over 25 ft high that was only slightly eroded by Hurricane Sandy. The federal project placed sand only on the berm in January 2019, extending the berm and shoreline nearly 100 ft from the fall 2018 location.

**Berkeley Township, South Seaside Park 6<sup>th</sup> Lane #347 (formerly #147);**

The Midway Beach profile contains dune (> 25 ft and 150 ft wide) that has been stable and maintained its shape since 2015. The federal project placed sand on the berm in February 2019.

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

Over the 2018-2019-time frame, the northern (NJBPN #247) and southern (NJBPN #146) IBSP locations exhibited sand volume gains while the central location (NJBPN #246) lost only a modest amount (-1.84 yd<sup>3</sup>/ft). The federal storm damage reduction project did not extend to the park locations, but the gains may indicate sediment transport south from the beach fill onto the state park oceanfront beaches.

**Long Beach Island; Barnegat Light Borough, 10<sup>th</sup> Street #245 and 26<sup>th</sup> Street #145;**

The Barnegat Light Borough locations display different profile features. The 10<sup>th</sup> Street site is comprised of an extensive dune system (1,200 ft. wide) and a very narrow berm. Since 2015, this site has been eroding and exhibited the greatest annual volume loss (-84.64 yds<sup>3</sup>/ft) of all the Ocean County sites between fall 2018 and fall 2019. The 26<sup>th</sup> Street location posted minimal volume gains during the 2018-2019 time period and has maintained its wide berm. This region of sand accumulation is entirely due to the 1990's re-alignment and construction of a new south Barnegat Inlet jetty parallel to the original north jetty. Sand deposition immediately filled in the pocket between the old arrowhead arrangement of inlet jetties and the new jetty generating several hundred acres of new coastal dune habitat which extends the entire length of the Borough oceanfront.

**Long Beach Township, Loveladies La Baia Street #144;**

This Loveladies site received federal beach fill and engineered dune in 2016. Since then the dune has remained in place and at design elevation. Over the 2018-2019 time period there were volume gains across the berm and below the 0.0 ft NAVD88 datum.

**Harvey Cedars, 73<sup>rd</sup> Street #143 and Tranquility Drive #142;**

Sand was placed in Harvey Cedars in spring/summer of 2018 as repair/periodic nourishment. This placement extended into the Long Beach Township communities of Loveladies and North Beach. The engineered dunes remained in position and elevation over 2018-2019. Most changes occurred at the berm and inshore. No project sand was placed in Barnegat Light Borough for reasons indicated above.

**Surf City, 20<sup>th</sup> Street #241;**

The 20<sup>th</sup> 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. Since then, the berm retreated landward but was at a higher elevation. Inshore sand bars were common over the 2018-2019 time period.

**Ship Bottom, 8<sup>th</sup> 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. The 2018-2019 seasons were no exception with most survey comparisons yielding positive volume changes. Again, in 2019, trapped windblown sand added elevation to the seaward base of the dune.

**Long Beach Township, Brant Beach 32<sup>nd</sup> St #140, Beach Haven Crest 81<sup>st</sup> St/Massachusetts Ave #139, and Beach Haven Terrace Old Whaling Rd #138;**

All 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 (NJBPN #140) received sand in April 2018 to extend the shoreline position seaward 74 ft from its spring 2018 pre-fill position. Sites #139 and #138 have shown modest volume gains and NJBPN #140 measured the greatest volume loss of the three sites in 2018-2019.

**Beach Haven, Taylor Ave #137 and Dolphin Ave #136;**

Both 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 to shift the crest landward and sand dredged from Little Egg Inlet was added to the berm in winter 2018. Over the 2018-2019 study period, both sites lost volume as the berms at both locations retreated landward from spring 2018. Both sites consistently show inshore sand bars.

**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 most of the volume gain was below the datum. This gain continues a trend at this location since 2016.

### **Long Beach Township/Forsythe National Wildlife Refuge boundary #234;**

Profile #234 is located 200 feet south (downdrift) of the Holgate terminal groin that was replaced with steel sheeting in winter 2019. Since commencement of the federal beachfill in Beach Haven and the Holgate section of the Township in 2016, this profile has shown significant changes in the berm and inshore depending on when and where the sand was placed updrift of the site. State and local supplemental beach fills occurred on the north side of the groin in November 2016 and January-March 2018. Approximately 8,000 cubic yards of fine sand dredged from a small channel on the bayside of LBI was placed on the ocean beach 1,500 ft updrift of the profile in winter 2019. During the 2018-2019 time period, the profile eroded with the sand presumably transported in the littoral current toward the Little Egg Inlet system. This site gained volume below the 0.0 ft NAVD88 datum between spring 2019 and fall 2019.

### **2019 Storm Activity**

With respect to coastal storms, 2019 was a relatively quiet year. Only one coastal weather event was recorded for eastern Ocean County (NOAA Storm Events Database, 2019). The coastal flooding that occurred October 10-11, 2019 was the result of the subtropical low-pressure system Melissa that passed offshore New Jersey. Small storms, such as the high wave/storm event that occurred April 19-21 and the large swell and northeaster on May 12, did not make the federal list but may at minimum, generated wave-flattened low gradient beaches and in some spots caused some beach erosion.

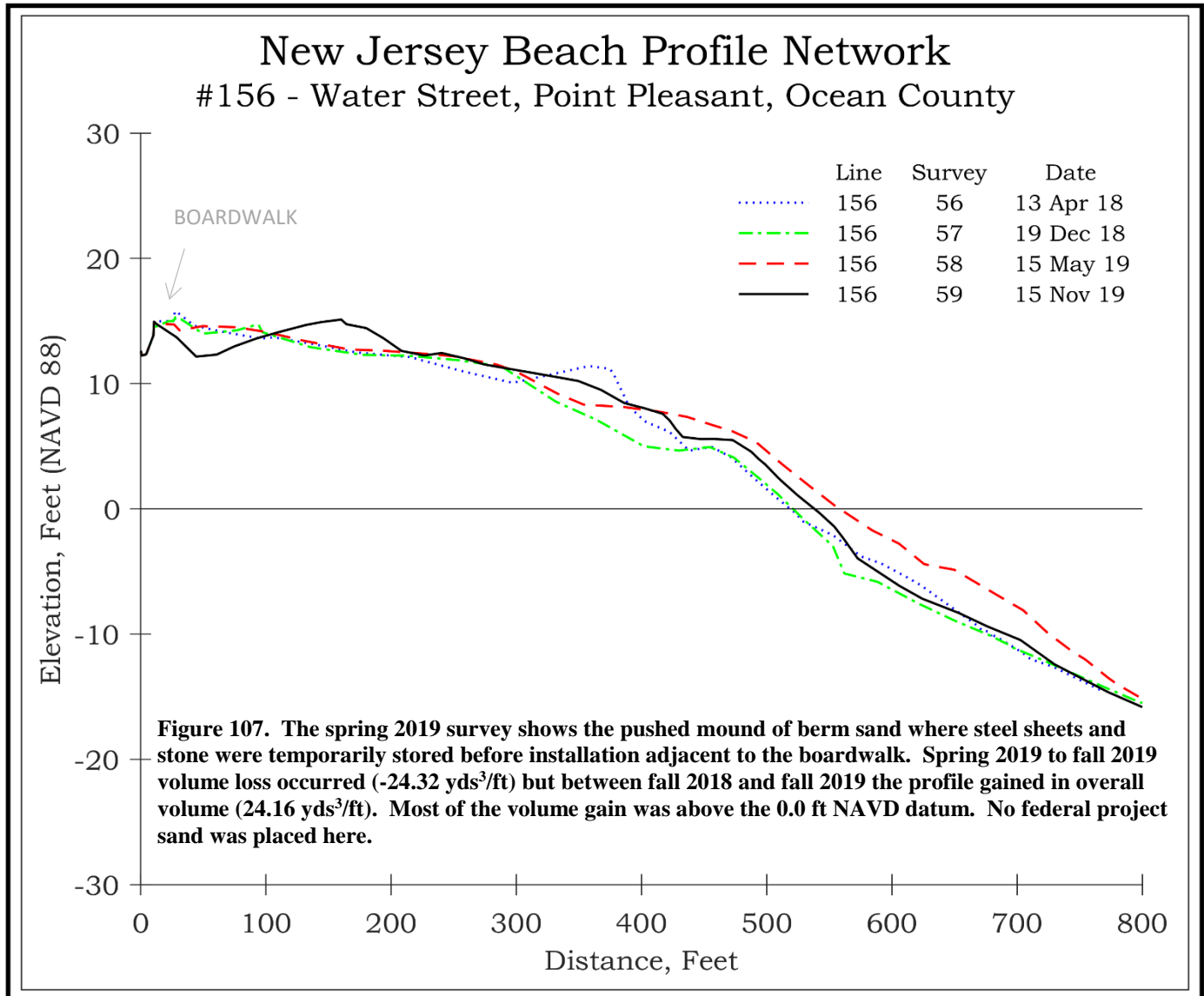
As of this report's data evaluation, all of Ocean County oceanfront where development dominates has seen US Army Corps of Engineers shore protection projects go to construction and be completed. Exceptions were:

1. The northern third of Point Pleasant Beach where a combination of private ownership of the beach and associated riparian grants combined with Manasquan Inlet jetties trapping sand in transit to the north along the oceanfront as a 600-foot wide fillet of dry upper elevation beach sand provided sufficient protection.
2. Island Beach State Park, a 13-mile natural area south of Seaside Park, NJ
3. Barnegat Light Borough, Long Beach Island oceanfront beaches where the inlet jetty reconstruction generated extensive shoreline accretion as another major sand fillet associated with the south inlet jetty.
4. The Holgate unit of the Forsythe National Wildlife Refuge at the southern three miles of Long Beach Island.

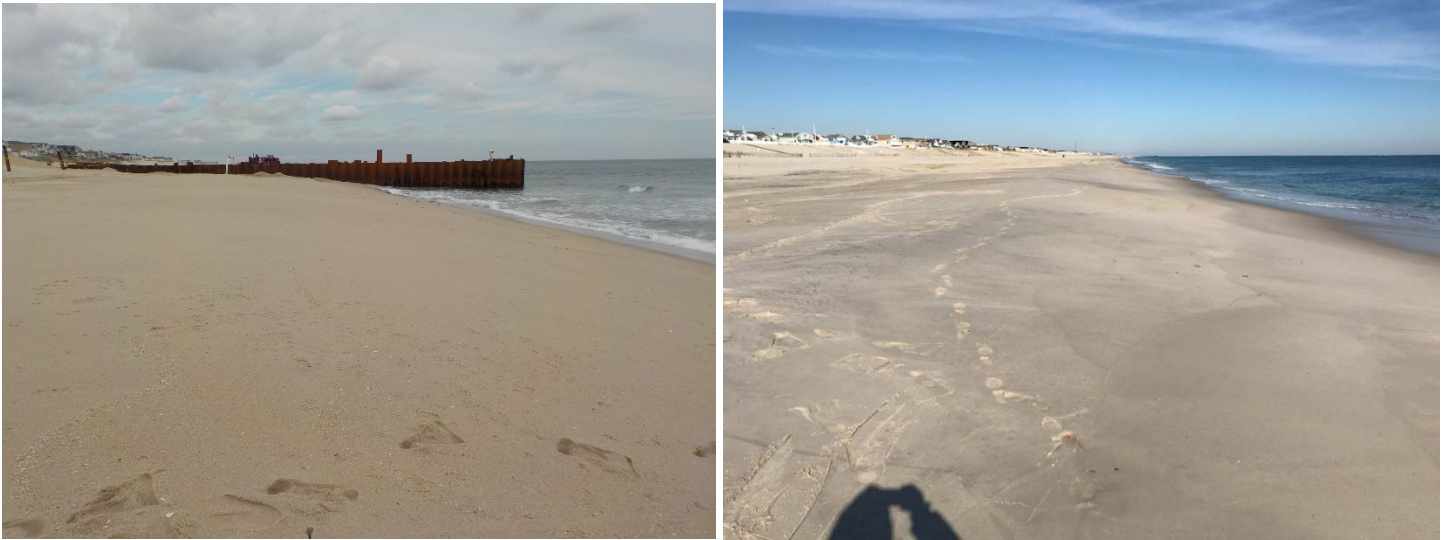
**NJBPN 156 – Water Street, Point Pleasant Beach**



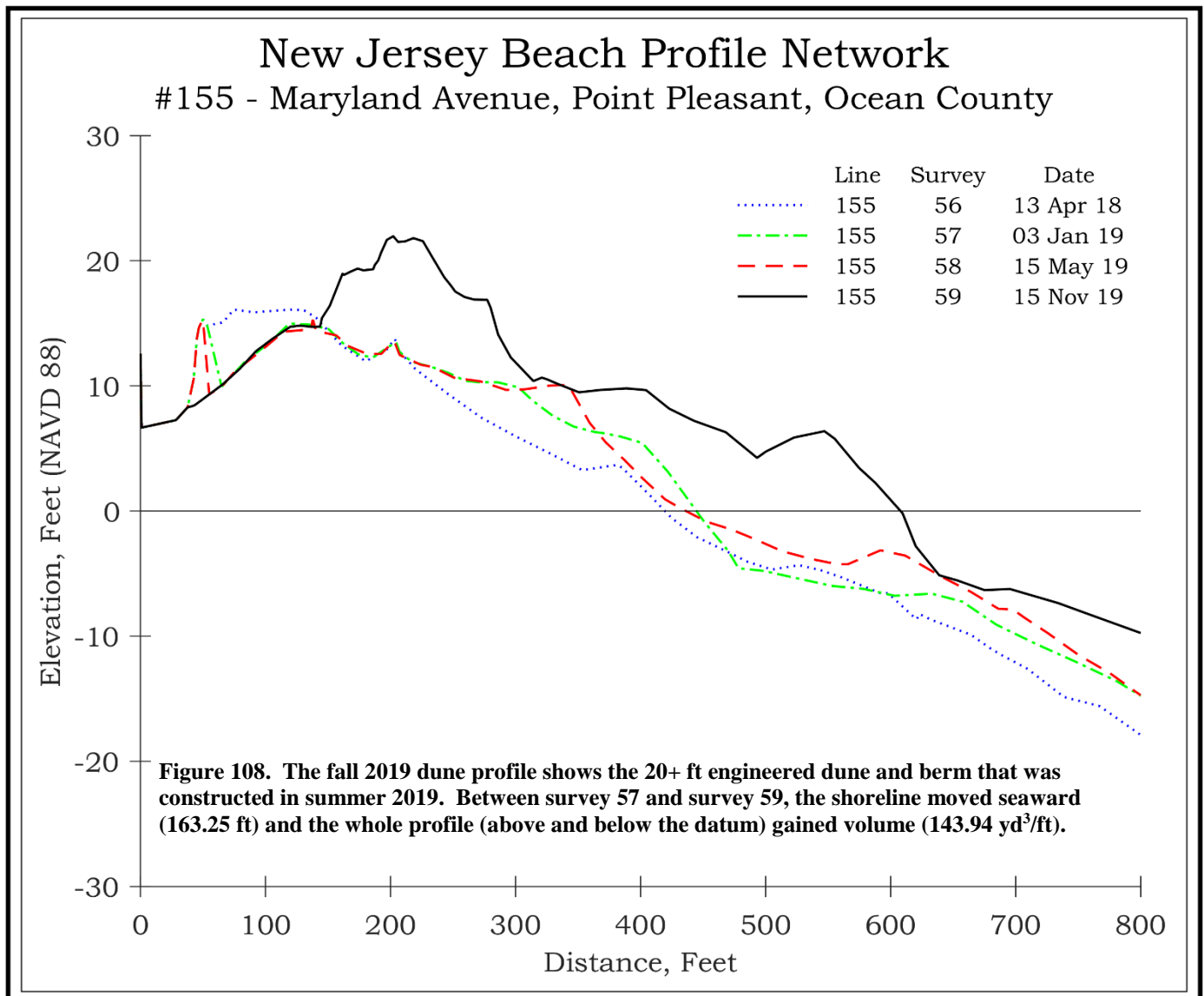
The Water Street site is located near the south end of the Point Pleasant Beach boardwalk and 1,400 ft south from the Manasquan Inlet jetty. The lack of dunes on the profile is the result of local beach maintenance activities. Between fall 2018 and fall 2019, the shoreline moved seaward (17.25 ft) (left photo taken December 19, 2018 and right photo taken November 15, 2019).



