

## Looe Bay Directional Waverider Buoy

### Location

OS: 228463E 51549N

WGS84: Latitude: 50° 20.329' N Longitude: 04° 24.717' E

### Water Depth

~10 m CD

### Instrument Type

Datawell Directional Waverider Mk III

### Data Quality

Recovery rate (%)	Sample interval
97	30 minutes

### Statistics - 2011

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	0.98	9.0	4.9	190	8.4	30
February	1.46	10.9	5.6	211	8.5	26
March	0.59	8.4	4.2	184	9.0	29
April	0.56	9.5	4.3	194	10.9	29
May	0.77	7.0	3.9	202	12.0	31
June	0.76	7.3	4.1	209	13.2	28
July	0.51	6.6	3.9	199	15.3	31
August	0.55	6.3	3.9	206	16.1	31
September	0.92	7.3	4.2	206	15.4	30
October	0.89	7.9	4.3	208	14.7	31
November	1.29	9.4	5.0	203	13.7	30
December	1.26	8.0	4.9	215	11.8	31

### 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)
08-Jan-2011 07:30	4.00	11.8	9.1	208	-	-	-	-	-
12-Dec-2011 21:30	3.98	10.0	6.7	210	1.08	HW +3	4.0	0.39	0.46
24-Oct-2011 03:30	3.94	11.8	7.4	210	2.14	HW	3.5	0.32	0.35
29-Nov-2011 13:00	3.44	9.1	6.2	211	-0.92	HW +4	4.5	0.33	0.34
15-Feb-2011 18:30	3.23	-	8.9	-	-	-	-	-	-

\* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Devonport). 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)
2009	-	-	3.33	2.98	2.42	1.95	14-Nov-2009 03:30	5.25
2010	4.06	3.04	2.75	2.40	1.94	1.57	16-Jan-2010 05:00	4.82
2011	3.71	2.97	2.71	2.41	2.02	1.69	08-Jan-2011 07:30	4.00

