

Saturday, April 11, 2009

Carolina Dunes Annual Meeting

The 2009 annual meeting was held in the Town of Duck Municipal Offices this year. The previous meeting location (the firehouse) is no longer available for public use. Ron Blunck began the meeting at 1pm.

The majority of the meeting was spent listening to a presentation by Bill Berkmeier from the Army Corps of Engineer Pier. Berkmeier is a researcher who has worked in Duck since 1980 studying a variety of topics for the Army Corps of Engineers. His most recent work relates to studies on erosion on the Outer Banks. Berkmeier stepped us through a summary of the historical data the pier has gathered since the 1970s that documents erosion along the Outer Banks. The average rate of erosion in the Carolina Dunes area is 3-5 feet per year. While that sounds like a lot it is actually quite low relative to other areas of the island. In some areas the annual rate of erosion is as high as 15-20 feet per year.

In one particular study a researcher drove from the NC/VA border all the way south to Oregon Inlet along the high water line. His position was tracked via GPS. The purpose of his month long daily drive was to document the position of the high water line before, during, and after a storm. The study was quite revealing in that the water line returned to its original position after the storm moved through.

In another study a researcher focused on areas along the Outer Banks that experienced abnormally high rates of erosion. The researcher examined the geological aspects of high erosion areas and looked for variances from areas of regular erosion. The initial research involved sediment samples that were obtained using a cylindrical drill. The researcher discovered that areas where the sediment was highly compacted and possessed higher-than-average rocky debris correlated to areas of high erosion. Conversely, sediment samples taken from areas of normal erosion showed a consistent uniform sandy ocean bottom.

Additional research was conducted using side-scan radar that penetrated the ocean floor. High resolution imagery revealed a rocky gravel like deposit on and below the ocean bottom. Under normal dune erosion and replenishment cycles, sand is taken from the dune (and beach) and is deposited in the well between the beach break and the sand bar. During the summer months the sand is returned to the beach through wave action, wind, and currents. The researchers hypothesized that a gravel-like and compacted ocean bottom failed to retain the sand eroded over the winter and as a result the normal replenishment during the summer could not occur. This leads to above normal erosion.

While continuing to research their hypothesis the researchers looked for ancient geological clues to explain why the ocean bottom was compacted and gravel-like in certain areas but sandy in other areas. The researchers looked back over thousands of years at sediment samples taken inland and determined that rivers in east-central North

Carolina deposited sediment in the ocean and terminated in the areas of high erosion. These areas include Nags Head, Kitty Hawk, and Carolina Dunes.

Research continues at the pier and the Army Corps of Engineers scientists are planning additional expeditions into the areas of high erosion. Their goal is to have a firm understanding of why the unusually high erosion occurs in certain areas of the Outer Banks.

Lastly, Berkmeier offered suggestions and recommendations for how to reduce erosion of the dune line during the winter months. Berkmeier provided a set of best practices that could mitigate some (but not all) of the ocean's erosion.

After Berkmeier's presentation Ron Blunck discussed the issues facing Carolina Dunes. The most pressing concern was the status of the walkways to the ocean. A suggestion was made to install landings that would reduce the number of steps beachgoers would have to take before they had a chance to rest. The landings also improved safety because beachgoers that fell at the top of the steps wouldn't have as far to fall before reaching a landing.

Unfortunately the landings are \$600-\$800 more expensive to install. Additionally they create increased drag during the winter months when the ocean erodes the dune. The opinion of our repairman was requested, and he stated that landings increase the maintenance costs of the steps.

The potential legal issues of landings were also discussed. The property owned by the Homeowners Association is only 2 feet left and right of the walkway. If the Association installed landings that turned the steps 90 degrees the Association would encroach into the property of an oceanfront homeowner. If the owner were to sell their property the new lender or owner would probably force the Association to remove the landing to avoid property infringement.

Avoiding a 90 degree turn in the landing was identified but that approach would result in the walkway being extended further towards the water line.

A motion was made to install sand fencing on the sides of the walkways in order to reduce the likelihood children will leave the walkway and play on the dune. The motion was seconded and approved.

A motion was made to put the "Dune Myths" slides from the Berkmeier presentation on the Carolina Dunes website. It was seconded and approved.

Several attendees commented on how nice the sound access looks these days. Ron Blunck has spent many hours pruning, trimming, and improving the look and feel of the sound. His sweat labor is most appreciated!

A motion was made to install non-skid sand paper onto the edges of the steps on the

walkways or paint white stripes. These would reduce the likelihood that beachgoers would fall on the steps and injure themselves. The motion was seconded and approved.

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