New Jersey Beach Profile Network

Ocean County

Manasquan Inlet to Little Egg Inlet

NJBPN Profile #'s 156 - 234

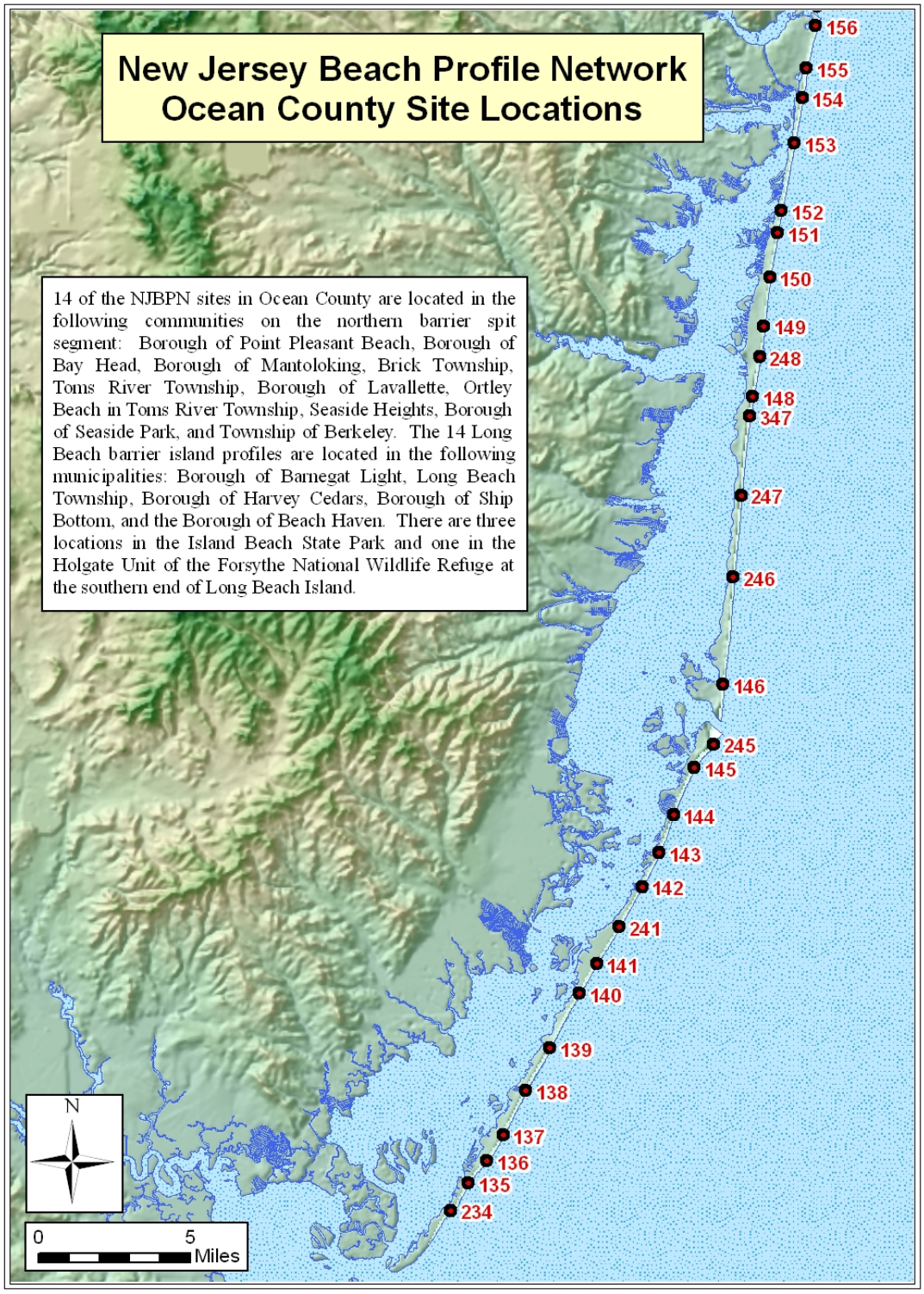

Figure 46. Locations of the 28 NJBPN profile stations in Ocean County, NJ. A new site was added in the Borough of Seaside Heights (#248).

OCEAN COUNTY SPRING 2008 to FALL 2009

The Ocean County shoreline is divided into two regions. The northern section begins at the Manasquan Inlet along a coastal bluff and continues south into the Borough of Bay Head. The Manasquan Inlet jetties form a barrier that traps sand moving north creating a decent-sized fillet of sand along the Point Pleasant Beach shoreline. The Bay Head beach has issues related to the reversal of long-shore transport and the impact the community beach groins have on generating off-sets in the width of the beach adjacent to each groin. These off-sets frequently reverse making the beach shrink and grow several times per year. Extreme duration events in one dominant direction have produced dune scarps on the down-drift side of each groin that prevent owners from reaching the beach and raises their fears of property damage.

Long Beach Island comprises the southern section of the Ocean County shoreline. The US Army Corps of Engineers (ACOE) returned to Long Beach Island in 2010 following the 2007 Surf City beach fill and placed sand in Harvey Cedars. The addition of catch baskets to both the dredge and discharge pipeline have prevented the recurrence of the $15.7 million expense to search the new deposit for military hardware that were previously disposed at sea. Work commenced in Spring 2010 at Harvey Cedars and moved north from the point where the 2007 project ended. This work completes another section of the Long Beach Island project, but the real estate issues still plague more rapid progress elsewhere on Long Beach Island. Work resumed in Surf City in June 2011 between 11th and 24th Streets restoring storm damage to the 2007 project with some of the $4.88 million the ACOE had available in FY 11.

Northern Ocean County has not been the recipient of any large-scale beach nourishment since the ACOE project stalled due to the same real estate issues that plagued Long Beach Island relating to the need to obtain a construction easement from each property owner with title extending to the high tide line. Fortunately the Northern Ocean County segment of the NJ coast is the most stable in the long term. There are also no openings between the Barnegat Inlet and Manasquan Inlet in this stretch of the shoreline. The developed section lies in a zone where the shoreline experiences a near annual balance in sand transport parallel to the shoreline. There is no trend where sand is moved dominantly north or south leaving sections of the beach to erode constantly as the process continues. The fact that sand moves north or south with equal frequency if not with equal intensity; the average is zero net transport away from any single community.

Storm damage from the 2009-2010 winter season was addressed with dune augmentation (Ortley Beach), bulldozing of beach material up to restore the dune erosion (Mantoloking) and other management tools allowed under the NJ State Land Use Program's General Beach Maintenance Permits awarded to coastal communities.

The 2009-2010 storm season produced three FEMA declarations covering the multi-day northeaster in mid-November 2009, mid-March 2010, and a snow storm in late December 2009. The beaches in Ocean County were not eligible for "Category G" funding for public recreational and park areas. With a decline in Federal dollars available for beach nourishment and the issues related to the real estate problem, the best chance for moderate-scale projects would be a consortium of adjoining communities partnering with the State of New Jersey under the NJ Shore Protection Act funding to do a 75% cost State co-sponsored project.

Below are links to the US Army Corps of Engineers Philadelphia website for the direct information on Ocean County.

http://www.nap.usace.army.mil/cenap-dp/projects/factsheets/NJ/4CG_NJShoreProtection_ManasquantoBarnegat.pdf

TREND ANALYSES AND SUMMARY:

Selected locations were chosen to review trends in shoreline changes for Ocean County. The trend analysis for Site 154 in Mantoloking shows small gains in the shoreline though no beach fills have been conducted over the past 23 years. Site 145 at Barnegat Light is located adjacent to the south jetty at Barnegat Inlet on Long Beach Island. Here, huge advances in the shoreline have been recorded due to the completion of the new jetty system. At Site 138, the gains that occurred in 2009 were reversed in 2010. The overall trend for the Ocean County shoreline shows gains that are due to the addition of sand through beach nourishment and results in better protection for structures adjacent to the open ocean.

A new site was established at Franklin Avenue in Seaside Heights (Site 248) along the boardwalk of this tourist-friendly municipality because of the heavy recreational use of the beach. The beach is the dominant feature with no dune system seaward of the bulkhead and boardwalk. Seasonal and summer losses were recorded during the short monitoring time period.

The summary of Ocean County's shoreline would not be complete without mention of issues stemming from the Long Beach Island fill project. On Long Beach Island the arduous task of sieving the entire 2007 deposit of sand on Surf City and Ship Bottom was finished in 2010. In early 2010 the project continued with placement of sand on Harvey Cedars beach adding another mile or so of shore to the proposed $71 million beach restoration plan for the island. This time both the dredge and the discharge pipeline were fitted with catch baskets designed to intercept all objects greater than 2 inches in size. At the time of writing this summary the dredge is in the act of restoring the Surf City northern end of the 2007 project with a maintenance effort. While not a significant percentage of the Ocean County oceanfront coastline, the sand volume added will act to enhance shoreline widths both north and south of the project limits.

Real estate issues and continuing appropriation shortfalls to the ACOE remain major obstacles to finishing this project any time soon. While northern Ocean County has what is probably the most stable segment of the NJ coast, there are narrow beaches and low dunes that may not withstand a 10-year storm event. A 100-foot wider beach and a 20-foot dune system would go a long way in preventing substantial storm damages. The same issue applies to much of Long Beach Island in spite of work completed in Harvey Cedars and Surf City plus a naturally wider beach in Barnegat Light Borough.

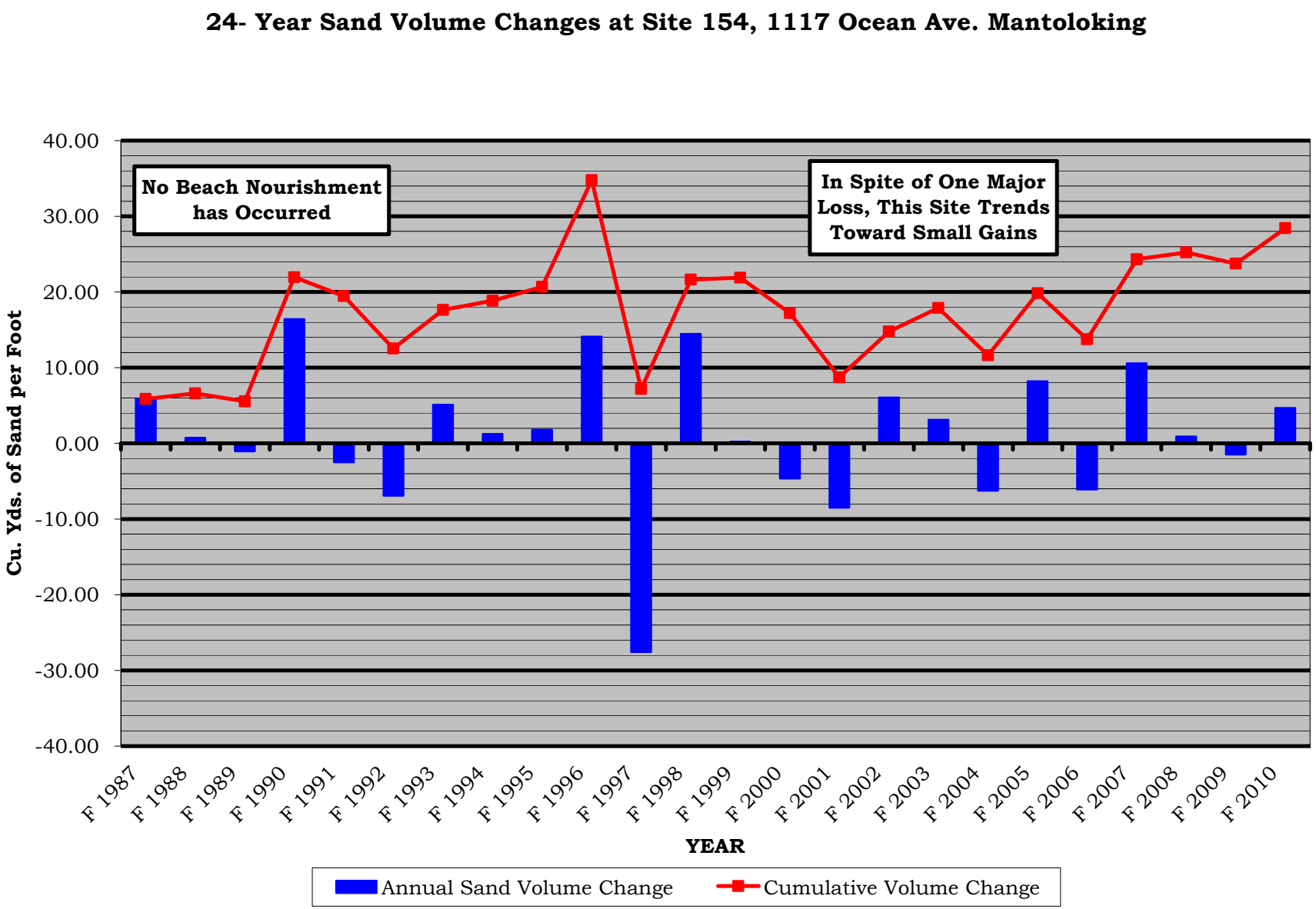

Figure 47. The Borough of Mantoloking has focused time and funding on maintaining the dunes along the 2 miles of shoreline with considerable success. Very little new sand has been introduced. Reliance has been placed on the harvesting of recovering berm sand to augment damaged dunes on an annual basis. The winter of 2010 – 2011 was the first in several years where no work was needed. The site varied in sand volume without much of a pattern in spite of two significant storms in 1991 and late 1992 (both negative above). The 1997 loss is unexplained by storm effects. In 24 years this site is about 29 cubic yards of sand per foot of shoreline ahead of the 1986 situation.

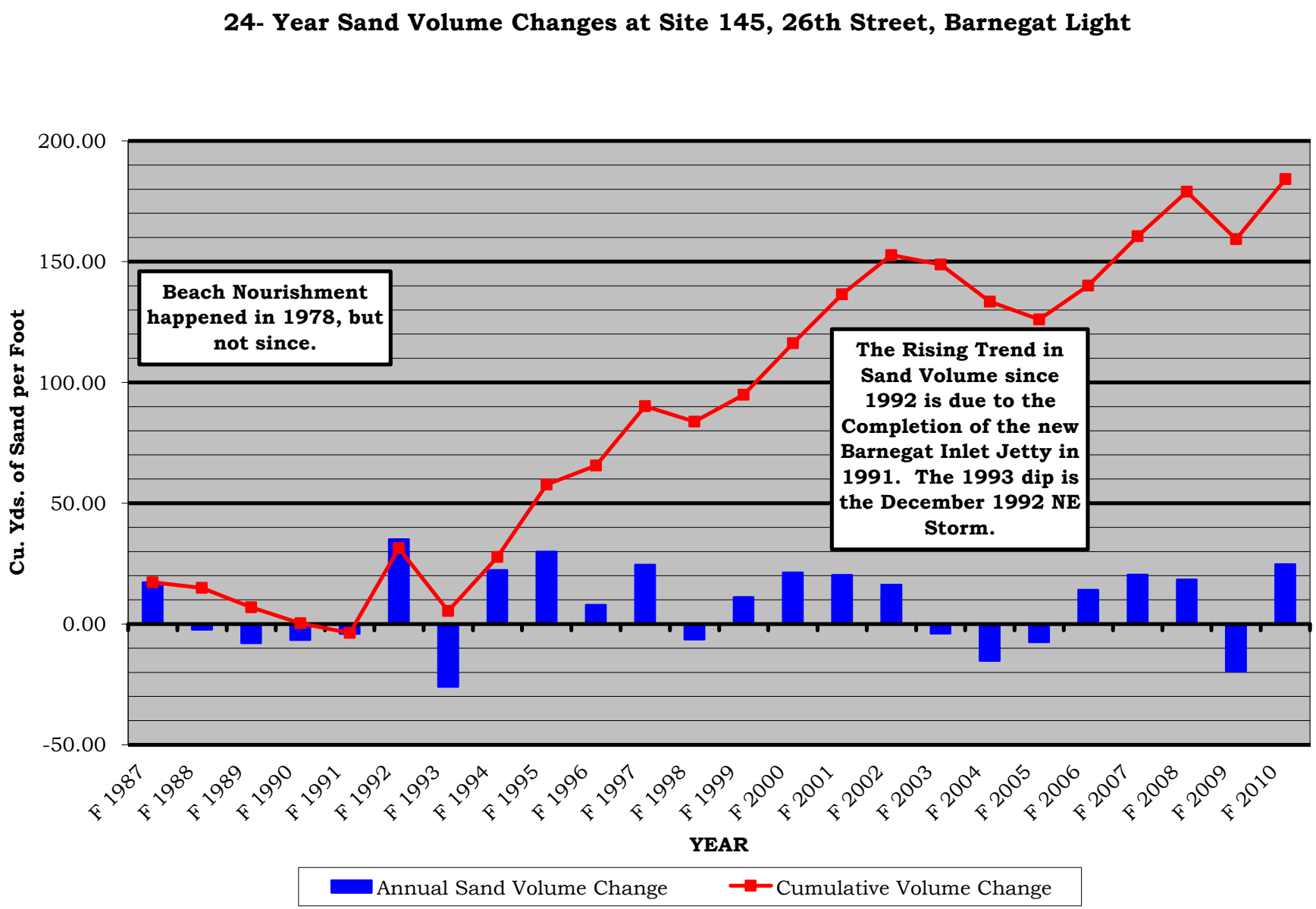

Figure 48. The new jetty at Barnegat Inlet produced a huge advance in the entire Borough shoreline since 1992. The amount declines slowly from 2,400 feet of advance at the jetty to about 60 feet at 26th Street. That advance added 184 cy/ft to the site's sand volume. The blue bars show that for 24 years, only 5 were negative since the jetty was finished in the new alignment in 1991.

