

Milford-on-Sea Directional Waverider Buoy

Location

OS: 427264E 90396N

WGS84: Latitude: 50° 42.754' N Longitude: 01° 36.912' W

Water Depth

~10 m CD

Instrument Type

Datawell Directional Waverider Mk III (17 November 2005 to present)

Datawell Waverider Mk II (20 May 1996 to 03 October 2005)

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	0.81	8.6	4.2	214	8.9	30
February	0.43	10.3	4.5	212	6.3	28
March	0.41	11.4	4.6	210	8.4	31
April	0.69	7.8	4.0	206	10.0	30
May	0.38	6.4	3.7	211	12.2	31
June	0.78	7.0	4.0	212	15.0	30
July	0.61	6.1	3.7	215	16.6	31
August	0.64	6.8	3.8	213	18.5	31
September	0.57	6.7	3.6	215	17.3	30
October	0.71	8.4	4.5	214	14.4	29
November	0.76	8.6	4.3	213	11.4	29
December	1.01	9.9	4.7	211	8.9	29

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 10:30	3.93	10.5	7.1	217	0.27	HW +4	1.2	0.4	0.4

* Tidal information is obtained from the nearest recording tide gauge (the gauge on Royal Lympington Yacht Club starting platform). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest positive 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)
1996	-	-	-	-	-	-	28-Oct-1996 21:00	4.05
1997	3.08	2.39	2.15	1.97	1.59	1.20	24-Feb-1997 23:00	3.32
1998	2.89	2.47	2.28	2.00	1.66	1.37	27-Oct-1998 13:00	3.21
1999	3.01	2.32	2.11	1.85	1.56	1.29	24-Dec-1999 22:00	3.23
2000	3.90	2.85	2.50	2.19	1.74	1.41	31-Dec-2000 19:00	4.09
2001	3.71	2.63	2.24	1.91	1.52	1.20	01-Jan-2001 00:00	4.07
2002	3.54	2.92	2.61	2.35	1.96	1.62	15-Oct-2002 18:00	4.06
2003	2.82	2.20	2.02	1.76	1.37	1.12	14-Nov-2003 15:00	2.92
2004	3.21	2.49	2.29	2.05	1.69	1.42	31-Jan-2004 17:00	3.44
2005	3.09	1.86	1.72	1.56	1.28	1.05	02-Dec-2005 18:30	3.53
2006	2.89	2.46	2.31	2.10	1.73	1.41	03-Dec-2006 06:30	3.51
2007	3.21	2.53	2.25	2.04	1.74	1.46	18-Jan-2007 12:00	3.64
2008	3.09	2.40	2.16	1.96	1.70	1.42	10-Mar-2008 20:00	3.42
2009	3.26	2.60	2.36	2.05	1.69	1.39	14-Nov-2009 15:00	4.08
2010	2.68	2.17	1.91	1.59	1.29	1.04	31-Mar-2010 06:00	2.96
2011	2.85	2.21	2.03	1.84	1.53	1.30	13-Dec-2011 01:00	3.24
2012	3.39	2.33	2.14	1.93	1.61	1.31	03-Jan-2012 10:30	3.93

* i.e. 5 % of the H_s values measured in 2004 exceeded 1.69 m

Distribution plots

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

- Annual time series of H_s (red line is 3.0 m storm threshold)
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data since 17 November 2005
- 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

Significant wave height return periods

Return periods for significant wave height can be calculated since the buoy has been deployed for more than 5 years. The return periods are based on 3-hourly records and are calculated for periods up to 10 times the record length, using a Weibull distribution.