**NJBPN 155 – Maryland Avenue, Point Pleasant**



This Maryland Avenue profile site underwent significant profile changes due to the beachfill that was completed in July 2019. The photo on the left (taken January 3, 2019) shows the cofferdam that was constructed for the demolition of the Maryland Ave bulkhead and outfall. By November 15, 2019, the beach showed no evidence of the former stormwater discharge station.

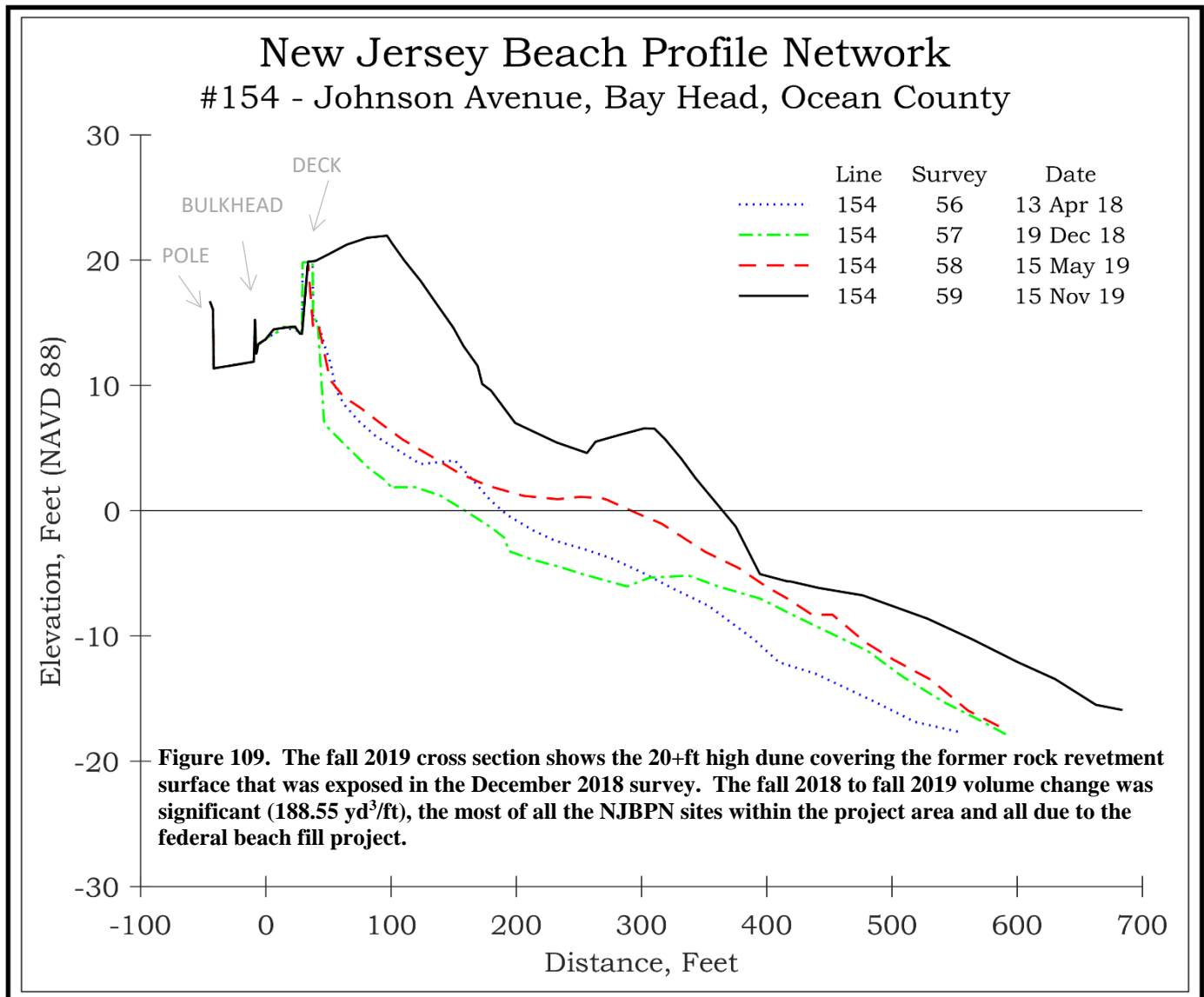




**NJBPN 154 – Johnson Avenue, Bay Head**



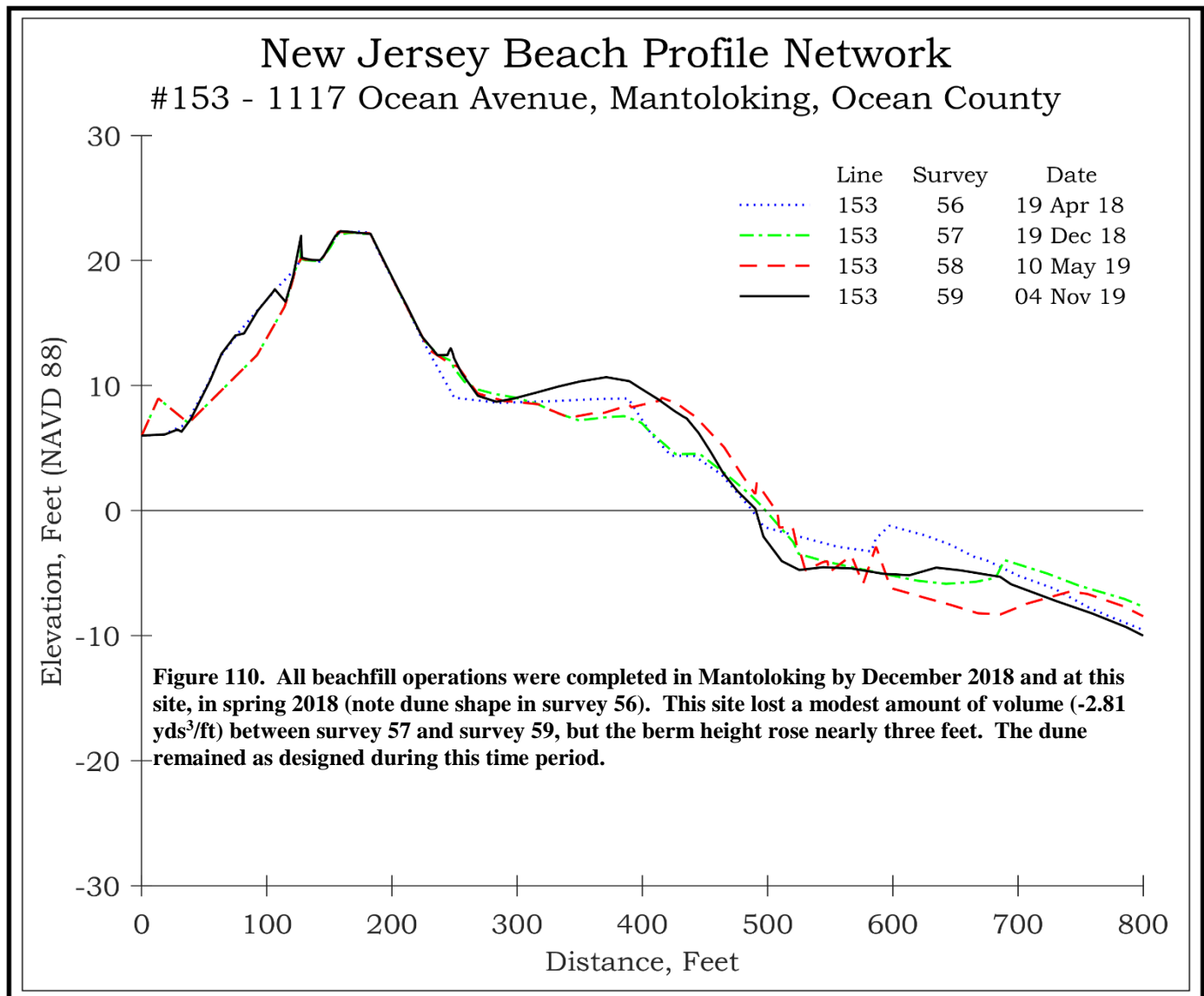
Prior to the beach fill, the Johnson Avenue profile consisted of no dune, exposed rock revetment, and a narrow beach (left photo taken December 19, 2018). The right photo (taken November 15, 2019) shows the dune (covering the rock revetment) and berm conditions five months after project completion. The position of the 0.0 ft NAVD shoreline moved seaward (205.5 ft) between surveys 57 and 59.



**NJBPN 153 – 1117 Ocean Avenue, Mantoloking**



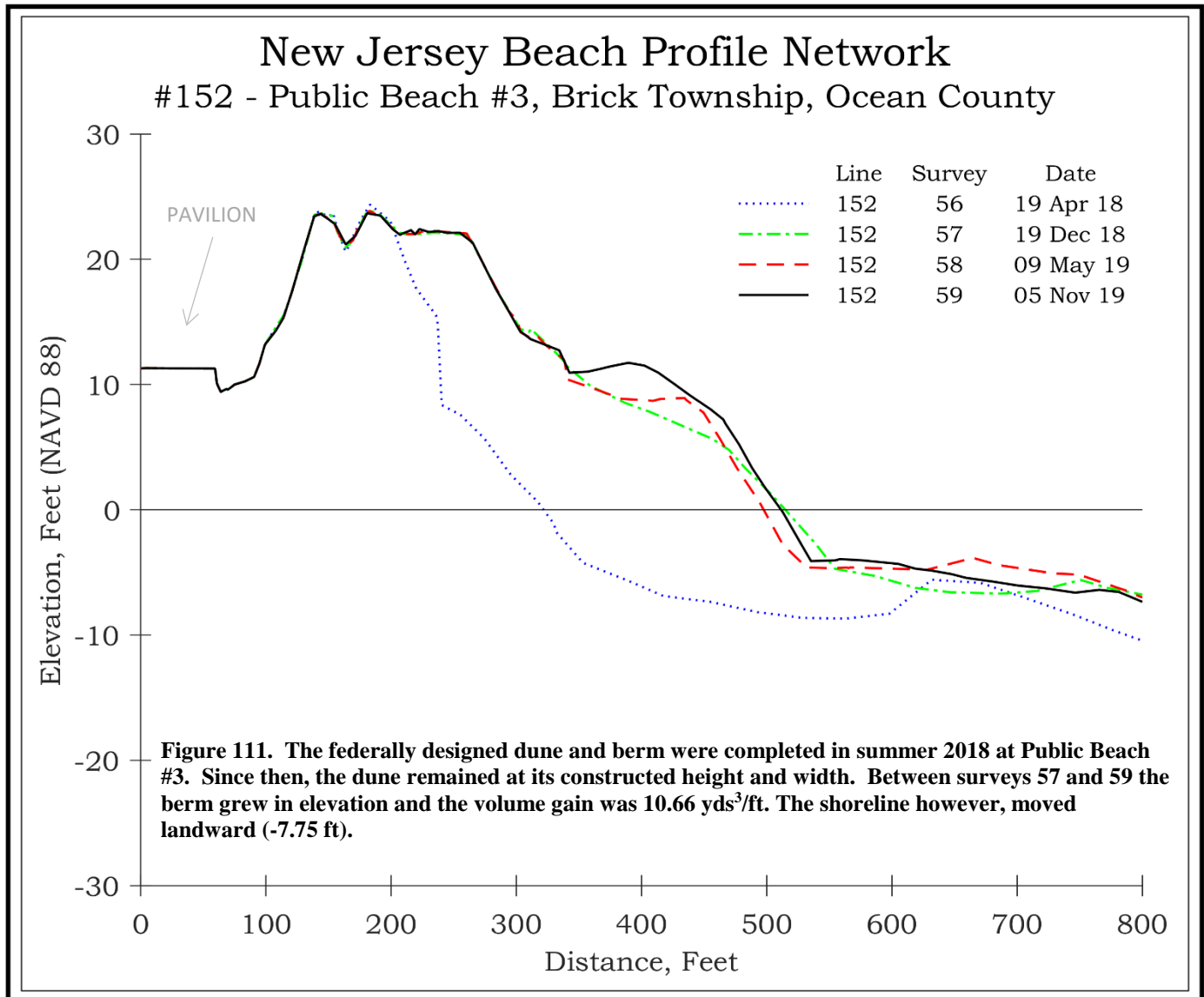
The vegetated dune at 1117 Ocean Ave. in Mantoloking covers a steel bulkhead that was constructed in 2015 (left photo taken December 19, 2018 following beach fill). The right photo (taken November 4, 2019) shows the condition of the dune vegetation and berm width similar to 2018. The 0.0 ft NAVD shoreline moved landward (-7.75 ft) from its fall 2018 position.



**NJBPN 152 – Public Beach #3, Brick Township**



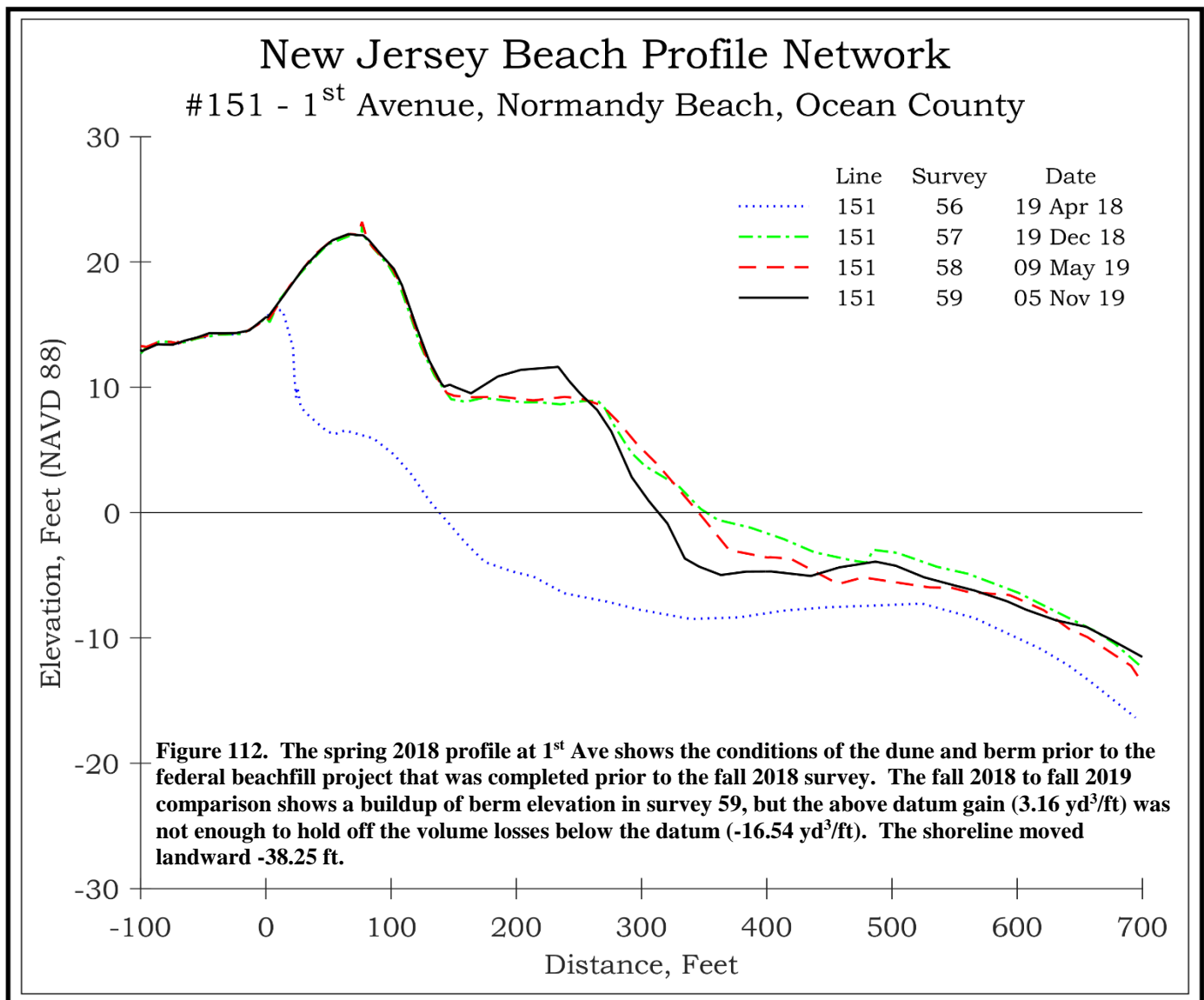
The beachfill was completed at the Brick Township Public Beach #3 profile site in summer 2018 with the engineered dune covering the steel bulkhead. The left photo (taken December 19, 2018) shows the newly planted vegetation. By November 5, 2019 (right photo) the vegetation was well established.