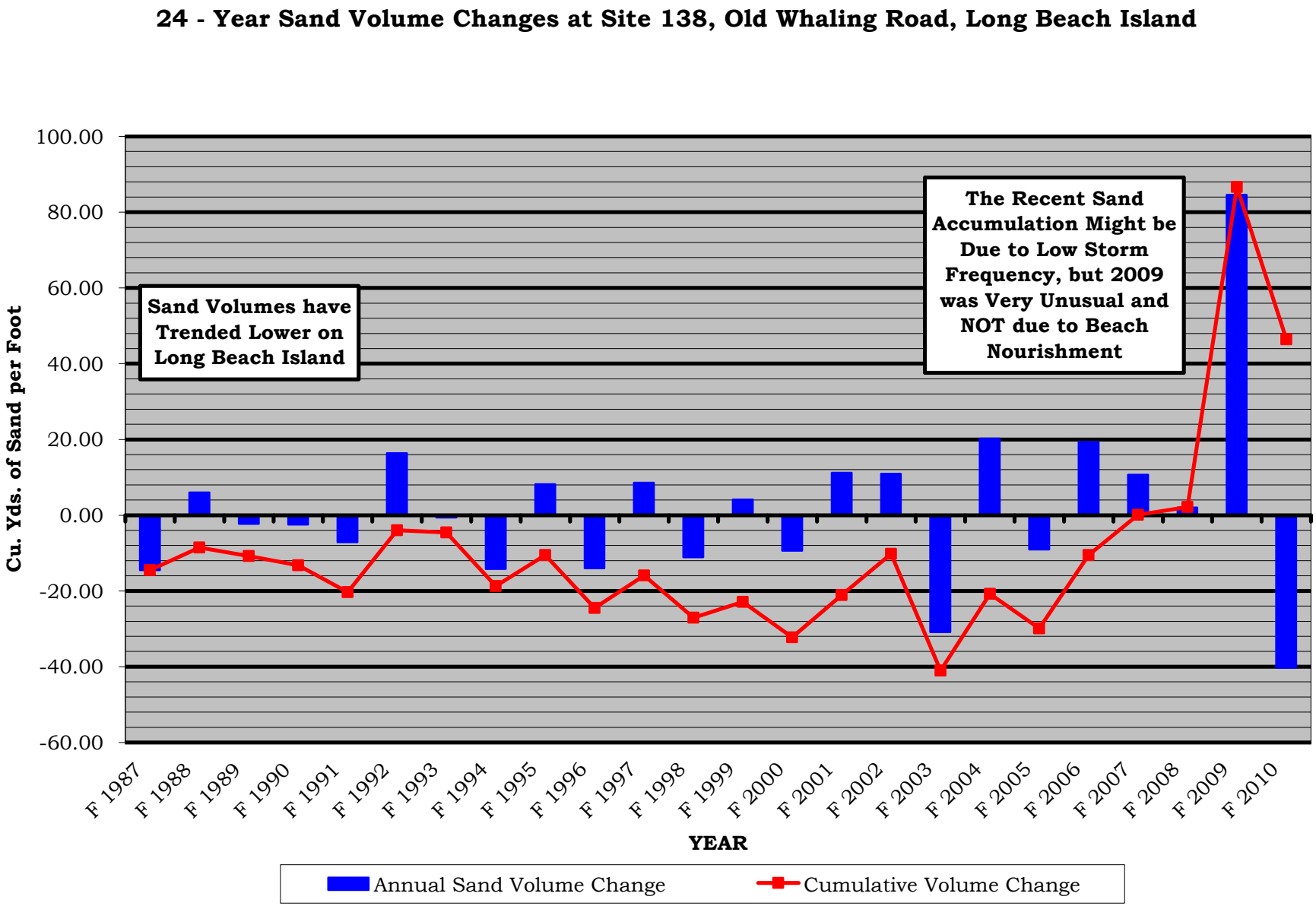

Figure 49. The Old Whaling Road site was selected to illustrate a relative degree of instability present along the Long Beach Island shoreline. The 1991 completion of the realignment of the Barnegat Inlet south jetty produced massive accumulation at the two northern sites surveyed (145 and 245). The dramatic gain seen in 2009 was partially reversed in 2010. This site remains in positive sand volume territory based on the 2009 sand volume increase.

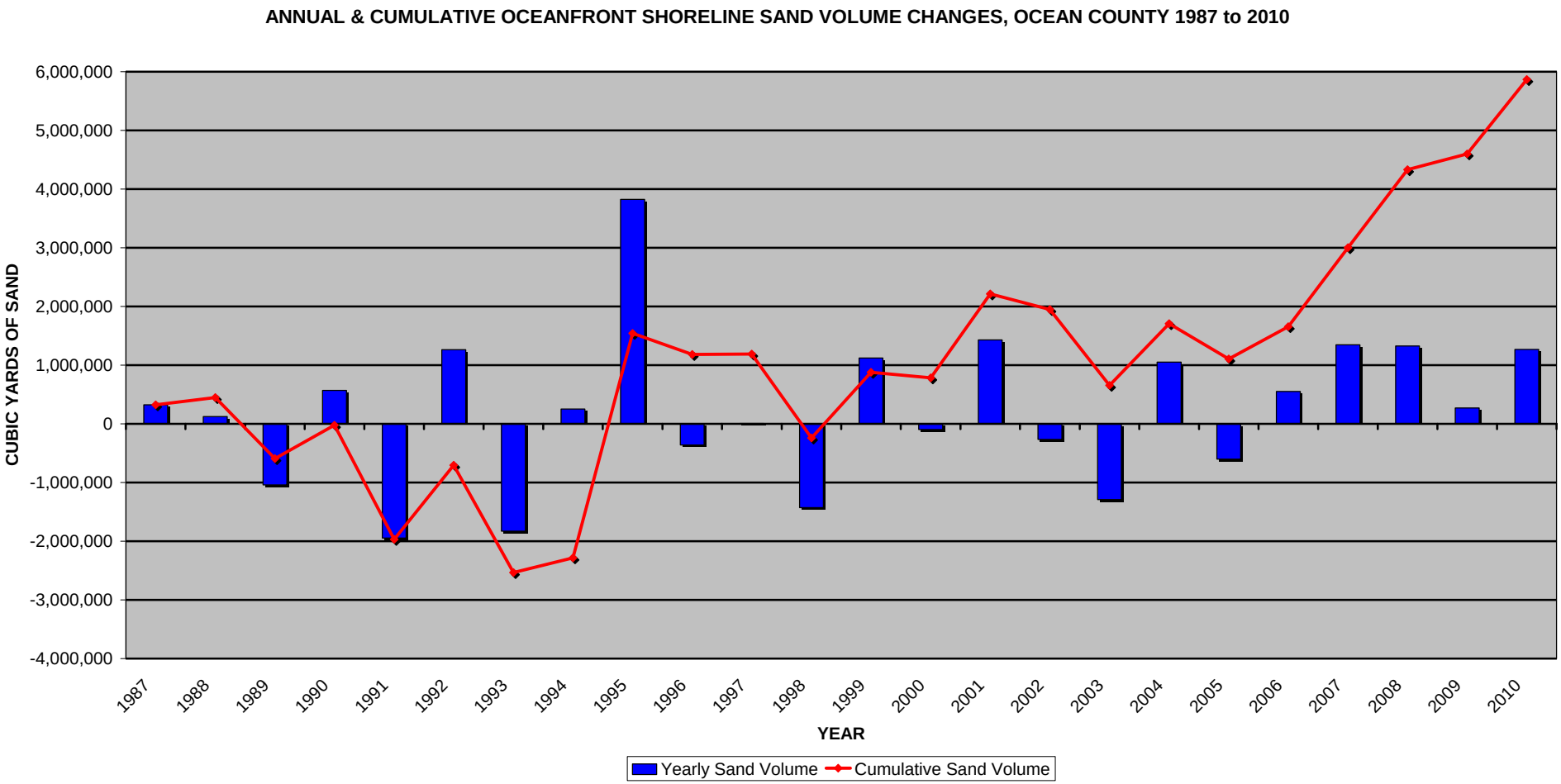

Figure 50. The 1995 Harvey Cedars beach fill project reversed the negative trend in Ocean County. Recently the trend has been upward driven in part by the impact of the ACOE Surf City project in 2007, continuing in 2010 and 2011. This was the first Federal project in Ocean County. 24 years of sand volume changes at the 28 sites in Ocean County shows the recent impact of beach restoration efforts on Long Beach Island. The cumulative trend line moved from about 1,000,000 cubic yards of sand gained between 1986 and 2005 (the last year of net loss) and 5,867,000 cubic yards gained by 2010. The advance in sand quantity by 4.8 million cubic yards is not due to natural accretion since there is no source for that much material derived from the natural environment. In spite of these gains being substantially smaller than those seen in Monmouth and Cape May Counties, this represents an advance in shoreline protection for some of this county's communities.

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WATER STREET, POINT PLEASANT BEACH - SITE 156

Photo taken September 23, 2009. View to the south.

The Manasquan Inlet is located a short distance to the north of this site, therefore often reflects dominant littoral transport toward or away from the inlet jetties. This view to the south shows the wide beach with no dune that lies in front of the Point Pleasant Beach boardwalk.

Photo taken October 19, 2010. View to the south.

Comparing the profiles over the year, the profile location lost volume (-40.14 cu yd/ft) and the shoreline moved landward (-30.08 ft).

New Jersey Beach Profile Network

#156 - Water Street, Point Pleasant, Ocean County

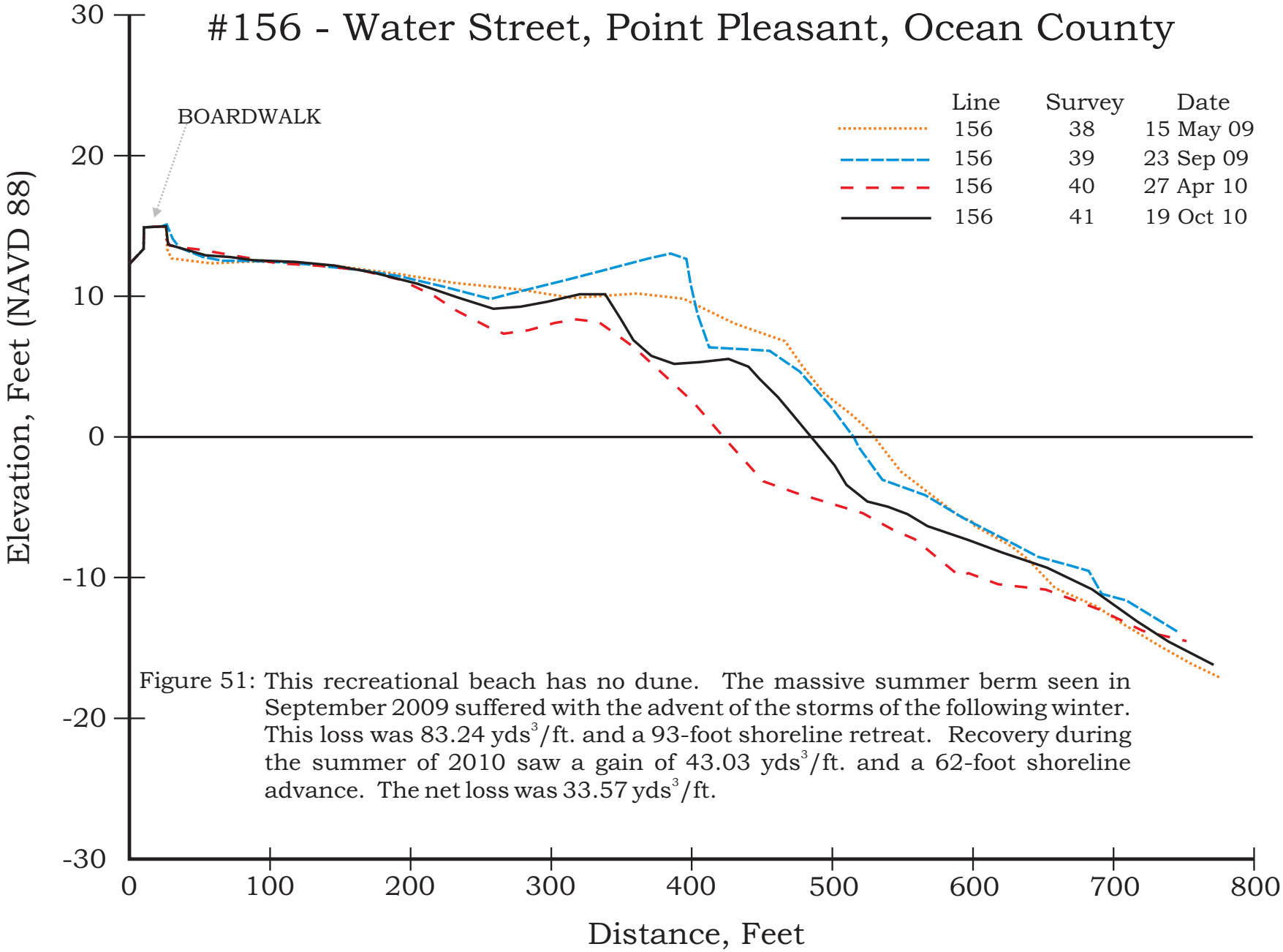

Figure 51: This recreational beach has no dune. The massive summer berm seen in September 2009 suffered with the advent of the storms of the following winter. This loss was 83.24 yds^3/ft. and a 93-foot shoreline retreat. Recovery during the summer of 2010 saw a gain of 43.03 yds^3/ft. and a 62-foot shoreline advance. The net loss was 33.57 yds^3/ft.

MARYLAND AVENUE, POINT PLEASANT BEACH - SITE 155

Photo taken September 23, 2009. View to the south.

This location has a substantial dune which has gained sand despite a relatively narrow beach. This cyclic nature of the groin offsets is most common in the Northern Ocean County coast because there is a near equal incidence of littoral sand transport in either direction. Northeast storms move sand south, followed by the southeast winds acting to move sand back to the north. The groin offset simply shows which direction is dominant at any one time.

Photo taken October 19, 2010. View to the south.

Comparing the profiles over the year, the profile location gained volume (13.64 cu yd/ft) and the shoreline moved seaward (12.11 ft).

New Jersey Beach Profile Network

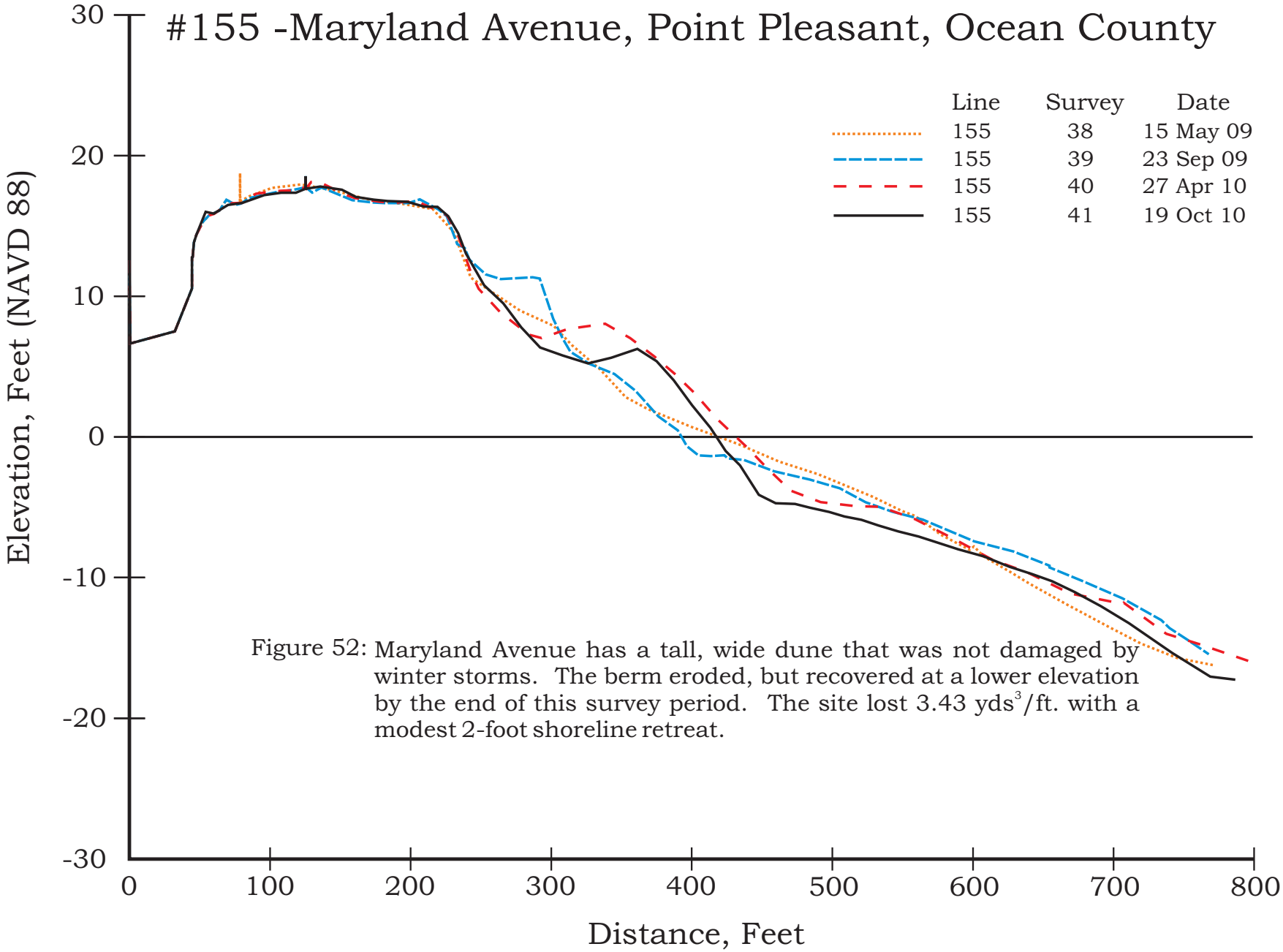

Figure 52: Maryland Avenue has a tall, wide dune that was not damaged by winter storms. The berm eroded, but recovered at a lower elevation by the end of this survey period. The site lost 3.43 yds^3/ft. with a modest 2-foot shoreline retreat.

JOHNSON AVENUE, BAY HEAD - SITE 154

Photo taken September 23, 2009. View to the south.

The Bay Head beach contains a rock revetment below the dune crest that has not been exposed since December 1992.

Photo taken October 19, 2020. View to the south.

Comparing the profiles over the year, the profile location gained volume (4.69 cu yd/ft) and the shoreline moved seaward (8.26 ft).

New Jersey Beach Profile Network

#154 - Johnson Avenue, Bay Head, Ocean County

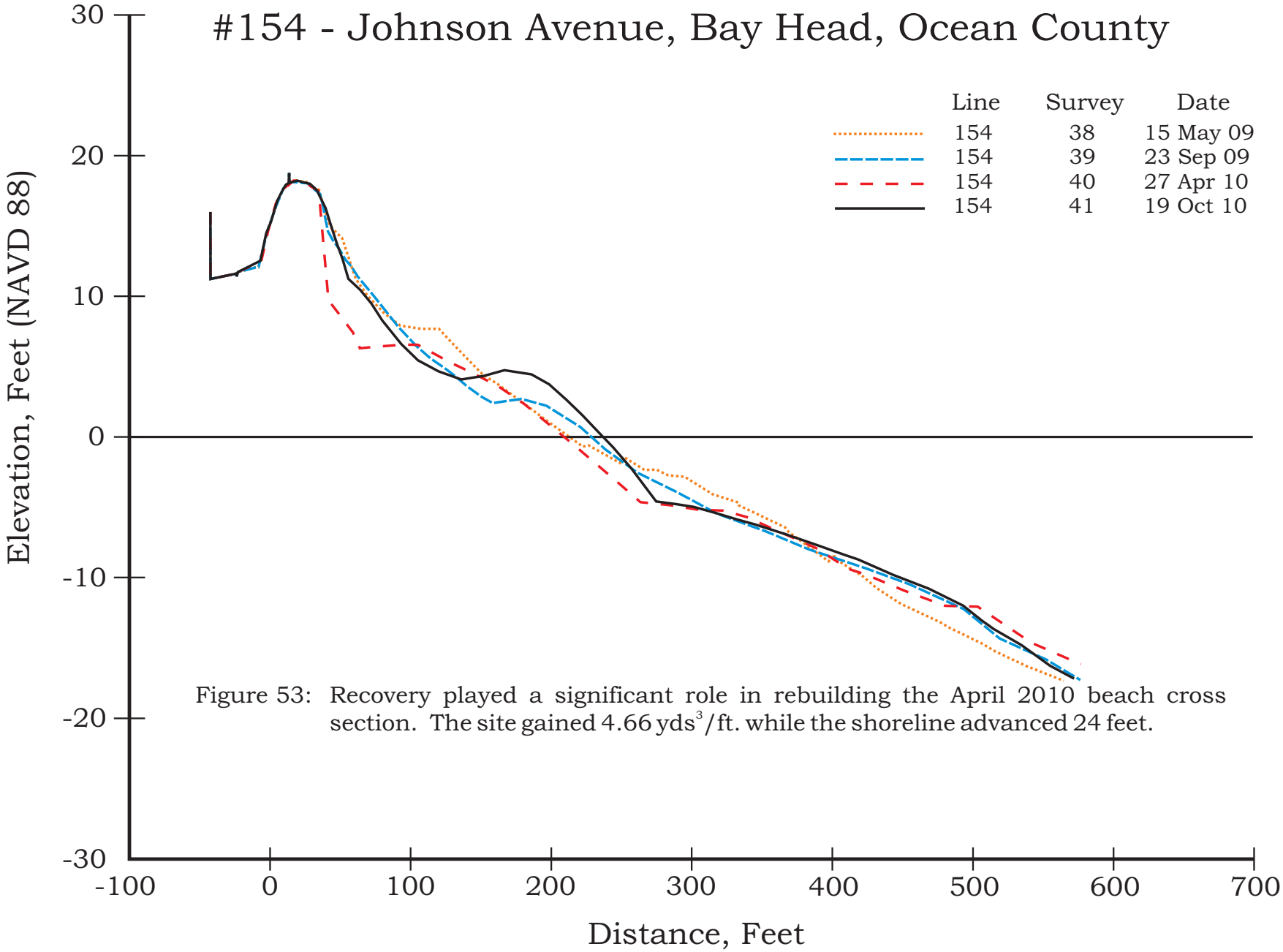

Figure 53: Recovery played a significant role in rebuilding the April 2010 beach cross section. The site gained 4.66 $yds^3/ft.$ while the shoreline advanced 24 feet.

1117 OCEAN AVENUE, MANTOLOKING - SITE 153

Photo taken September 15, 2009. View to the south.

The Mantoloking site is surveyed quarterly for the specific interests of the municipal officials along with four other sites along the Borough oceanfront. In October 2008, this site was restored by transferring sand from the berm up the seaward dune slope to restore winter erosion into the dune. Winter events in 2009 produced significant dune retreat and prompted another restoration effort with the bulldozer. The fall 2009 required a community-wide bulldozing effort to move between 7 and 10 cubic yards of sand back to the dune.

Photo taken October 19, 2010. View to the south.

Comparing the profiles over the year, the profile location gained volume (4.26 cu yd/ft) and the shoreline moved landward (-13.74 ft).

New Jersey Beach Profile Network

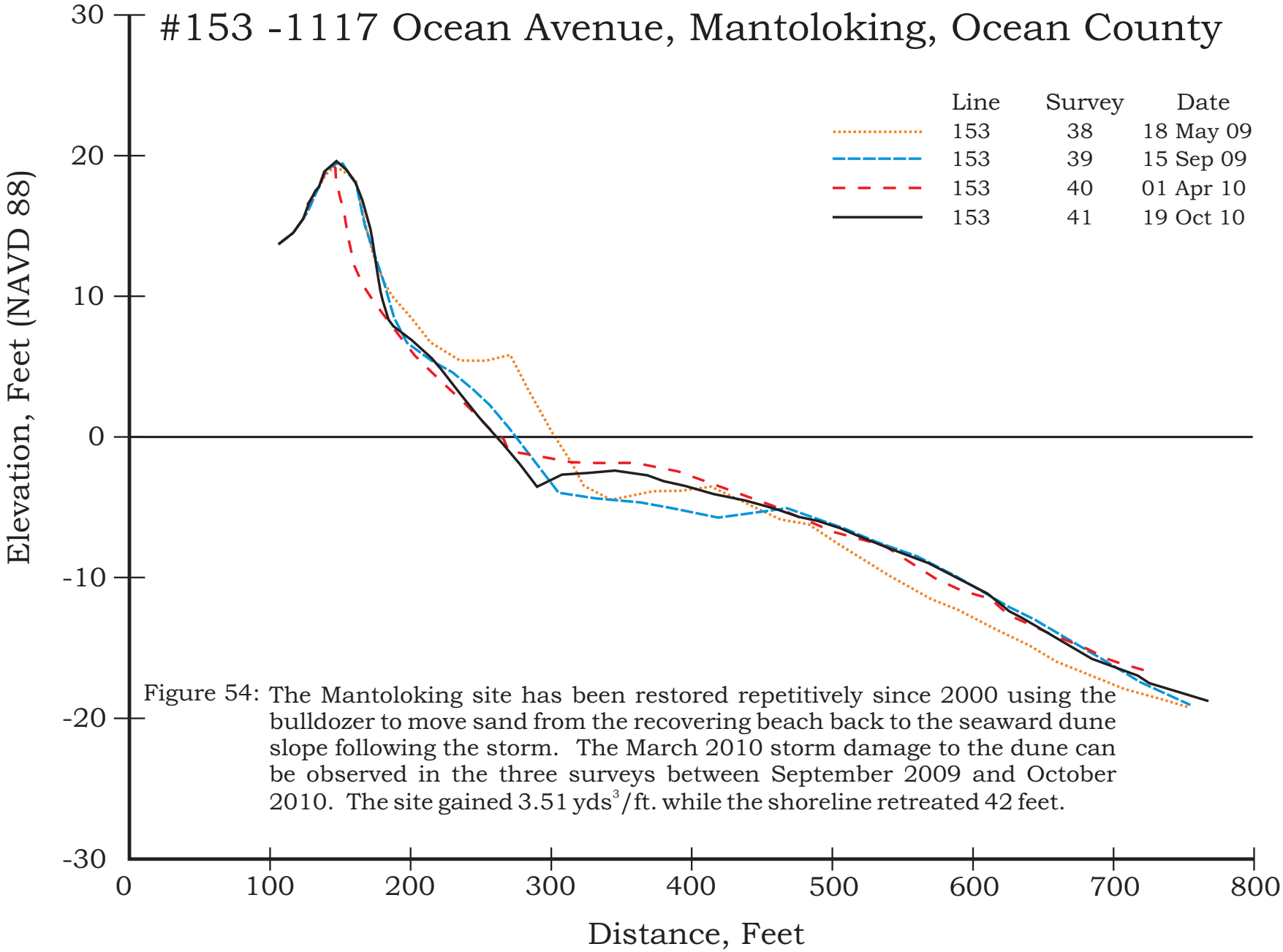

Figure 54: The Mantoloking site has been restored repetitively since 2000 using the bulldozer to move sand from the recovering beach back to the seaward dune slope following the storm. The March 2010 storm damage to the dune can be observed in the three surveys between September 2009 and October 2010. The site gained 3.51 $yds^3/ft.$ while the shoreline retreated 42 feet.

PUBLIC BEACH #3, BRICK TOWNSHIP - SITE 152

Photo taken September 24, 2009. View to the north.

The public beach in Brick Township has developed a sizable dune between the beach and the recreational area parking lot and service building. This site was surveyed prior to fall 2009 storms commencing.

Photo taken October 19, 2010. View to the north.

Comparing the profiles over the year, the profile location lost volume (-16.9 cu yd/ft) and the shoreline moved landward (-0.5 ft).

New Jersey Beach Profile Network

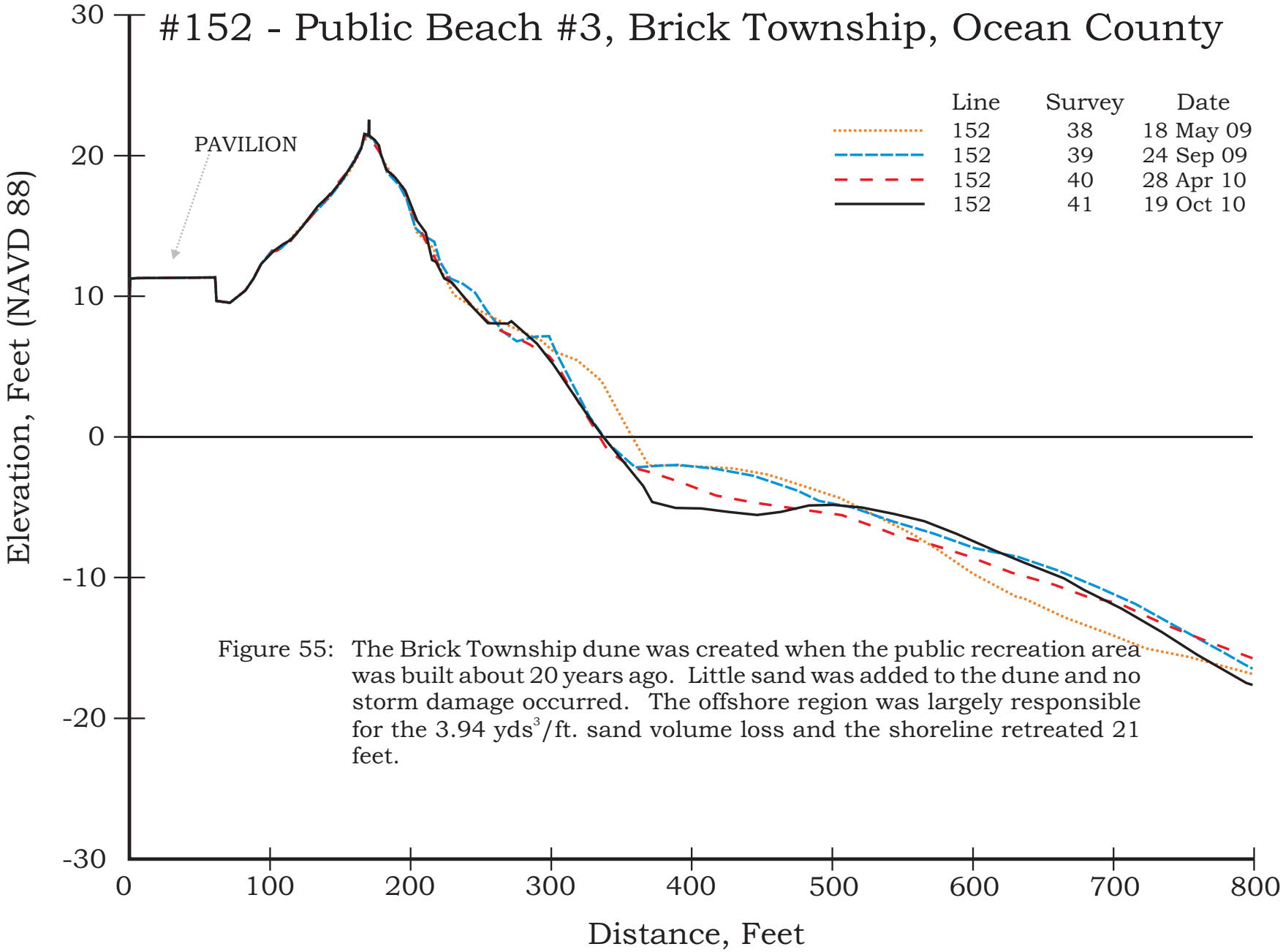

Figure 55: The Brick Township dune was created when the public recreation area was built about 20 years ago. Little sand was added to the dune and no storm damage occurred. The offshore region was largely responsible for the 3.94 yds^3/ft. sand volume loss and the shoreline retreated 21 feet.

1st AVENUE, NORMANDY BEACH - SITE 151

Photo taken September 24, 2009. View to the south.

The dune toe is vulnerable to storm wave activity. No large-scale beach fills have been carried out at this location.

Photo taken October 19, 2010. View to the south.

Comparing the profiles over the year, the profile location lost volume (-6.16 cu yd/ft) and the shoreline moved seaward (3.95 ft).

New Jersey Beach Profile Network

#151 - 1st Avenue, Normandy Beach, Ocean County

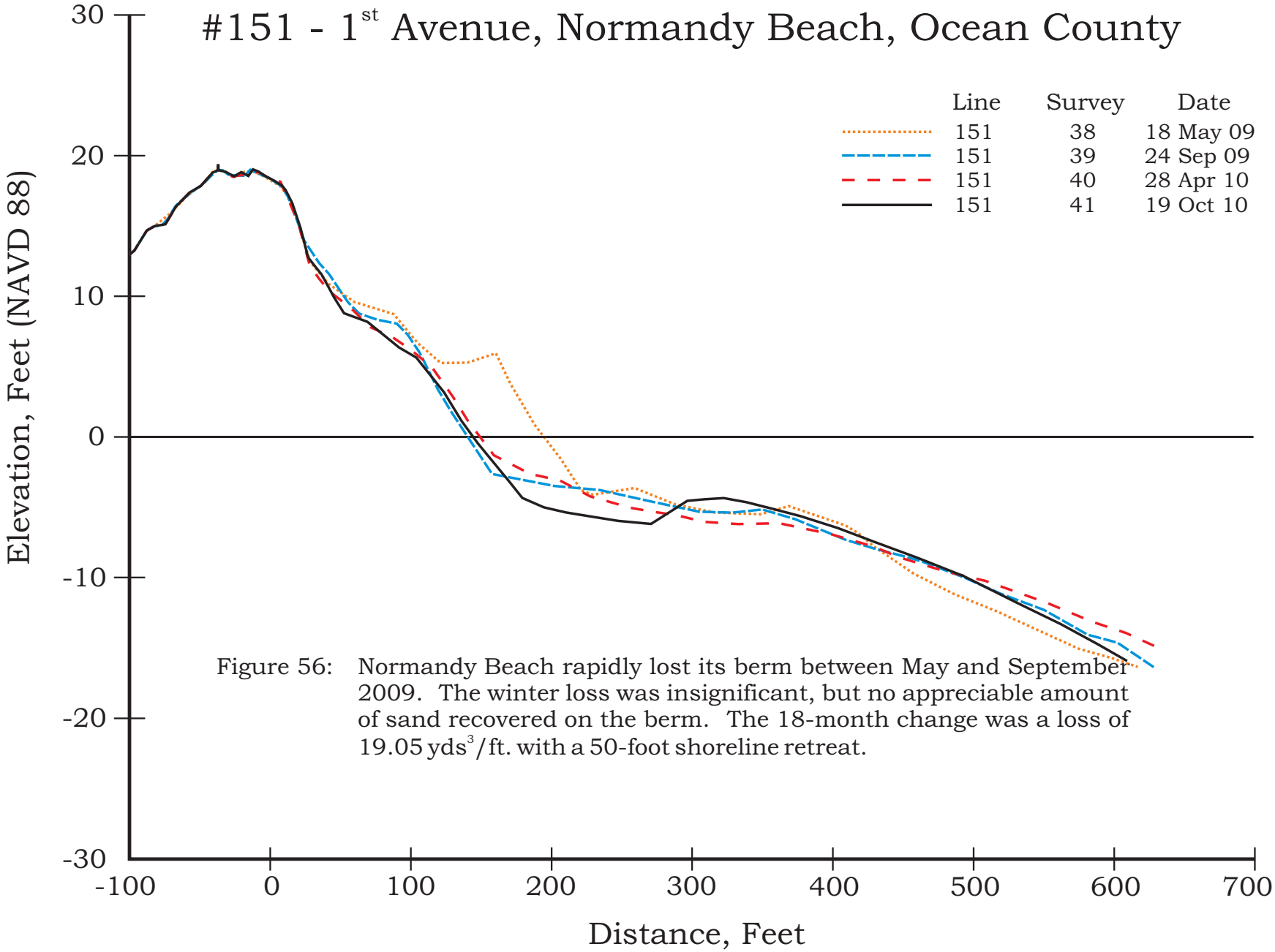

Figure 56: Normandy Beach rapidly lost its berm between May and September 2009. The winter loss was insignificant, but no appreciable amount of sand recovered on the berm. The 18-month change was a loss of 19.05 yds^3/ft. with a 50-foot shoreline retreat.

WHITE AVENUE, LAVALLETTE - SITE 150

Photo taken September 24, 2009. View to the north.

The dry beach in Lavallette is relatively wide and stable.

Photo taken October 19, 2010. View to the north.

Comparing the profiles over the year, the profile location lost volume (-4.25 cu yd/ft) and the shoreline moved landward (-19.35 ft). The survey for the fall 2009 preceded the northeast activity.

New Jersey Beach Profile Network

#150 - White Avenue, Lavallette, Ocean County

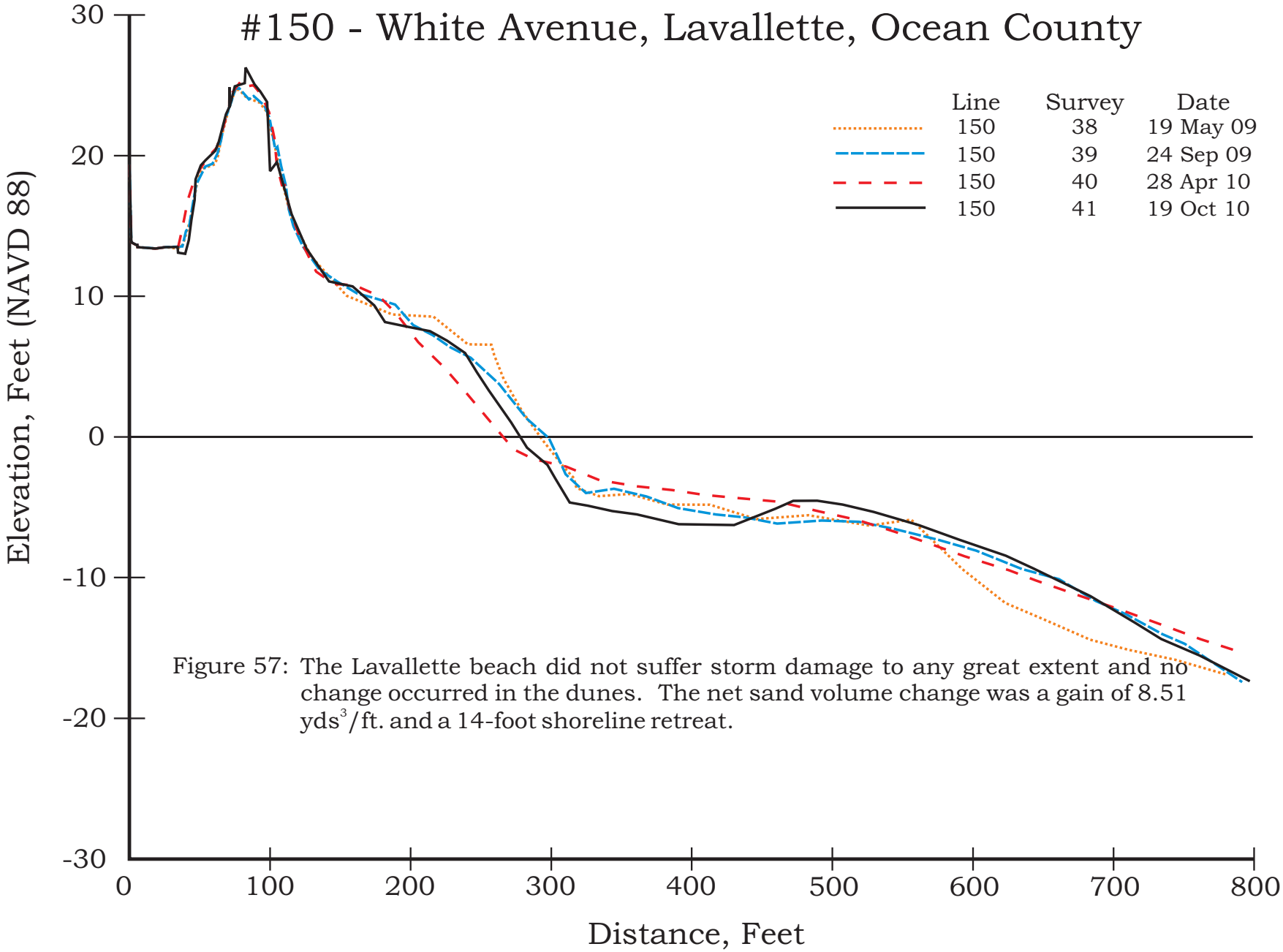

Figure 57: The Lavallette beach did not suffer storm damage to any great extent and no change occurred in the dunes. The net sand volume change was a gain of 8.51 $yds^3/ft.$ and a 14-foot shoreline retreat.

8th AVENUE, ORTLEY BEACH - SITE 149

Photo taken October 6, 2009. View to the north.

The Ortley Beach location has a dune, but the close proximity of the beach road limits the landward extent. This view from the dune toe slope north shows the recreational services pavilon that occupies the dune's natural position.

