

Tor Bay Directional Waverider Buoy

Location

OS: 292267E 60381N

WGS84: Latitude: 50° 26.001 N Longitude: 03° 31.097' W

Water Depth

~11 m CD

Instrument Type

Datawell Directional Waverider Mk III

Data Quality

Recovery rate (%)	Sample interval
48	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	0.43	6.0	3.5	159	10.0	31
February	0.42	7.0	3.8	136	7.8	29
March	0.31	7.6	3.6	120	9.2	31
April	0.52	5.9	3.6	136	9.9	30
May	0.31	3.8	3.0	166	10.9	7
June	-	-	-	-	-	0
July	-	-	-	-	-	0
August	-	-	-	-	-	0
September	-	-	-	-	-	0
October	-	-	-	-	-	0
November	0.46	6.4	3.8	120	12.5	19
December	0.46	7.2	3.6	146	10.7	31

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)
29-Apr-2012 12:30	3.06	9.1	6.2	101	-	HW +1	1.6	-	-
24-Nov-2012 21:00	2.33	6.7	5.3	113	-0.59	HW -6	2.6	0.4	0.5
02-Feb-2012 10:00	2.18	7.1	5.4	101	0.15	HW -3	1.4	-0.2	-0.1
15-Jan-2012 20:00	2.16	7.1	5.1	103	0.41	HW -3	3.0	-0.2	0

* Tidal information is obtained from the nearest recording tide gauge (the WaveRadar REX on Teignmouth 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	-	2.20	2.10	2.01	1.22	0.88	28-Dec-2008 04:00	2.60
2009	2.56	1.79	1.60	1.43	1.10	0.84	12-May-2009 05:00	2.88
2010	2.50	1.96	1.85	1.67	1.40	1.10	12-Jan-2010 22:30	2.70
2011	2.39	1.84	1.63	1.39	1.06	0.78	24-Oct-2011 16:30	2.63
2012	2.86	2.18	2.00	1.71	1.31	0.93	29-Apr-2012 12:30	3.06

* i.e. 5 % of the H_s values measured in 2008 exceeded 1.22 m

Distribution plots

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

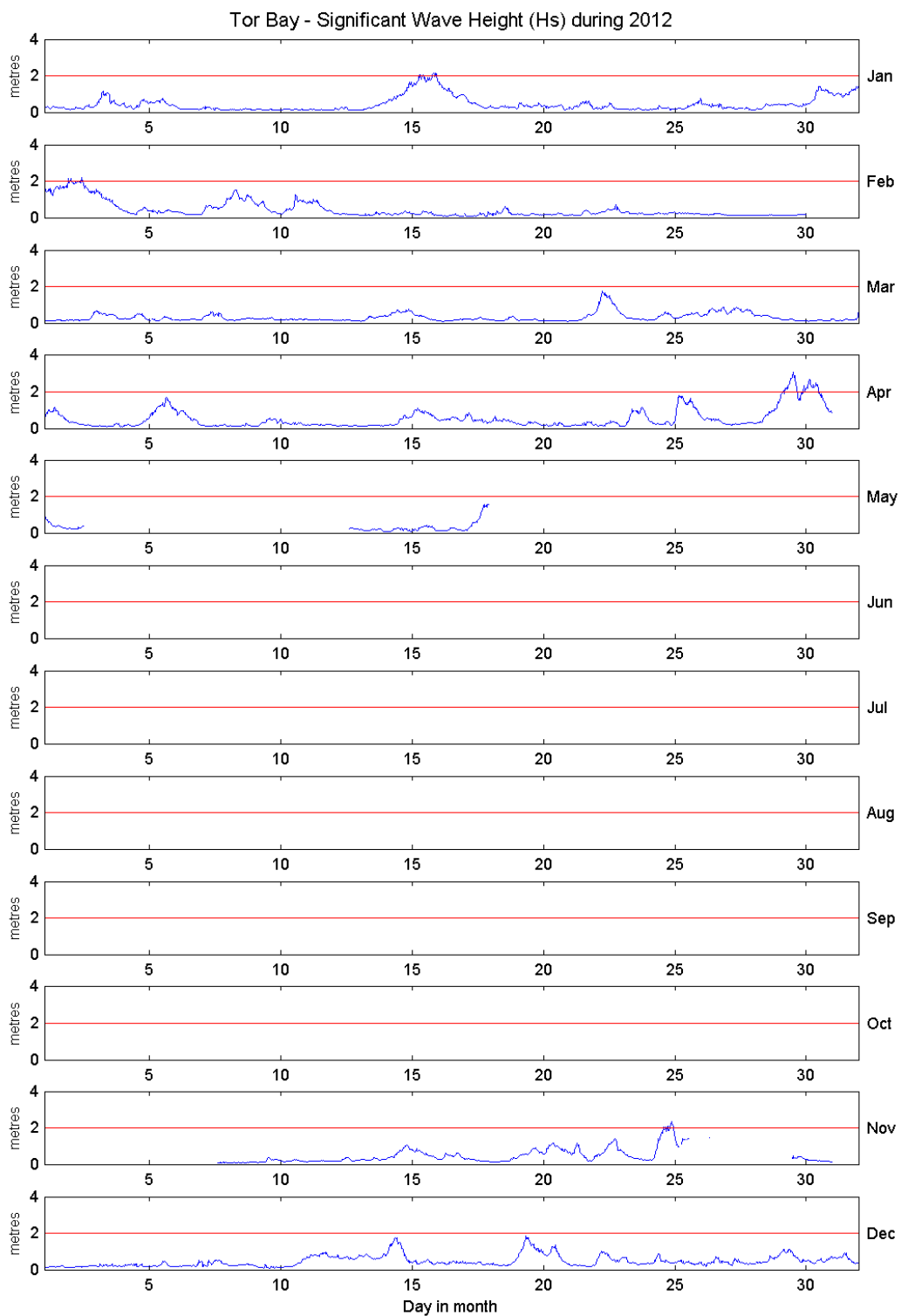
- Annual time series of H_s (red line is 2.0 m storm threshold)
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data
- Percentage of occurrence of H_s , T_p , T_z and Direction for 2012
- Incidence of storm waves for 2012. Storm events are defined using the Peaks-over-Threshold method.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

