

## Weymouth Directional Waverider Buoy

### Location

OS: 370845 E 80428 N  
 WGS84: Latitude: 50° 37.369' N Longitude: 002° 24.810' W

### Water Depth

Approx. 10m CD

### Instrument Type

Datawell Directional WaveRider Buoy Mk III

### Data Quality

C1(%)	Sample interval
97	30 minutes

### Monthly Means

*All times GMT*

Month	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	0.73	7.6	4.1	166	9.3	31
February	0.57	6.4	3.7	153	9.0	29
March	0.50	6.5	3.9	166	8.9	31
April	0.42	5.7	3.6	154	9.9	30
May	0.39	5.1	3.4	135	12.5	30
June	0.29	5.7	3.6	163	15.0	28
July	0.42	5.6	3.4	162	16.6	30
August	0.47	5.3	3.5	165	17.3	30
September	0.50	5.7	3.6	151	16.5	30
October	0.49	6.5	4.0	162	14.8	31
November	0.44	6.0	4.0	152	12.0	26
December	0.49	6.6	4.0	153	9.3	29

Tables and plots of these values, together with the minimum and maximum values and the standard deviation are available on the website.

Highest storm events in 2008									
Date/Time	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Dir.	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
03-Feb-2008 13:00	2.74	7.7	5.7	160	0.30	HW -5	0.94	0.29	0.45
13-Jan-2008 20:00	2.58	7.7	5.5	162	0.75	HW -2	2.00	0.50	0.51
13-Dec-2008 06:30	2.57	8.3	5.6	165	1.43	HW	2.50	0.10	-0.35
10-Mar-2008 06:00	2.41	8.3	5.3	169	0.97	HW -3	2.52	0.83	1.00
05-Sep-2008 10:30	2.37	7.1	5.3	153	1.18	HW +1	1.45	0.27	0.33

\* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Weymouth). The surge shown is the residual at the time of the highest H<sub>s</sub>. The maximum tidal surge is the largest positive surge during the storm event.

Year	Annual $H_s$ exceedance* (m)						Annual Maximum $H_s$	
	0.05%	0.5%	1%	2%	5%	10%	Date	$A_{max}$ (m)
2007	2.29	1.72	1.43	1.24	1.03	0.85	18-Nov-2007 13:30	2.56
2008	2.57	1.95	1.75	1.46	1.1	0.89	03-Feb-2008 13:00	2.74

\* i.e. 5 % of the  $H_s$  values measured in 2007 exceeded 1.03m

### Distribution plots

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

- Percentage of occurrence of  $H_s$ ,  $T_p$ ,  $T_z$  and Direction for 2008
- Percentage wave height exceedance
- Joint distribution of all parameters for 2008, given both as number of observations and as percentage of occurrence
- Cumulative joint distribution of parameters from start of records
- Incidence of storm waves for 2008. Storm events are defined using the Peaks-over-Threshold method. The highest  $H_s$  of each storm event is shown.
- Annual time series of  $H_s$  (red line is storm threshold)

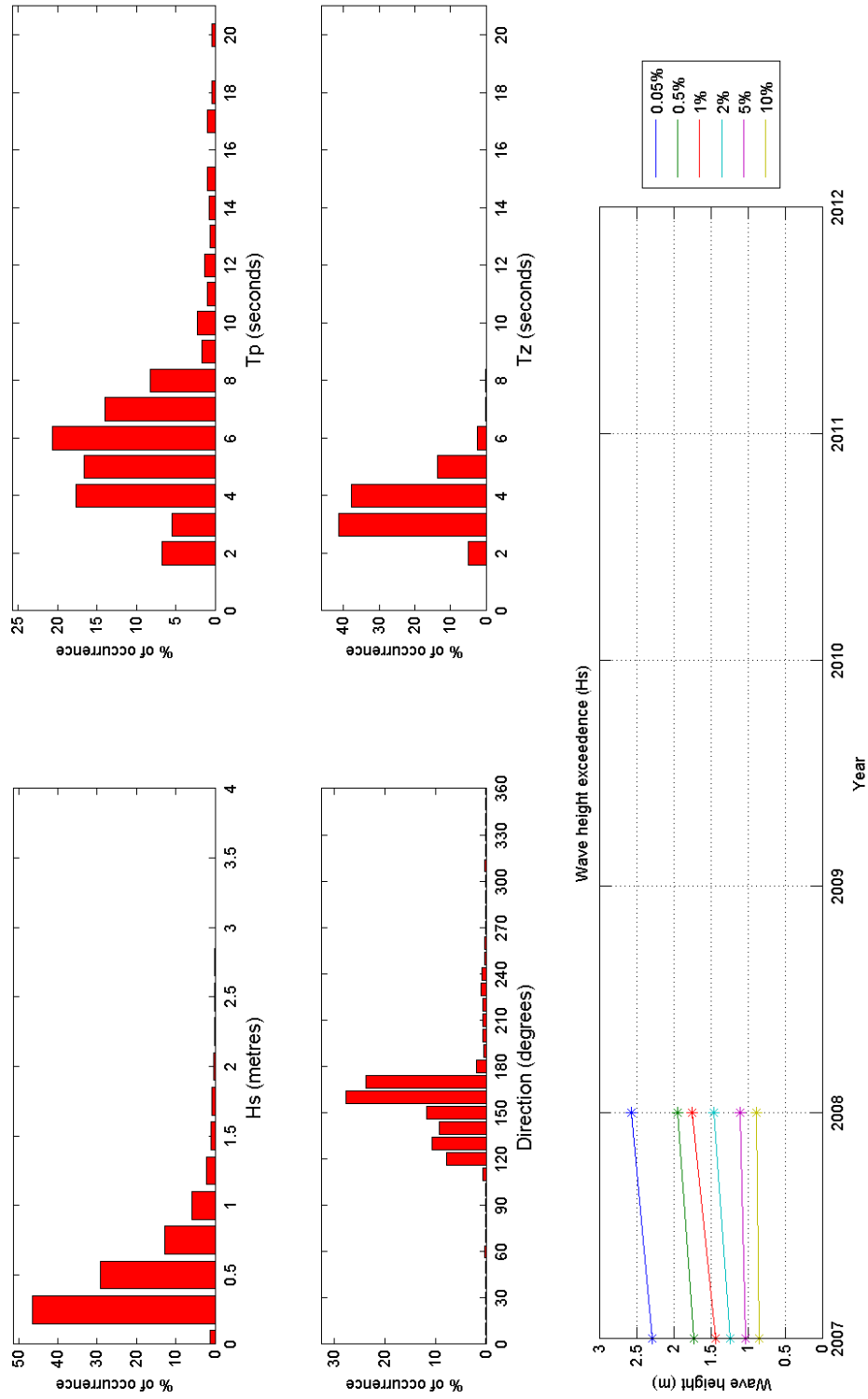
### General

The WaveRider was first deployed on the 18 December 2006.

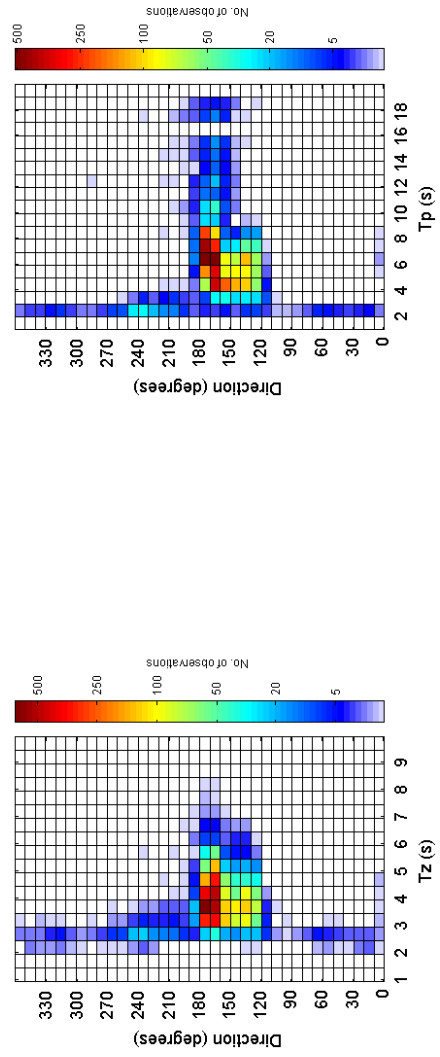
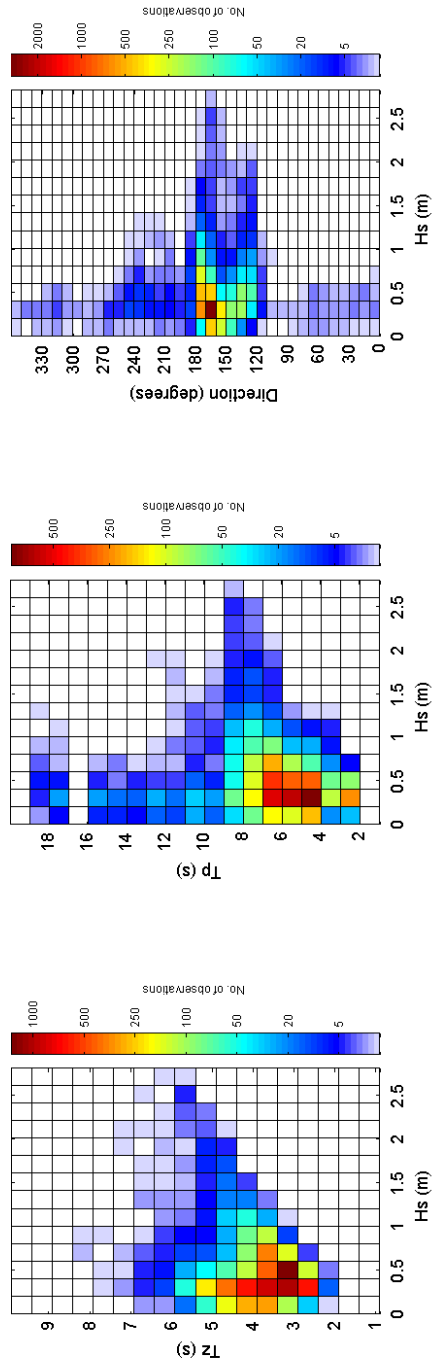
### Acknowledgements

Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

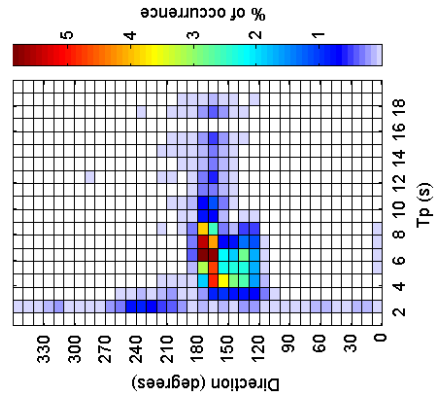
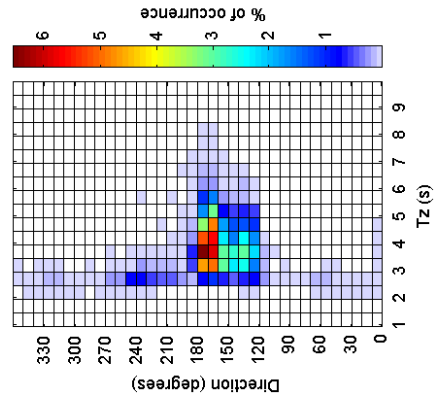
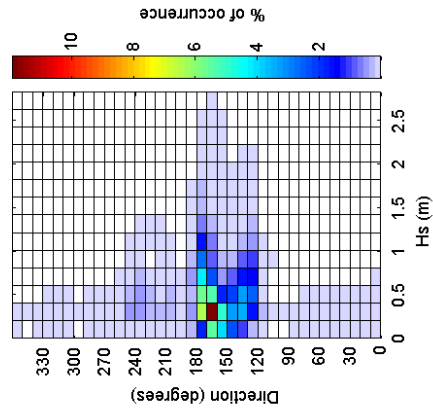
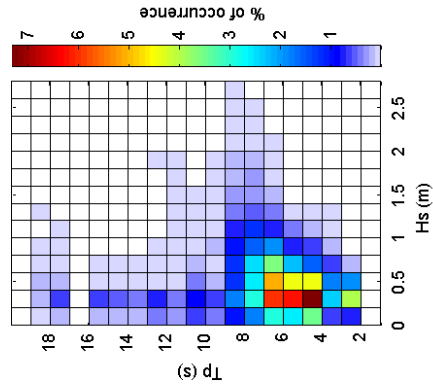
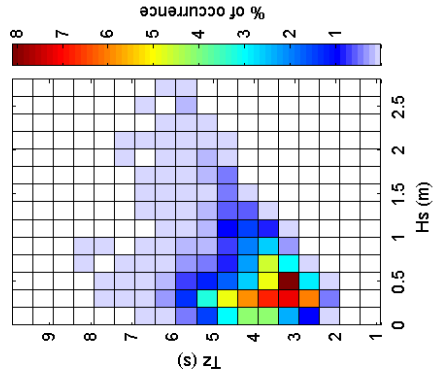
Weymouth 2008



Weymouth 2008 - Joint distribution



Weymouth 2008 - Joint distribution (% of occurrence)



Weymouth 2006 to 2008 - Joint distribution (% of occurrence)