Photo taken October 13, 2010. View to the north.

Comparing the profiles over the one-year time period, the profile location lost volume (-0.77 cu yd/ft) and the shoreline moved landward (-22.04 ft). Most of the material lost was above the 0.0 ft NAVD88 datum.

New Jersey Beach Profile Network

#149 - 8th Avenue, Ortley Beach, Ocean County

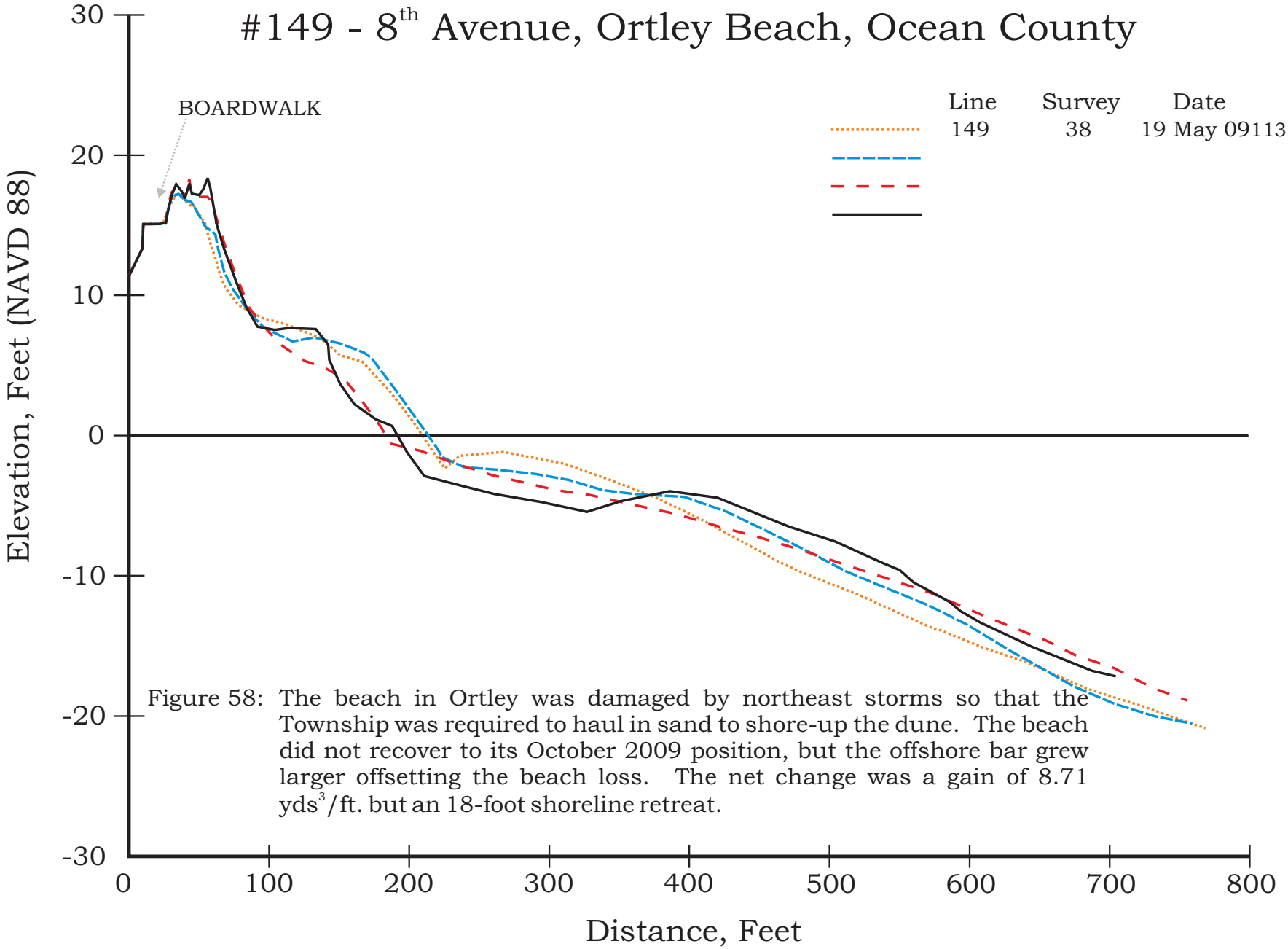

Figure 58: The beach in Ortley was damaged by northeast storms so that the Township was required to haul in sand to shore-up the dune. The beach did not recover to its October 2009 position, but the offshore bar grew larger offsetting the beach loss. The net change was a gain of 8.71 $yds^3/ft.$ but an 18-foot shoreline retreat.

FRANKLIN AVENUE, SEASIDE HEIGHTS - SITE 248

Photo taken October 6, 2009. View to the south.

The Borough of Seaside Heights required a site simply to include this municipal beach in the array of Ocean County communities being monitored. Located between major amusement piers, the beach is fairly wide with no dune at the boardwalk due to intense recreational use.

Photo taken October 13, 2010. View to the south.

This view is toward the southern pier from the boardwalk looking across the beach in the fall. The sand volume change was a seasonal loss for the first winter season followed by continued loss through the summer of 2010. The net was a loss of 31.26 cu yd/ft and the shoreline moved landward 6.0 feet. Only two of the three seasons are represented by surveys in this report.

New Jersey Beach Profile Network

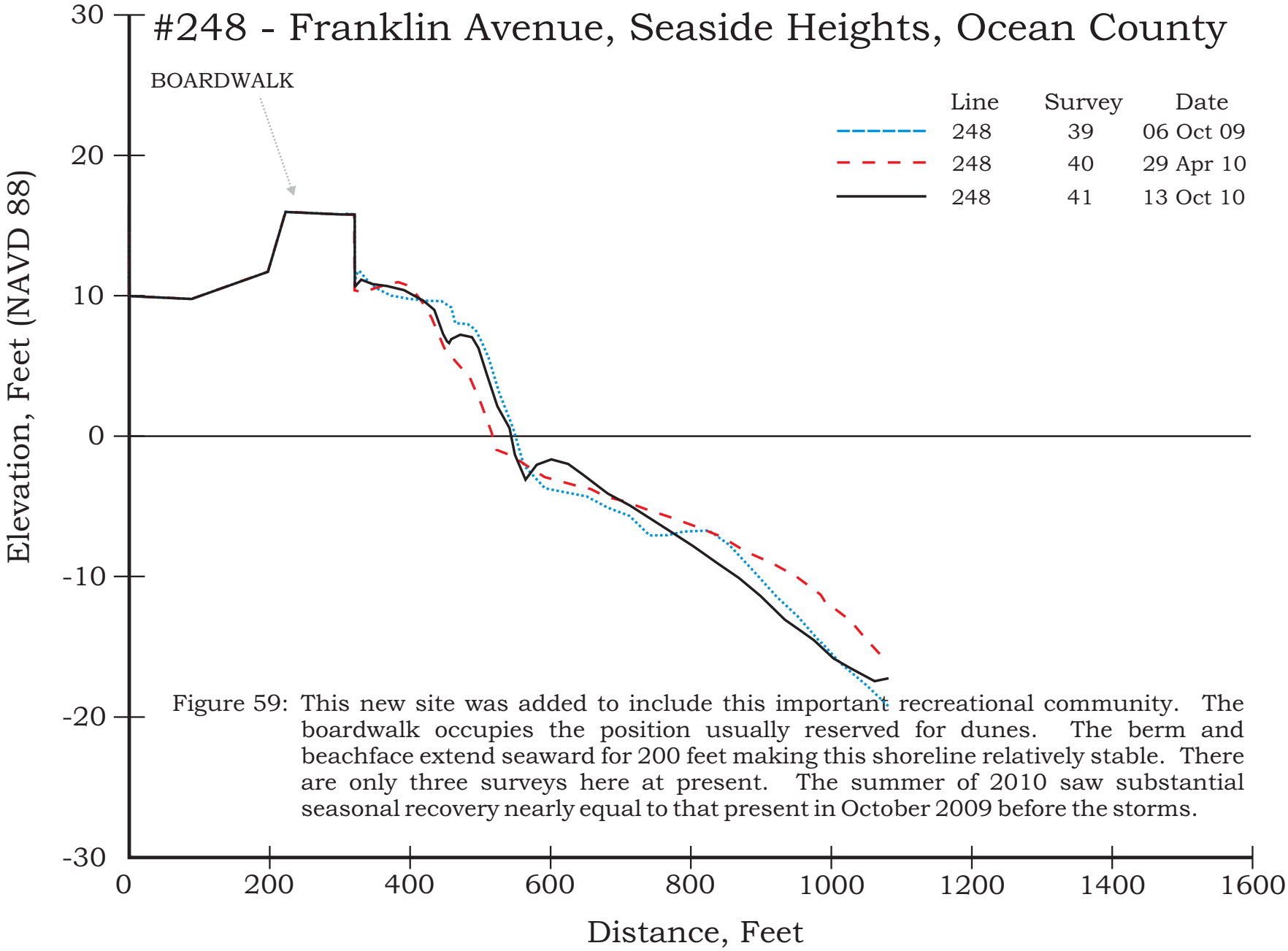

Figure 59: This new site was added to include this important recreational community. The boardwalk occupies the position usually reserved for dunes. The berm and beachface extend seaward for 200 feet making this shoreline relatively stable. There are only three surveys here at present. The summer of 2010 saw substantial seasonal recovery nearly equal to that present in October 2009 before the storms.

4th AVENUE, SEASIDE PARK - SITE 148

Photo taken October 8, 2009. View to the north.

The Fourth Avenue site in Seaside Park has a low relief, but wide dune protecting the property landward.

Photo taken October 13, 2010. View to the north.

Comparing the profiles over the one-year time period, the profile location remained stable in volume (0.05 cu yd/ft) and the shoreline moved landward (-18.69 ft).

New Jersey Beach Profile Network

#148 - 4th Avenue, Seaside Park, Ocean County

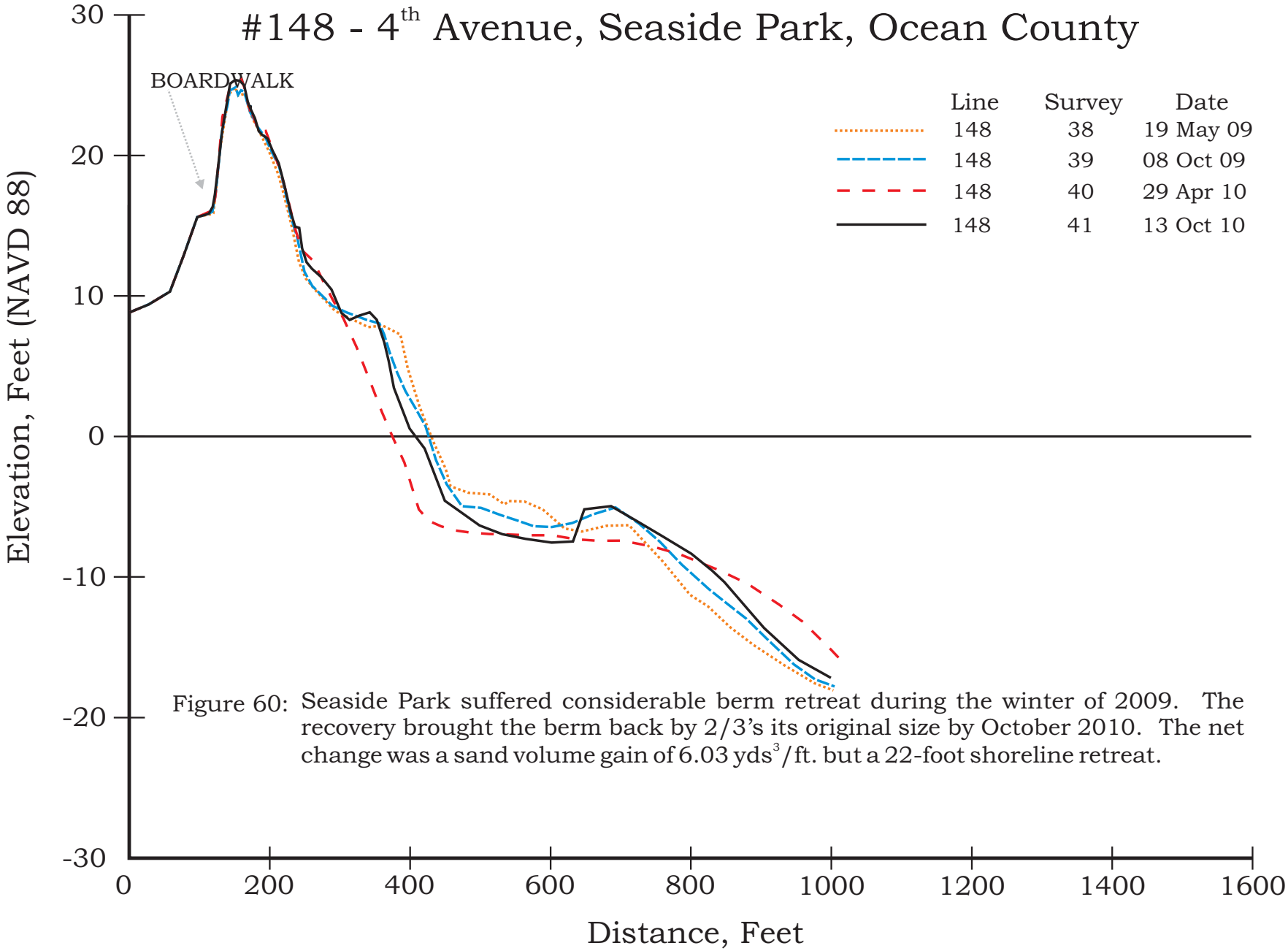

Figure 60: Seaside Park suffered considerable berm retreat during the winter of 2009. The recovery brought the berm back by 2/3's its original size by October 2010. The net change was a sand volume gain of 6.03 yds^3/ft. but a 22-foot shoreline retreat.

6th LANE, MIDWAY BEACH - SITE 347

Photo taken October 8, 2009. View to the north.

This site was moved south off the pedestrian pathway in 2008 to monitor changes in the dune. When the site was established in 1986, there was no dune at all. However, the wind opened the pathway wider removing foredune seen on the earlier profile transects across the dune.

Photo taken October 13, 2010. View to the north.

Comparing the profiles over the year, the profile location lost volume (-11.27 cu yd/ft) and the shoreline moved landward (-5.14 ft).

New Jersey Beach Profile Network

#347 - 6th Lane, Midway Beach, Ocean County

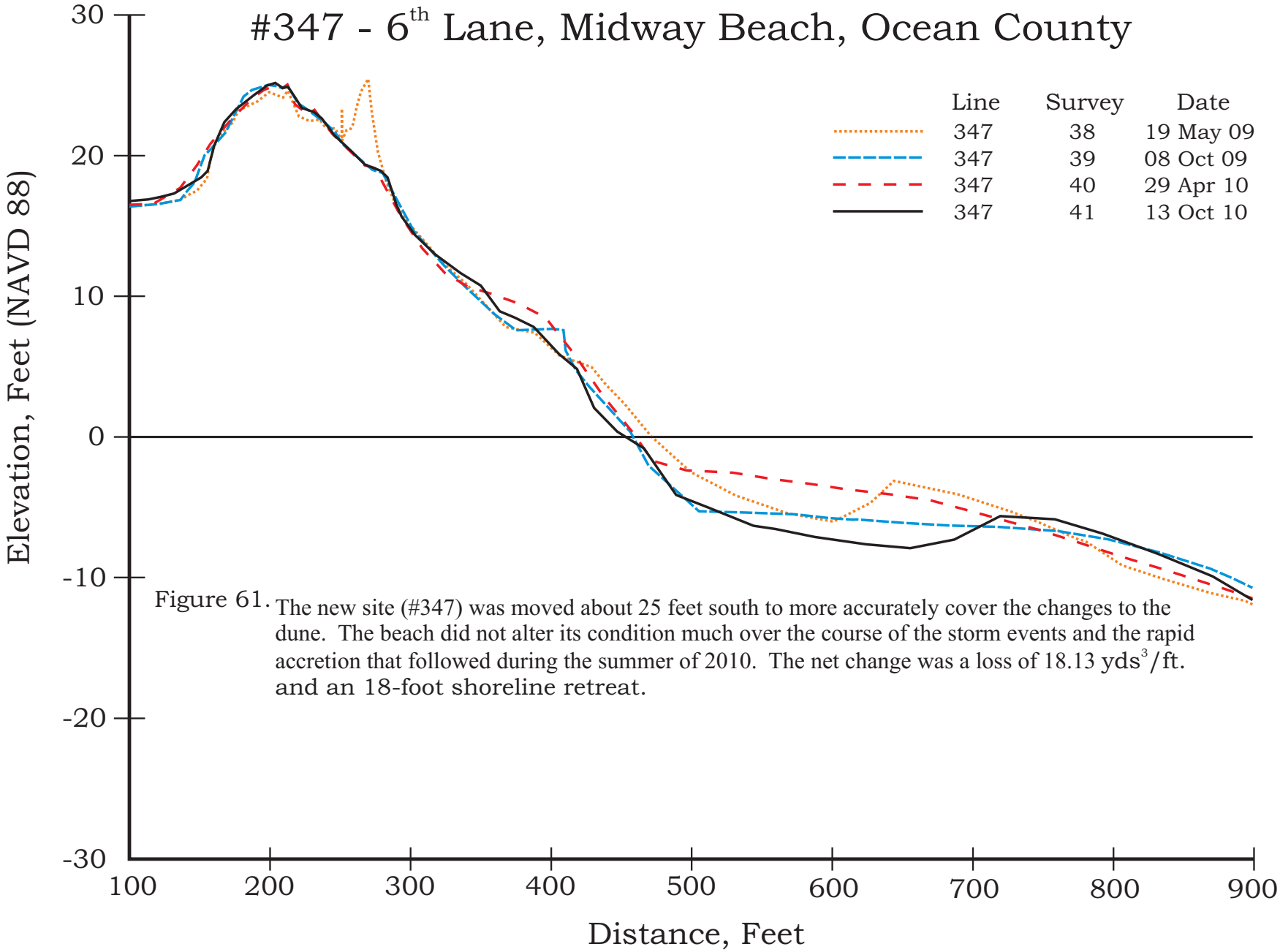

Figure 61. The new site (#347) was moved about 25 feet south to more accurately cover the changes to the dune. The beach did not alter its condition much over the course of the storm events and the rapid accretion that followed during the summer of 2010. The net change was a loss of 18.13 $yds^3/ft.$ and an 18-foot shoreline retreat.

ISLAND BEACH STATE PARK - SITE 246

Photo taken December 15, 2009. View to the south.

The middle profile on Island Beach State Park also traverses a massive dune field to a wide beach. The gap just south is natural and typifies a "blow-out" gap in the dunes. Storm impacts were severe to the dune and beach. The scarp retreat exposed the dune fence posts on the beach, not in the seaward dune toe. The beach followed this retreat landward.

Photo taken November 3, 2010. View to the south.

Comparing the profiles over the year, the profile location gained volume (3.63 cu yd/ft) and the shoreline moved seaward (32.56 ft). Most of the sand gain was above the 0.0 ft NAVD88 datum.

