Shoreline Observations : Monitoring dune response and recovery
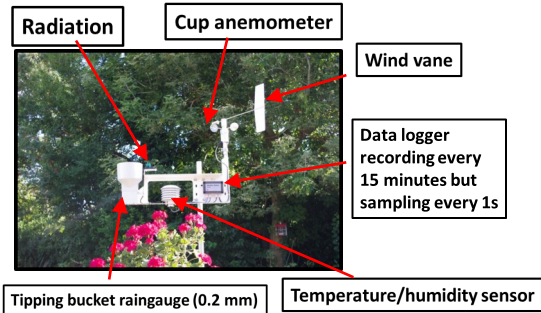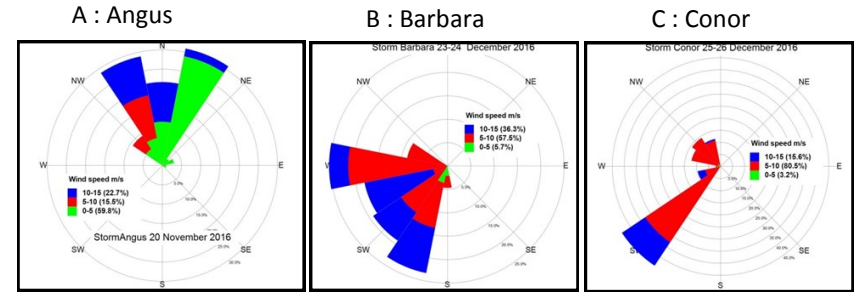
Weather Station instrumentation for Workpackage 1

Logging storms during winter 2016-17

Installation at Penhale Sands on 31 August 2016

Radiation
Cup anemometer
Wind vane
Data logger recording every 15 minutes but sampling every 1s
Tipping bucket raingauge (0.2 mm)
Temperature/humidity sensor

A : Angus

B : Barbara

C : Conor

How will the dunes at Penhale Sands respond to storms? Monthly repeat RTK surveys conducted in the field will reveal event scale morphological responses which will be quantified.

LiDAR will reveal the decadal scale change.

Monitoring shoreline Responses in East Anglia for Workpackage 2

Holkham Bay, Norfolk (2D RTK) August cross-shore profiles 2006 -2014 courtesy of EA Anglian Coastal Group
(more details in Brooks, S.M., Spencer, T. and Christie, E.C (2017) Storm impacts and shoreline recovery: Mechanisms and controls in the southern North Sea. Geomorphology (http://dx.doi.org/10.1016/j.geomorph.2017.01.007))
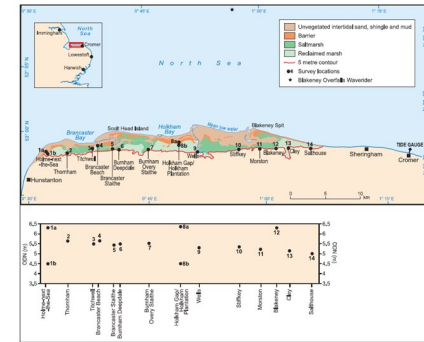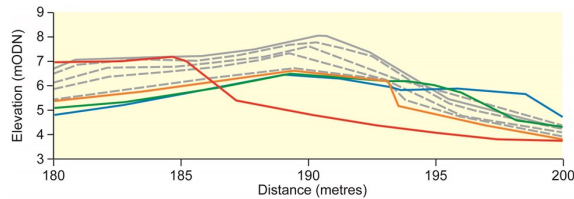

Fig. 1. Alongshore variation in maximum water levels reached during the storm surge of 5 December 2013 on the barrier coastline of North Norfolk, eastern England (ODN = Ordnance Datum Newlyn, where 0.0 ODN approximates to mean sea level).

Water levels for 5th December 2013, North Norfolk Coast

From Spencer et al., 2014 Where local matters: Impacts of a major North Sea storm surge. *EOS, Transactions of the American Geophysical Union* 95 (30): 269-270.

23 March 2016

16 December 2016
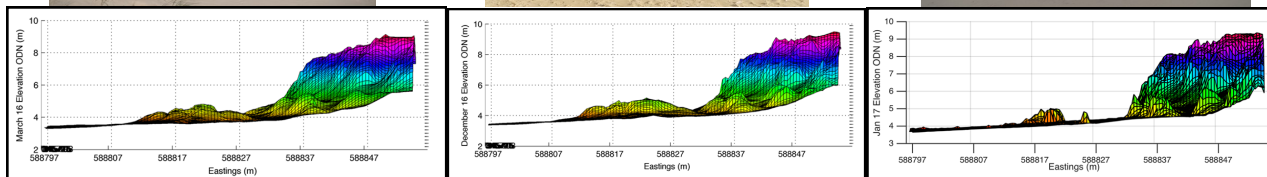
18 January 2017

Brooks, S.M. and Tempest, J. (2017) unpublished data

Water levels from 13th January 2017 and 5th December 2013