**NJBPN 151 – 1<sup>st</sup> Avenue, Normandy Beach**



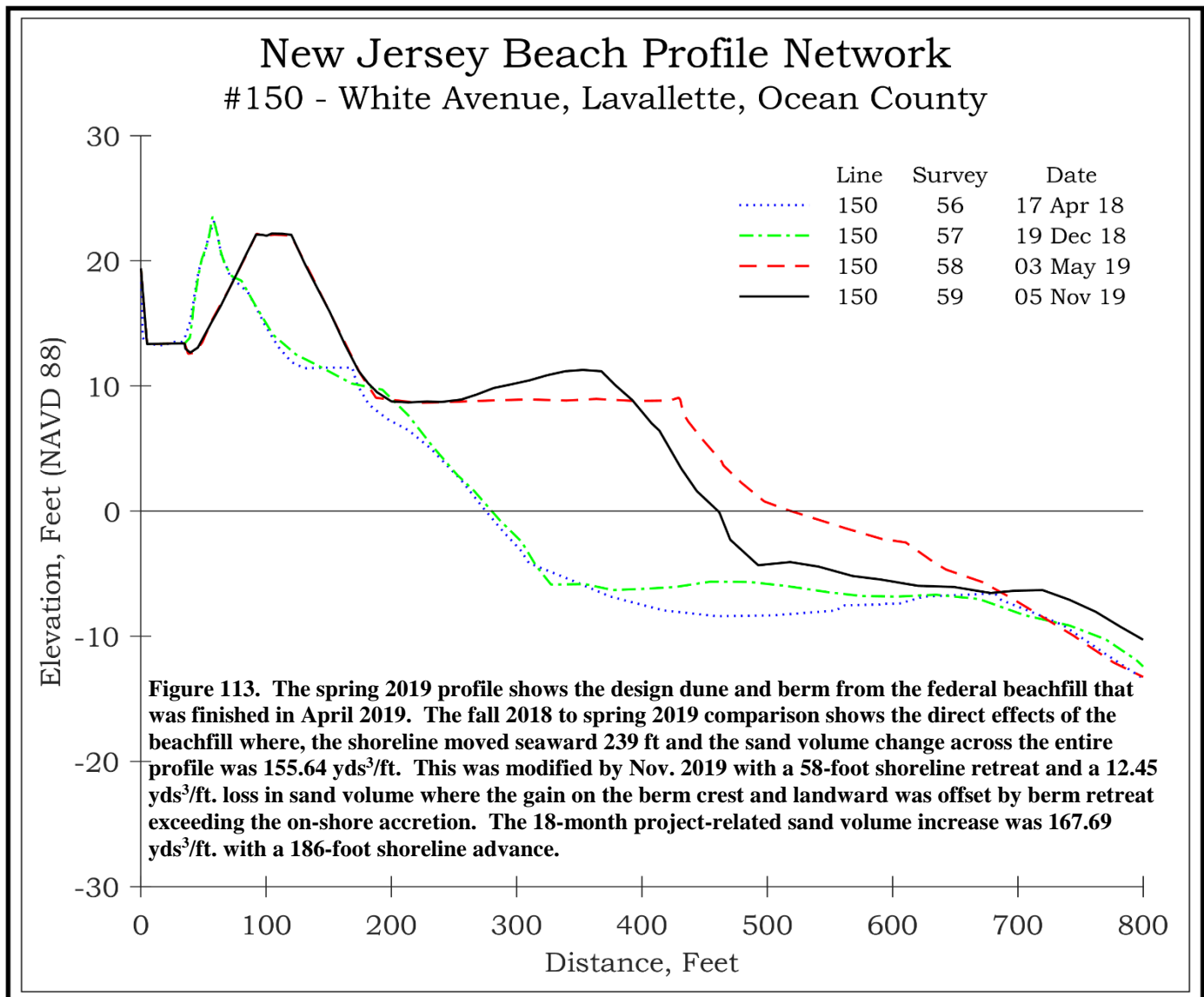
The photos of the Normandy Beach profile show the conditions of the seaward dune toe of the engineered dune after completion in December 2018 (left photo taken December 19, 2018). The right photo (taken November 5, 2019) shows the vegetated dune and wide berm nearly a year later.



**NJBPN 150 – White Avenue, Lavallette**



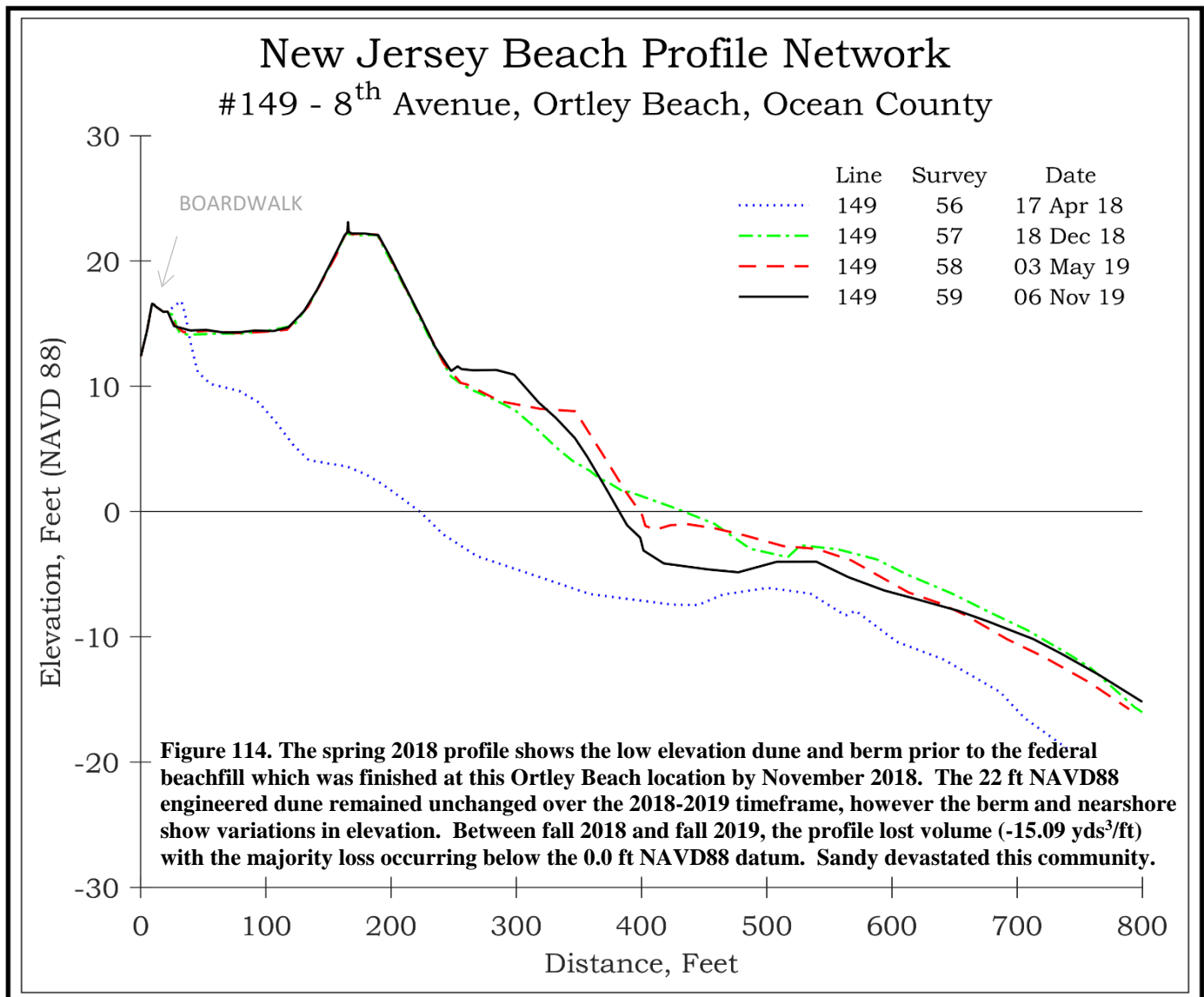
The left photo (taken December 19, 2018) shows the pre- beach fill dune which was created from sand recovered from Hurricane Sandy. The right photo (taken November 5, 2019) shows the unvegetated engineered dune that integrated the sand from the previous dune. Sand placement was completed in April 2019.



## NJBPN 149 – 8<sup>th</sup> Avenue, Ortley Beach



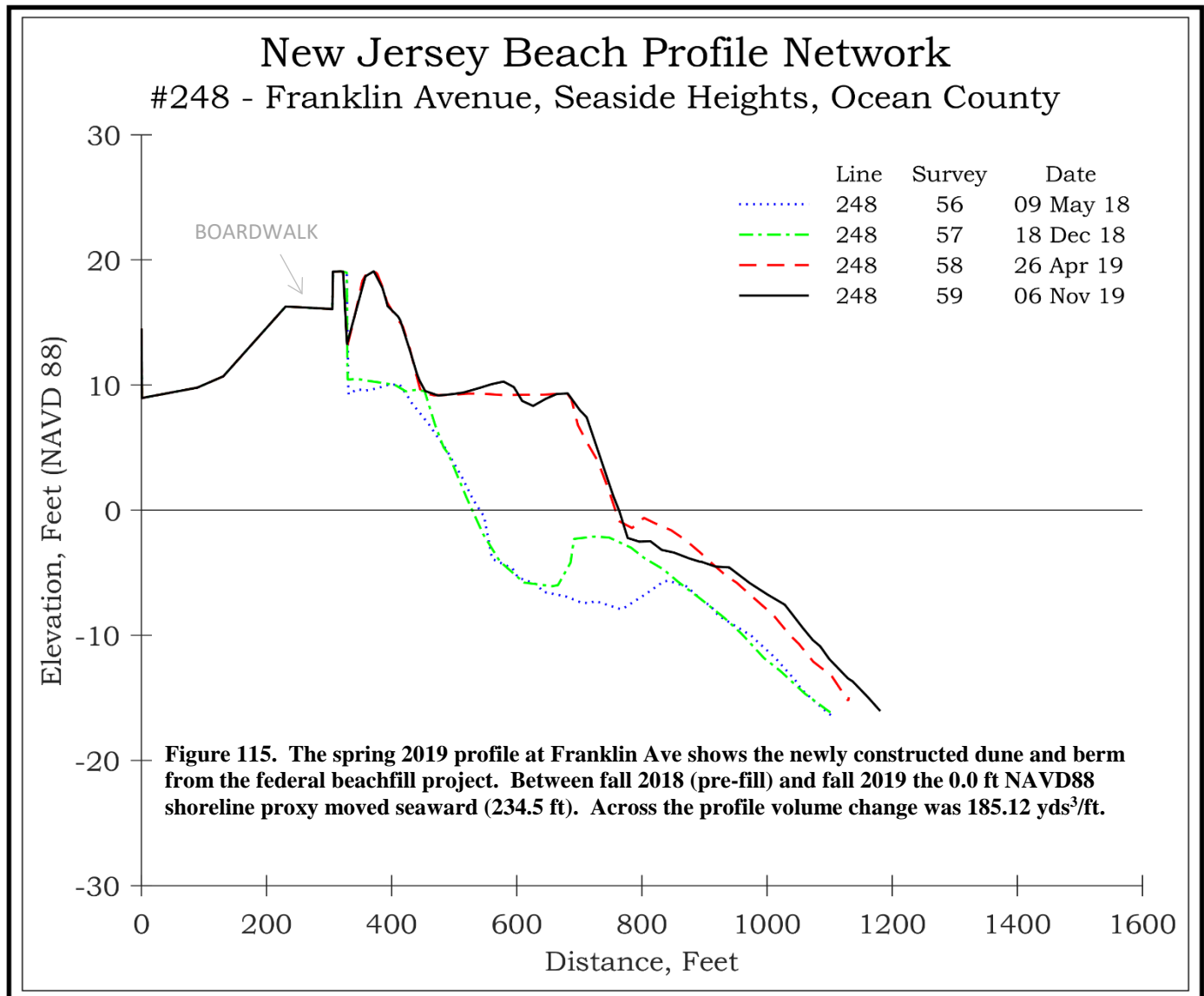
The left photo (taken December 18, 2018) from the crest of the new engineered dune. The right photo (taken November 6, 2019) shows the conditions from the same location nearly a year later. The shoreline moved 51.5 ft landward during this time period.