New Jersey Beach Profile Network

#246 - Island Beach State Park, Ocean County

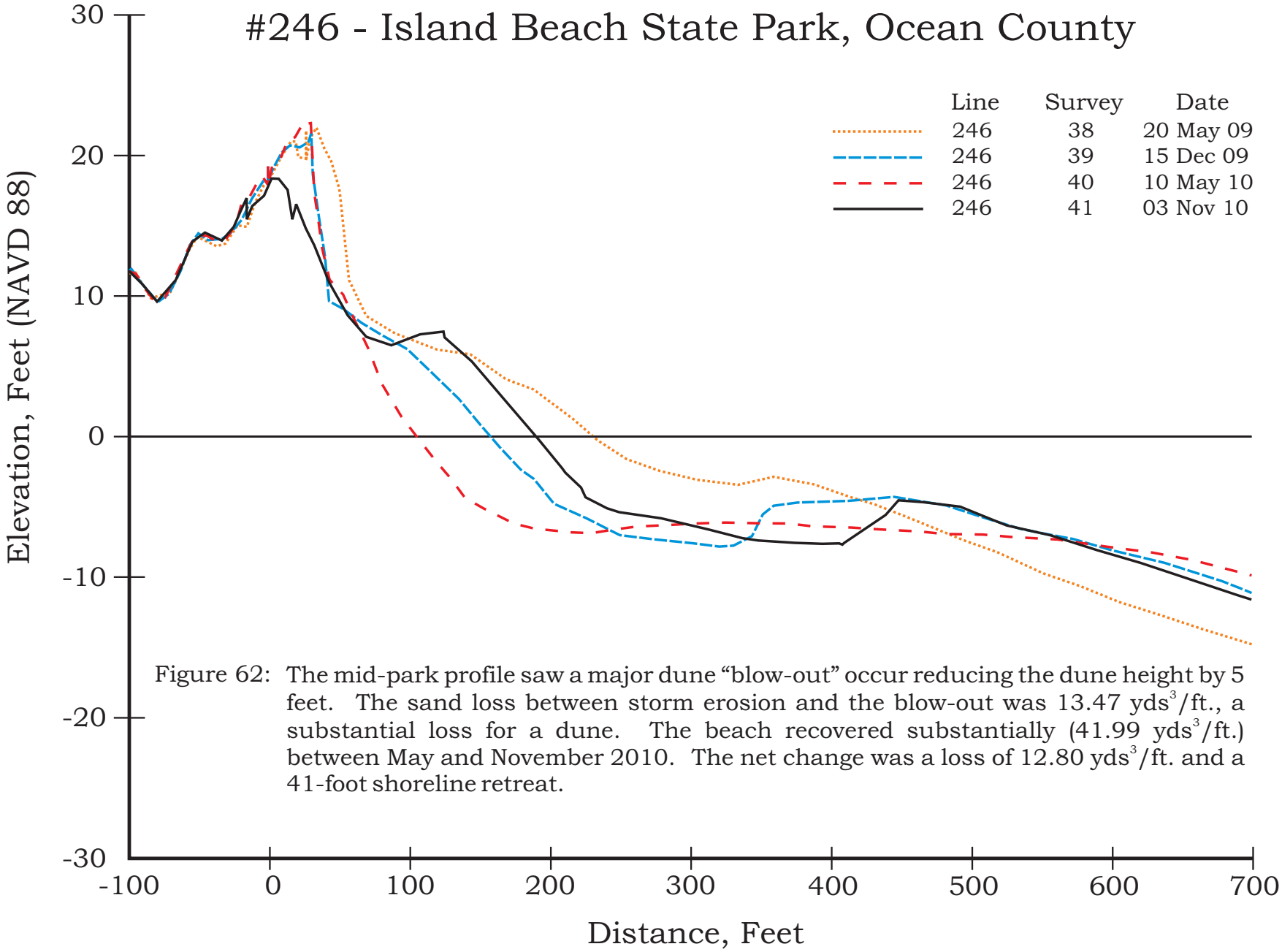

Figure 62: The mid-park profile saw a major dune "blow-out" occur reducing the dune height by 5 feet. The sand loss between storm erosion and the blow-out was 13.47 yds^3/ft., a substantial loss for a dune. The beach recovered substantially (41.99 yds^3/ft.) between May and November 2010. The net change was a loss of 12.80 yds^3/ft. and a 41-foot shoreline retreat.

NORTH END, ISLAND BEACH STATE PARK - SITE 247

Photo taken December 15, 2009. View to the south.

The dunes at this location contain a series of ridges and swales and support a variety of vegetation. Further landward the maritime forest grows on older segments of this shoreline.

Photo taken November 3, 2010. View to the south.

Comparing the profiles over the year, the profile location lost volume (-36.98 cu yd/ft) and the shoreline moved seaward (7.57 ft). Most of the sediment loss was below the 0.0 ft NAVD88 datum.

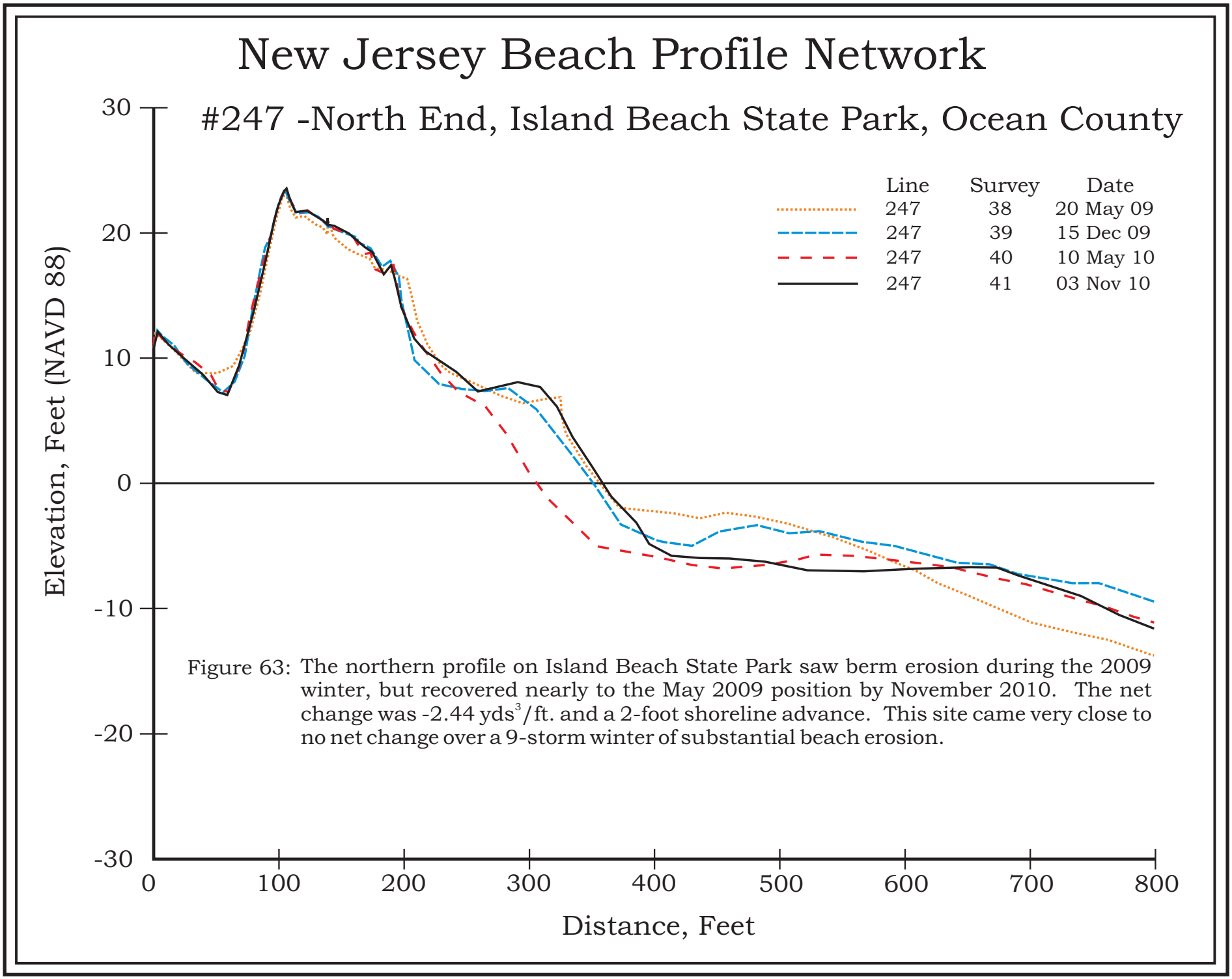

Figure 63: The northern profile on Island Beach State Park saw berm erosion during the 2009 winter, but recovered nearly to the May 2009 position by November 2010. The net change was -2.44 yds^3/ft. and a 2-foot shoreline advance. This site came very close to no net change over a 9-storm winter of substantial beach erosion.

SOUTH END, ISLAND BEACH STATE PARK - SITE 146

Photo taken December 15, 2009. View to the north.

The southern end of the Island Beach State Park has no human modification. The site can only be accessed from the beach. The north jetty of Barnegat Inlet is located immediately to the south and traps sand moving south and produces this expanding beach that has grown wider almost every year since 1986. The jetties at Barnegat Inlet acted to trap sand producing the expansion seen.

Photo taken November 3, 2010. View to the north.

Comparing the profiles over the year, the profile location lost volume (-34.74 cu yd/ft) and the shoreline moved landward (-40.63 ft). Most of the sand lost was below the 0.0 ft NAVD88 datum.

New Jersey Beach Profile Network

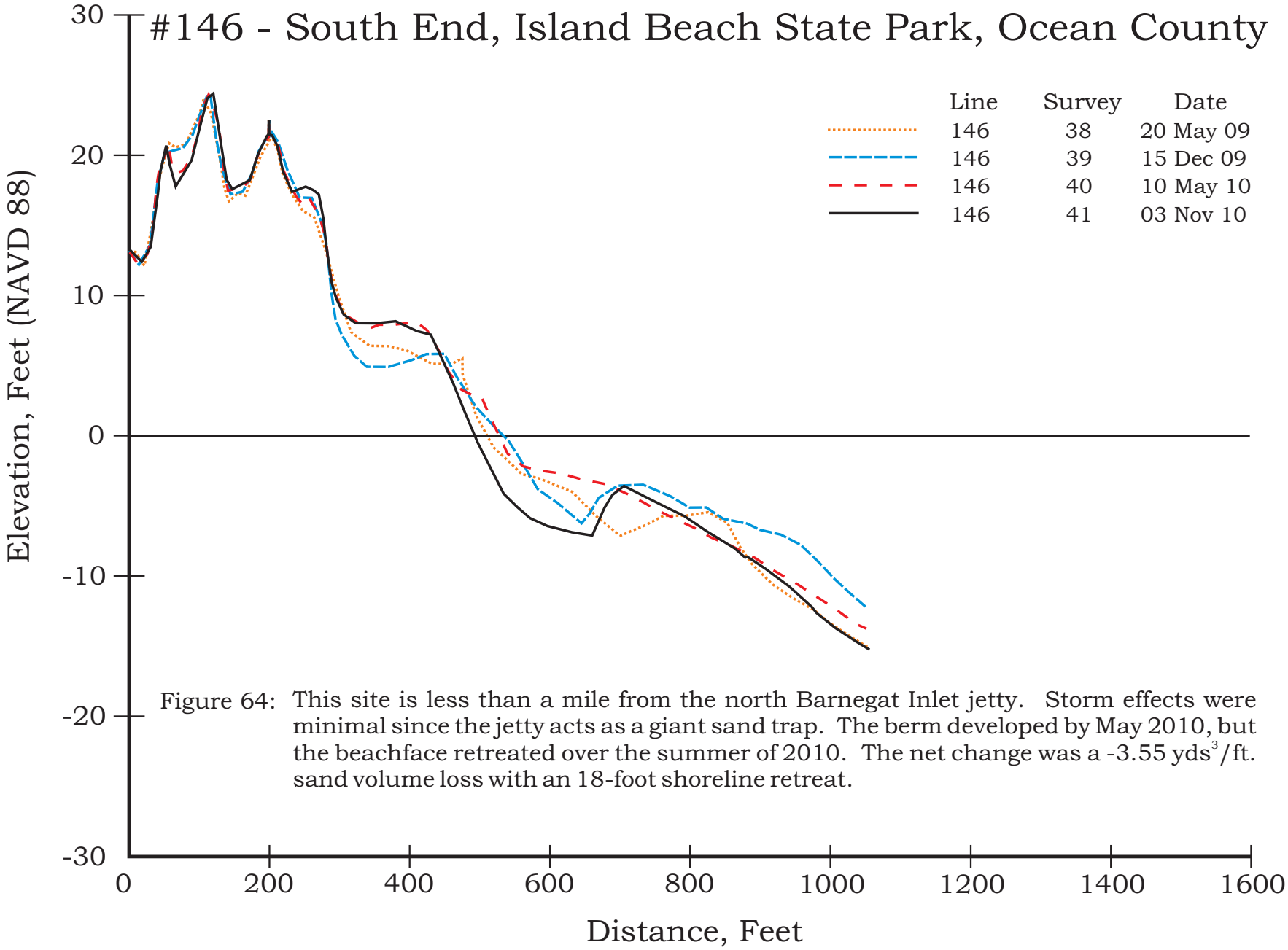

Figure 64: This site is less than a mile from the north Barnegat Inlet jetty. Storm effects were minimal since the jetty acts as a giant sand trap. The berm developed by May 2010, but the beachface retreated over the summer of 2010. The net change was a -3.55 $yds^3/ft.$ sand volume loss with an 18-foot shoreline retreat.

10th STREET, BARNEGAT LIGHT - SITE 245

Photo taken December 29, 2009. View to the north.

In the northern segment of the Barnegat Light Borough shoreline lies in what will become a major maritime forest eventually. This site is positioned just south of the old "arrowhead jetty" configuration. There was a wide beach here previously due to the rock jetty making its attachment to the land nearby, but the new structure makes landfall at the Barnegat Light tower. The intervening distance was converted from tidal sand flats extending away from the main channel to a dry sand beach with a complex of dune ridges extending nearly to the seaward end of the new jetty.

Photo taken October 12, 2010. View to the north.

The offshore portion of the profile was already stressed prior to the fall 2009-winter 2010 storms. Comparing the profiles over the year, the profile location lost volume (-76.26 cu yd/ft) and the shoreline moved landward (-76.12 ft).

New Jersey Beach Profile Network

#245 - 10th Street, Barnegat Light, Ocean County

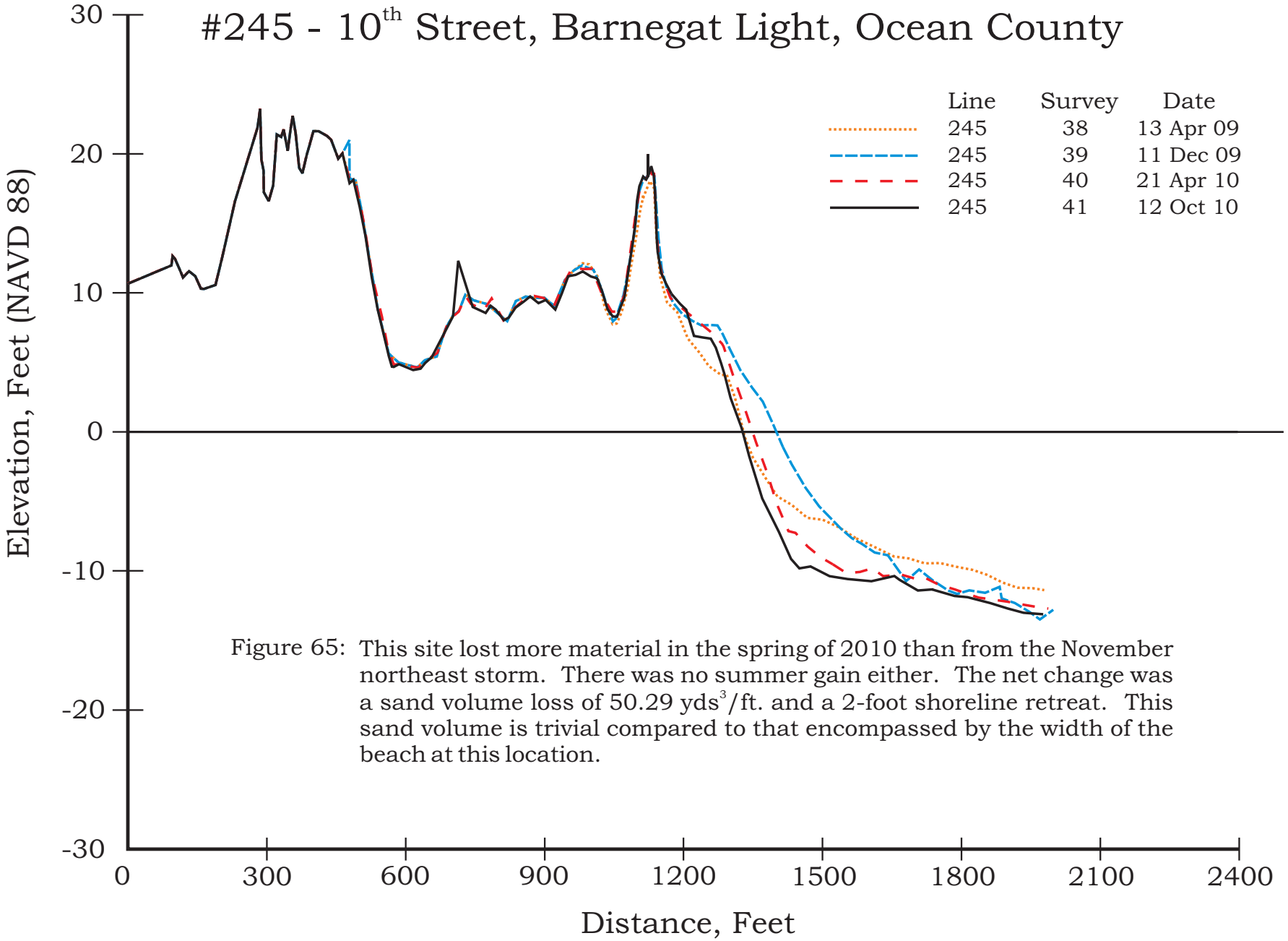

Figure 65: This site lost more material in the spring of 2010 than from the November northeast storm. There was no summer gain either. The net change was a sand volume loss of 50.29 yds^3/ft. and a 2-foot shoreline retreat. This sand volume is trivial compared to that encompassed by the width of the beach at this location.

26th STREET, BARNEGAT LIGHT - SITE 145

Photo taken December 11, 2009. View to the north.

This site in southern Barnegat Light lies within the accretional wedge of shoreline extending from nearly to the La Baia Street site to the Barnegat Inlet jetty that was re-constructed in a new location beginning in 1988.

Photo taken October 12, 2010. View to the north.

Since the jetty was completed in 1990 the shoreline advanced as sand moved onto the beach from the old ebb-tidal delta position offshore. This expansion grows wider to the north, reaching a maximum at the jetty. During the fall of 2009 the trend reversed with the berm getting hit with erosion and a deep trough appearing just offshore. Comparing the profiles over the year, the profile location gained volume (24.78 cu yd/ft) and the shoreline moved seaward (49.14 ft).

