

## Rye Bay Directional Waverider Buoy

### Location

OS: 596521E 109474N

WGS84: Latitude: 50° 51.083' N Longitude: 00° 47.433' E

### Water Depth

~11 m CD

### Instrument Type

Datawell Directional Waverider Mk III

### Data Quality

Recovery rate (%)	Sample interval
89	30 minutes

### Statistics - 2012

All times are GMT

Month	H <sub>s</sub> (m)	T <sub>p</sub> (s)	T <sub>z</sub> (s)	Dir. (°)	SST (°C)	No. of days
January	1.10	5.7	3.9	199	8.9	30
February	0.70	5.4	3.5	186	6.3	28
March	0.48	6.1	3.4	189	7.5	29
April	0.91	5.4	3.7	181	9.2	30
May	0.54	4.7	3.2	175	11.4	31
June	0.93	5.4	3.6	193	14.2	29
July	0.71	5.5	3.5	205	16.2	25
August	0.70	5.6	3.5	205	17.8	30
September	0.73	4.7	3.4	207	17.2	27
October	0.99	5.9	3.7	186	15.0	26
November	0.89	5.6	3.7	207	12.3	19
December	1.04	5.8	3.8	206	9.2	20

### Storm Analysis

Date/Time	H <sub>s</sub> (m)	T <sub>p</sub> (s)	T <sub>z</sub> (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	4.68	9.1	6.6	218	-0.84	HW -6	2.3	0.31	0.44
05-Jan-2012 03:00	4.06	10.0	6.6	222	-1.07	HW -6	3.2	0.05	0.63
24-Sep-2012 17:00	3.68	9.1	6.1	221	1.67	HW -1	3.0	-0.03	0.49
25-Nov-2012 09:30	3.59	9.1	6.1	212	2.01	HW +1	4.2	-0.37	0.58
08-Jun-2012 12:00	3.56	8.3	5.6	224	1.64	HW -2	5.6	0.08	0.37

\* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Newhaven). The surge shown is the residual at the time of the highest H<sub>s</sub>. 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	-	-	3.02	2.74	2.20	1.76	05-Oct-2008 00:00	3.71
2009	4.00	3.31	2.98	2.65	2.19	1.76	14-Nov-2009 18:00	4.37
2010	3.86	3.08	2.64	2.21	1.65	1.31	12-Nov-2010 01:00	4.35
2011	3.49	2.88	2.66	2.41	1.97	1.69	08-Dec-2011 20:00	3.72
2012	4.27	3.06	2.68	2.35	1.91	1.53	03-Jan-2012 13:00	4.68