**NJBPN 248 – Franklin Avenue, Seaside Heights**



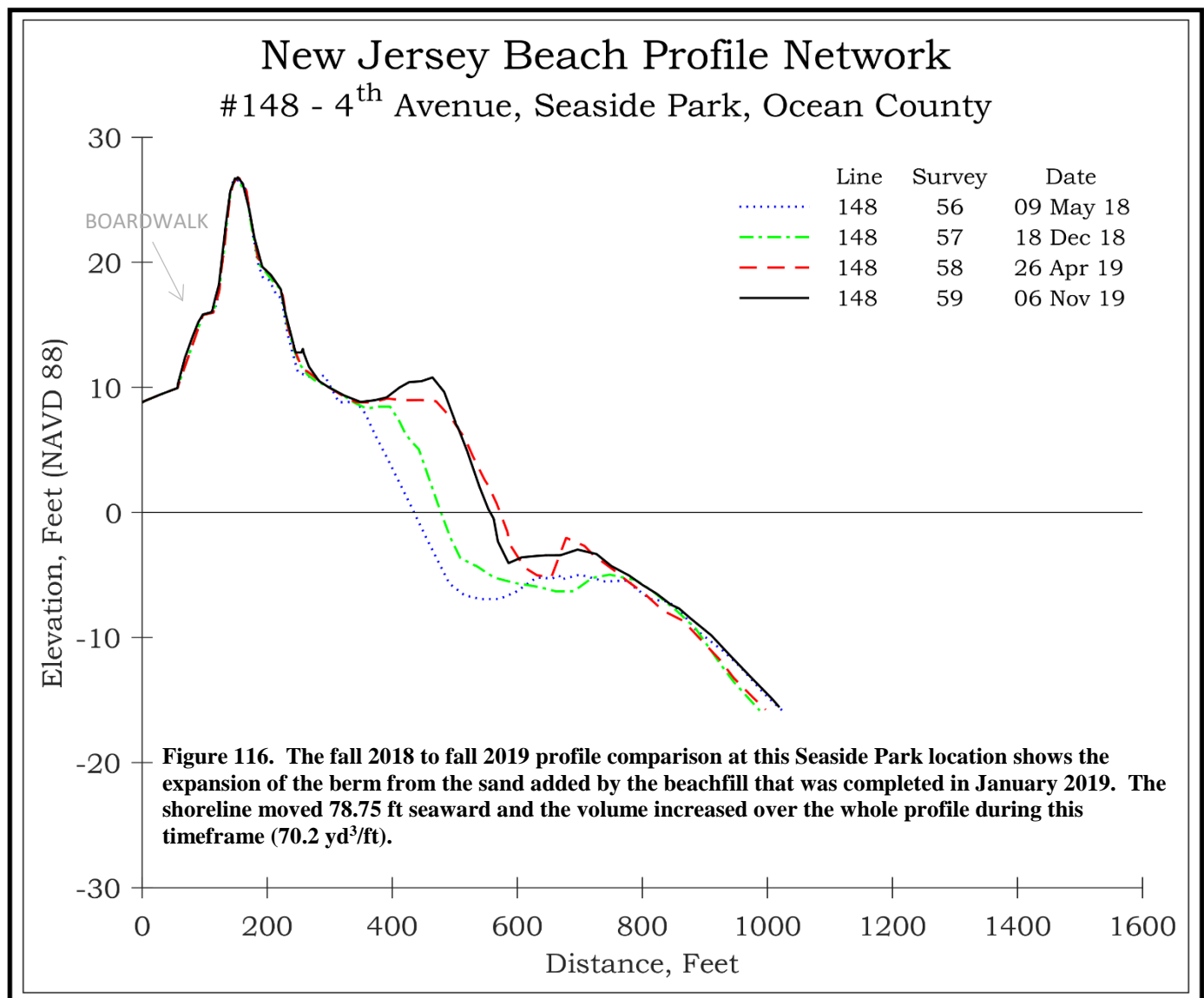
The berm and dune at the Franklin Avenue site changed significantly due to the beachfill activities that finished in January 2019 (left photo taken December 18, 2018 and right taken November 6, 2019). After years of no dune protection, the federal project included an engineered dune adjacent to the boardwalk.



**NJBPN 148 – 4<sup>th</sup> Avenue, Seaside Park**



There was little change in the dune at 4<sup>th</sup> Avenue between fall 2018 and fall 2019 (left photo December 18, 2018 and right photo taken November 6, 2019). Beachfill at this Seaside Park location was completed in January 2019 and did not include additional sand on the dune.

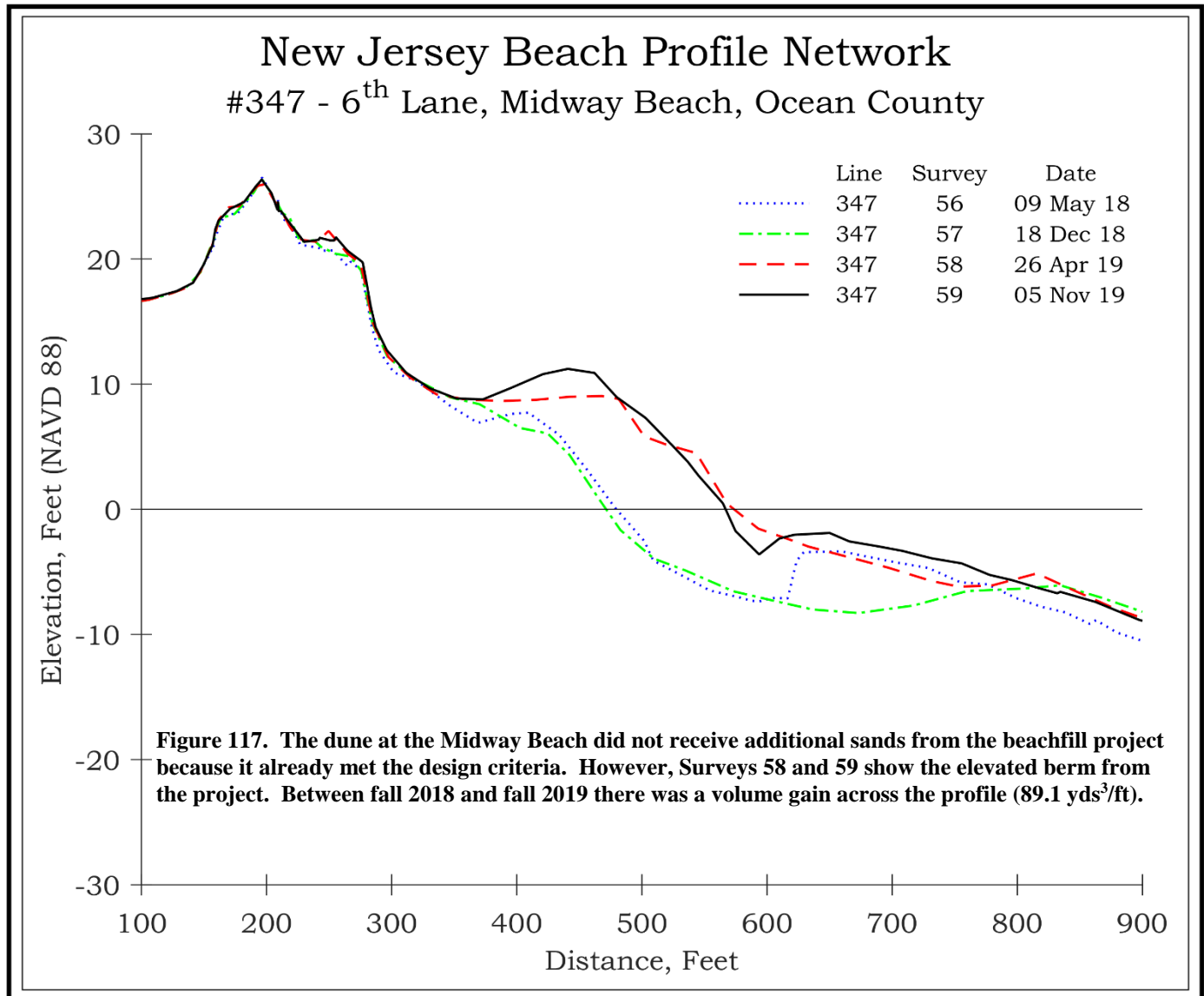




NJBPN 347 (formerly 147) – 6<sup>th</sup> Lane, Midway Beach (S. Seaside Park)



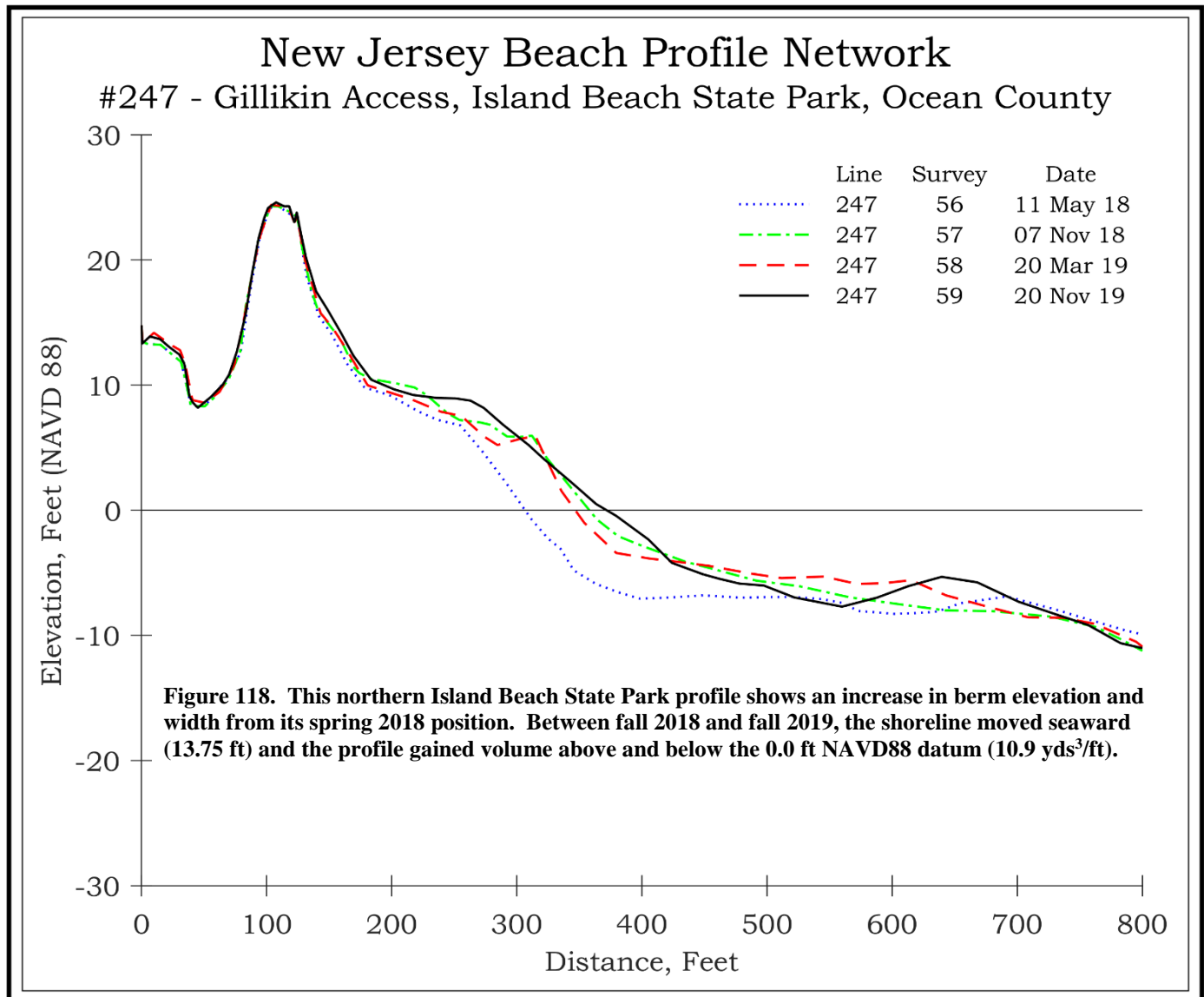
The photos of the 6<sup>th</sup> Lane location (left December 18, 2018 and right taken November 5, 2019) show changes of the berm before and after the beachfill which was completed in February 2019. The shoreline was moved 95.75 ft during this timeframe.



**NJBPN 247 – North End, Island Beach State Park**



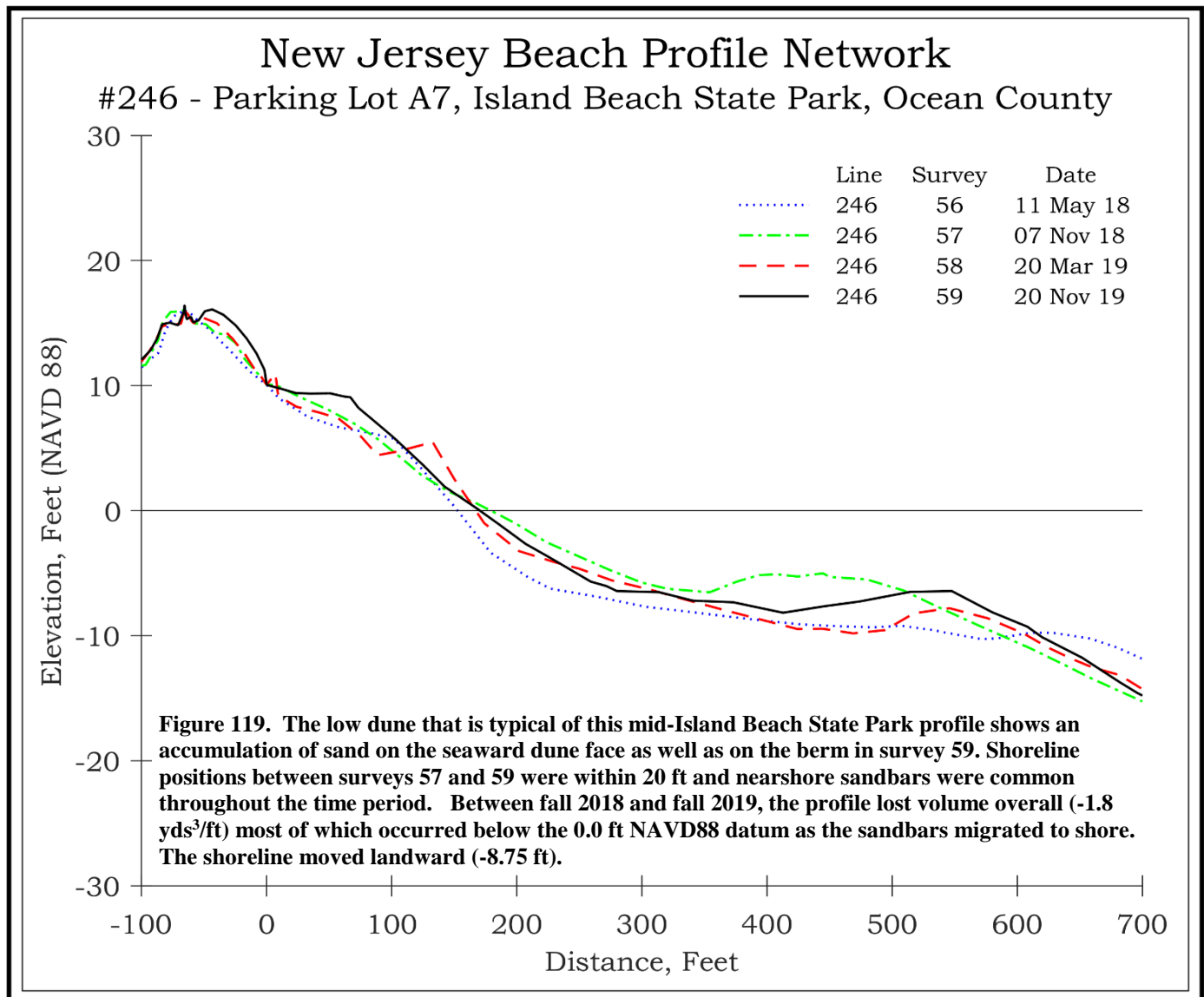
There has been no change in the dune shape or elevation at the Gillikin Access site since the seaward dune face was scarped during Hurricane Sandy in 2012 (left photo taken November 7, 2018 and right photo taken November 20, 2019). The Island Beach State Park profile sites were not included in the federal beachfill project but are downdrift and accretion is anticipated at this state park location.