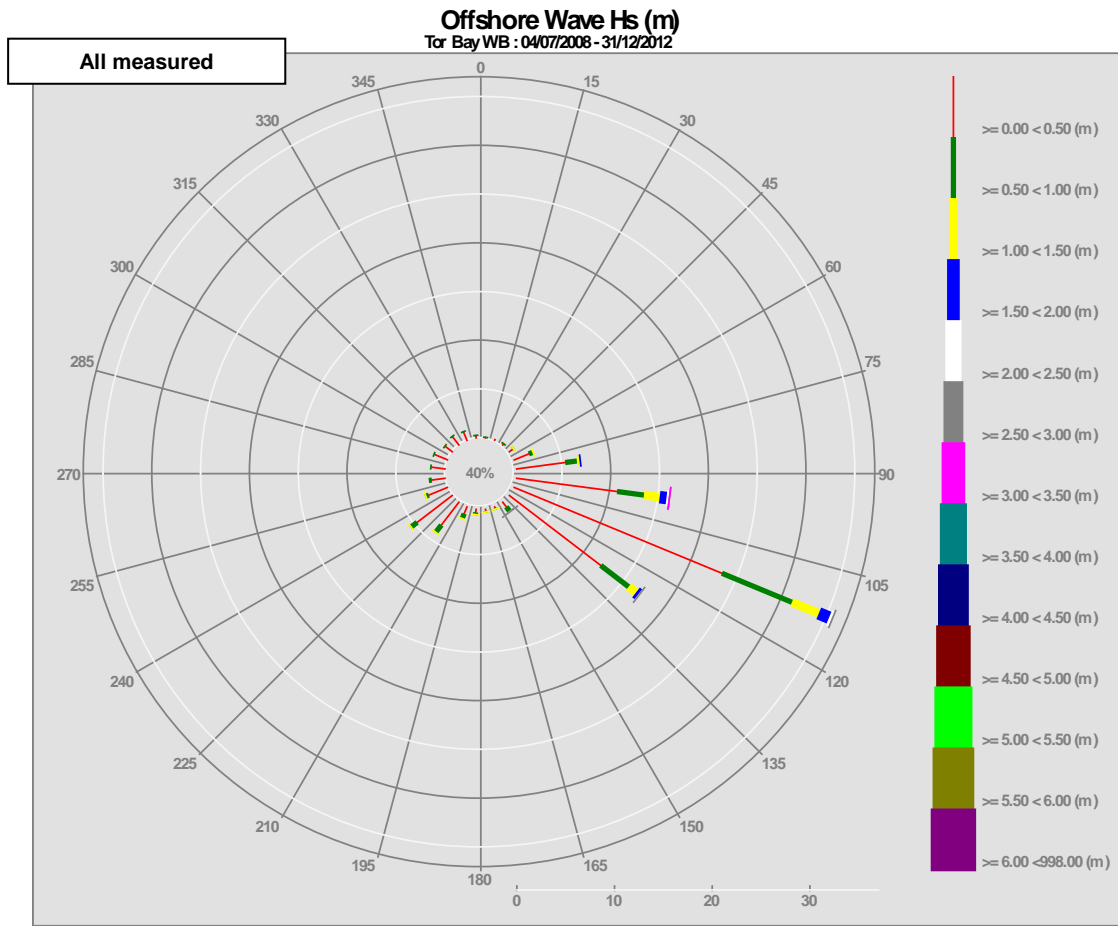
General

The buoy, owned jointly by Torbay Council and the Environment Agency (Southwest Region), was first deployed on 4 July 2008 at which time the magnetic declination at the site was 3.0° west, changing by 0.15° east per year.