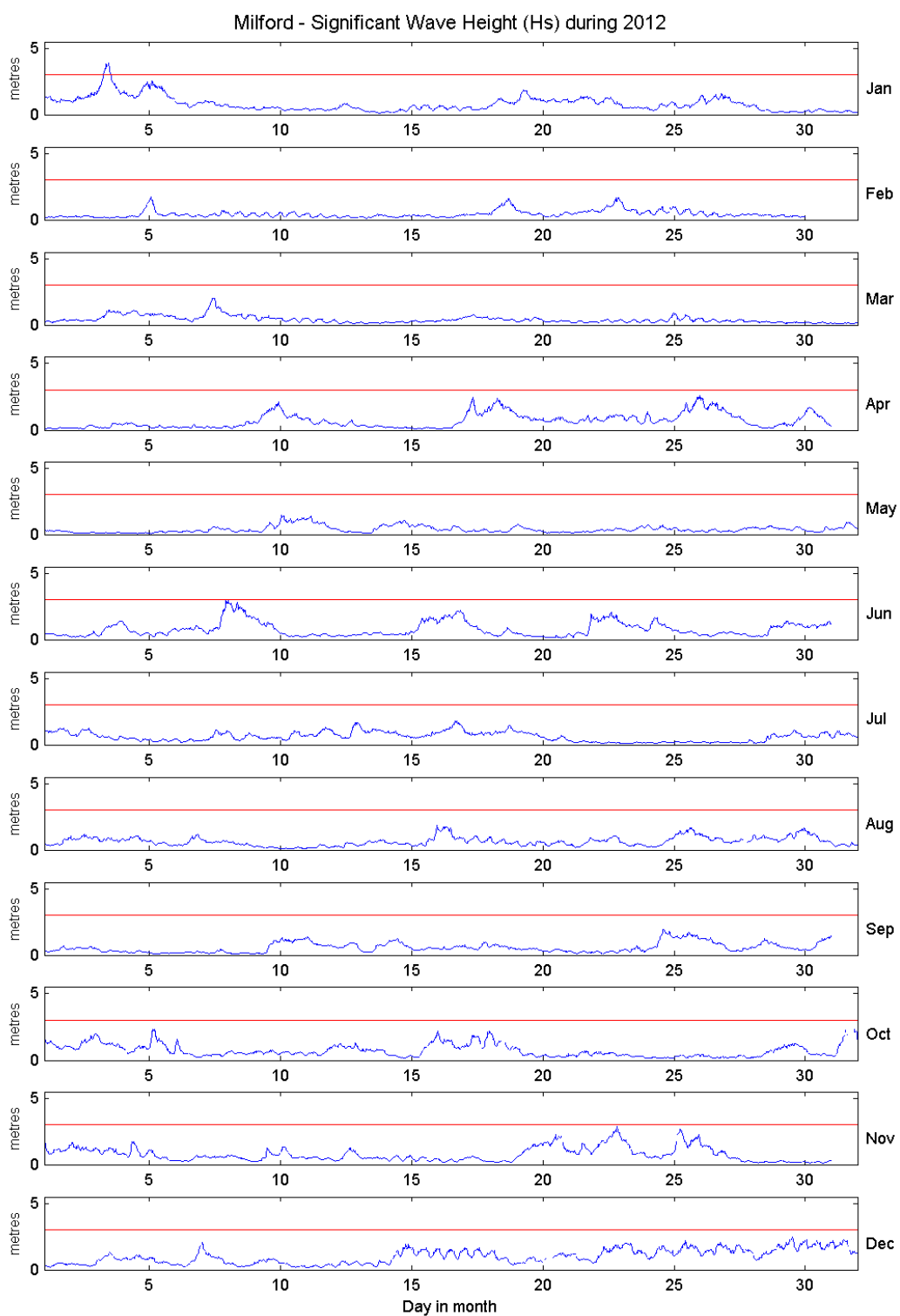
Return period (years)	Significant wave height (m)	Comments
1	3.5	Depth-limited at MLWS
2	3.7	
5	3.9	
10	4.1	
20	4.3	Depth-limited at MHWS
50	4.5	
100	4.7	