NJBPN 246 – Parking Lot A7, Island Beach State Park



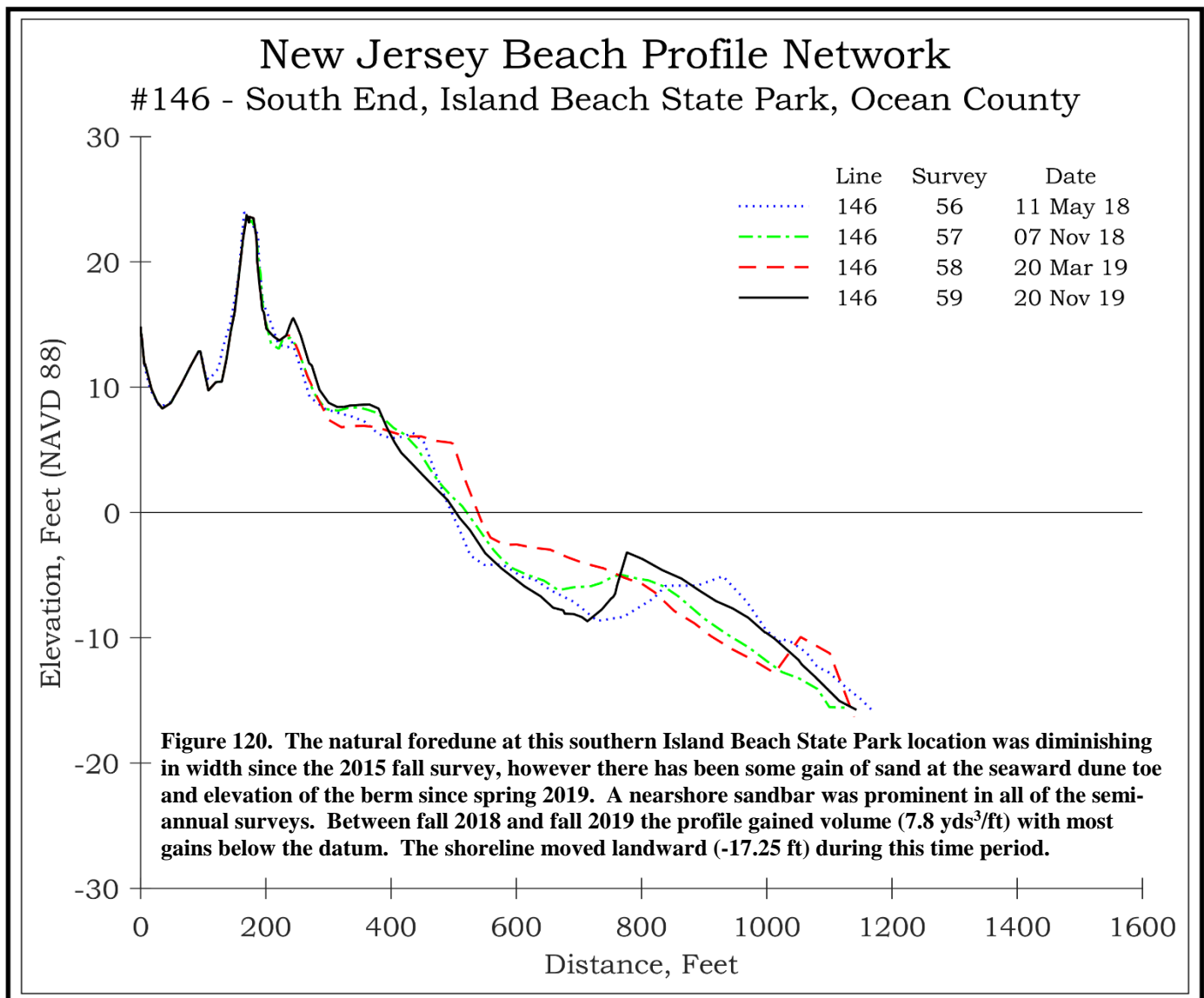
The photos at the Parking Lot A7 site from the dune toe show accumulation of sand as the sand fencing poles appear less exposed than in the left photo (left photo taken November 7, 2018 and right photo taken November 20, 2019).



**NJBPN 146 – South End, Island Beach State Park**



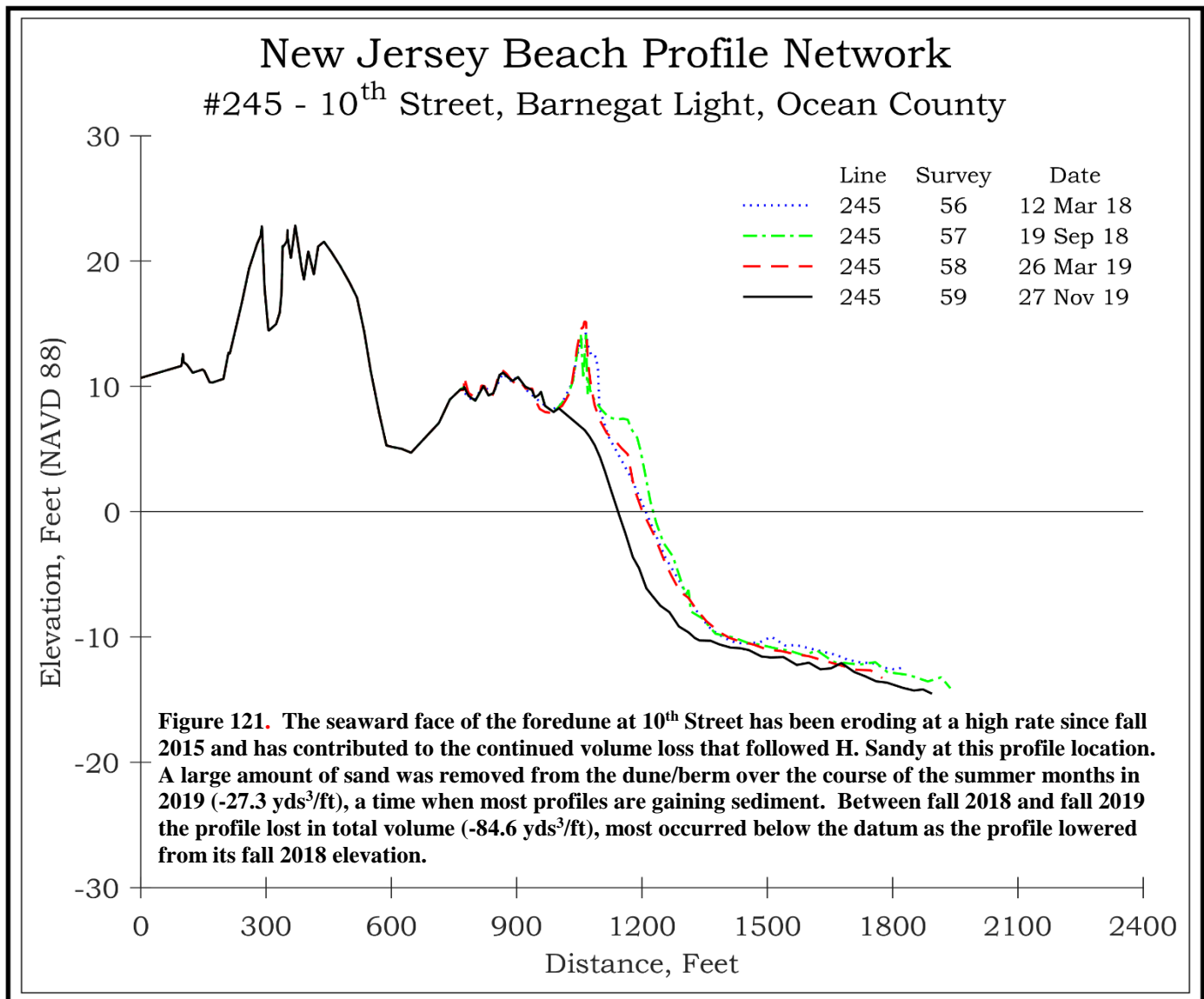
At the Island Beach State Park southernmost profile, the photos show the view from the backshore/dune toe. The berm was wider and lower in spring 2019 but by the following fall had returned to a position similar to fall 2018 (left photo taken November 7, 2018 and right photo taken November 20, 2019).



NJBPN 245 – 10<sup>th</sup> Street, Barnegat Light



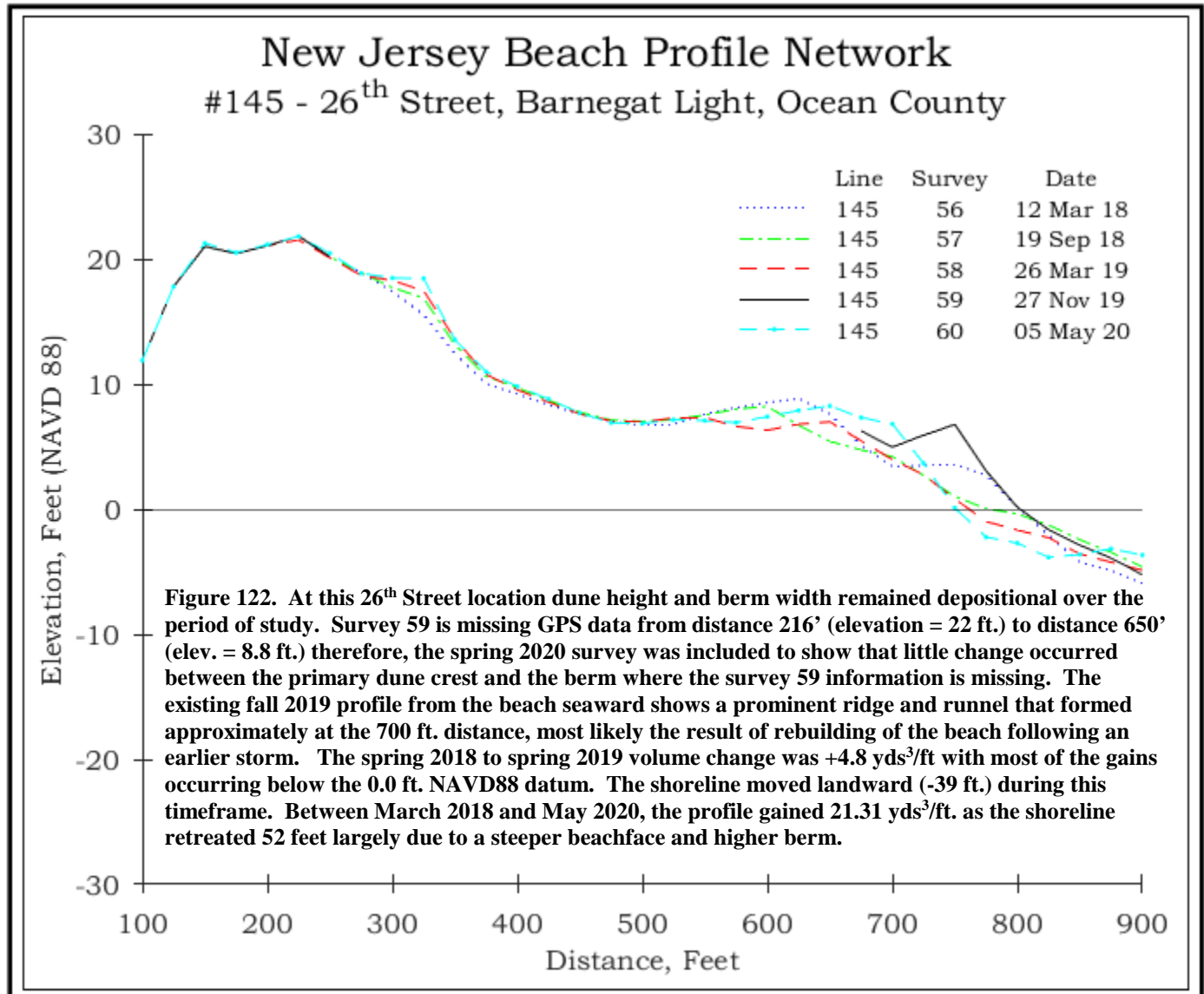
The 10<sup>th</sup> Street profile is characterized by a wide dune field and narrow berm but the foredune has been eroding and moving landward since the fall 2015 survey (left photo taken September 19, 2018 and right photo taken November 27, 2019). Over the timeframe displayed by the photos the 0.0 ft NAVD88 shoreline proxy moved landward (-84.25 ft).



NJBPN 145 – 26<sup>th</sup> Street, Barnegat Light



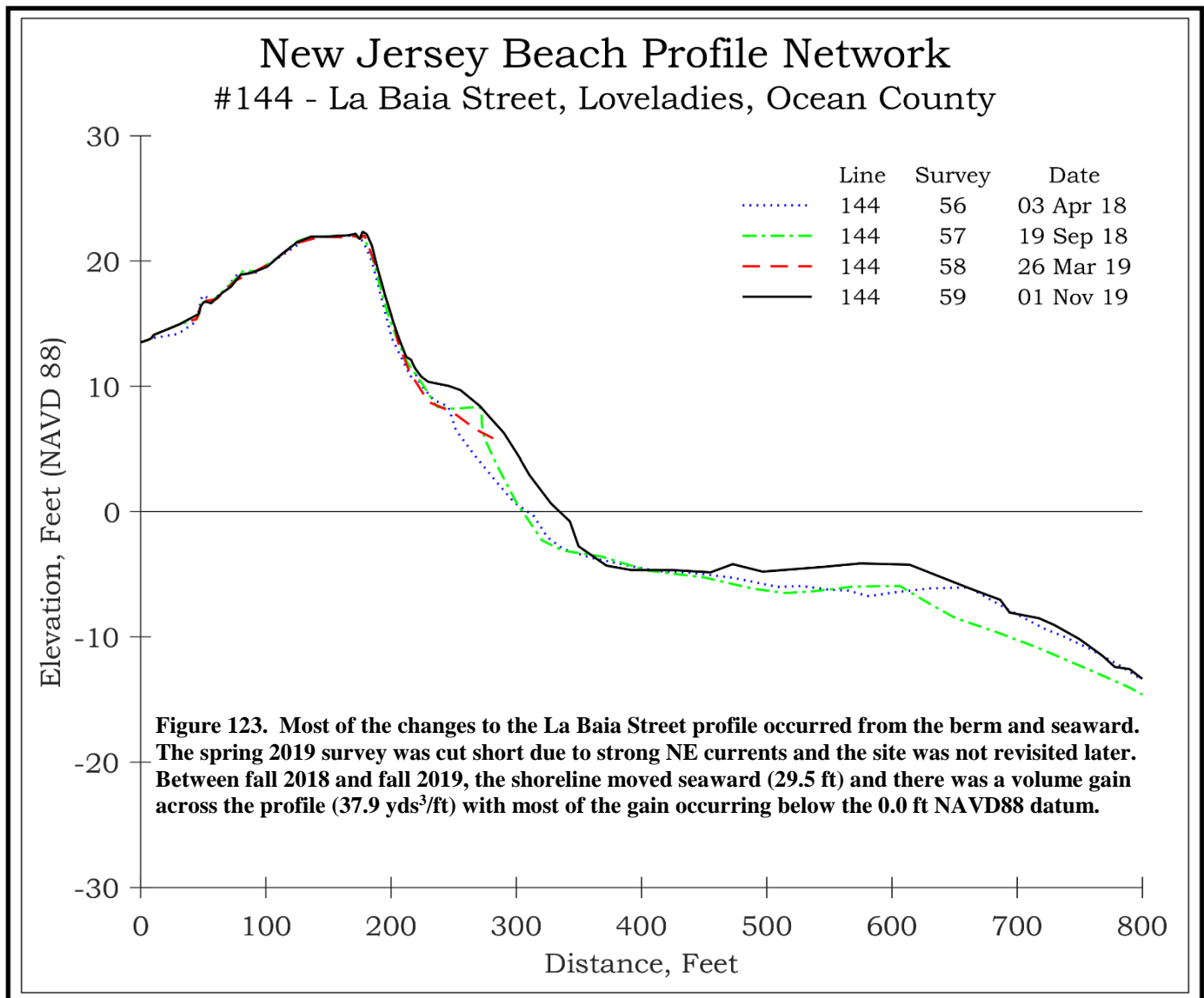
The berm at the 26<sup>th</sup> Street profile remained in similar width during the 2018-2019 timeframe (left photo taken September 19, 2018 and right photo taken November 27, 2019). The right photo shows heavy mineral sands on the upper berm. This was most likely deposited during higher waves from a coastal low that passed the New Jersey shoreline a week earlier.



