

# Siasconset Beach Preservation Fund

## Summer 2015 Community Update

Summer 2015

Volume 2

### Inside this issue:

Addressing runoff	2
Geotubes	2
Protecting nearby beaches	3
Cost of erosion	3
Visit 'Sconset	4
About SBPF	4

### Points of Interest

- ◆ A three-tier geotube system was installed in winter 2013/2014
- ◆ The privately funded project was approved by the state DEP
- ◆ Ongoing monitoring allows for a greater understanding of the benefits and impacts
- ◆ Access to the beach is uninterrupted
- ◆ Sand replenishment assures adjacent beaches remain unharmed
- ◆ **Up Next:** Extend the project to further protect all endangered areas

## Geotubes succeed for second winter

To the Nantucket Community:

What a difference a year – and three layers of geotubes – has made at 'Sconset Beach & Bluff. After another winter of historic weather, it is clearer than ever that climate change will have a lasting impact on our region. I am pleased to report that even with several major storms (including one that left most of the Island without power), the geotubes once again "did their job".

There has been no erosion from the toe of the Bluff since the geotubes were installed in late 2013.

This stands in contrast to the winter of 2012/2013, where up to 30 feet of bluff was lost in some areas and town officials seriously considered closing Baxter Road for

safety reasons. That crisis led to a cooperative plan supported by both SBPF and the Town of Nantucket to use a geotube system to protect the Bluff. Though several legally erroneous and short sighted Conservation Commission denials had to be appealed, the experts at the MA Department of Environmental Protection ruled the project met all requirements and relied on sound science to protect the Bluff without negative impact on nearby beaches.

The limited erosion from this winter is great news in terms of maintaining access to Baxter Road and Sankaty Light and preserving local homes. However, challenges remain. The project is only 900 feet long, and while the most vulnerable part of Baxter Road is protected, more than 3400 total feet

of the Bluff and more homes are at risk (from Sankaty Lighthouse to mid-Baxter). The geotubes also need to be expanded to the engineer designed height to protect against the largest storms. Erosion on the bluff face caused by wind and rain runoff from the road is also being addressed. (See article). Properties along Baxter Rd. continue to see both values and taxes paid to the town decrease yearly, costing all Nantucket taxpayers an estimated \$350,000 a year.

SBPF is committed to acting collaboratively,



*Geotubes are effectively protecting "Sconset Beach from erosion.*

as evidenced by our agreement with the Board of Selectmen to provide voluntary easements across private property to create an alternative access

route in the event that erosion control methods are not effective in the future and Baxter Road must be closed; something we believe can be avoided.

Unfortunately, the basic permitting dispute with the Conservation Commission continues, wasting time and money on litigation. After a frustrating six months pursuing a settlement, we still hope for a positive resolution. We remain committed to scientifically sound proposals to keep Baxter Road safe and minimize further risk.

I hope you find this Community Update useful in understanding the facts. For more information, visit [www.sconsetbeach.org](http://www.sconsetbeach.org).

Josh Posner, President of SBPF

## All about that Bluff: Improved vegetation limits erosion from runoff

With the toe of a portion of 'Sconset Bluff well protected, it became even more apparent just how much erosion results from storm water runoff from Baxter Road. SBPF has been requesting Conservation Commission approval to vegetate the face of the Bluff using native plant materials for over a year. Though this request is commonly approved throughout the Island, it was not until early this year that we received permission to move forward.

While we are only allowed to plant in areas behind the 900 feet geotube project, that work has been completed and you can already see the vegetation. As the new beach grass grows out fully over the next few years it will both blend in seamlessly and stabilize the bluff with an extensive root system.

It is also important to address runoff from rainstorms that flow from Baxter Road over the bluff. There are several approaches to moving forward: installing a drainpipe buried in the newly restored bluff to carry rain water down to a dry well at the back of the geotubes; or creating a more elaborate storm water infiltration system within the Baxter Road right of way, which SPBF designed and the Conservation Commission actually approved this winter. A berm along the ocean side of Baxter has been installed as part of the permitted system and is now in place preventing runoff from going over the bluff.



*Newly vegetated bluff will limit runoff impact.*



*The fully vegetated bluff will be both beautiful and functional.*



*Storm water runoff impacting the bluff. This can be fixed!*



*Geotubes (nearly invisible under sand cover) have never impacted normal access to 'Sconset Beach and Bluff.*

### The Basics: What is a Geotube

- ⇒ Sand-filled sleeves of geotextile fabric, like very big sausages.
- ⇒ The ones in this project are approximately 7 feet tall and 19 feet across with a circumference of 45 feet.
- ⇒ They are approximately 100-200 feet long.
- ⇒ They rest on a fabric scour apron with sand-filled anchor tubes along the sea-ward edge of the bottom tube and the landward edge of the top tube.
- ⇒ Geotubes are typically placed parallel to shore along the back beach, with sand and natural vegetation cover.