\* i.e. 5 % of the  $H_s$  values measured in 2008 exceeded 2.20 m

## Distribution plots

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

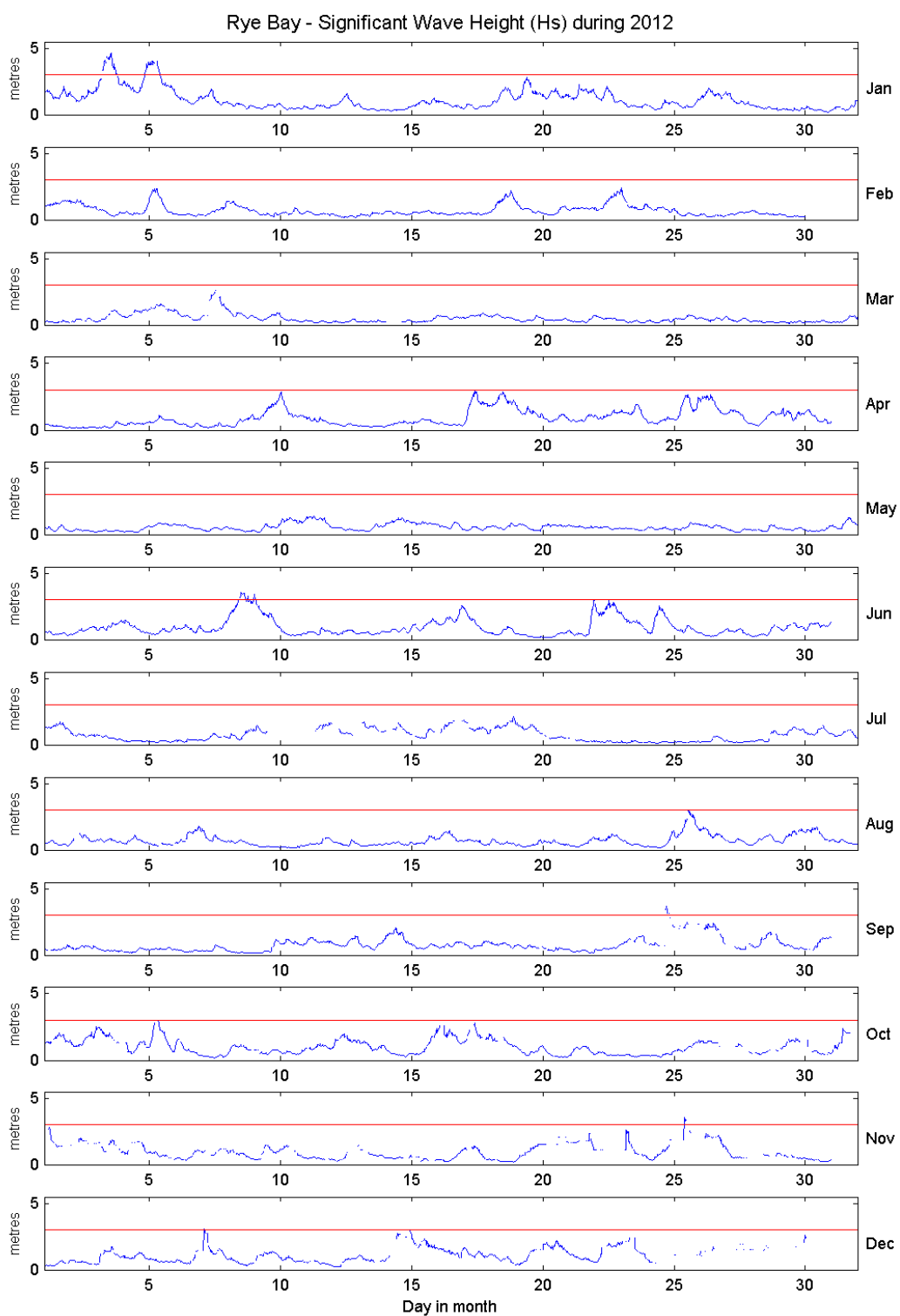
- Annual time series of  $H_s$  (red line is 3.0 m storm threshold)
- Wave roses (Direction vs.  $H_s$  and vs.  $T_p$ ) for all measured data
- Percentage of occurrence of  $H_s$ ,  $T_p$ ,  $T_z$  and Direction for 2012
- Incidence of storm waves for 2012. Storm events are defined using the Peaks-over-Threshold 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