**NJBPN 144 – La Baia Street, Loveladies**



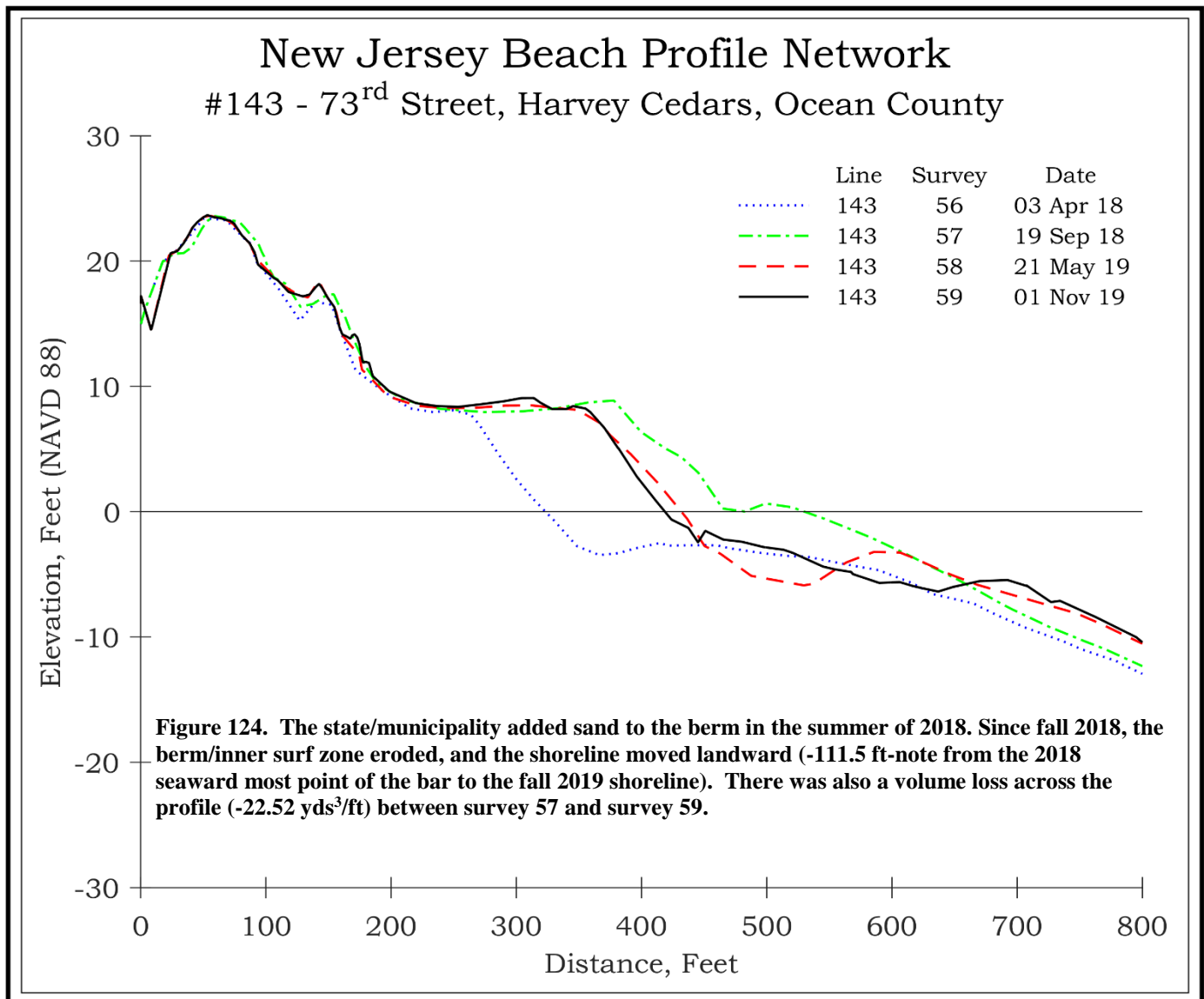
The photos show the vegetated engineered dune that was constructed at La Baia Street in 2016 (left photo taken September 19, 2018 and right photo taken November 1, 2019). The dune remained in its same position and elevation over the photo time frame.



NJBPN 143 – 73<sup>rd</sup> Street, Harvey Cedars



The seaward portion of the dune continued its growth at the 73<sup>rd</sup> Street location due in part to fencing (left photo taken September 19, 2018 and right photo taken November 1, 2019). Both photos show accumulations of wind-blown sand on the dune.

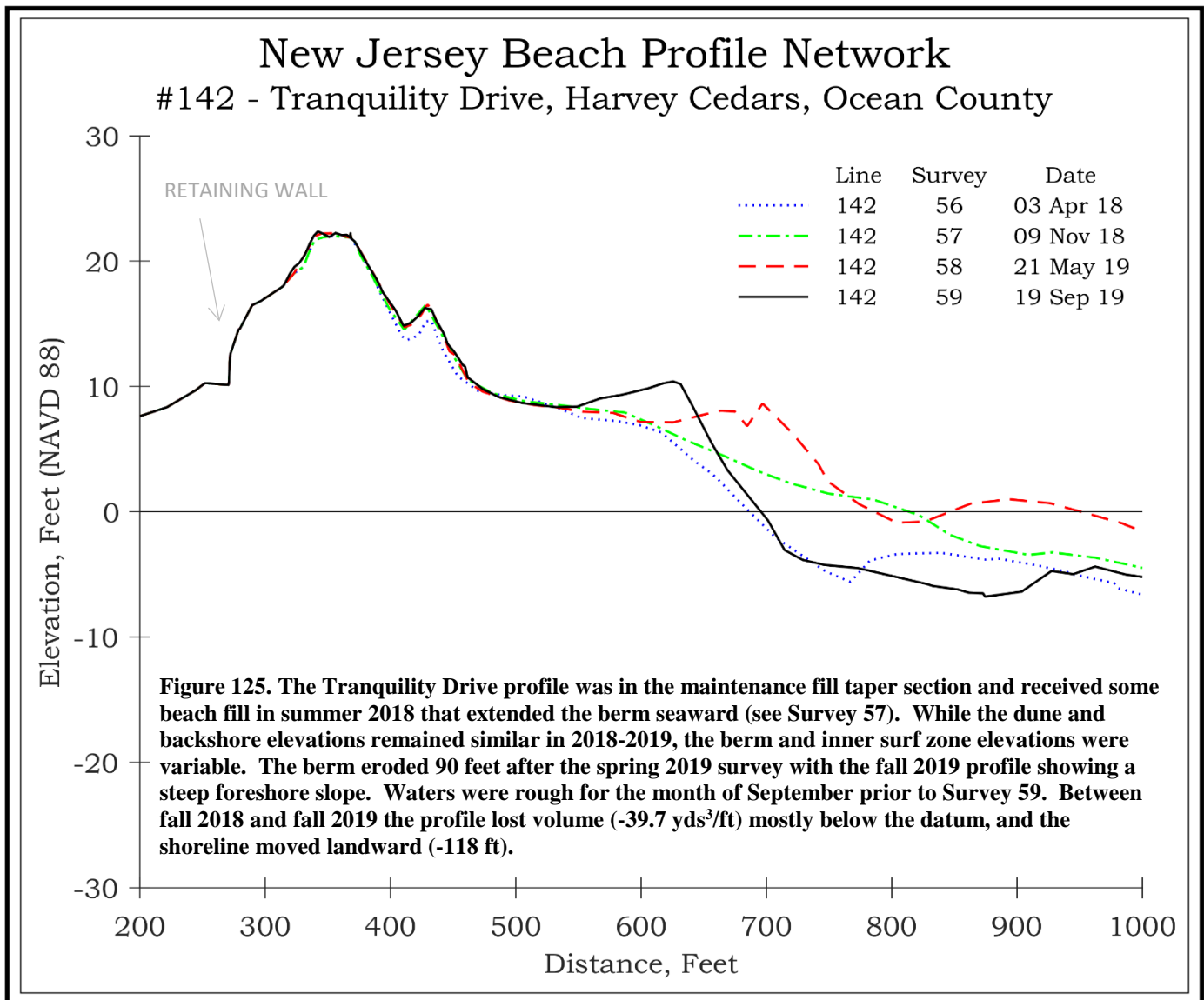




NJBPN 142 – Tranquility Drive, Harvey Cedars



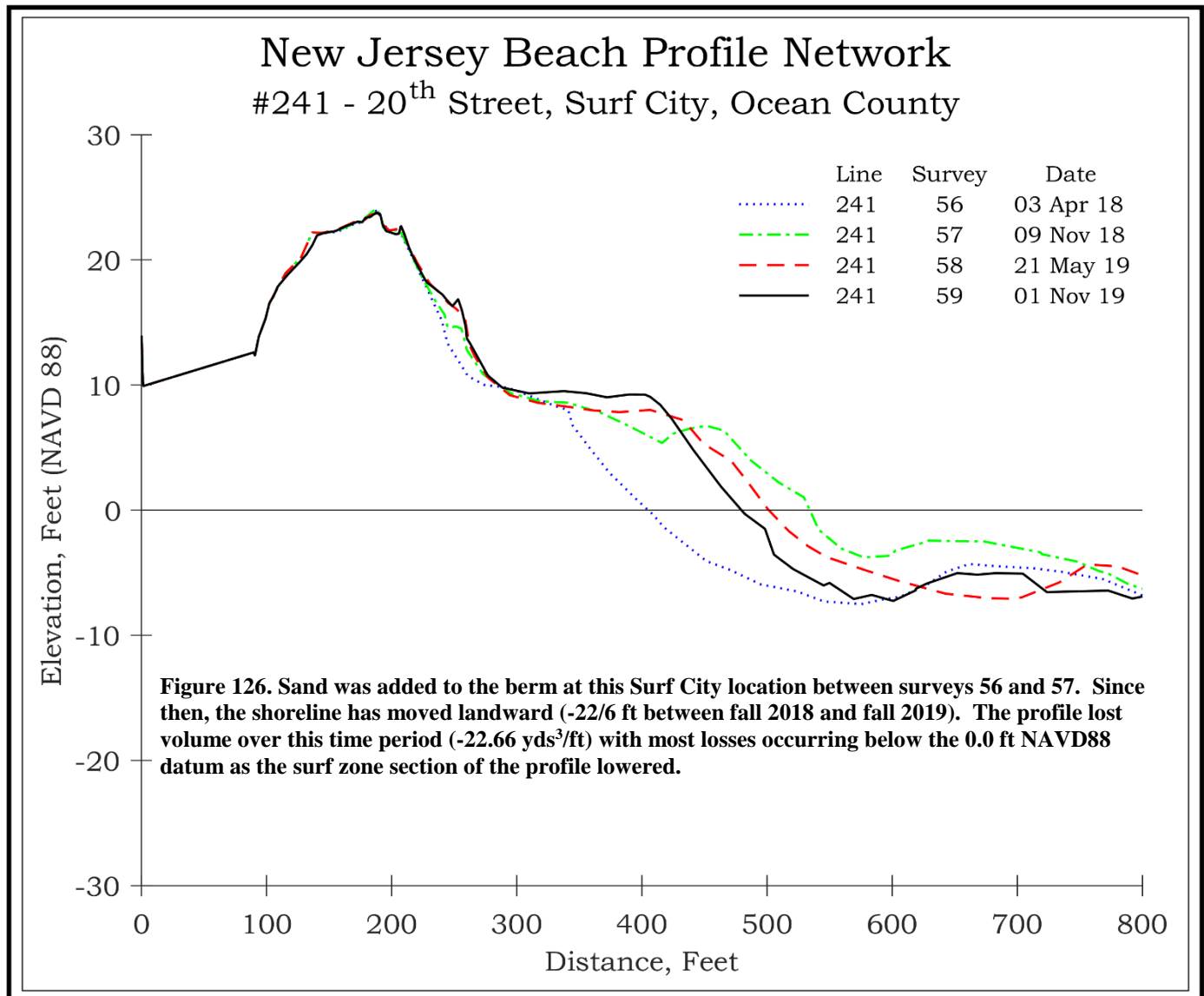
At the Tranquility Drive location the vegetation density on the engineered dune remained unchanged since 2015 (left taken November 9, 2018 and right taken September 19, 2019). Wind-blown sand contributed to gains at the dune toe.



NJBPN 241 – 20<sup>th</sup> Street – Surf City



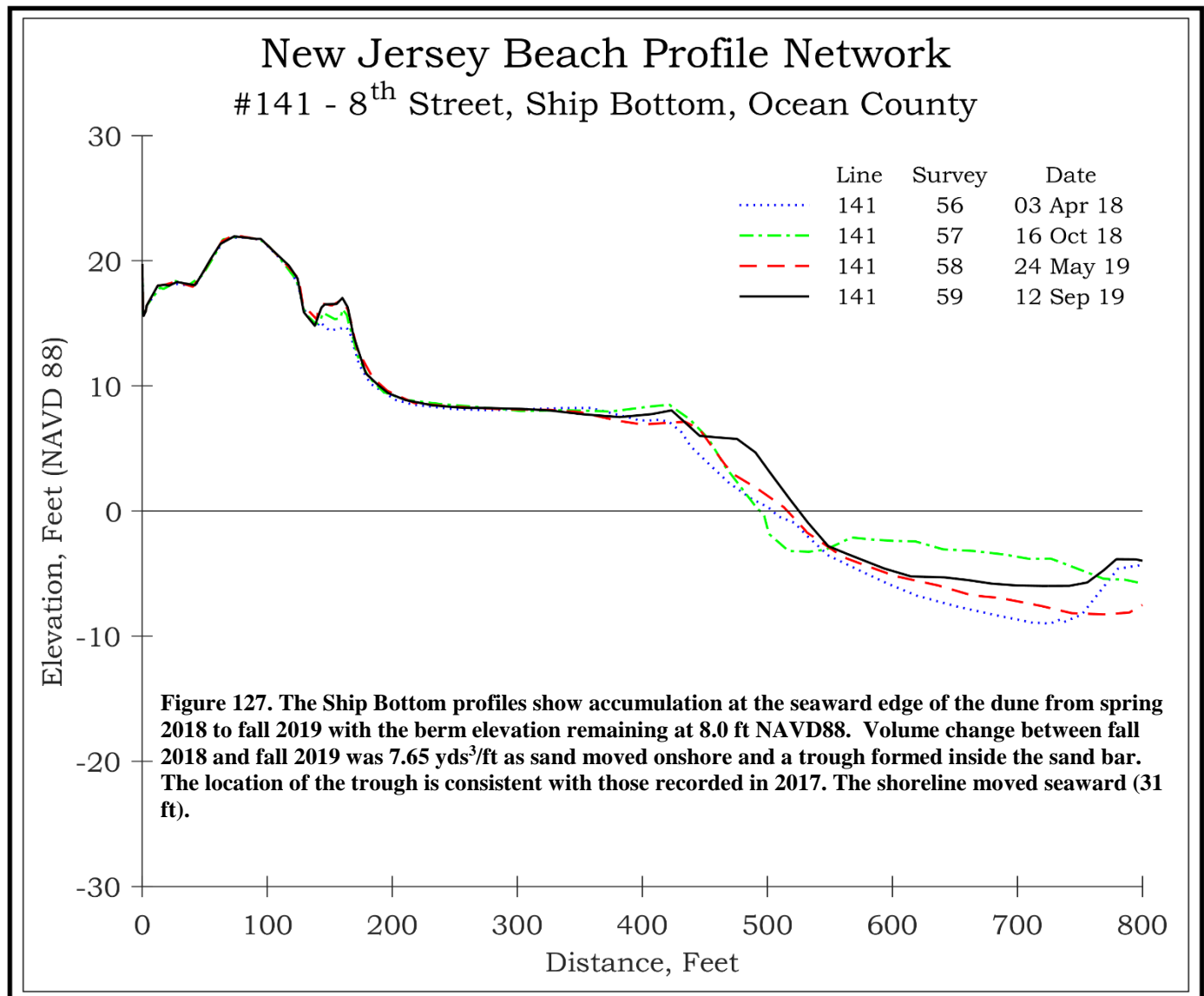
Profile changes at the 20<sup>th</sup> Street location show the seaward extent of the beachfill in fall (left photo taken November 9, 2018) and the conditions in fall 2019 (right photo taken November 1, 2019).