\* i.e. 5 % of the  $H_s$  values measured in 2009 exceeded 2.42 m

## Distribution plots

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

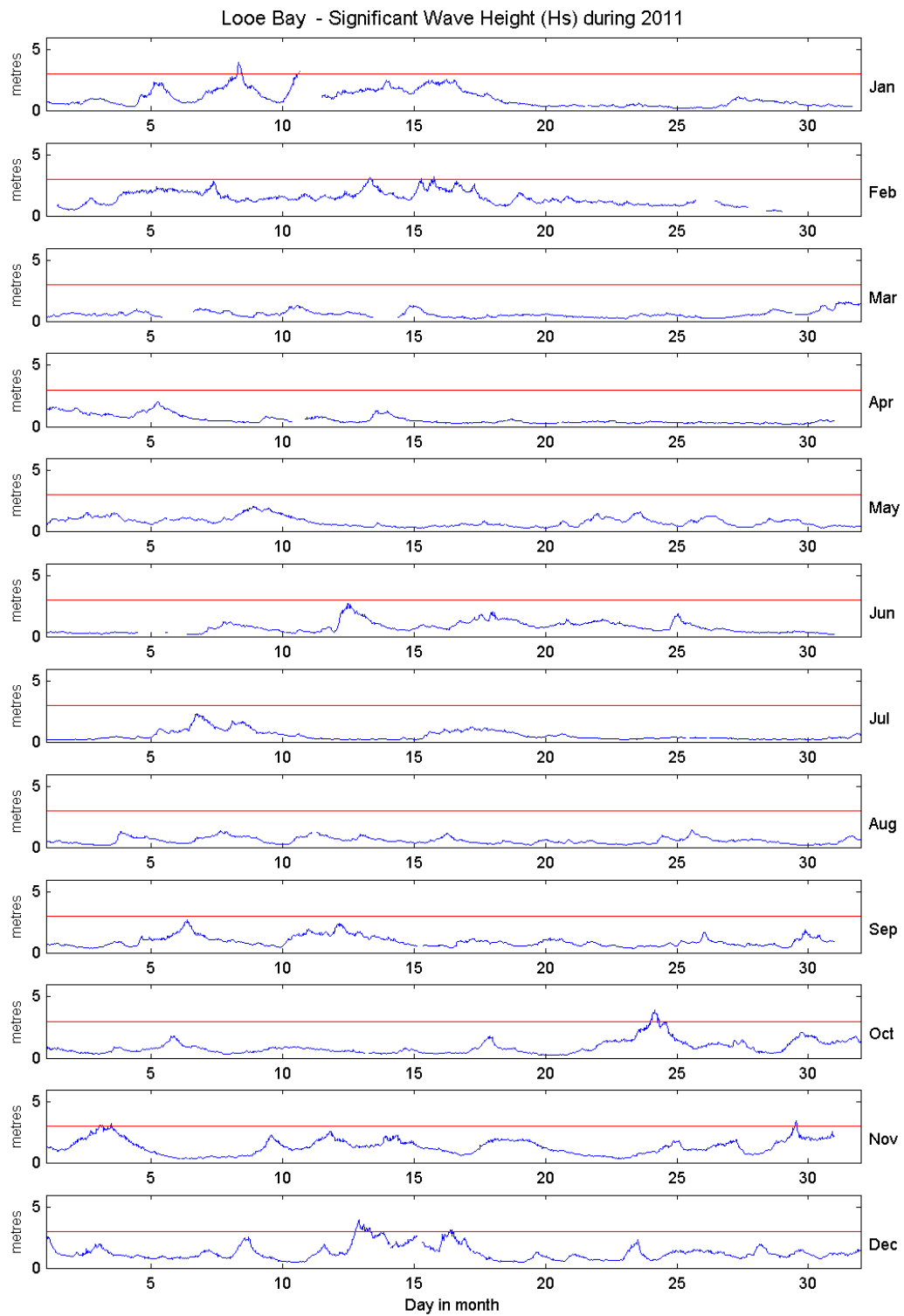
- Annual time series of  $H_s$  (red line is 3.0 m storm threshold)
- Wave roses (Direction vs.  $H_s$  and vs.  $T_p$ ) for all measured data
- Percentage of occurrence of  $H_s$ ,  $T_p$ ,  $T_z$  and Direction for 2011
- Incidence of storm waves for 2011. Storm events are defined using the Peaks-over-Threshold 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