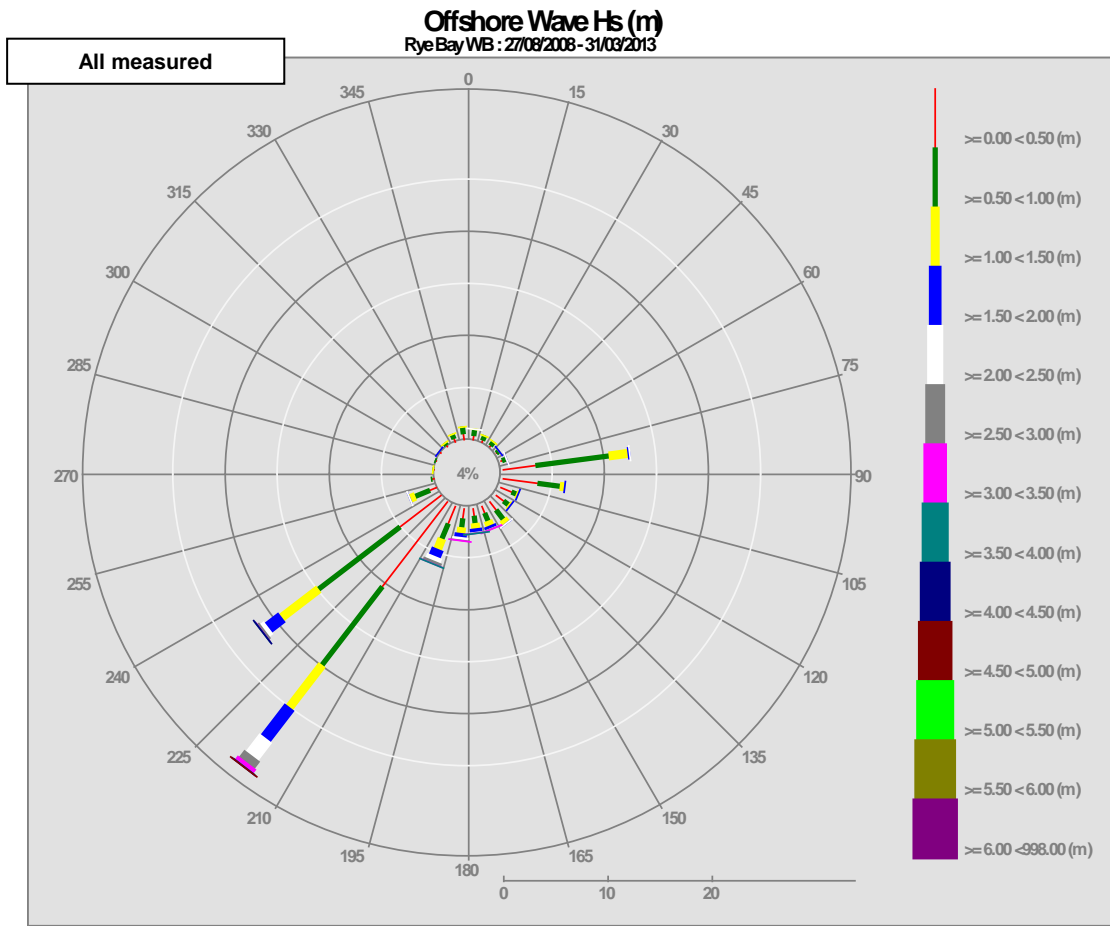
## General

The buoy, owned by the Environment Agency (Southern Region), was first deployed on 27 August 2008, at which time the magnetic declination at the site was 1.5° west, changing by 0.14° east per year.

