

Research Trends and Results

"Manual for Sand Dune Scarp Control Works" Completed as a Deliverable of the Sand Pack Joint Research

-- First Full-scale Adoption in Japan for Miyazaki Coast ---

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1. Joint research

As a deliverable of the joint "Research on Performance Evaluation of Sand Pack Structure for Coastal Protection Works," conducted from 2010 to 2012, Technical Note of NILIM No. 745 "Manual on Performance Evaluation, Construction and Maintenance for Sand Dune Scarp Control Works" was completed.¹⁾

This joint research was conducted by the Coast Division of the NILIM and three geotextile manufacturers (Nakada Industrial Co., Ltd., Maeda Kosen Co., Ltd., and Mitsui Kagaku Sanshi). In the research, hydraulic model tests, full-scale tests and material tests were conducted, and field tests were conducted along the Hamaju Coast, Miyazaki Coast, etc.

On July 2, 2013, a reporting session was held at the Tsukuba Center for Institutes, which was attended by 92 persons from governments, universities, construction consultant companies, construction material manufacturers, etc.

2. Sand dune scarp control works and sand

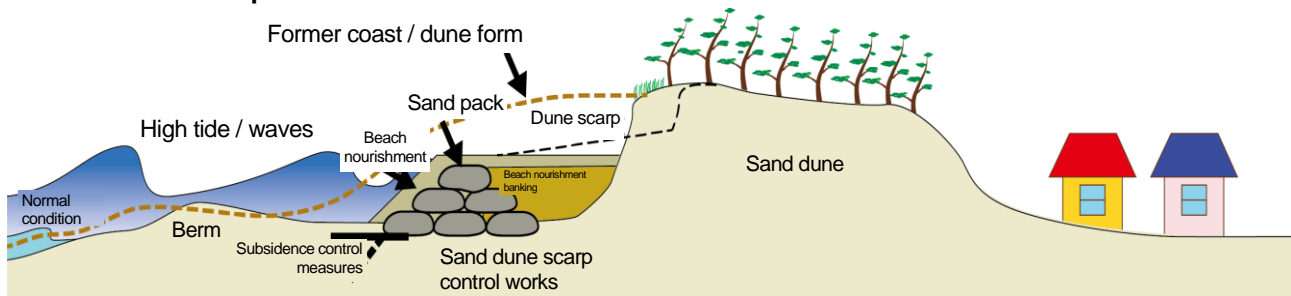


Figure: Sand Dune Scarp Control Works

Sand Beach (Hamaju Coast)



Photo 1: Sand Dune Scarp Control Works Fit for

packs

Sand dune scarp control works consist of sand packs (sand pack structure) and beach fills (Figure). Using sand packs and beach nourishment to prevent erosion at the foot of sand dune scarps, which causes sand dune scarps to retreat, will control the retreat of sand dune scarps. For sand packs, local beach material and beach nourishment material are used as fill material, which results in faster construction work than concrete revetment work. Since the height of the top of sand packs used for sand dune scarp control works is as low as berm height, they are covered with sand under normal conditions, forming a landscape fit for the sandy beach (Photo 1).

Sand packs were fully adopted for the first time in Japan as buried shore protection works in the Oida District, Miyazaki Coast (Photo 2).

[Reference]

1) Technical Note of NILIM No.745 pp. I-1-1 - II-4-149
<http://www.nilim.go.jp/lab/bcg/siryounn/tnn0745.htm>



Photo 2: Sand Dune Scarp Control Works Adopted or Miyazaki Coast