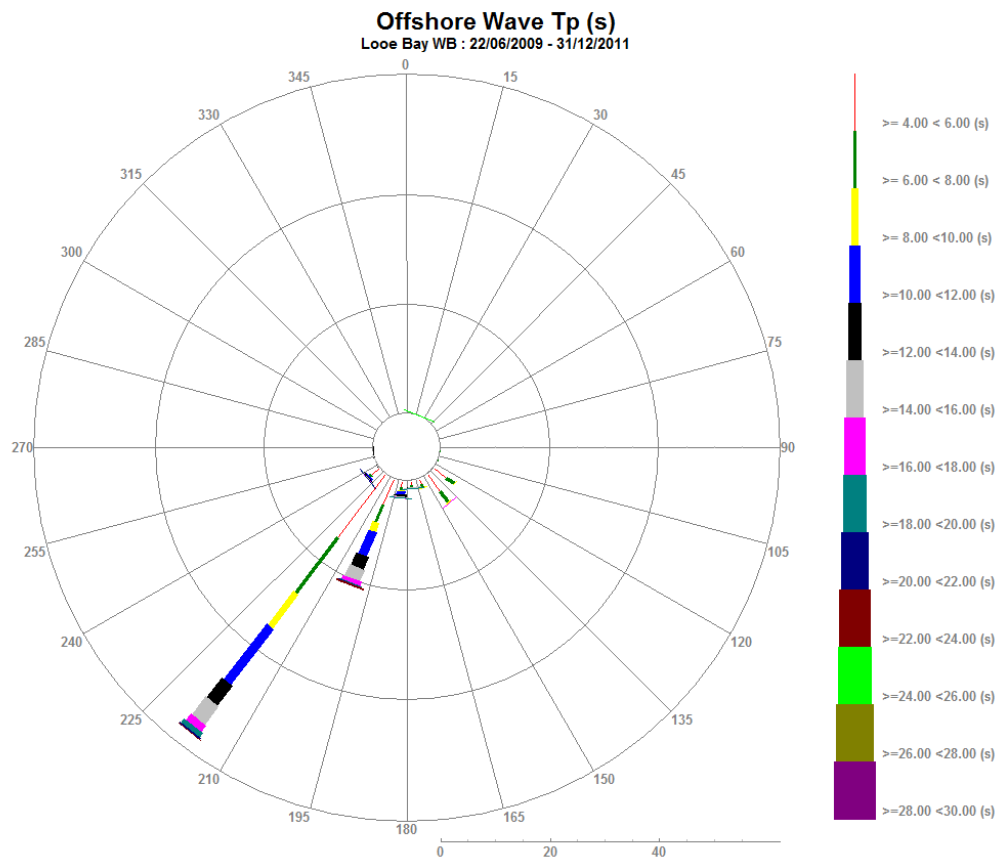
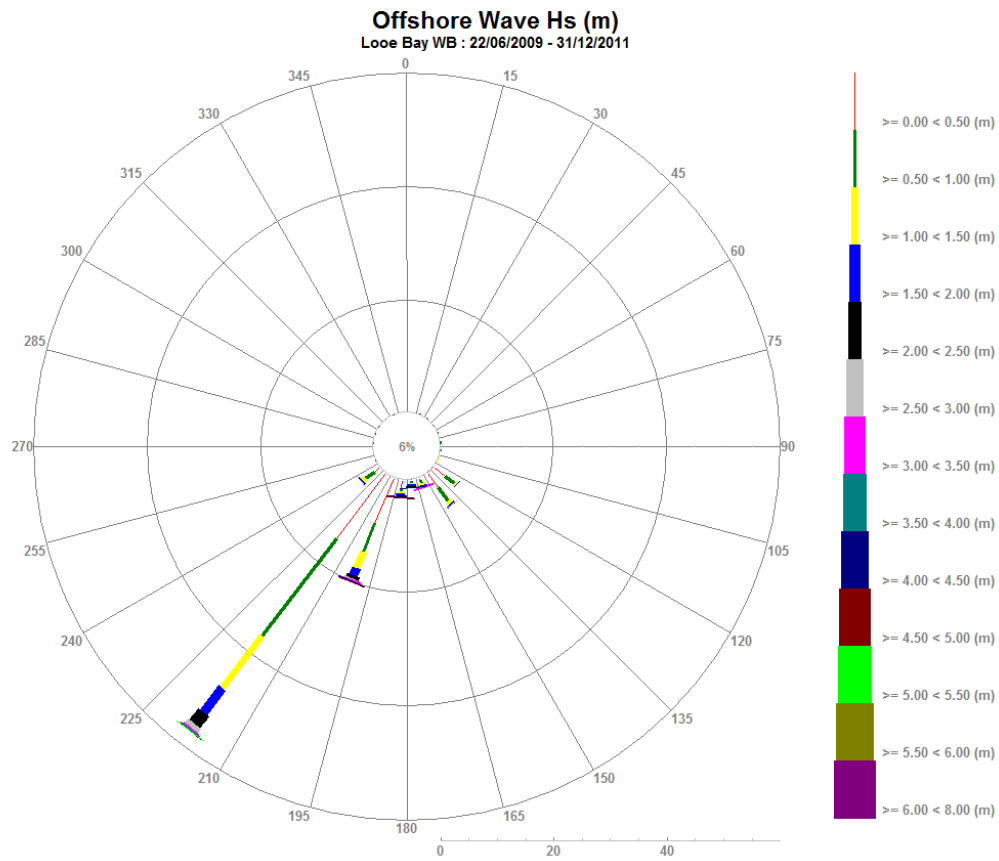
## General

The buoy, owned by the Environment Agency (Southwest Region), was deployed on 22 June 2009.