## Sand delivery protects adjacent beaches

One of the major differences between the geotube system protecting 'Sconset Bluff and other similar systems is the commitment to covering the geotube

system with replacement sand that is designed to wash away during storms, mimicking natural erosion. The engineering team relied on 20 years of de-

tailed data to determine the amount of natural sand erosion and estimate the amount of sand to use in this effort. We have committed to providing 150% of this amount of sand annually.

The sand is delivered from mid-island sand pits during the off season, with delivery concentrated into compact time periods—one week in late fall/early winter and one week in early spring.

During the past "sand year" (from April 1 2014 to March 31 2015):

- ⇒ 150% of sand that erodes naturally was replenished.
- ⇒ 1900 cubic yards was delivered
- ⇒ 28,500 tons of sand total
- ⇒ Truck deliveries over 10 days, all off season



Twice annual deliveries of sand in the off season assure that adjacent beaches are not impacted.

## Cost of Erosion – impacting all of Nantucket

The cost of Erosion at 'Sconset Bluff goes far beyond individual property owners. In 2015, 30 property owners on Northern Baxter Road filed for abatements from their land assessments to reflect the impact of erosion.

After a review of the arguments, exhibits and photographic evidence, **the Assessor granted tax abatements to all 30 applicants**, reducing land valuation by **\$31,447,842 for 2015 alone**. As a result, the Town shifted **\$113,526.71** in tax revenues to all other taxpayers.

This amount would have paid for the equivalent of two school teachers. In total, an estimated \$350,000 in annual taxes from Baxter Road homes had erosion been controlled have now shifted to the rest of the Island.

If this situation continues the remaining \$300 million of property value and over \$1 million annual tax revenues provided by Baxter Road will steadily shift to the rest of the island. As our island's tax base washes away, the broader impact of erosion is clear.

## Next Steps

While we are proud of the pilot project (the 900 feet long, 3 tube system) there is more to be done to assure long-term success.

Improve the existing project:

- ⇒ Ongoing sand nourishment
- ⇒ Monitor project for effectiveness and to assure no impact on access or surrounding beaches
- ⇒ Maintain beachgrass on Bluff face; continue to improve storm water management from Baxter

Expansion:

- ⇒ Increase geotubes from 3 tiers to 4 tiers, as originally designed for maximum protection
- ⇒ Add returns (smaller tubes) placed on the ends of the system at an angle to mitigate scouring at the ends of the system
- ⇒ Extend length of project to protect the full length of eroding bluff from Lighthouse to where erosion has advanced on mid-Baxter



As the edge of the Bluff washes away, so too do property values and tax dollars. (Bechley 1961, Footpath to lighthouse)

SEE FOR YOURSELF

# Visit our observation area at 'Sconset Bluff

Each year, 'Sconset Beach and Bluff is at risk for further erosion – in some recent difficult storm years, up to 30 feet or more have been lost from the Bluff. Visit our observation area at 'Sconset Beach to learn more about our efforts to protect and preserve this special place.

- ⇒ Chat with our summer interns (see below), who can answer questions and point out project highlights
- ⇒ Listen to our audio tour at 508-443-6443
- ⇒ Schedule an information session on the Bluff for your group
- ⇒ Get announcements about events (follow us on Facebook and Twitter for regular updates)



*The observation area at 87 Baxter Road is a great starting place for learning more about efforts to preserve 'Sconset Beach and Bluff.*



## Meet the interns

Austin Bentley is a Junior studying environmental science at the University of Texas. He has spent every summer in 'Sconset and is currently a beach lifeguard. In his spare time Austin enjoys surfing, biking, and classical guitar.

Janie Hendrickson, interested in environmental studies will be entering Duke University this fall. She has spent every summer in 'Sconset and set up a lemonade stand on Baxter Road to raise funds for the Sankaty Lighthouse move. She enjoys playing tennis and spending time at the beach.



## Siasconset Beach Preservation Fund

### Mission:

Identify ways to protect and preserve 'Sconset Beach and Bluff that are environmentally responsible, carried out collaboratively and help Nantucket adapt to climate change and rising sea levels that threaten its very existence.

Sconset Beach Preservation Fund  
PO Box 2279  
Nantucket, MA 02584

facebook.com/SconsetBeach  
Twitter.com @sconsetbeach

[www.sconsetbeach.org](http://www.sconsetbeach.org)

## About SBPF

Siasconset Beach Preservation Fund is a 501(c)3 organization that was formed by a group of 'Sconset homeowners concerned about erosion and the threat it poses to the village of 'Sconset.

Since the early 1990s, SBPF has worked to research and install, on an experimental basis, a series of measures that might control the erosion of the 'Sconset Beach. The goal has been to find an effective, environmentally benign and economically feasible approach. Virtually all funding has been provided from private, non-governmental sources.

### Funding

Funding for the efforts of SBPF is provided by our members, local community organizations, and the general public.

### Public Private Partnership

SBPF seeks opportunities to partner with the Town of Nantucket, local organizations, community members and agencies that share our goal of limiting the impact of erosion on 'Sconset Beach and Bluff. We thank the Town of Nantucket for their time and expertise.