## NJBPN 141 – 8<sup>th</sup> Street, Ship Bottom



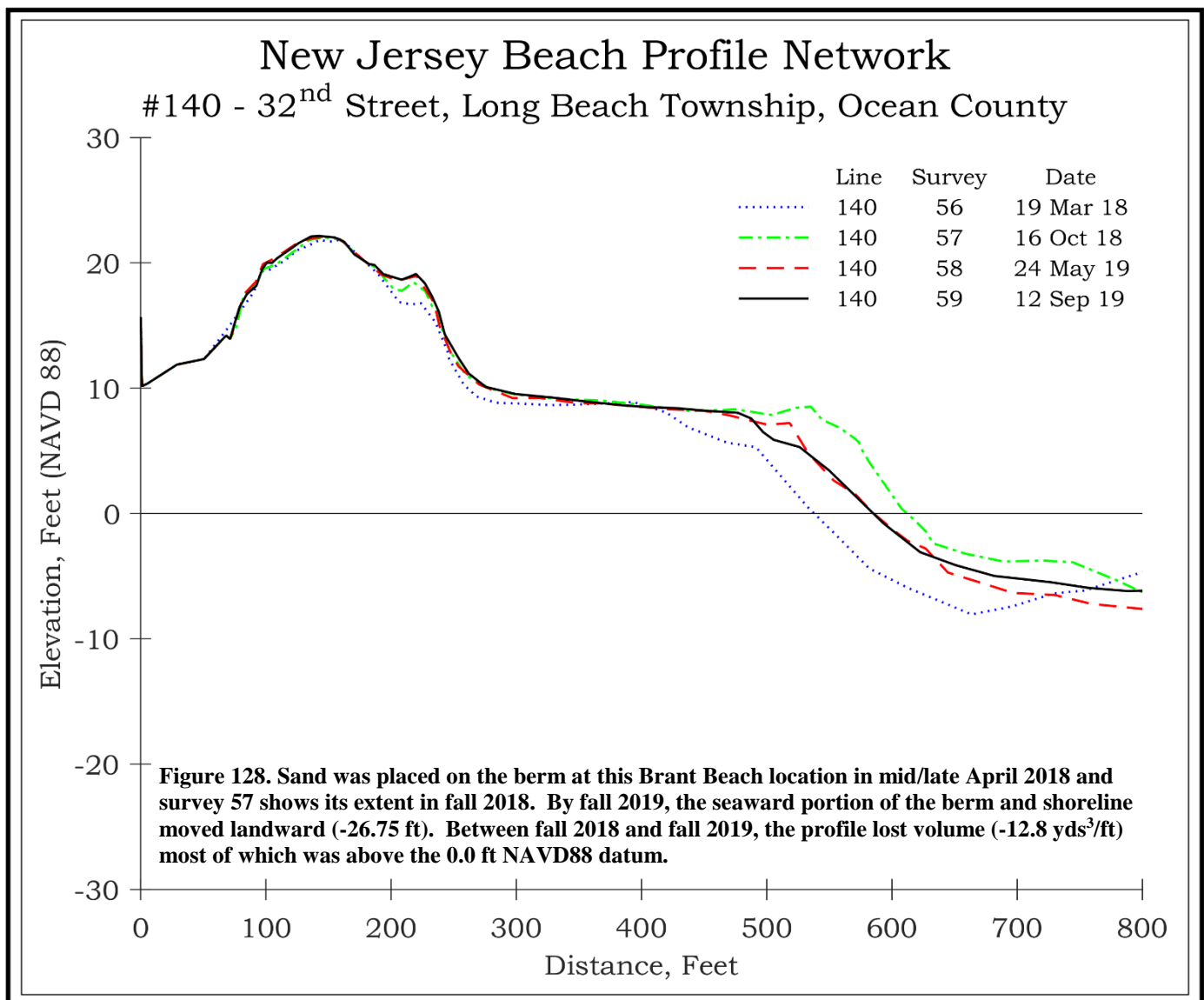
The 8<sup>th</sup> Street photos show accumulated on the seaward dune toe that later became vegetated and stabilized the dune (left photo taken October 16, 2018 and right photo taken September 12, 2019). This profile has maintained a 200-ft wide berm over the same time period.



**NJBPN 140 – 32<sup>nd</sup> Street, Long Beach Township**



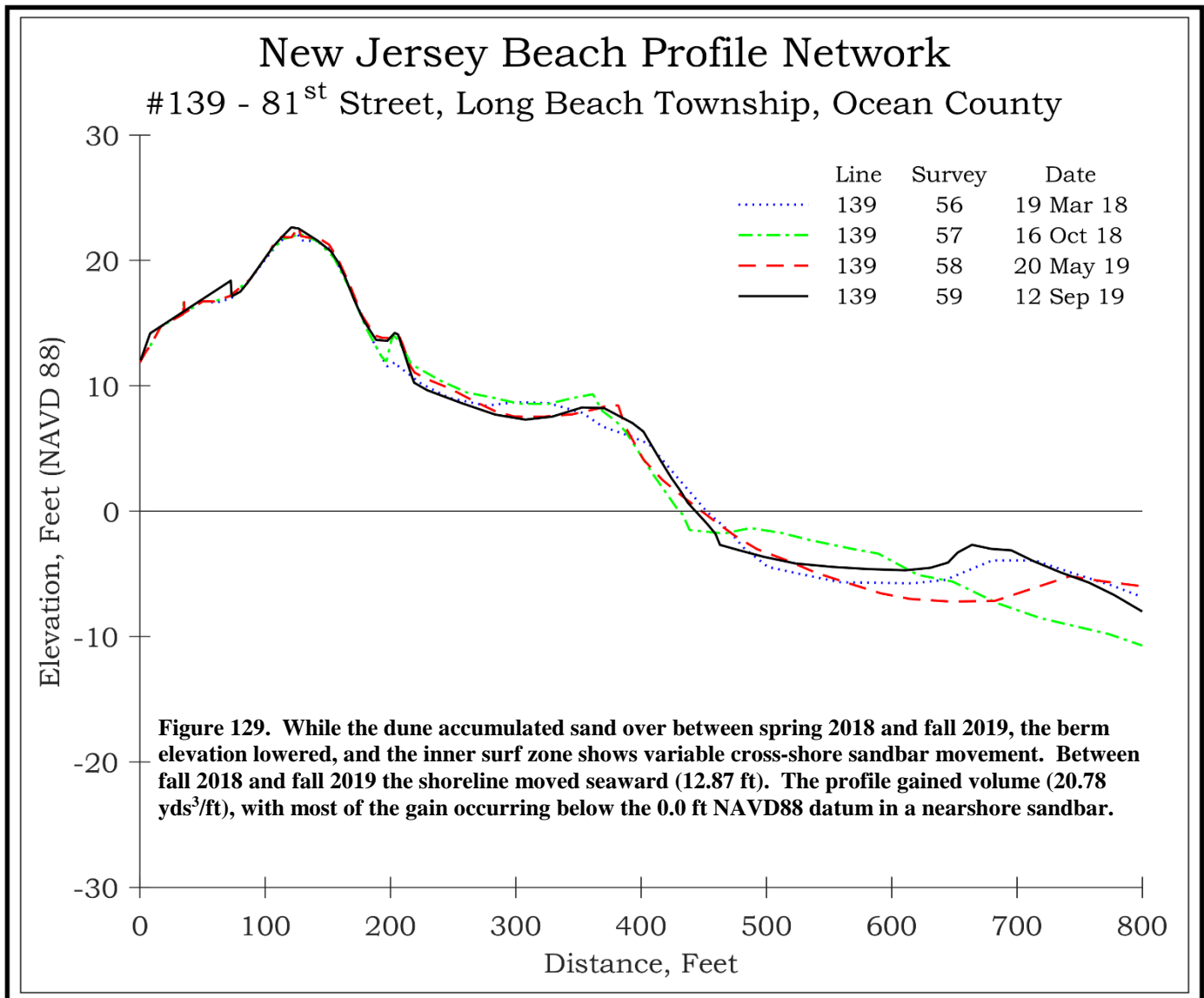
The photos show the view to the north of the dune toe and backshore at 32<sup>nd</sup> Street in Brant Beach (left taken October 16, 2018 and right photo taken September 12, 2019). The berm elevation remained consistent at around 9 ft NAVD88.



**NJBPN 139 – 81<sup>st</sup> Street, Long Beach Township**



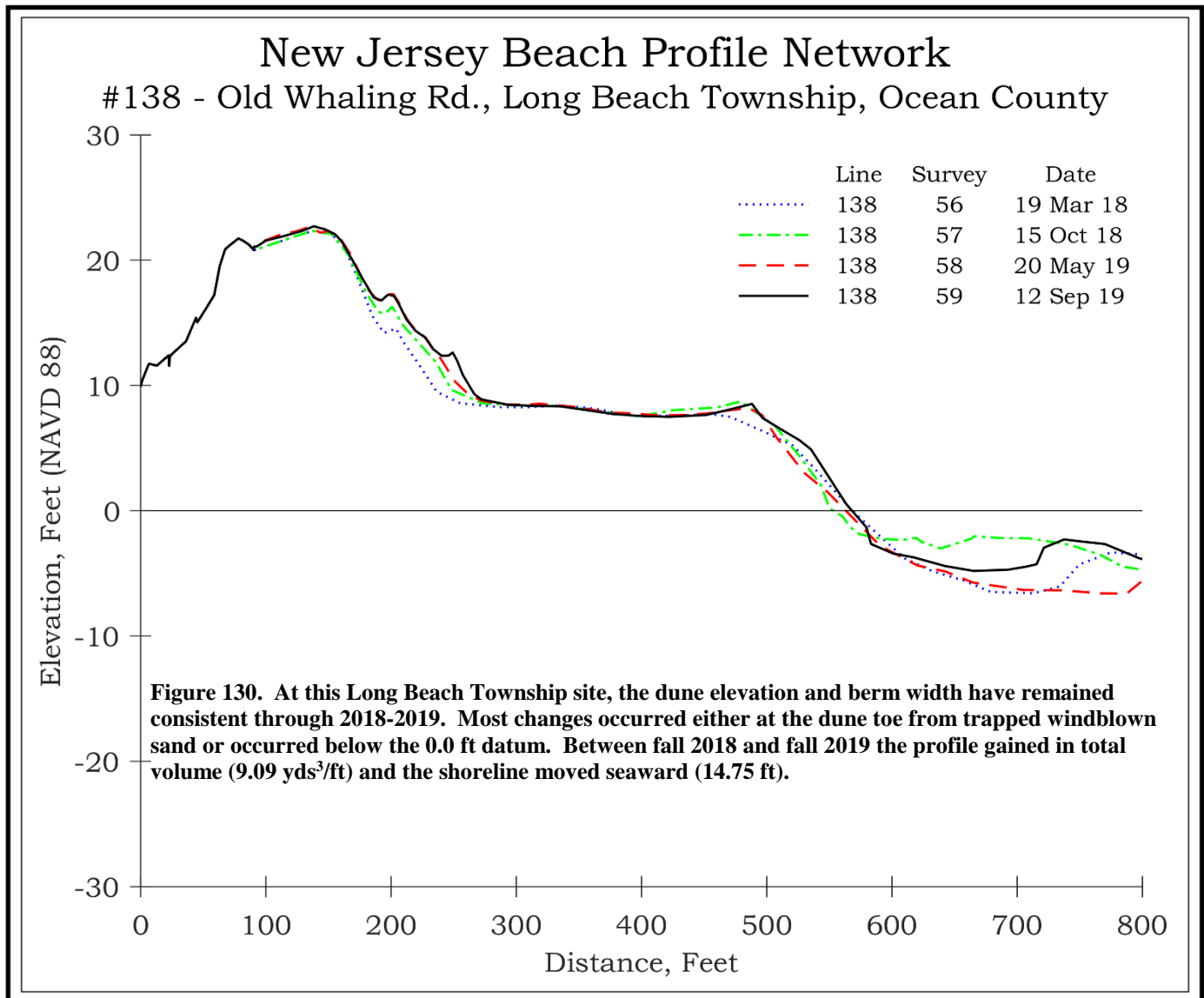
At the Township’s 81<sup>st</sup> Street location the photos show very similar dune conditions between fall 2018 and fall 2019 (left photo taken October 16, 2018 and right taken September 12, 2019) and sand accumulations near the dune toe. The engineered dune has remained at the same elevation since it was constructed in 2015.



NJBPN 138 – Old Whaling Road (124<sup>th</sup> Street), Long Beach Township



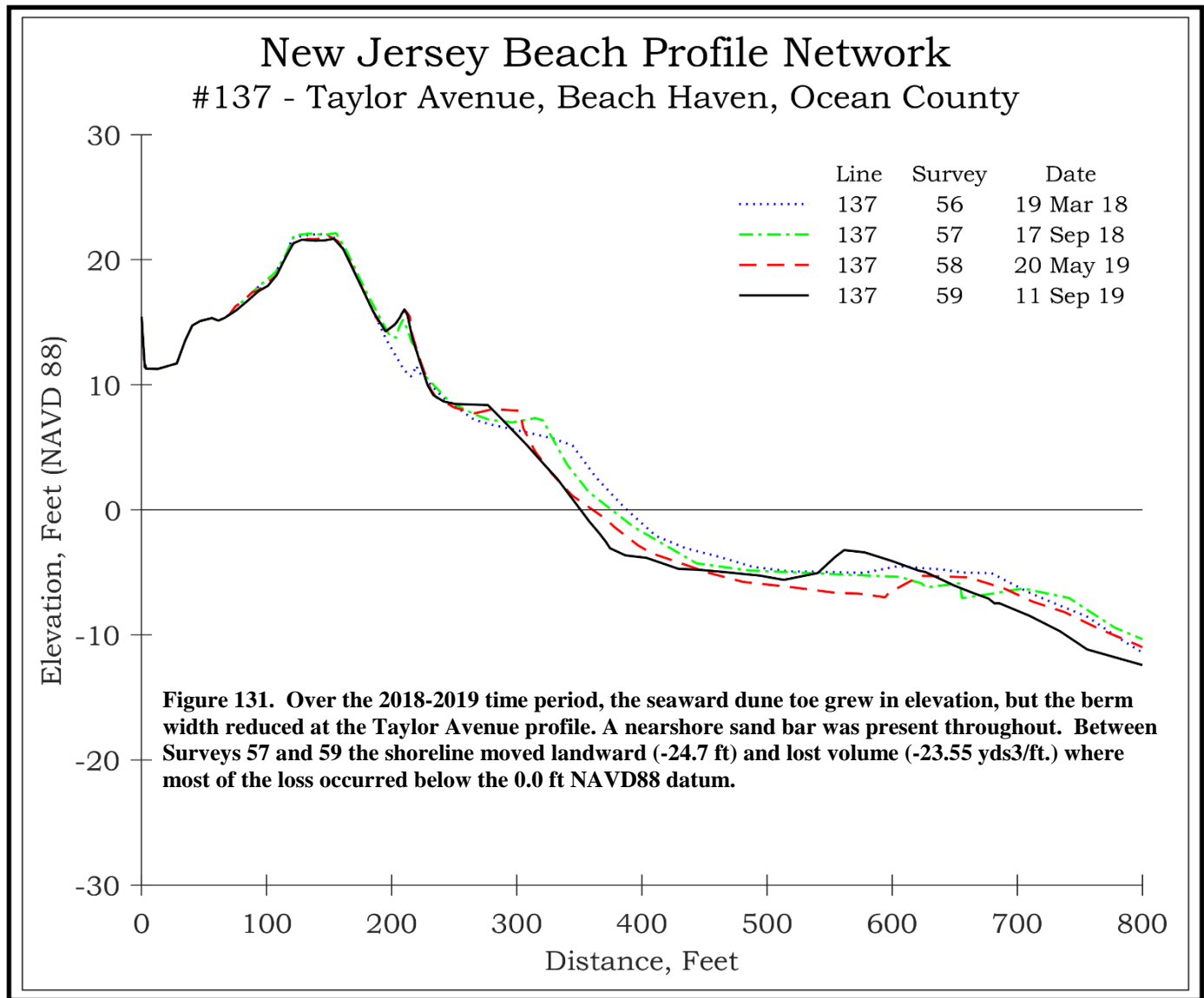
The photos show the view to the north along the dune toe at the Old Whaling Road profile (left taken October 15, 2018 and right photo taken September 12, 2019). This profile has shown consistent growth of the dune toe between 2018 and 2019 from accumulations of windblown sand. The profile is characterized by a wide berm in place since repairs were made to the beachfill in 2016.