New Jersey Beach Profile Network

#145 - 26th Street, Barnegat Light, Ocean County

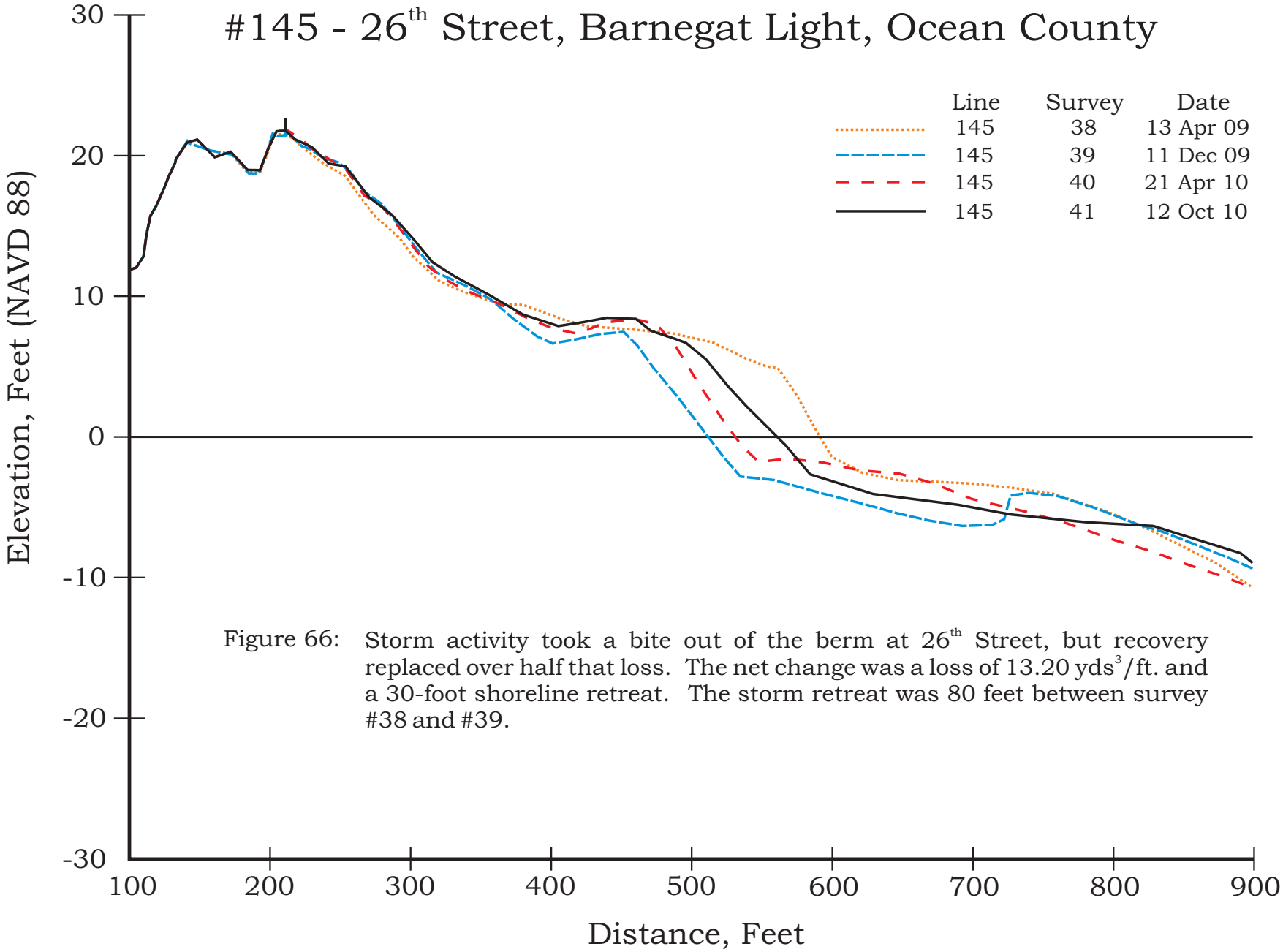

Figure 66: Storm activity took a bite out of the berm at 26th Street, but recovery replaced over half that loss. The net change was a loss of 13.20 yds^3/ft. and a 30-foot shoreline retreat. The storm retreat was 80 feet between survey #38 and #39.

LA BAIA STREET, LOVELADIES - SITE 144

Photo taken December 11, 2009. View to the south.

The dune in Loveladies is much narrower with the homes built into the landward toe so that any breach means that wave energy will accelerate landward into the buildings.

Photo taken October 11, 2010. View to the south.

This site received some of the end material from the USACE beach fill. Comparing the profiles over the year, the profile location gained volume (28.59 cu yd/ft) and the shoreline moved seaward (43.04 ft).

New Jersey Beach Profile Network

#144 - La Baia Street, Loveladies, Ocean County

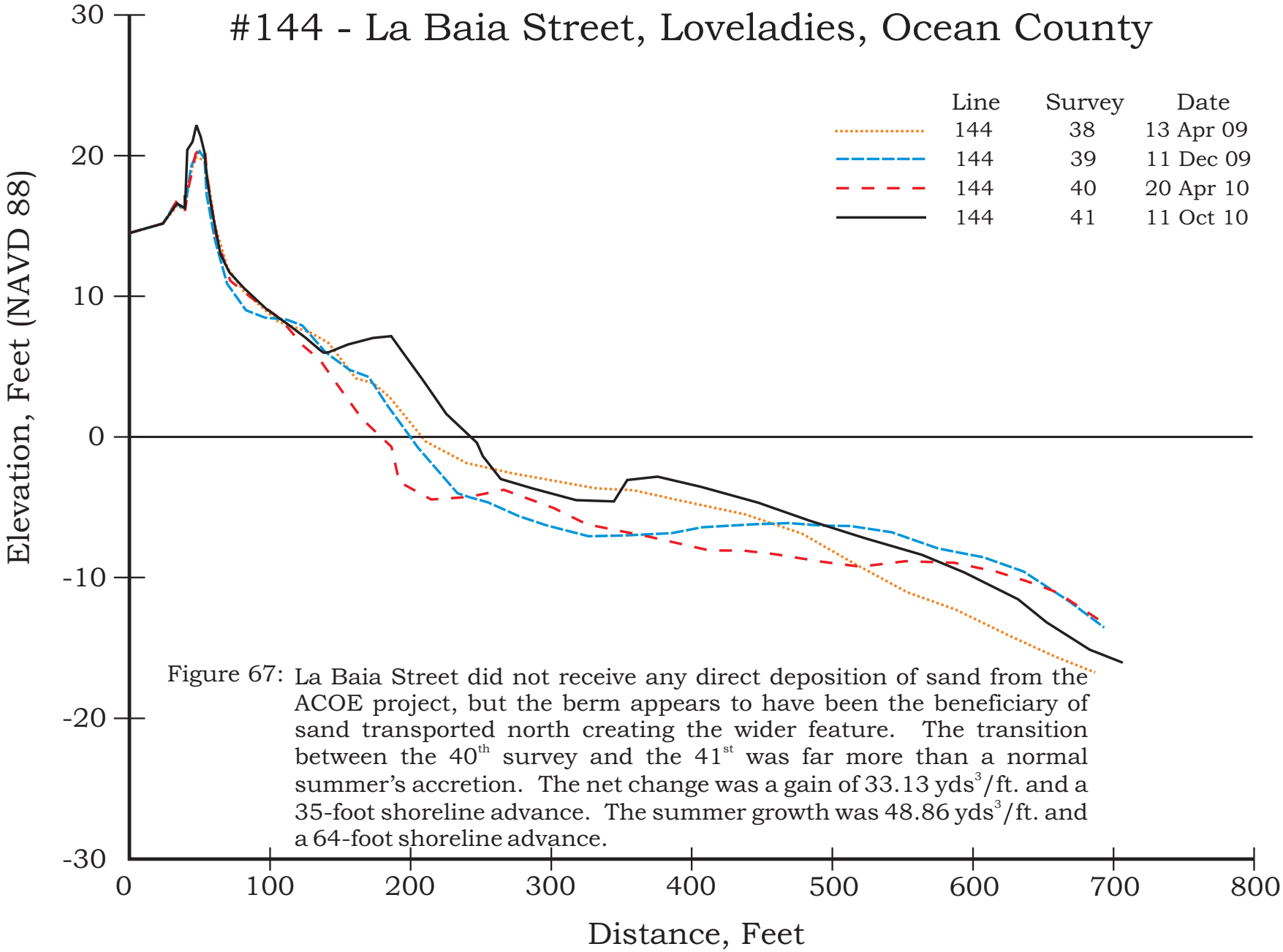

Figure 67: La Baia Street did not receive any direct deposition of sand from the ACOE project, but the berm appears to have been the beneficiary of sand transported north creating the wider feature. The transition between the 40th survey and the 41st was far more than a normal summer's accretion. The net change was a gain of 33.13 yds^3/ft. and a 35-foot shoreline advance. The summer growth was 48.86 yds^3/ft. and a 64-foot shoreline advance.

73rd STREET, HARVEY CEDARS - SITE 143

Photo taken December 11, 2009. View to the south.

The narrow beach exposes the dune to potential wave run up.

Photo taken October 11, 2010. View to the south.

The USACE placed beach fill at this site in the Spring of 2010. Comparing the profiles over the year the profile location gained volume (250.71 cu yd/ft) and the shoreline moved seaward (292.23 ft).

New Jersey Beach Profile Network

#143 - 73rd Street, Harvey Cedars, Ocean County

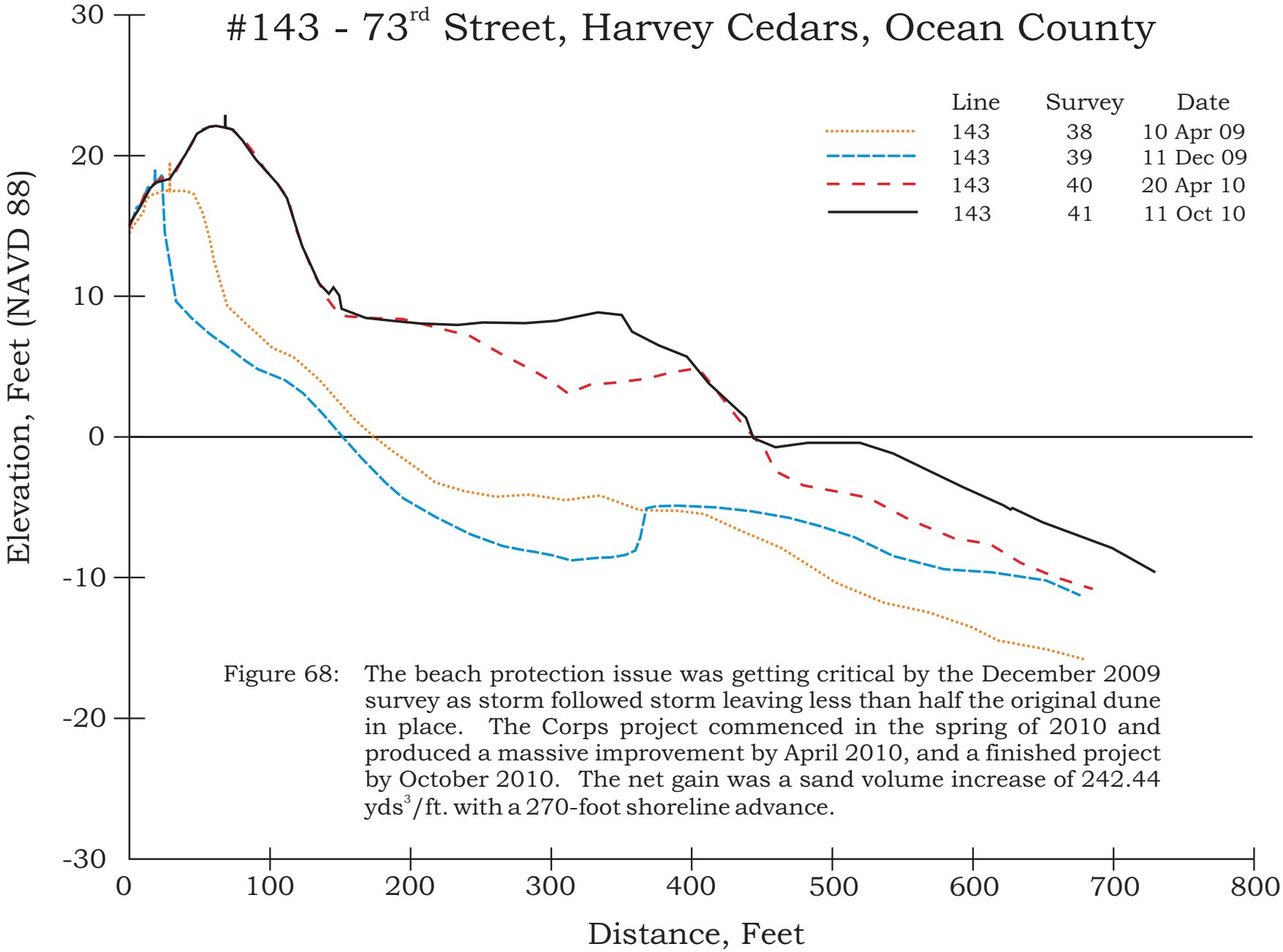

Figure 68: The beach protection issue was getting critical by the December 2009 survey as storm followed storm leaving less than half the original dune in place. The Corps project commenced in the spring of 2010 and produced a massive improvement by April 2010, and a finished project by October 2010. The net gain was a sand volume increase of 242.44 yds^3/ft. with a 270-foot shoreline advance.

TRANQUILITY DRIVE, HARVEY CEDARS - SITE 142

Photo taken December 11, 2009. View to the north. The dune was cut by a scarp to the crest and abundant sand appeared far offshore.

Photo taken October 8, 2010. View to the north.

The USACE placed beach fill at this site in the Spring of 2010. Comparing the profiles over the year, the profile location gained volume (160.19 cu yd/ft) and the shoreline moved seaward (157.34 ft).

New Jersey Beach Profile Network

#142 - Tranquility Drive, Harvey Cedars, Ocean County

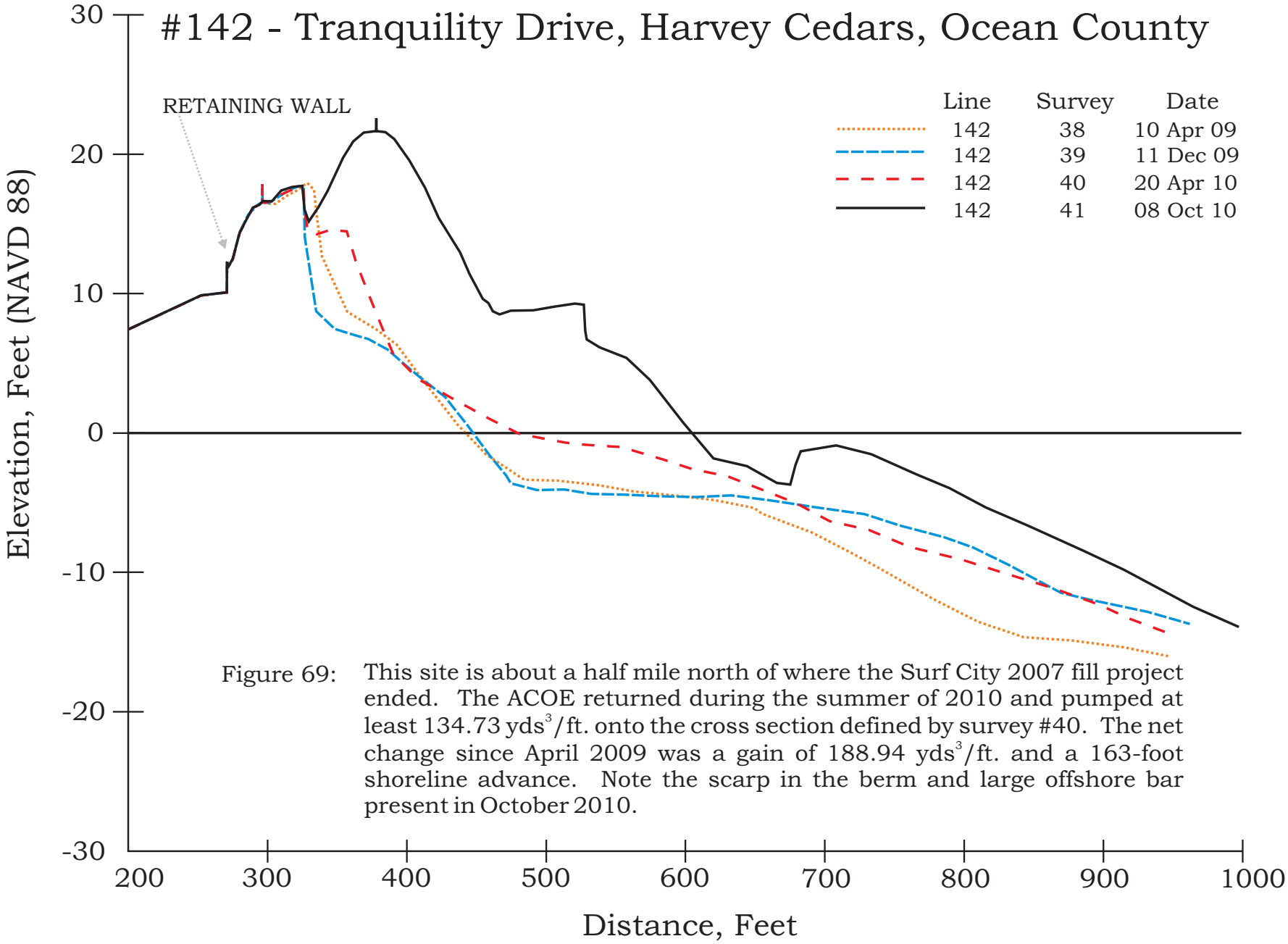

Figure 69: This site is about a half mile north of where the Surf City 2007 fill project ended. The ACOE returned during the summer of 2010 and pumped at least 134.73 yds^3/ft. onto the cross section defined by survey #40. The net change since April 2009 was a gain of 188.94 yds^3/ft. and a 163-foot shoreline advance. Note the scarp in the berm and large offshore bar present in October 2010.

20th STREET, SURF CITY - SITE 241

Photo taken December 11, 2009. View to the south.

Site of a beach fill in 2007 with erosion and shoreline retreat following the loss of the placed sand. The fall of 2009 had a profound effect on the berm width removing nearly all of it as opposed to minor losses seen between surveys 36 and 38. The sand volume remaining is still substantially more than what was present before the project.

Photo taken October 8, 2010. View to the south.

Comparing the profiles over the year, the profile location lost volume (-3.38 cu yd/ft) and the shoreline moved seaward (24.12 ft).