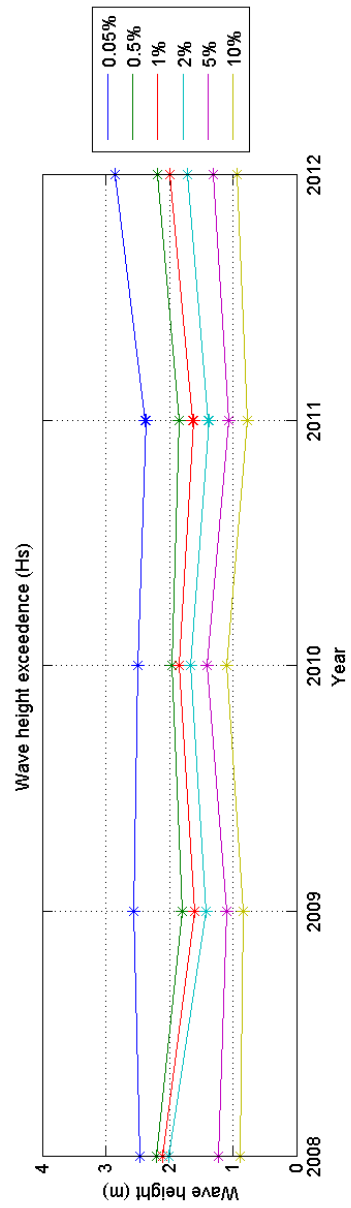
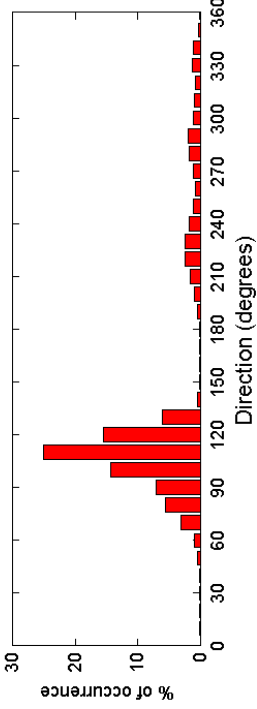
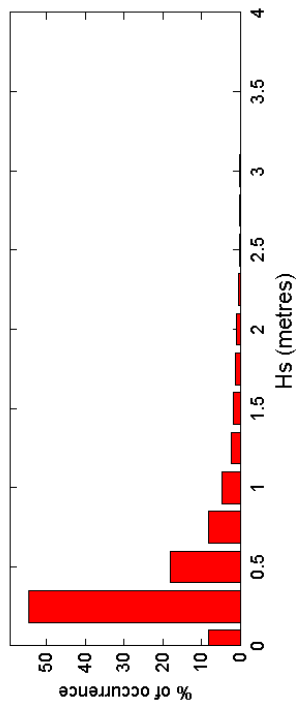
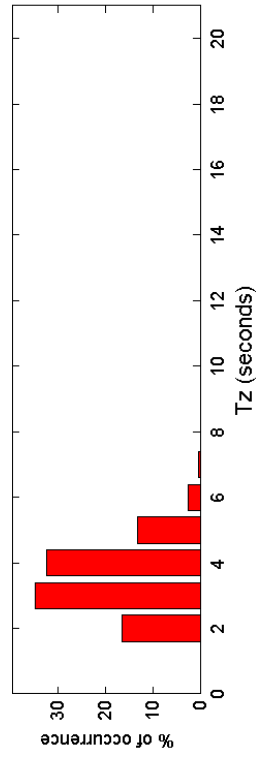
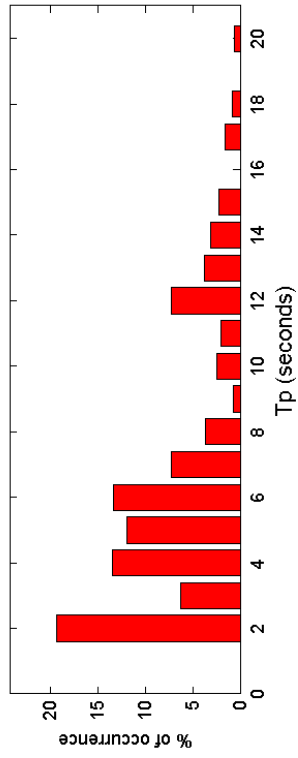
Acknowledgements

