

Maine Beaches Conference 12 July 2013 Concurrent Session Notes: Approaches for Coastal Erosion Control

Pete Hanrahan

What ideas and technology exists for erosion control? Ian McCaharg's *Design with Nature* was written in 1967 and the principles he mentions are still in play today.

Because state and local regulations are very different in every state, not all of the products and techniques shown are relevant in Maine.

What is causing the erosion? Sea level rise, storm surges.

There are four main ways to address erosion: hard armor, soft armor, beach nourishment, do nothing. Traditional response: more rock! Hard armor such as sea walls, bulkheads, sheet pilings, gabion baskets, groins.

Beach nourishment is not a permanent solution. Drift fences have been used in Cape Cod. Additional technologies are emerging, such as coconut fiber soil envelopes, anchors, geosynthetic tubes, marine mattresses, etc.

Steve Dickson

Popham Beach is the "problem child" in our state. Dunes present in 2009 are now gone (200-400 feet of loss in four years). The Morse River changes the sand movement. Fallen trees placed at the erosion hot spot at the toe of the dune (tree wattles) have slowed the erosion. Hurricane Irene caused damage.

18 months after erosion control activities (with Army Corps of Engineers permits), dunes starting to take and they have a long beach profile but will still need "touch up". East Beach eroding and the road is being threatened. The Morse River is coming back and could take 5-10 years to create a problem.

Sue Schaller

Dune grass dying in Old Orchard Beach because of drought, harsh environment, nutrient-poor soils, loss of root system, and disease. Fixing just three of these causes can reverse the die off and protect the dunes, which protect private property, serve as a storm barrier, dissipate wave energy.

A 2007 FEMA-funded project restored dunes on Old Orchard beach at former location of Surf Street. Fencing is key to protecting the dunes! Cedar and rope works great. Also native plants: dune grass, beach pea, Virginia rose, beach plum, northern bayberry (works great on back of dune), pitch pine, dusty miller, woolly beach heather, yucca.

Avoid lawn care products and do not apply fertilizer. Homeowners should consider less lawn and more dune grass. Avoid and remove invasive plants. Specs for dune walkovers and paths vary from state to state.

Marybeth Richardson/Jay Clement

Coastal Sand Dune Rule (Chapter 355) created in mid 2000s recognizing fragile nature of the dune, which includes the beach berm, frontal dune, dune ridge, and back dune. Most of the hard materials that Peter Hanrahan presented earlier are not allowed in Maine.

Beach nourishment standards - sand can be brought in but needs a permit. There are “de minimus” permits, permit-by-rule, and full permits. Permitted activities should be timed in order to not impact wildlife and other natural features.

Sea walls must meet certain permit requirements based on the need of repairs.

Post or pile foundation requirements depend on the location. Reconstruction in dune areas/wildlife habitat requires an IF&W permit.

A statutory exemption created in 2011 does allow minor expansions in the frontal dune.

Army Corps conducts permitting, dredging/beach nourishment, and coastal protection activities in the shoreland zone. Federal permitting separate from that of the state and is required for any work done in navigable waters under section 404 of the Clean Water Act.