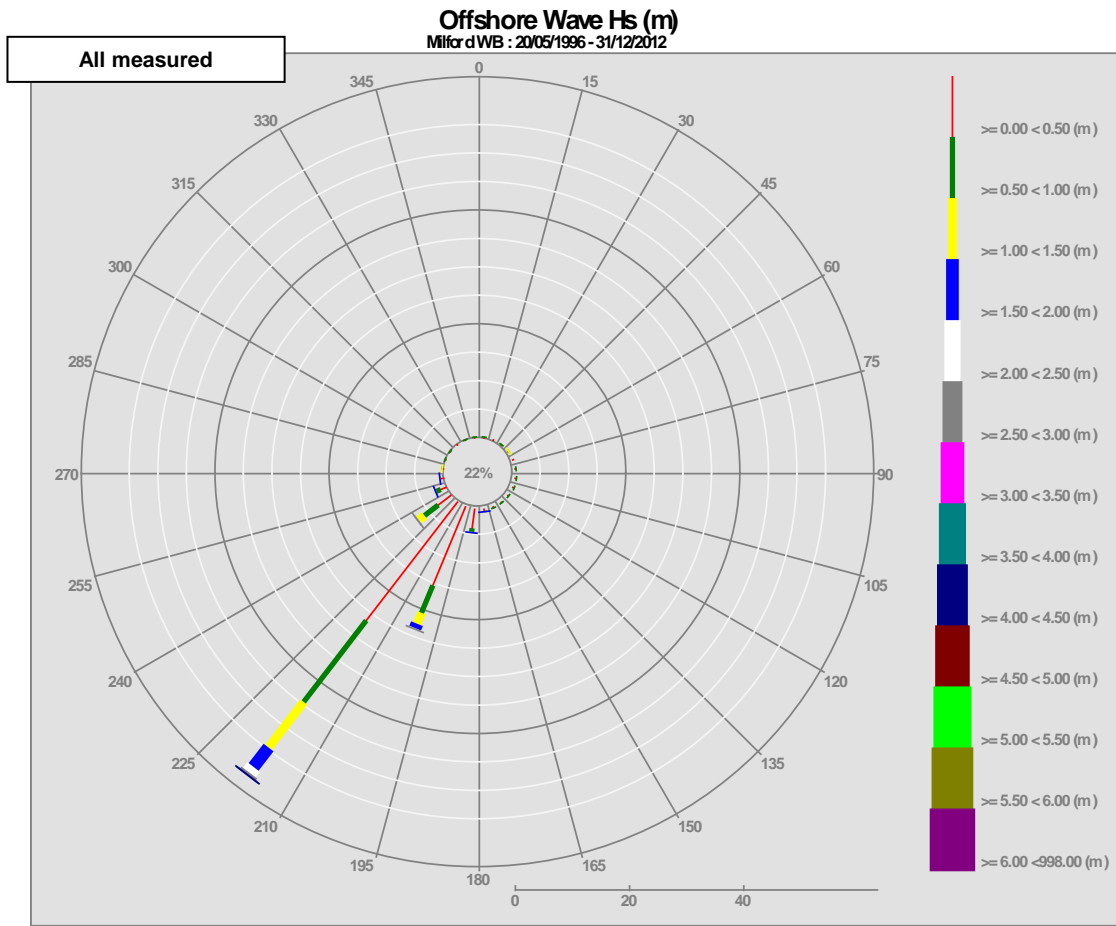
General

The buoy was first deployed on 20 May 1996. It was replaced with a Directional Waverider on 17 November 2005, at which time the magnetic declination at the site was 2.6° west, changing by 0.15° east per year.