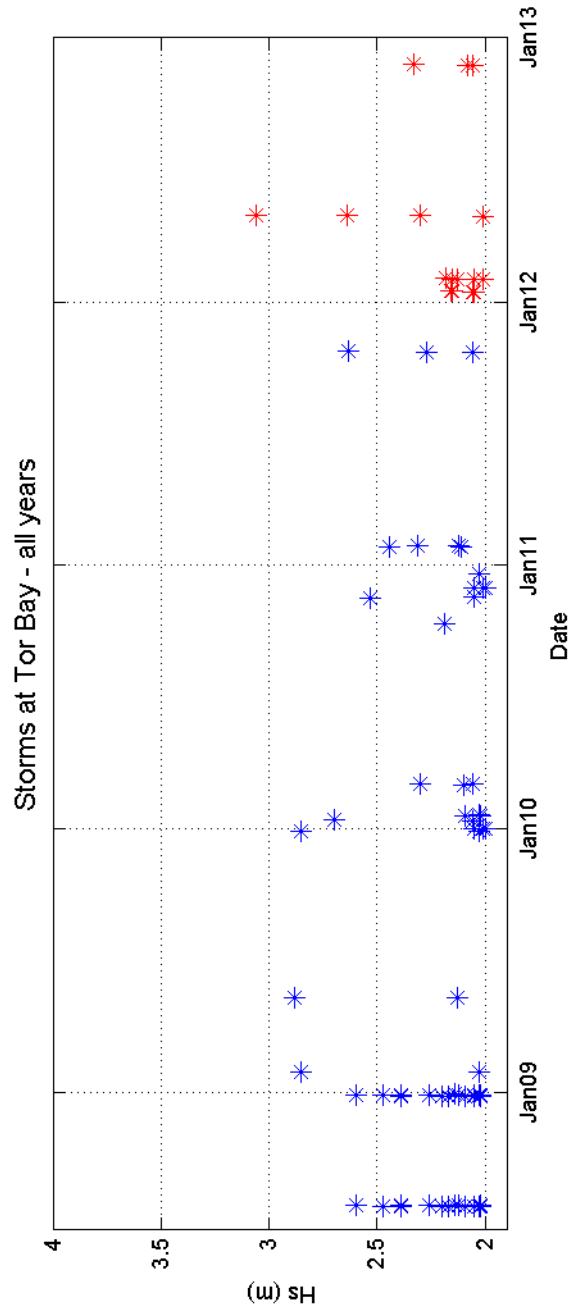
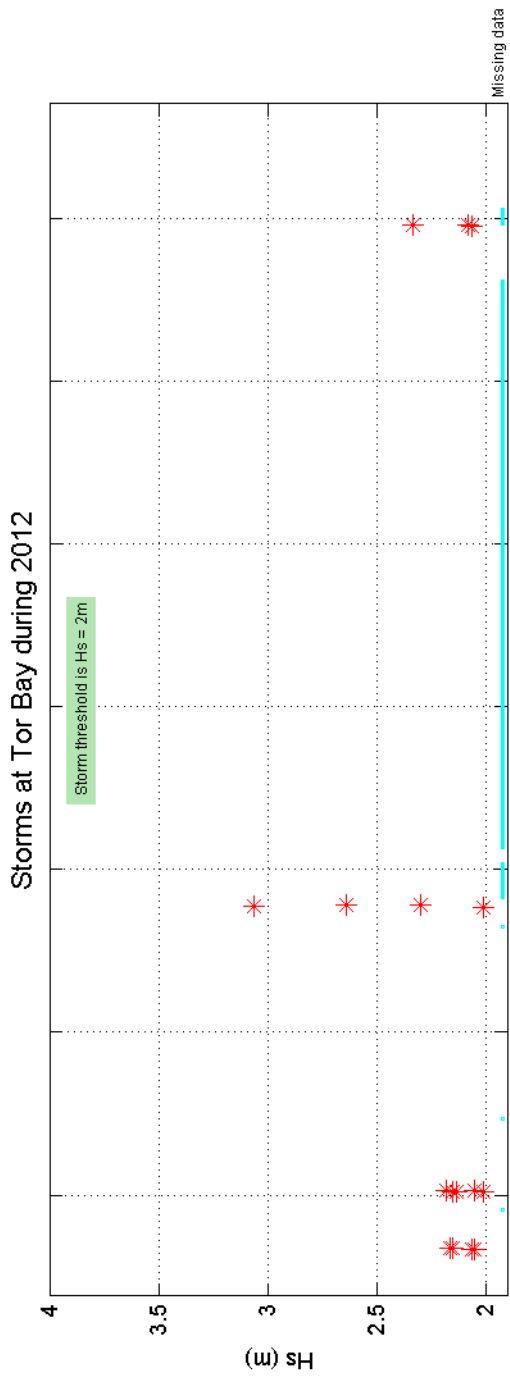
TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.





Tor Bay 2012





Tor Bay 2008 to 2012 - Joint distribution (% of occurrence)

