Port Development in a Tidal Inlet System

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Research Projects

1. Monitoring of dredged sediment disposal
   - Multibeam Surveying
   - Side-Scan Sonar Surveys

2. Investigations of Entrance Channel Sedimentation and Channel Hydraulic Efficiency
   - Hydrodynamic Modeling
     - Tides
     - Waves

3. Influence of Capital Dredging on Tidal Flow
Monitoring of dredged sediment disposal and beach renourishment

Dredge Spoil Disposal

Disposal Sites

Multiple Survey Comparison

Combination Side-Scan and Bathymetric Surveys

Images from Spiers and Healy (2007a)
Data Collection for Model Calibration

Image Spiers, Healy and Winter
Investigations of Entrance Channel Sedimentation

Wave Modeling

Modeled Wave Heights for a 4 m Storm Event
(Photos by B. Scarfe)

Comparisons of wave refraction patterns with bed sediment facies

All Images from Spiers and Healy (in prep)
Investigations of Entrance Channel Sedimentation

Modeled Eddy Migration

Ebb-tide induced eddy (image: Google Earth)

ADCP survey ebb-jet dynamics

Sediment accumulation in the entrance channel and transient eddy migration

Images from Spiers, Healy and Winter
Recent Publications


de Lange, W.P., Prasetya, G.S., Spiers, K.C., Moon, V.G. Utilising palaeotsunami data for hazard assessment: numerical modelling to identify credible sources. Accepted for *Solutions to Coastal Disasters*. American Society of Civil Engineers.


