

## **Aerial Photos of the breach at Old Inlet on November 11, 2012**

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Given the dynamic nature of barrier island breaches it was expected that there would be noticeable changes in the morphology of the breach at Old Inlet after the aerial photos that Rich Giannotti and I took on November 3<sup>rd</sup>. Those photos were taken 4 days after hurricane Sandy and so we had the idea of a general follow-up aerial shoot at some subsequent time. However, Sandy was followed 9 days later by a reasonably intense nor-easter which certainly had the potential to change the inlet substantially. So Rich and I made a second aerial survey of the area on November 11, 2012 when it was clear that major changes had occurred in the new inlet and these are shown in the photos below. This photo shoot took place during ebb tide as compared to the first survey which took place during flood.

There were substantial changes to both the main channel through Fire Island and the sand islands in the bay. The initial cut through the island had been fairly straight with the deepest part along the eastern edge. As a result of natural adjustment but probably mostly as a result of the nor-easter, the channel now has a decided offset to the west between the ocean and bay ends of the channel. The offset appears confined to the bay end of the channel while the ocean end does not seem to have moved. Also there is less evidence of a single deep channel.

The most visible changes to the breach occurred in the sand islands that had been formed by dune sands carried into the bay. Right after Sandy, the sand islands were north of Fire Island and west of the inlet with channels between the sand islands, Fire Island and Pelican Island. After the nor-easter the connection with the bay which had been to the west just north of Fire Island had completely switched directions and now makes a connection to the old Old Inlet channel to the east passing under and through the dock as shown in the last photo below. As part of this change was the build-up of what appears to be a fairly high sand island that all but connects Fire Island to Pelican Island with a small channel that passes under the Pelican Island dock. This change in flow pattern now connects the inlet to the rest of Great South Bay through a deeper channel with greater conveyance and that may extend the natural lifetime of the inlet.

Photo taken November 3, 2012 after hurricane Sandy and prior to November 7 - 8 nor-easter



Photos taken November 11, 2012 after the nor-easter rearranged the sand islands and channel



Post nor-easter channel configuration showing the sand island connecting Fire Island to Pelican Island



The new channel now passes under the old dock and connects the inlet to the old Old Inlet channel