New Jersey Beach Profile Network

#241 -20th Street, Surf City, Ocean County

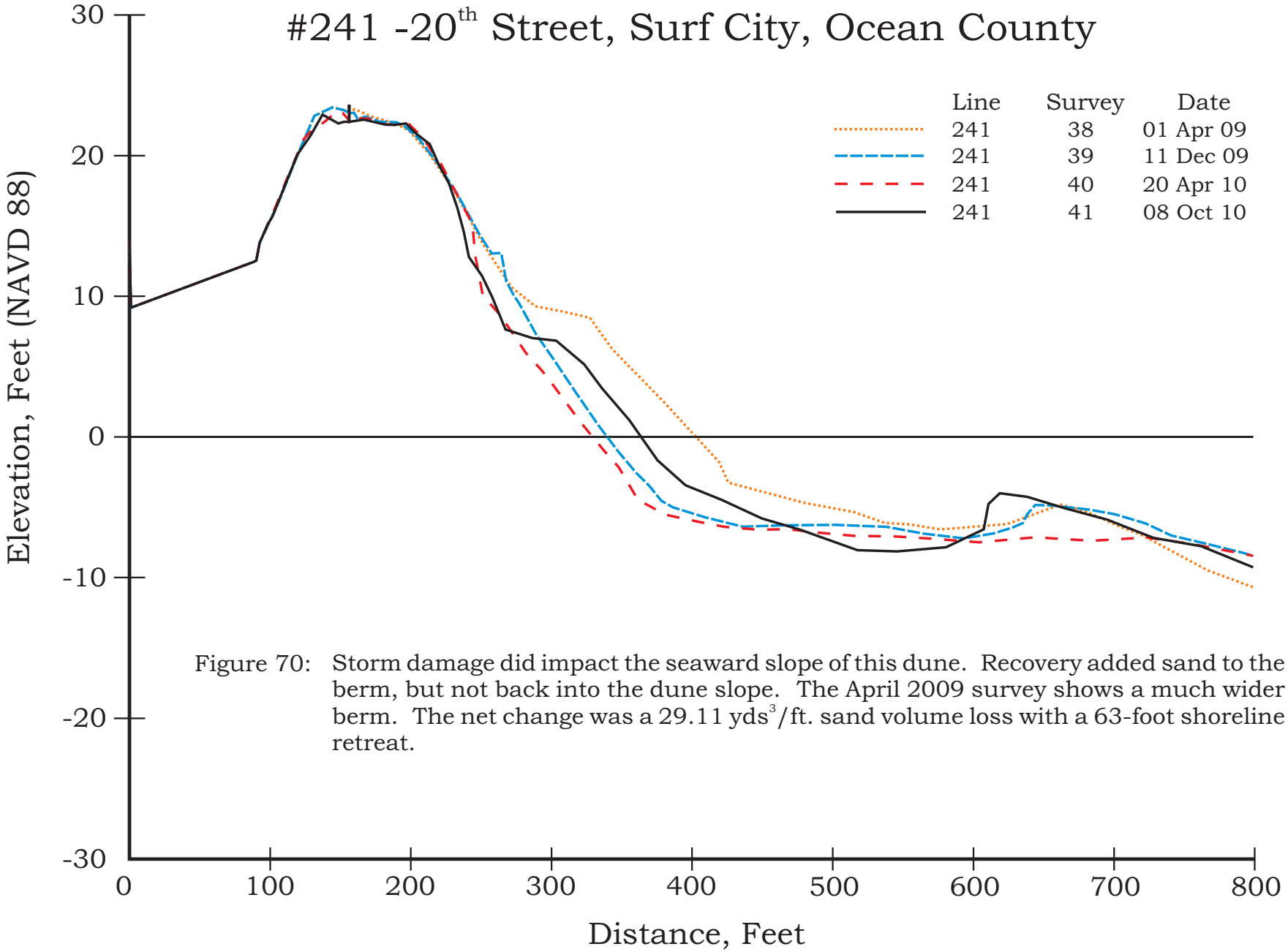

Figure 70: Storm damage did impact the seaward slope of this dune. Recovery added sand to the berm, but not back into the dune slope. The April 2009 survey shows a much wider berm. The net change was a 29.11 yds^3/ft. sand volume loss with a 63-foot shoreline retreat.

8th STREET, SHIP BOTTOM - SITE 141

Photo taken December 10, 2009. View to the south.

This site has remained relatively stable over the past 20 years with dune volume increasing and minimal changes in the shoreline position.

Photo taken October 8, 2010. View to the south.

Comparing the profiles over the year, the profile location lost volume (-16.43 cu yd/ft) and the shoreline moved landward (-14.7 ft).

New Jersey Beach Profile Network

#141 - 8th Street, Ship Bottom, Ocean County

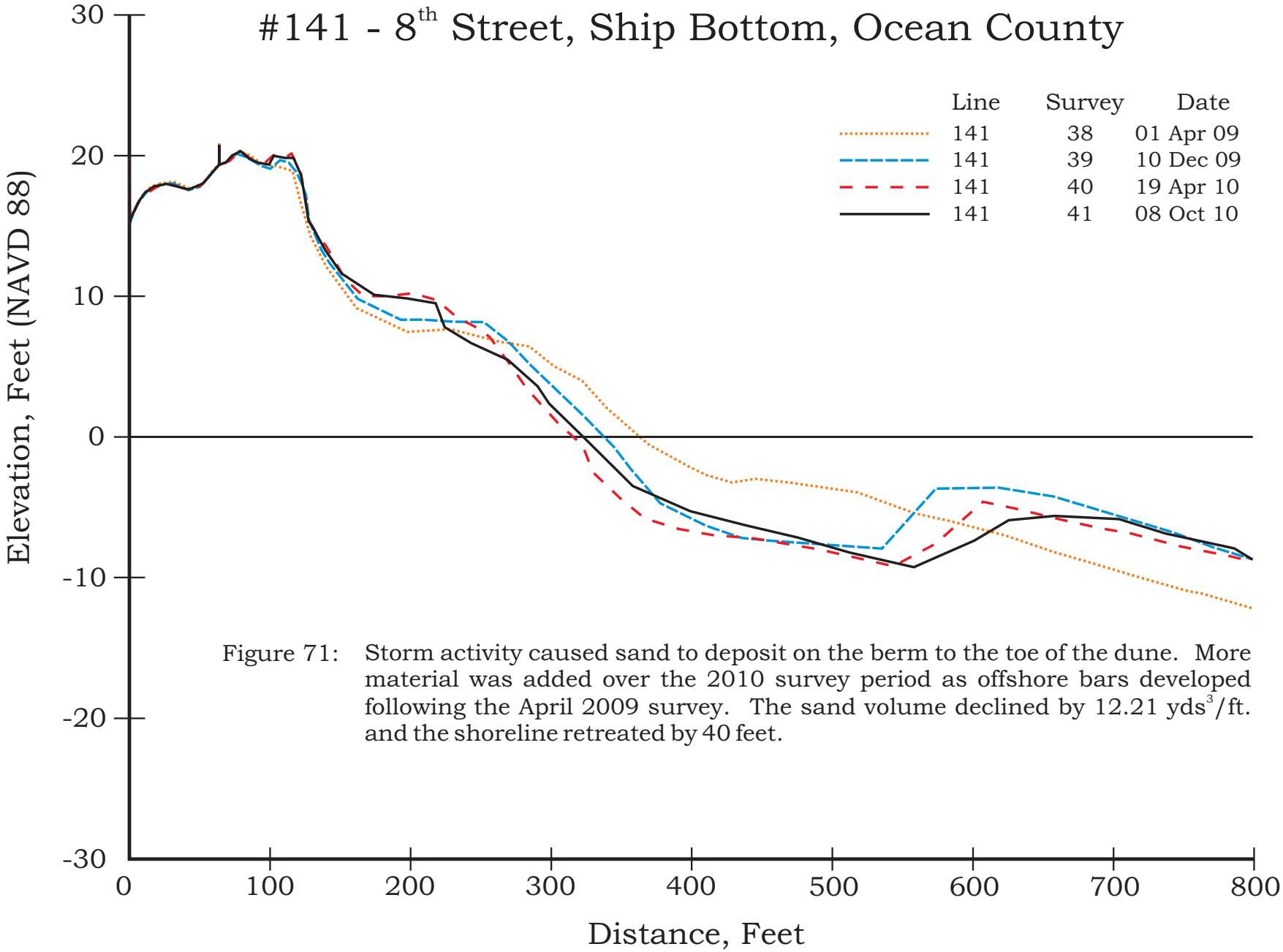

Figure 71: Storm activity caused sand to deposit on the berm to the toe of the dune. More material was added over the 2010 survey period as offshore bars developed following the April 2009 survey. The sand volume declined by 12.21 $yds^3/ft.$ and the shoreline retreated by 40 feet.

32nd STREET, LONG BEACH TOWNSHIP - SITE 140

Photo taken December 10, 2009. View to the north. In 2008-2009, sand was added to the beach and assembled into a bar far offshore.

Photo taken October 11, 2010. View to the north.

Comparing the profiles over the year, the profile location gained volume (17.78cu yd/ft) and the shoreline moved landward (-0.57 ft). The sediment gain was predominantly below the 0.0 ft NAVD88 datum.

New Jersey Beach Profile Network

#140 - 32nd Street, Long Beach Township, Ocean County

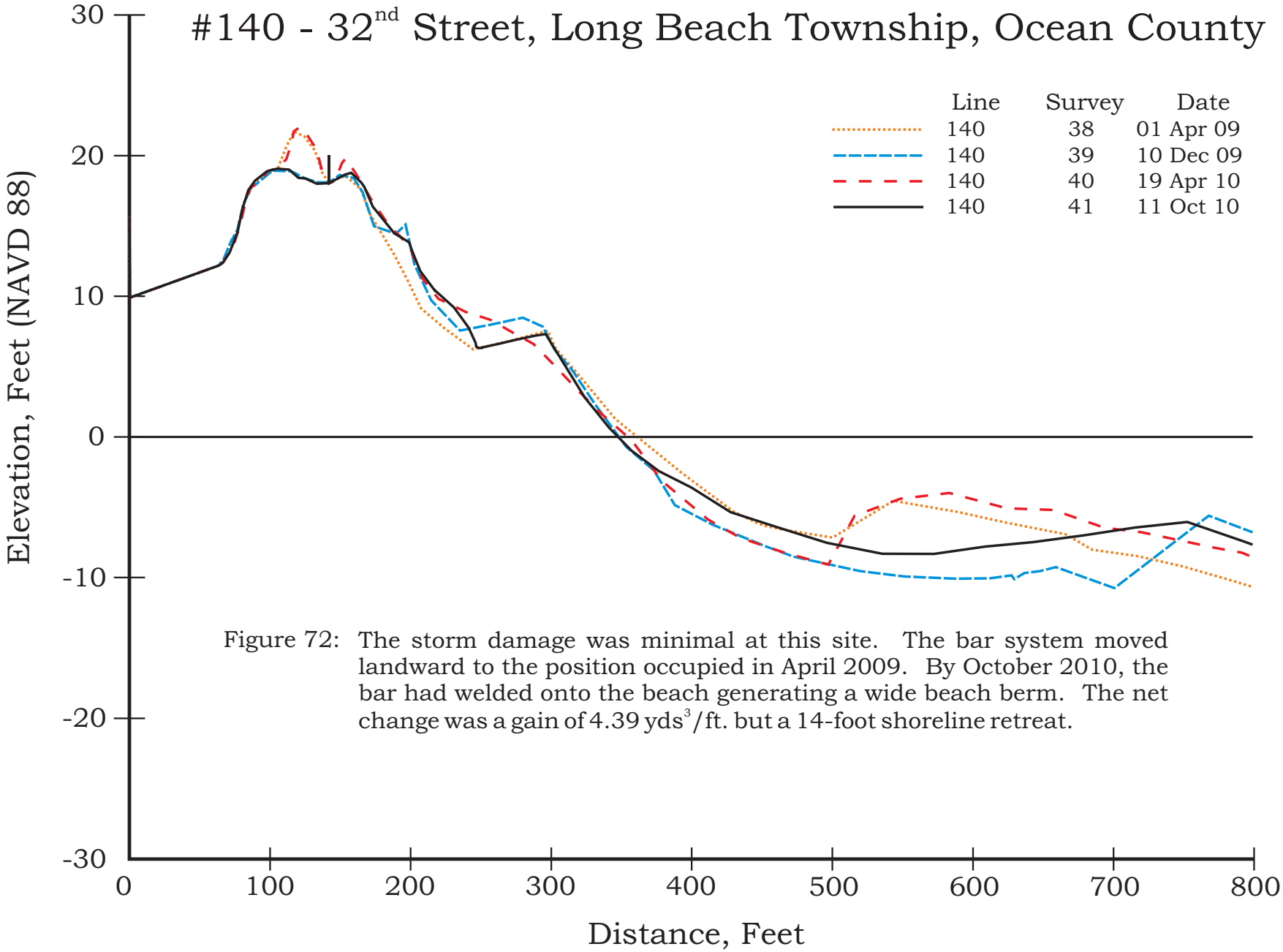

Figure 72: The storm damage was minimal at this site. The bar system moved landward to the position occupied in April 2009. By October 2010, the bar had welded onto the beach generating a wide beach berm. The net change was a gain of 4.39 yds^3/ft. but a 14-foot shoreline retreat.

81st STREET, LONG BEACH TOWNSHIP - SITE 139

Photo taken December 10, 2009. View to the north.

Fall storms prompted the Township to move sediment within the profile to the dune.

Photo taken October 11, 2010. View to the north.

Comparing the profiles over the year, the profile location lost volume (-8.86 cu yd/ft) and the shoreline moved seaward (7.21 ft). Most of the sand loss was below the 0.0 ft NAVD88 datum.

New Jersey Beach Profile Network

#139 - 81st Street, Long Beach Township, Ocean County

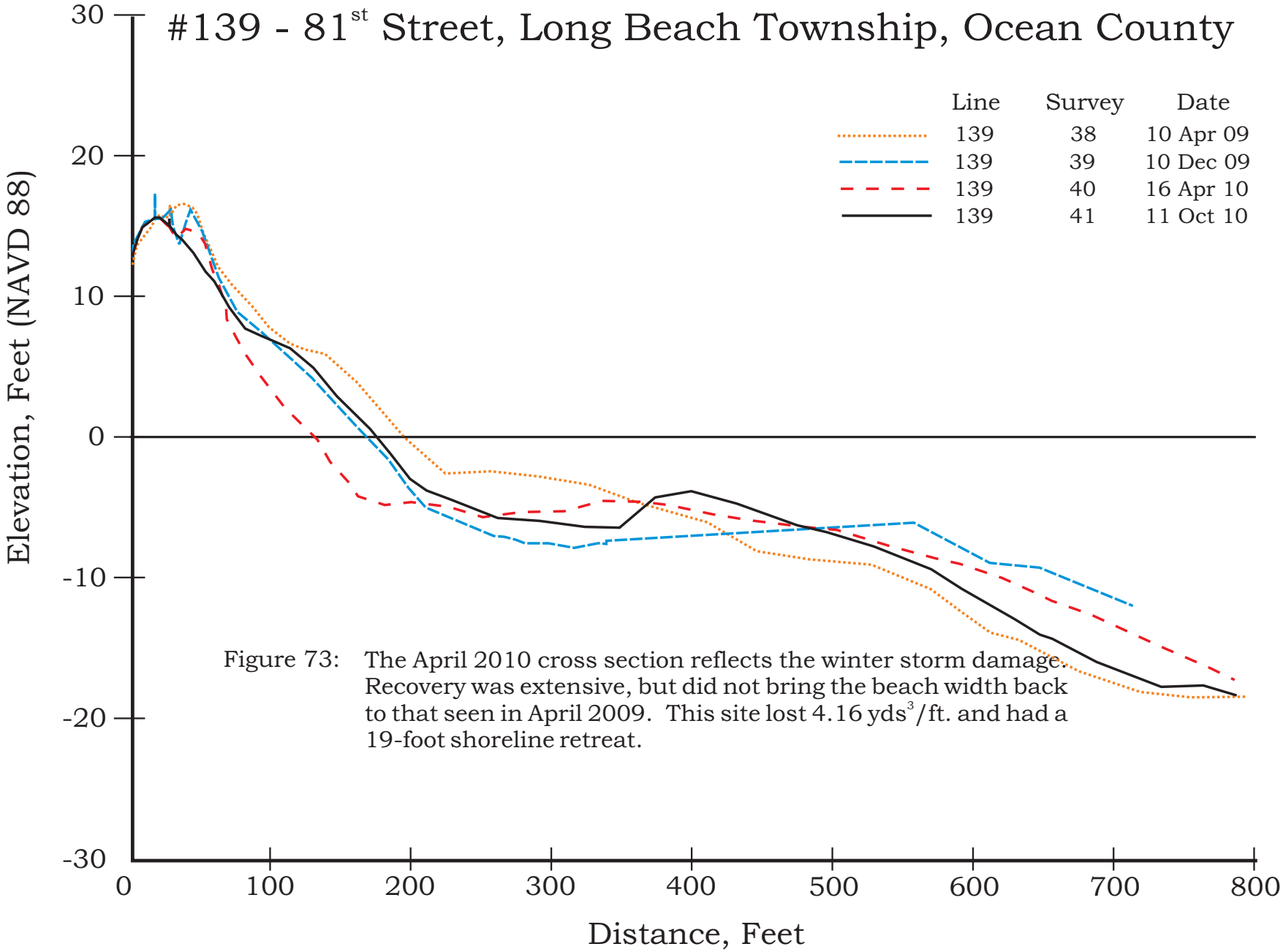

Figure 73: The April 2010 cross section reflects the winter storm damage. Recovery was extensive, but did not bring the beach width back to that seen in April 2009. This site lost 4.16 yds^3/ft. and had a 19-foot shoreline retreat.

OLD WHALING ROAD, LONG BEACH TOWNSHIP - SITE 138

Photo taken December 10, 2009. View to the south. This location was another to receive sand due to storm activity rather than suffer erosion. Sand was added to the berm and offshore, the effect was quite impressive.

Photo taken October 12, 2010. View to the south.

Comparing the profiles over the year, the profile location lost volume (-40.27 cu yd/ft) and the shoreline moved landward (-24.49 ft). Sand was lost across the entire profile.

New Jersey Beach Profile Network

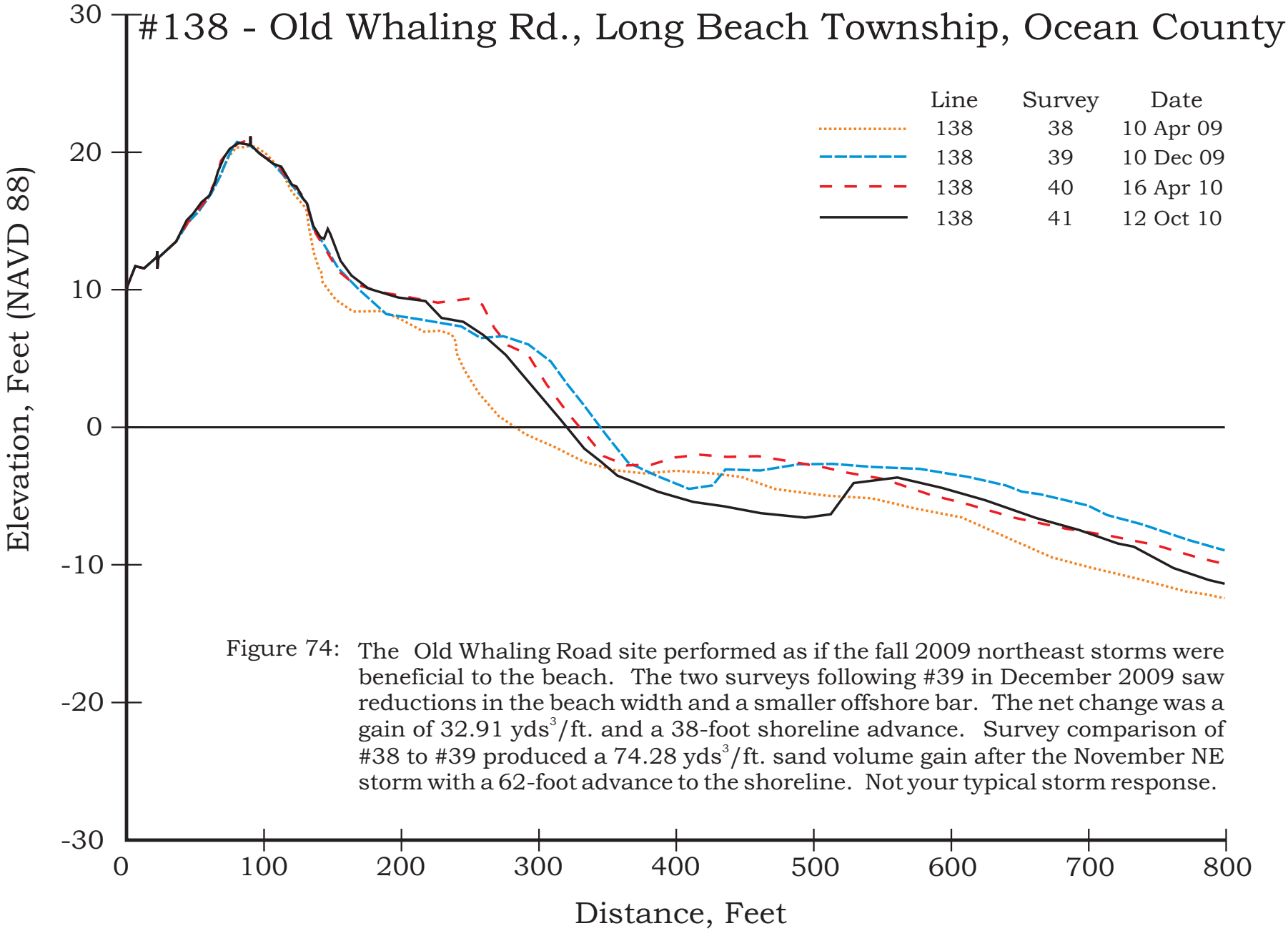

Figure 74: The Old Whaling Road site performed as if the fall 2009 northeast storms were beneficial to the beach. The two surveys following #39 in December 2009 saw reductions in the beach width and a smaller offshore bar. The net change was a gain of 32.91 yds^3/ft. and a 38-foot shoreline advance. Survey comparison of #38 to #39 produced a 74.28 yds^3/ft. sand volume gain after the November NE storm with a 62-foot advance to the shoreline. Not your typical storm response.

TAYLOR AVENUE, BEACH HAVEN - SITE 137

Photo taken December 11, 2009. View to the south.

The shoreline is relatively narrow at this site with a slightly wider dune between the dry beach and the residences. The 2008 “Mother’s Day” northeast storm cut a scarp in the dunes that was not repaired. The fall of 2009 did relatively little damage to the dunes or the beach. Sand was added offshore.

Photo taken October 12, 2010. View to the south.

Comparing the profiles over the year, the profile location gained volume (6.89 cu yd/ft) and the shoreline moved seaward (21.1 ft).

New Jersey Beach Profile Network

#137 - Taylor Avenue, Beach Haven, Ocean County

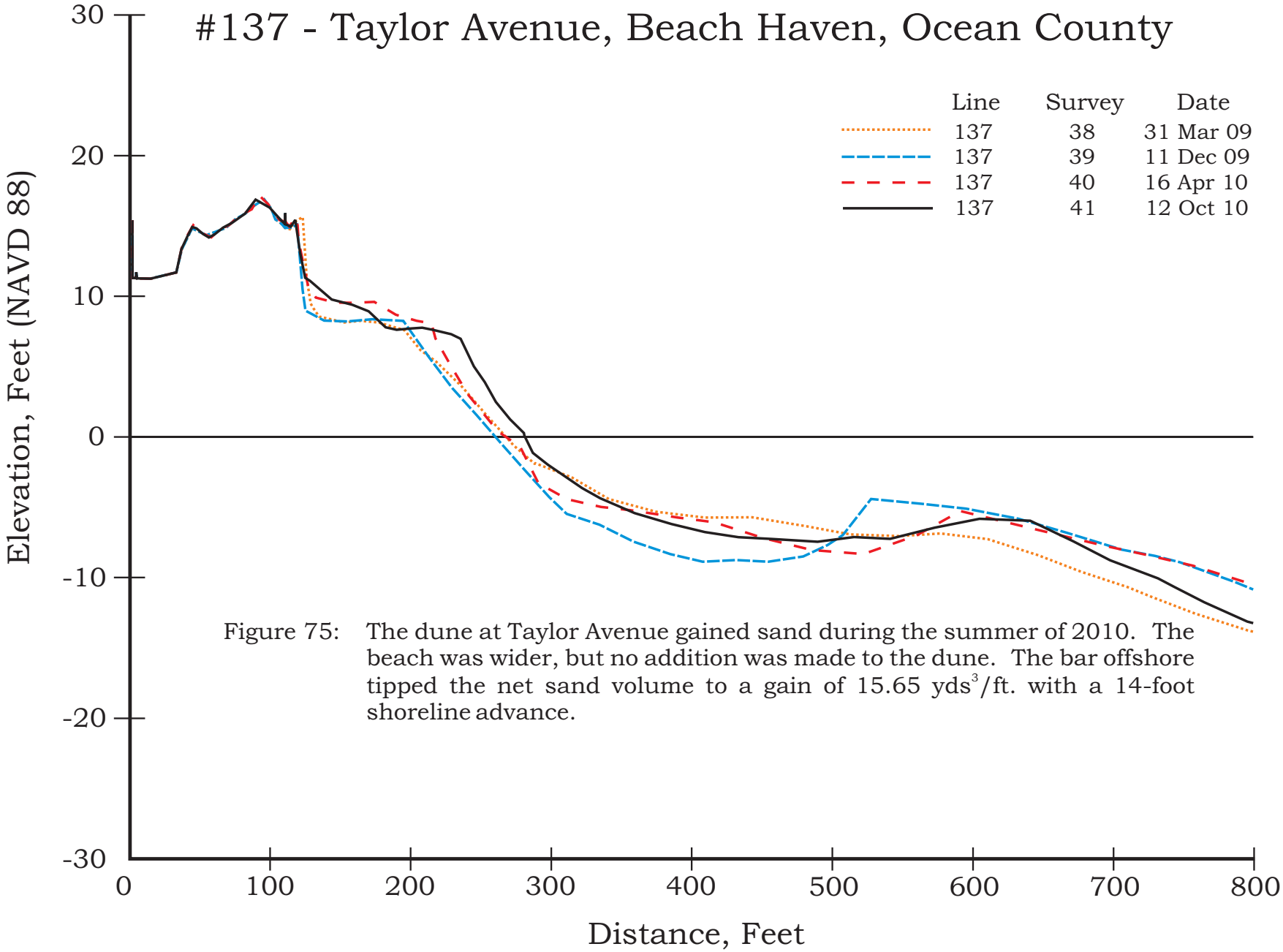

Figure 75: The dune at Taylor Avenue gained sand during the summer of 2010. The beach was wider, but no addition was made to the dune. The bar offshore tipped the net sand volume to a gain of 15.65 $yds^3/ft.$ with a 14-foot shoreline advance.

DOLPHIN AVENUE, BEACH HAVEN - SITE 136

Photo taken December 11, 2009. View to the north.

Conditions of the beach following the storms in September to November.

Photo taken October 12, 2010. View to the north.

Comparing the profiles over the year, the profile location lost volume (-15.83 cu yd/ft) and the shoreline moved seaward (1.36 ft). Most of the volume lost was below the 0.0 NAVD88 datum.

New Jersey Beach Profile Network

#136 - Dolphin Avenue, Beach Haven, Ocean County

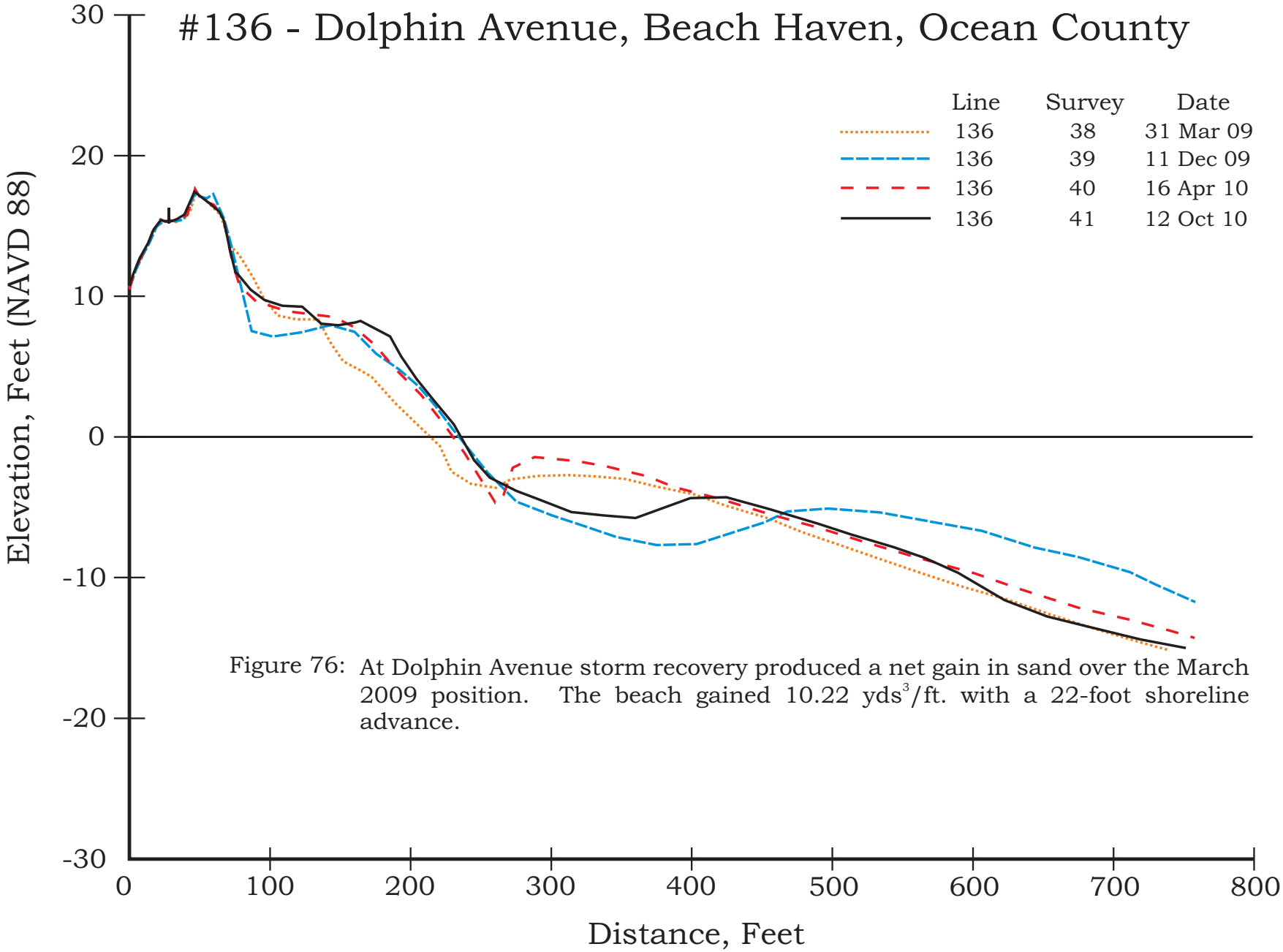

Figure 76: At Dolphin Avenue storm recovery produced a net gain in sand over the March 2009 position. The beach gained 10.22 yds^3/ft. with a 22-foot shoreline advance.

WEBSTER AVENUE, LONG BEACH TOWNSHIP - SITE 135

Photo taken December 11, 2009. View to the south.

The Webster Avenue site has a tall, but narrow dune with a beach that slopes seaward from the dune toe. Bar migration is important to building a summer berm.

Photo taken October 12, 2010. View to the south.

Comparing the profiles over the year, the profile location gained volume (45.81 cu yd/ft) and the shoreline moved seaward (87.75 ft). This site was particularly hard hit by the series of northeasters during the fall/winter of 2009-2010, but begins to show some recovery in the summer of 2010.

New Jersey Beach Profile Network

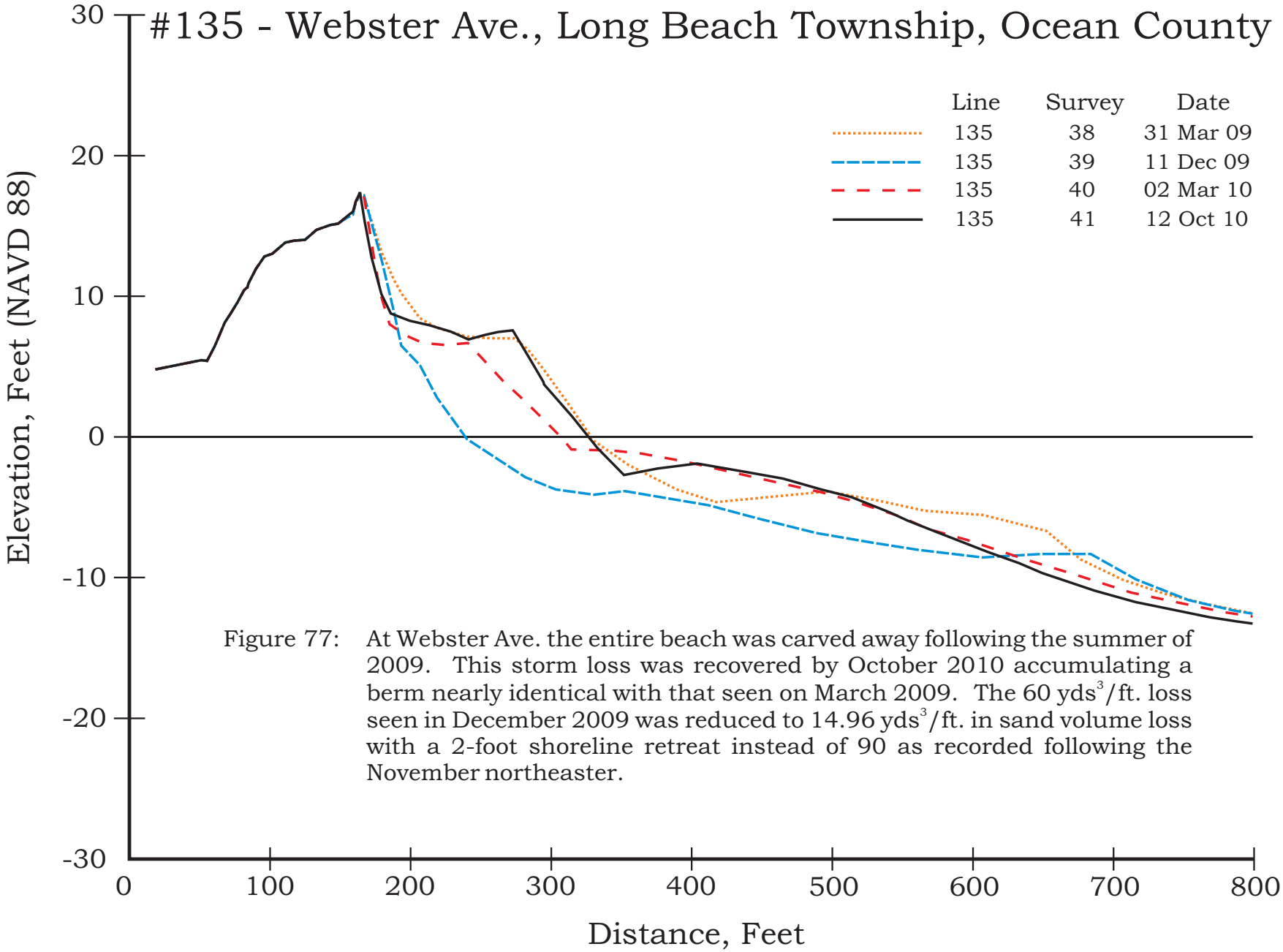

Figure 77: At Webster Ave. the entire beach was carved away following the summer of 2009. This storm loss was recovered by October 2010 accumulating a berm nearly identical with that seen on March 2009. The 60 yds^3/ft. loss seen in December 2009 was reduced to 14.96 yds^3/ft. in sand volume loss with a 2-foot shoreline retreat instead of 90 as recorded following the November northeaster.

NATURAL AREA, LONG BEACH TOWNSHIP - SITE 234

Photo taken December 11, 2009. View to the north.

This view toward the terminal groin shows a narrow beach with considerable exposure of the rocks. Northeast storms act to move sand around this groin where post-storm waves move it onto the beach after the storm. In the absence of northeasters sand will move up the beach from the south if southeast wave conditions prevail for extended periods of time.

Photo taken October 12, 2010. View to the north.

Comparing the profiles over the year, the profile location lost volume (-54.94 cu yd/ft) and the shoreline moved landward (-93.81 ft). The sand loss was across the entire profile.

New Jersey Beach Profile Network

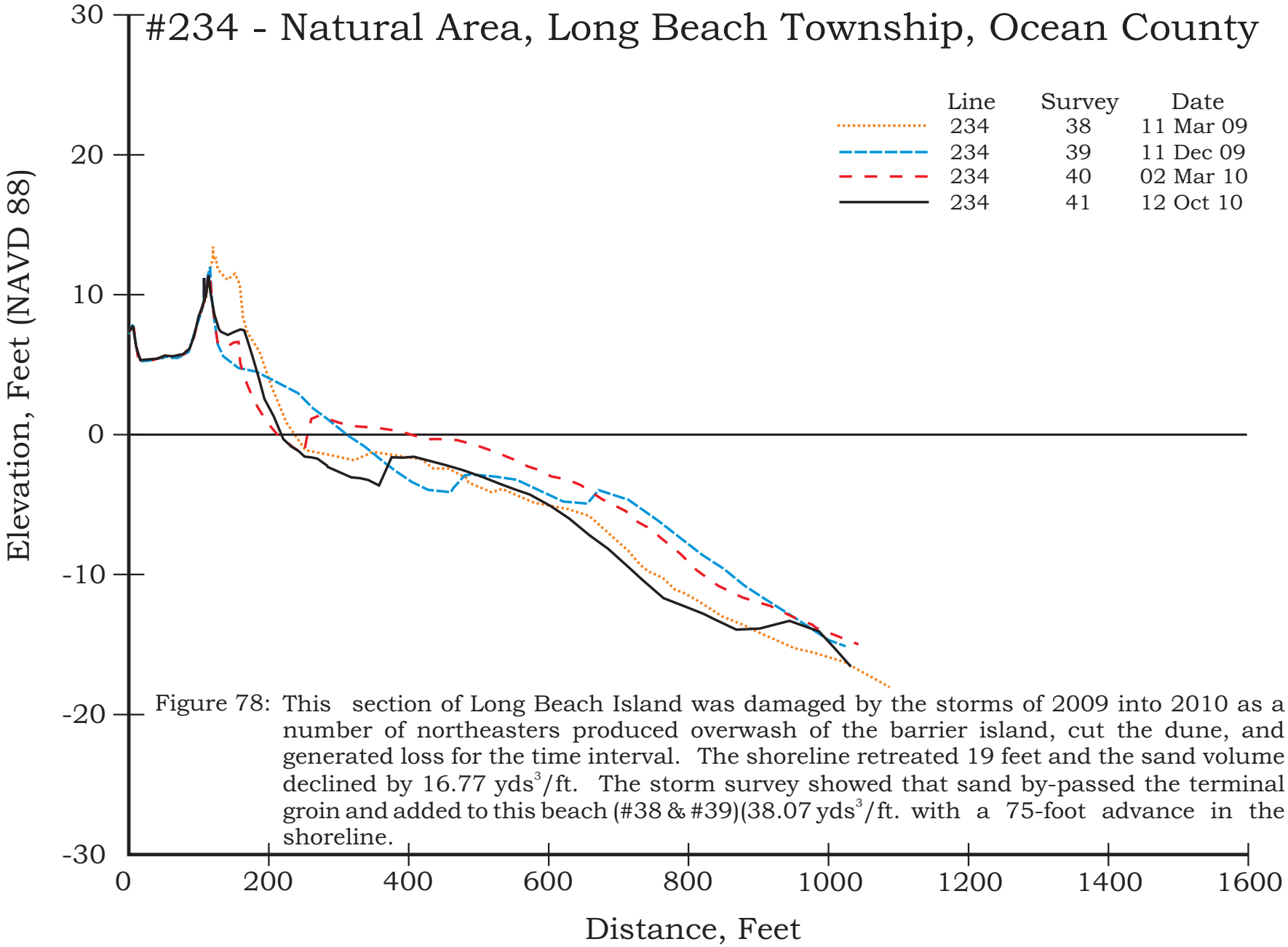

Figure 78: This section of Long Beach Island was damaged by the storms of 2009 into 2010 as a number of northeasters produced overwash of the barrier island, cut the dune, and generated loss for the time interval. The shoreline retreated 19 feet and the sand volume declined by 16.77 yds^3/ft. The storm survey showed that sand by-passed the terminal groin and added to this beach (#38 & #39)(38.07 yds^3/ft. with a 75-foot advance in the shoreline.