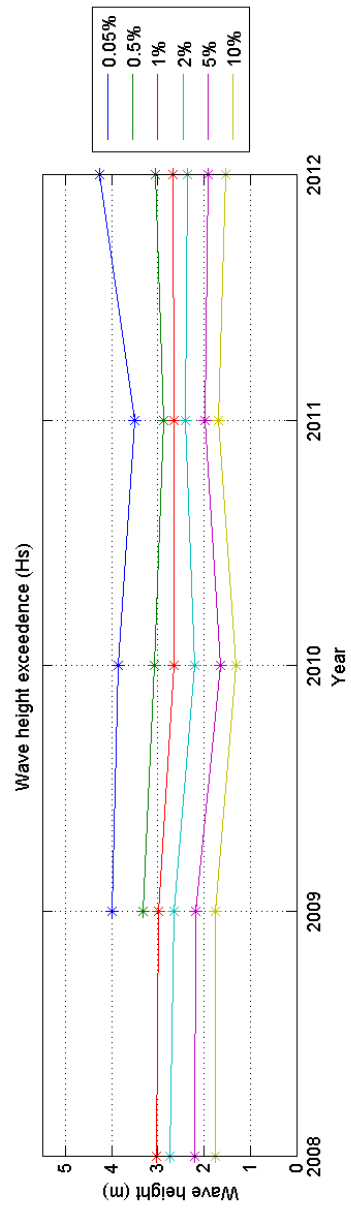
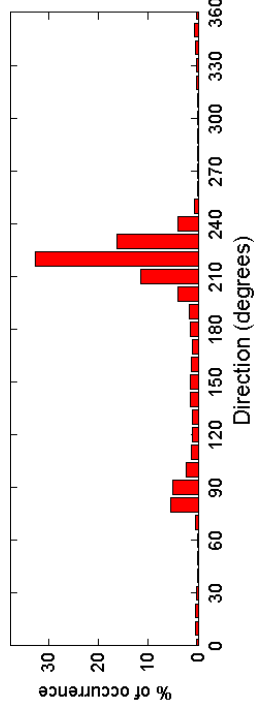
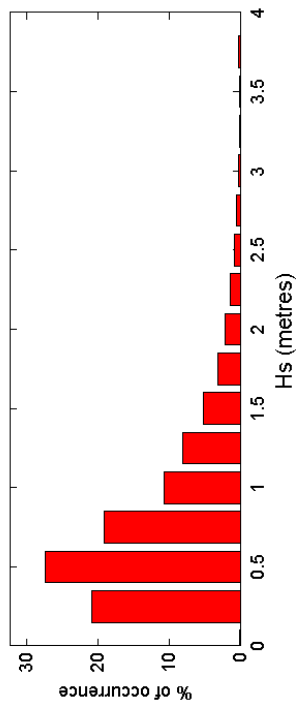
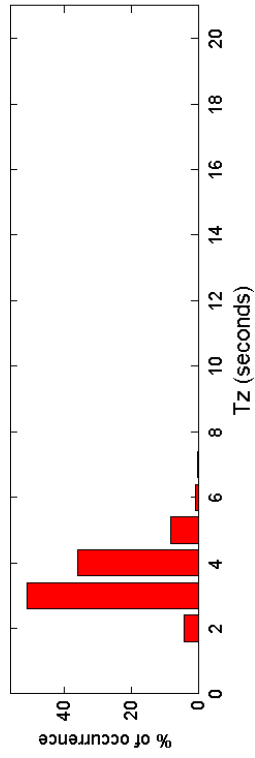
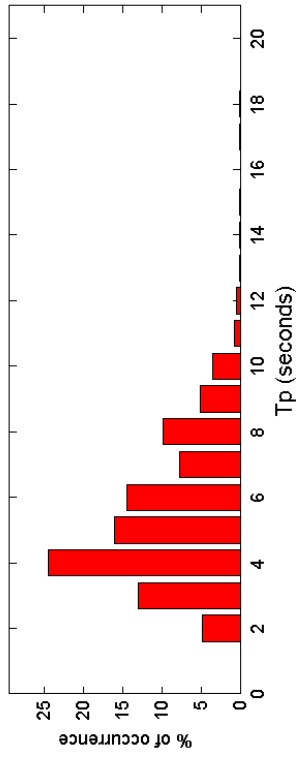
## Acknowledgements