**NJBPN 137 – Taylor Avenue, Beach Haven**



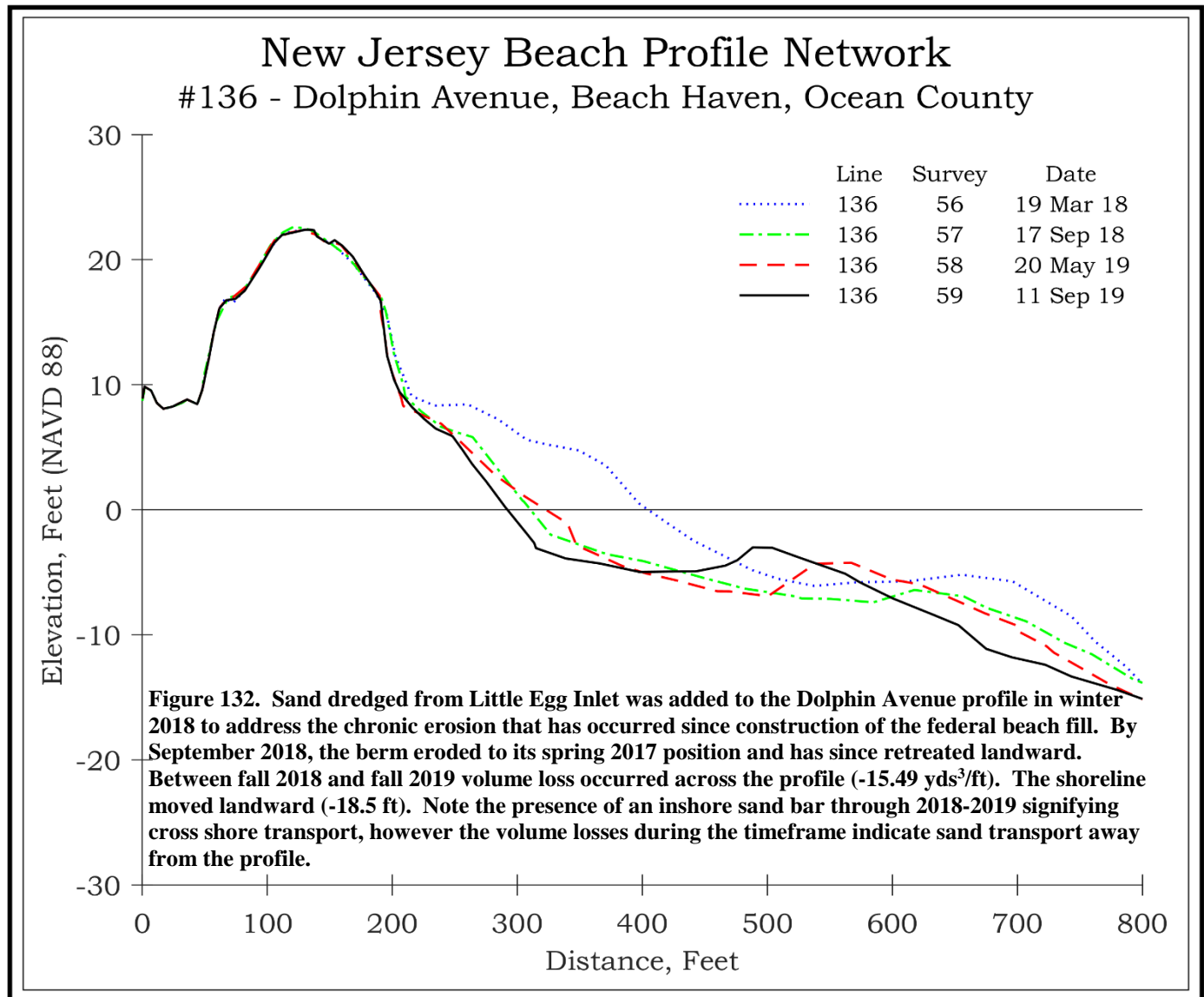
Since fall 2018, sand fencing continued to trap windblown sand at the dune toe at this Beach Haven profile location (left taken September 17, 2018 and right taken September 11, 2019). The sand accumulation reached an elevation of 14 ft NAVD88.



**NJBPN 136 – Dolphin Avenue, Beach Haven**



At Dolphin Avenue, the wide berm established via beach fill in summer 2016 eventually reduced to expose the Chatsworth Ave groin located to the north of the profile. In the past, this site experienced wide swings in shoreline position (left photo taken September 17, 2018 and right photo taken September 11, 2019). In early 2018, the dune crest was shifted landward to accommodate changes to the USACE dune template. The landward dune area was filled with sand and replanted to meet the elevation of the pre-existing dune.

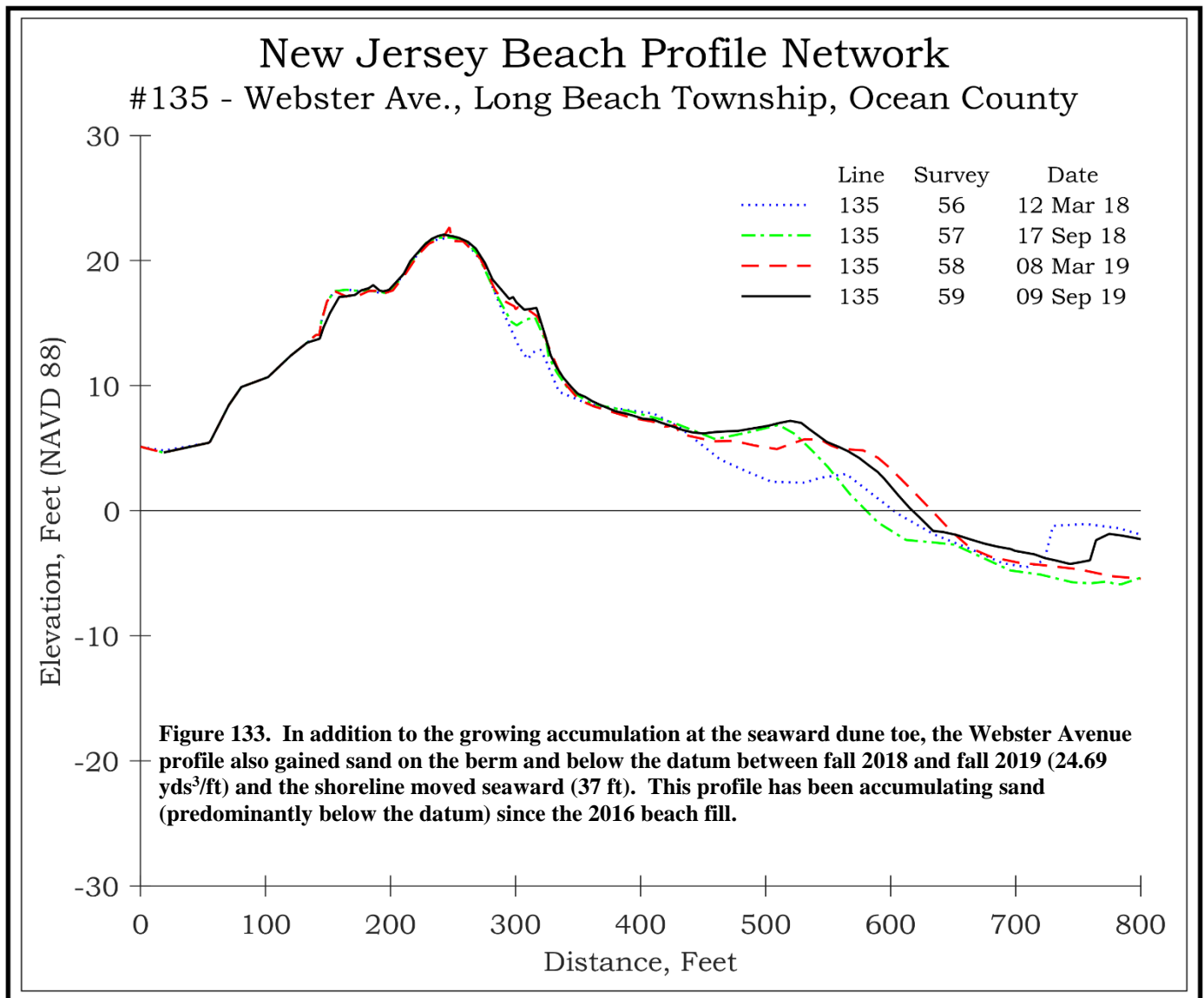




**NJBPN 135 – Webster Avenue, Long Beach Township**



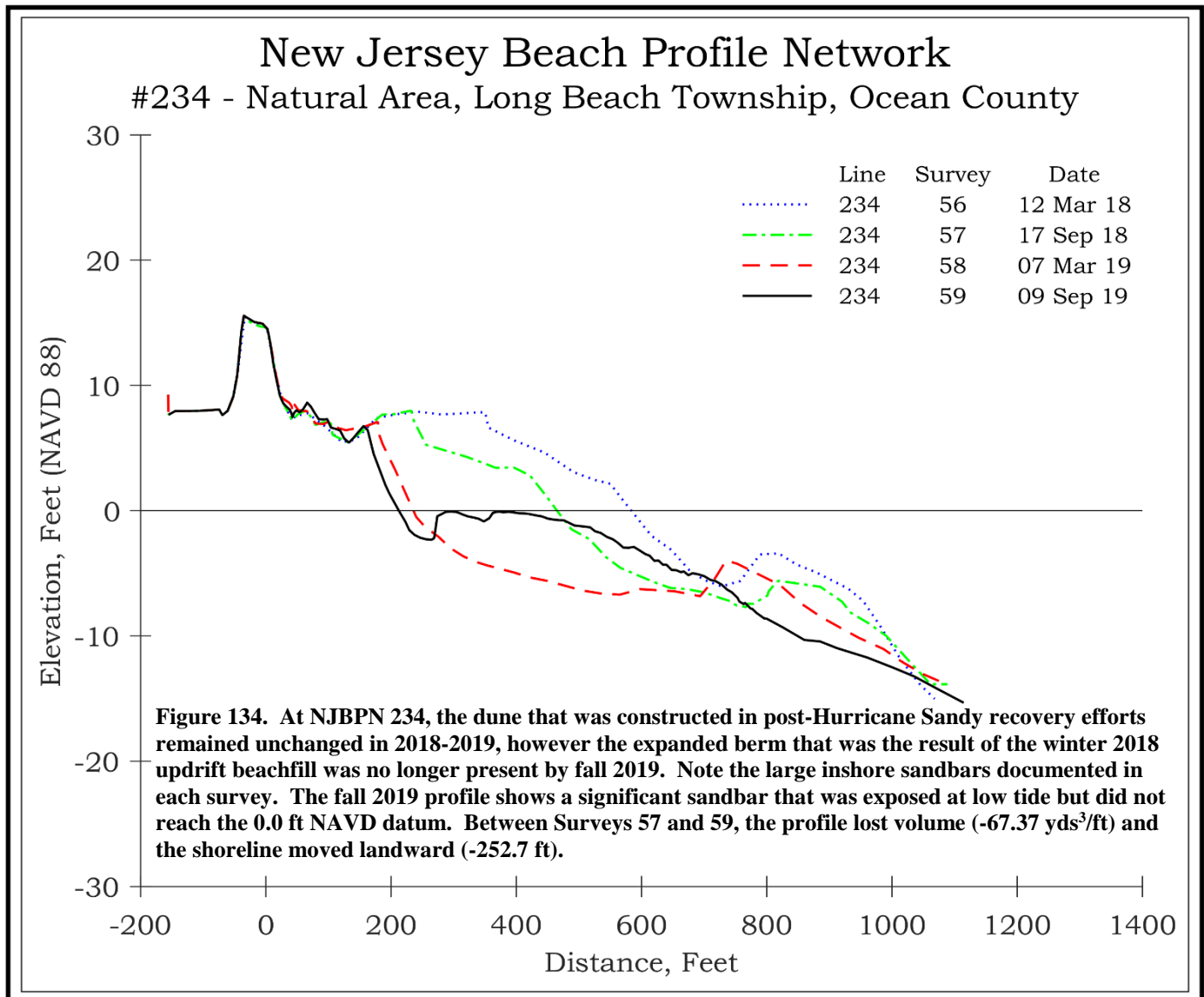
The Webster Avenue photos show the establishment of dune vegetation over the course of the year at the seaward dune toe (left taken September 17, 2018 and right taken September 9, 2019). This sizable accumulation was created from windblown sand trapped by sand fencing starting in early 2017.



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



The Holgate profile lies 200 feet downdrift of the Holgate terminal groin and the photos show the changes near the swash zone (left photo taken September 17, 2018 and right taken September 9, 2019). The fall 2019 photo shows sand that accumulated on the south side of the groin that most likely was transported from the updrift beaches southward around the structure.



## 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 included a 22-ft (NAVD88) high dune and a berm width of 75-ft. The beachfill continued through 2018 for most of the beaches in northern Ocean County NJBPN station beaches and completing in Point Pleasant Beach in July 2019.

On Long Beach Island (LBI), several NJBPN sites received sand in early 2018 in federal repairs or supplemental fills. Also, 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. However, no sand was placed on the beaches on LBI in 2019. The next anticipated nourishment cycle is expected to commence in 2023.

Appendix Tables 6 and 7 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 in northern Ocean County (Point Pleasant Beach, Bay Head, Lavallette, and Seaside Heights) that measured greater than 100 yds<sup>3</sup>/ft for the annual fall to fall survey comparison. The greatest shoreline gain was at Bay Head (NJBPN #154) at 205.5 ft. The site with the greatest volume loss was at the Barnegat Light 10<sup>th</sup> Street location (for the second year in a row) as the site adjusts to changes in the ebb tidal delta associated with the Barnegat Inlet jetties. The site with the most landward movement of the shoreline was at the Natural Area, Long Beach Township at -252.75 ft between fall 2018 and fall 2019. Note the presence of a sand bar that was exposed at low tide but did not reach the 0.0 ft NAVD88 datum but signifying sand in the littoral system.

The Island Beach State Park profiles showed minor volume gains in the northernmost location (NJBPN #247) from the southerly littoral transport of sand from the federal beachfill. The beaches from Seaside Heights and Seaside Park were filled in January 2019. There also was a minor volume gain at the IBSP site closest to the north Barnegat Inlet jetty (NJBPN #146).