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Sent: Monday, September 15, 2014 10:52 AM
To: wendy.jeffers@gmail.com
Cc: caldwellnd@aol.com; charles.f.parker@gmail.com; jimmalkin@gmail.com; boh@chilmarkma.gov
Subject: The exposed forest & coastal dynamics around Squibnocket Point
Attachments: Squibnocket_Point_Beach,_ancient_forest_exposed_16_Aug_2014,_Covered_11_Sept_2014_©_D_Caldwell.jpg

Dear Wendy,

I thought that you might like to see what happened to the beach on the western side of Squibnocket Point between Aug. 16th and Sept. 11th. As you know, from my comments at the last committee meeting, it was eroding so quickly back then that the dunes were being eaten away by fairly small waves, creating a bluff, and an ancient forest had been exposed at its foot. I've juxtaposed two shots of the beach looking in the same direction from the same spot at the same tide so you can see how much change can take place in such an environment, without any local storms, in three weeks. The frame on the left shows a 137-yard long exposure of stumps rooted in stratified freshwater peat while the picture on the right shows the same perspective after the old forest was covered with at least 5 feet of sand.



As I may have told the committee, huge amounts of another kind of peat, composed largely of eelgrass, which seems to have formed in a lagoon, rather than in the open ocean, wash up on the western side of Squibnocket Point, suggesting that there used to be another "great pond" between the present Vineyard and Noman's. If this is true, Noman's probably anchored two barrier beaches, which fanned back on either side of the pond towards Squibnocket and Gay Head. When they were both breached, as is happening now with the landmasses at either end of our island, Noman's was isolated and the lagoon between the landmasses disappeared.

Based on the consistency of the stumps, I'd guess that the forest grew within the last millennium along a freshwater marsh or pond (inland from the lagoon), and that it was covered when the coast fell back to the next place where a barrier beach could form and hold the line for a while - between the anchor-points of Squibnocket Point and Zack's Cliffs.

I wanted to bring these observations and hypotheses to your attention for a couple of reasons. The first is simply historical and concerns the difference between the coastal dynamics around the point

from those along the straight beach between Chappy and Lucy Vincent. The trends in one place simply can't be applied to the other because of their different orientations and topography.

The second is that the rapid reversal of the erosion and thickening of the beach suggests that an artificial means of diverting sand towards the thinning section of the public beach at Squibnocket, such as the short artificial reef I suggested, might be able to rapidly thicken that stretch by funneling sand inwards.

I hope your preparations for the next meeting are going well, and that you'll come see us soon afterwards!

My warmest wishes.

Duncan

PS. Here's a picture of one of the peat layers that the old trees were growing out of:

