

Goodwin Sands Directional Waverider Buoy

Location

OS: 643171E 155848N

WGS84: Latitude: 51° 14.996' N Longitude: 01° 28.994' E

Water Depth

~10 m CD

Instrument Type

Datawell Directional Waverider Mk III

Data Quality

Recovery rate (%)	Sample interval
98	30 minutes

Statistics - 2012

All times are GMT

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)	No. of days
January	0.72	5.6	3.6	152	8.5	30
February	0.62	5.1	3.5	138	5.5	29
March	0.40	4.6	3.3	130	7.0	31
April	0.72	5.4	3.7	139	8.7	30
May	0.55	5	3.5	116	11.4	31
June	0.68	4.9	3.5	146	14	30
July	0.52	5	3.5	156	15.9	31
August	0.52	4.6	3.3	156	17.6	30
September	0.61	4.9	3.4	157	17.1	30
October	0.76	5.4	3.6	137	14.6	30
November	0.79	5.6	3.6	158	11.9	30
December	0.91	5.8	3.8	161	9.2	30

Storm Analysis

Date/Time	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
03-Jan-2012 13:00	3.00	9.1	5.3	194	-1.63	HW -5	3.0	-0.31	-0.01
07-Dec-2012 02:00	2.60	7.7	5.3	187	0.02	HW -3	3.2	-0.32	-0.30
08-Jun-2012 13:00	2.55	7.1	5.0	184	2.11	HW -1	4.7	-0.28	0.03
25-Nov-2012 06:00	2.48	9.1	5.2	190	0.08	HW -3	3.0	0.14	0.29
04-Nov-2012 14:00	2.45	7.1	4.8	188	2.35	HW	3.7	0.24	0.73

* Tidal information is obtained from the nearest recording tide gauge (the Wave Radar REX at Deal Pier). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest surge during the storm event.

Annual Statistics

Year	Annual H_s exceedance* (m)						Annual Maximum H_s	
	0.05%	0.5%	1%	2%	5%	10%	Date	A_{max} (m)
2008	-	1.99	1.86	1.69	1.42	1.20	05-Oct-2008 04:00	2.37
2009	2.45	2.07	1.90	1.73	1.46	1.24	28-Nov-2009 06:00	2.57
2010	2.59	2.02	1.86	1.65	1.39	1.19	11-Nov-2010 10:30	2.81
2011	2.81	2.00	1.74	1.56	1.34	1.16	13-Dec-2011 02:00	3.16
2012	2.60	2.08	1.9	1.72	1.43	1.20	03-Jan-2012 13:00	3.00

* i.e. 5 % of the H_s values measured in 2008 exceeded 1.42 m

Distribution plots

The distribution of wave parameters are shown in the accompanying graphs of:

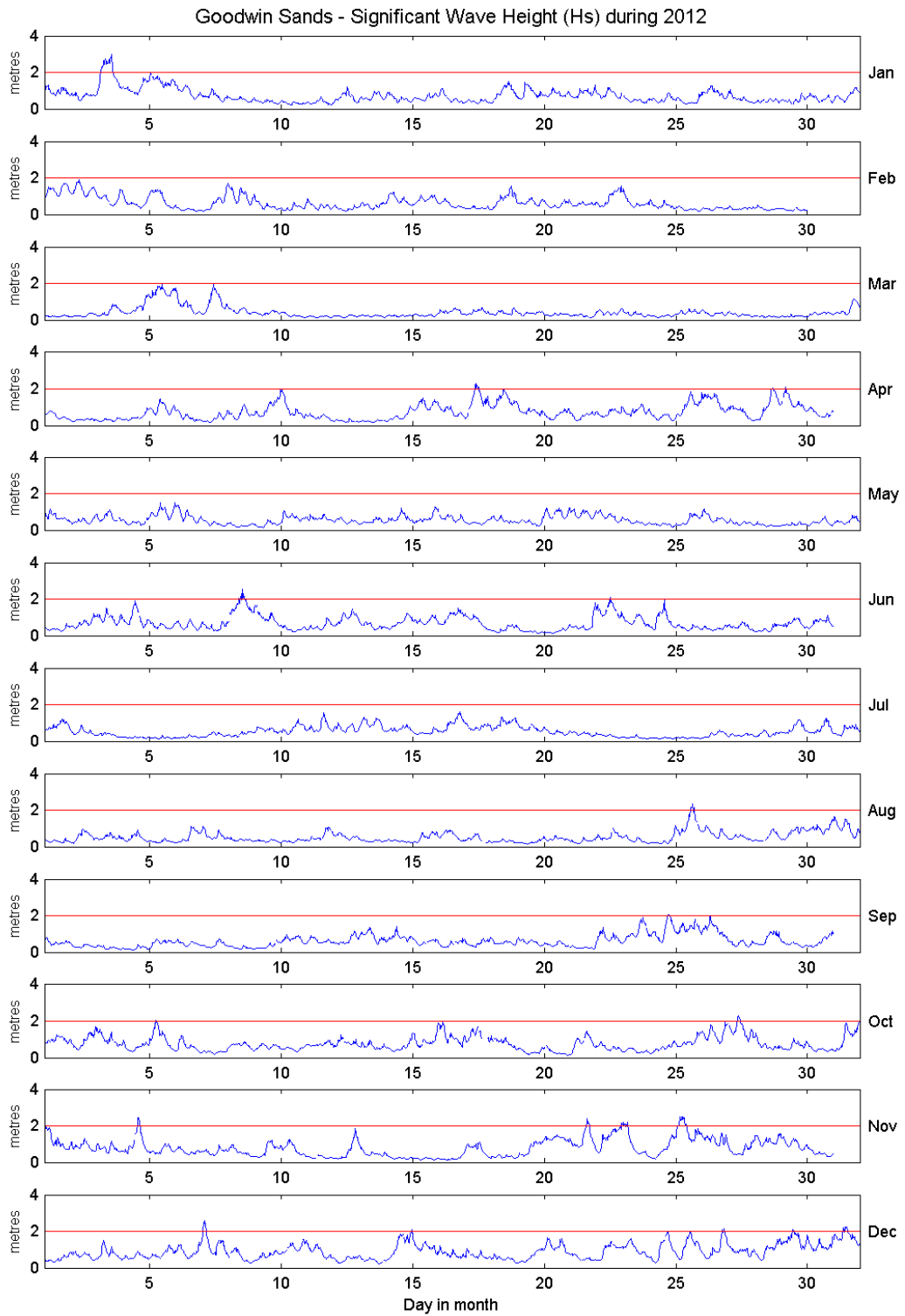
- Annual time series of H_s (red line is 2.0 m storm threshold)
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data
- Percentage of occurrence of H_s , T_p , T_z and Direction for 2012
- Incidence of storm waves for 2012. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

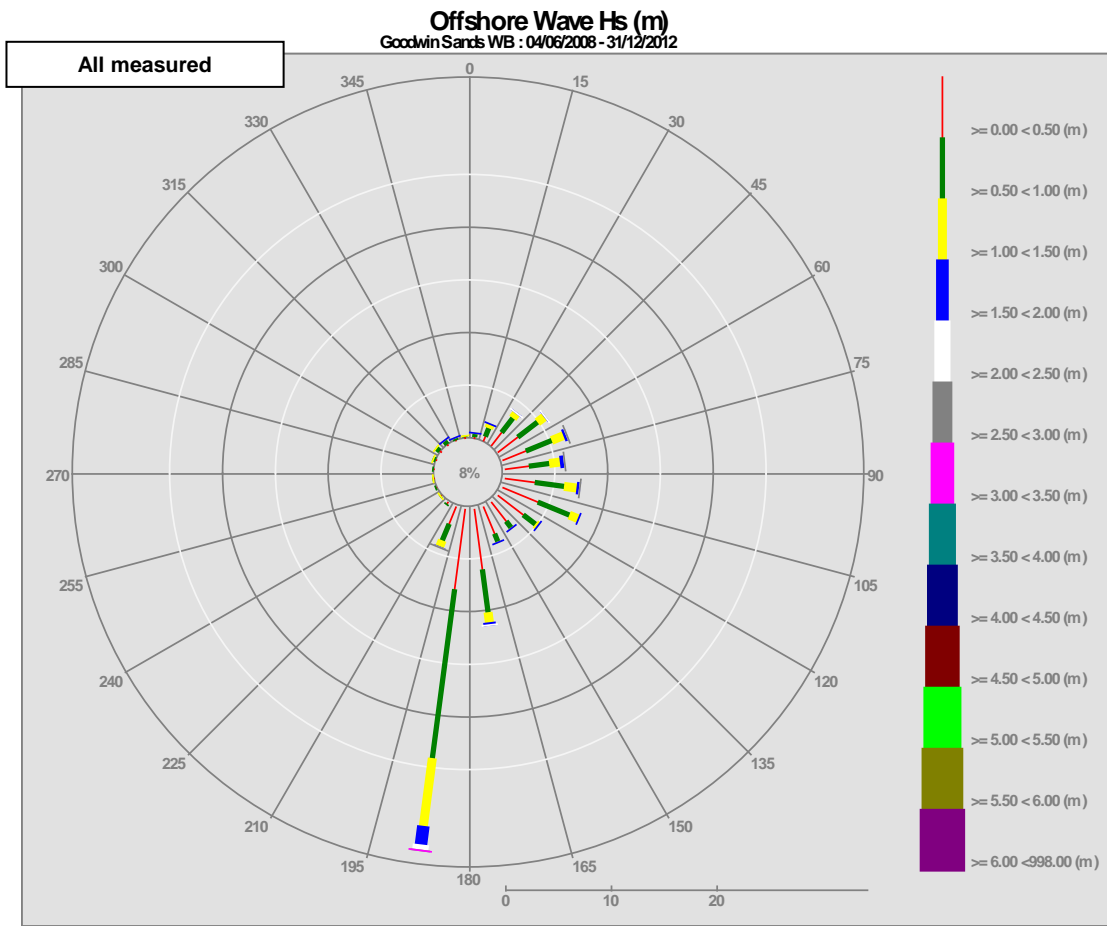
General

The buoy was first deployed on 4 June 2008, at which time the magnetic declination at the site was 1.3° west, changing by 0.14° east per year.