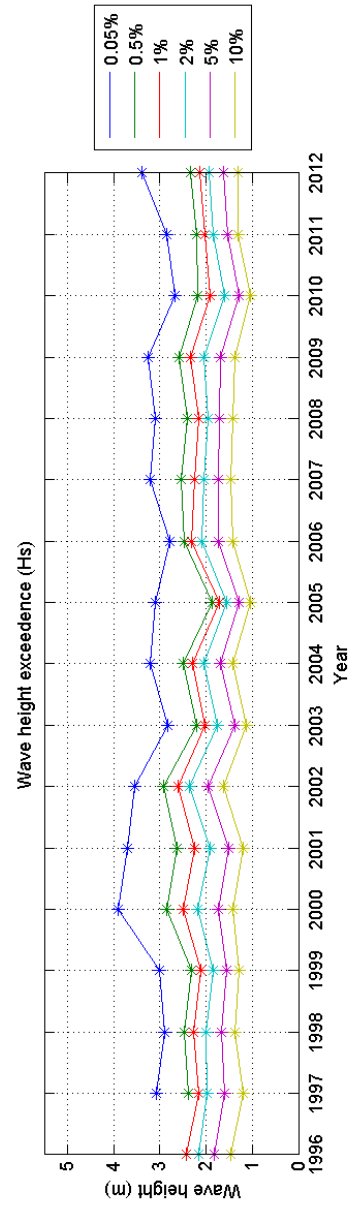
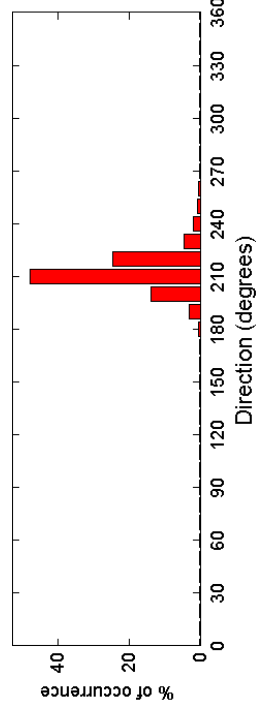
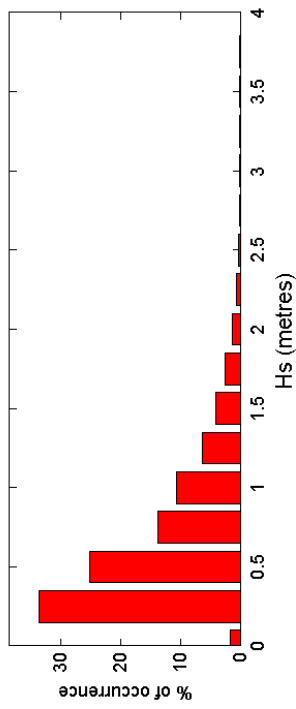
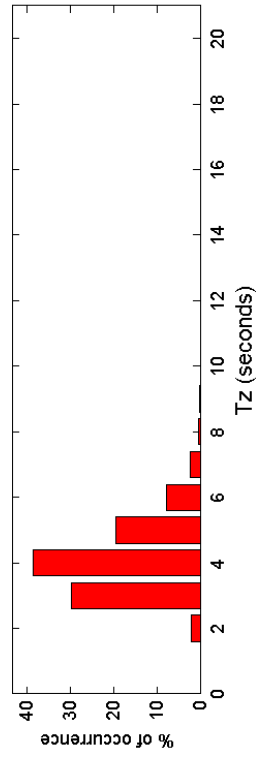
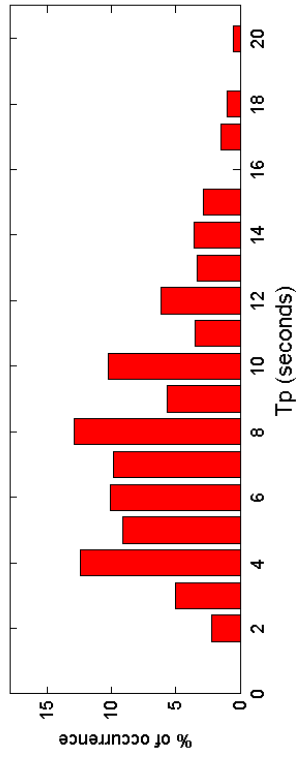
Acknowledgements