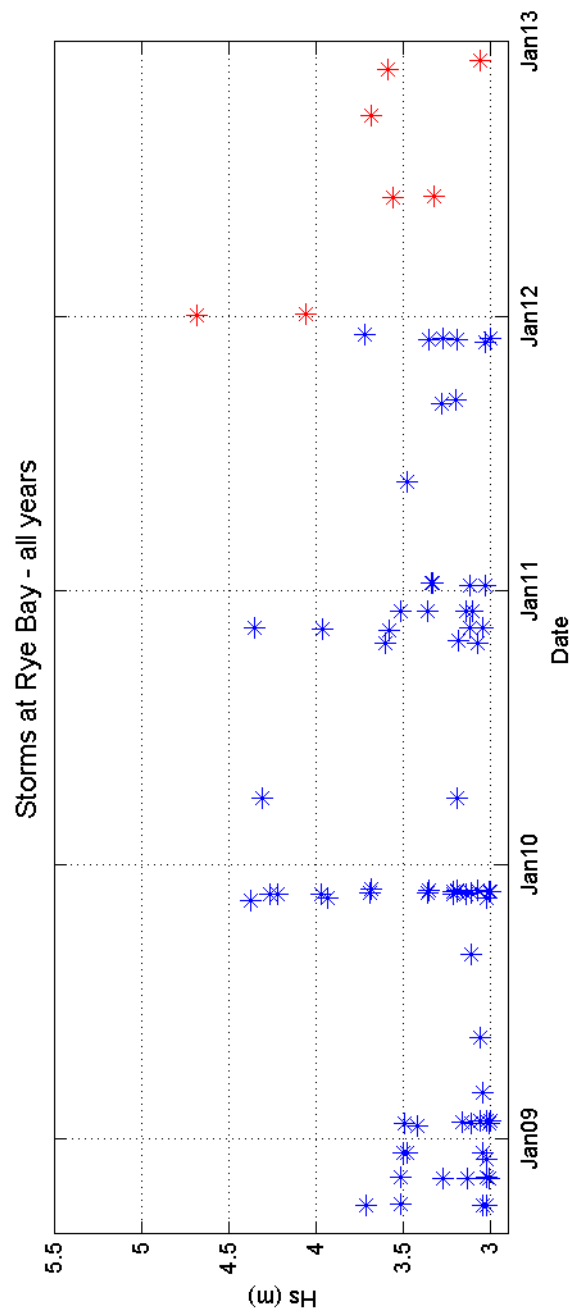
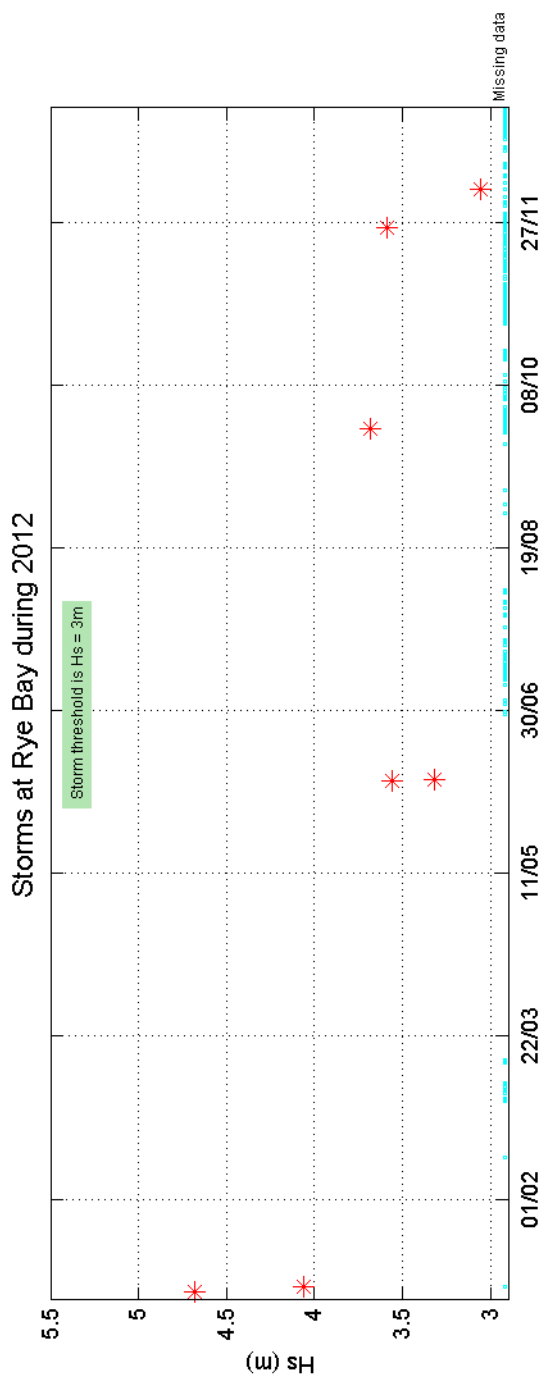
Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.





Rye Bay 2012





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