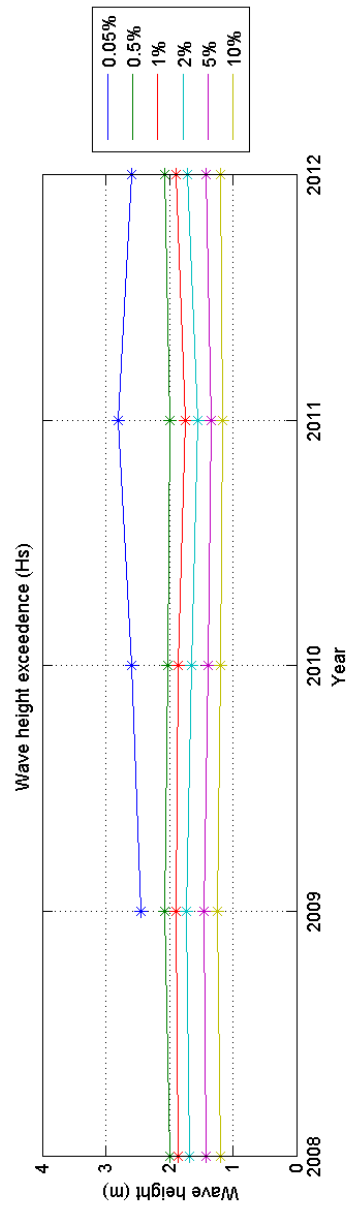
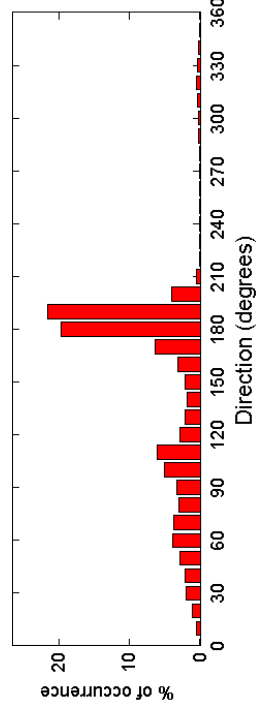
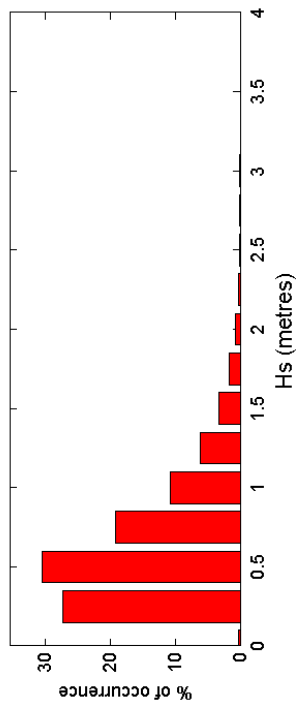
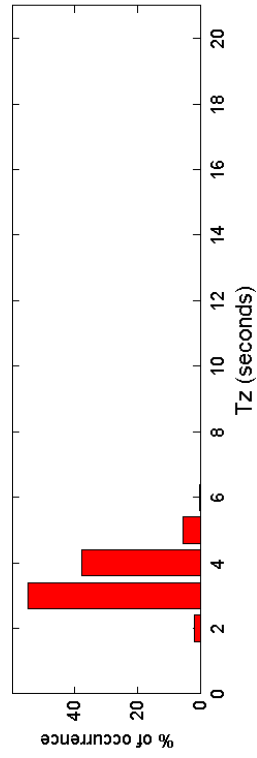
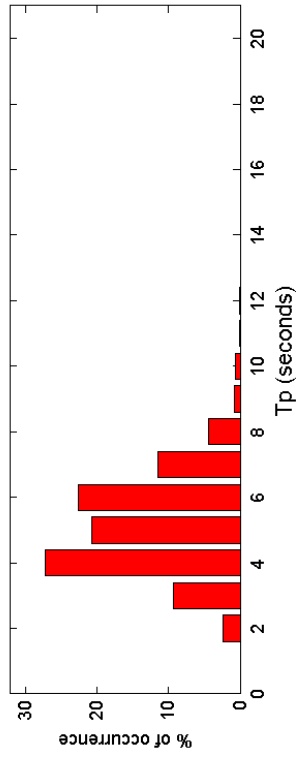
Acknowledgements