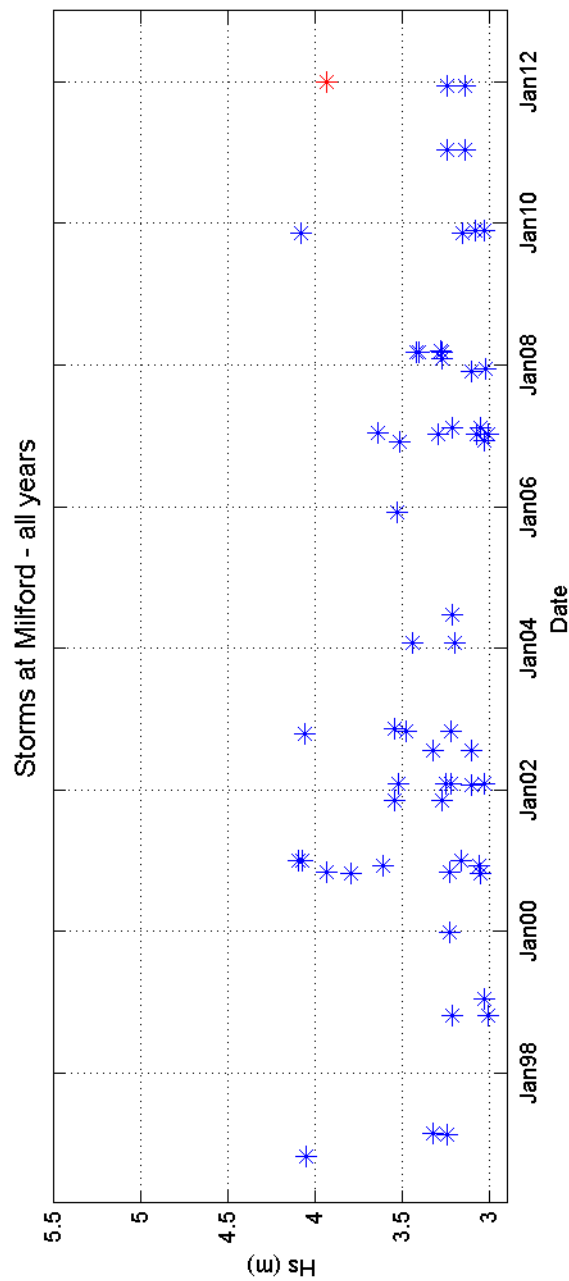
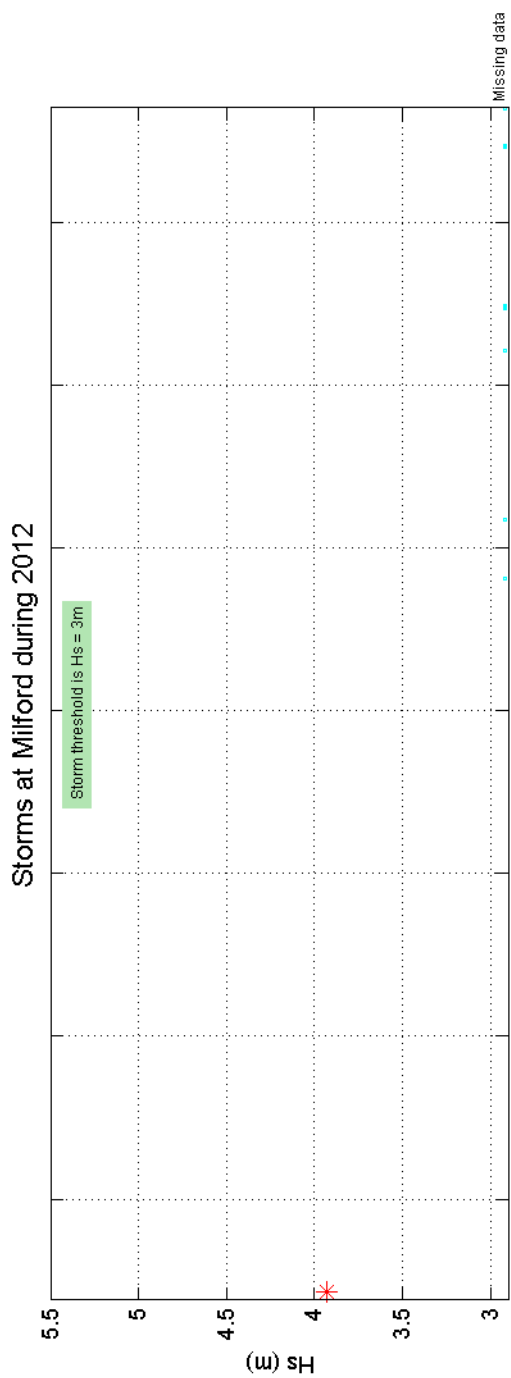
Tidal predictions for Lymington were supplied by EMU Limited.





Milford 2012





Milford 1996 to 2012 - Joint distribution (% of occurrence)