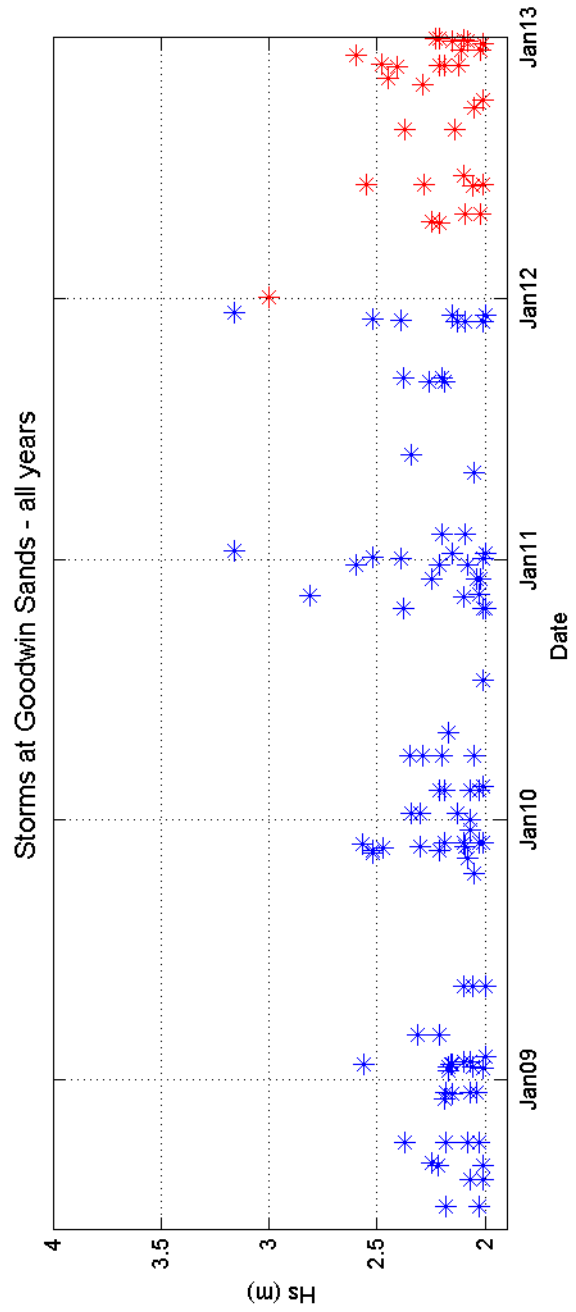
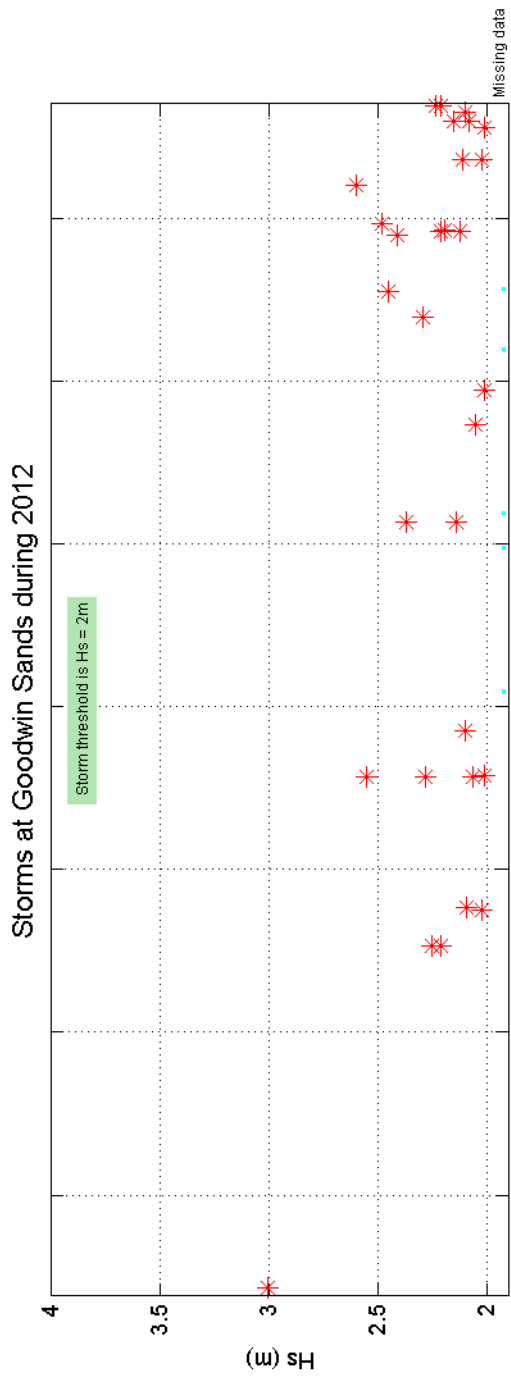
The shore station for the Waverider is kindly hosted by Ramsgate Harbourmaster. TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.





Goodwin Sands 2012





Goodwin Sands 2008 to 2012 - Joint distribution (% of occurrence)