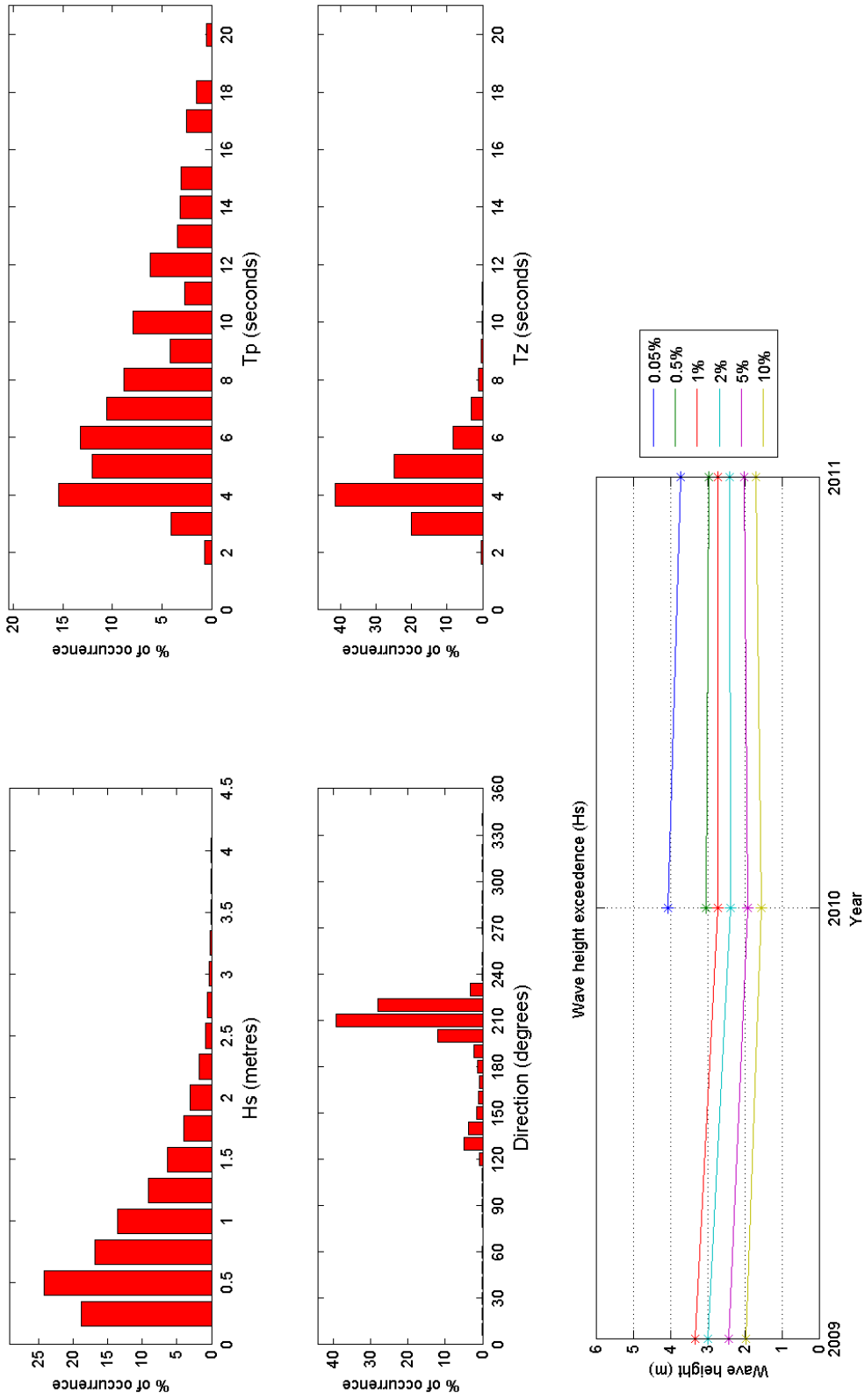
## Acknowledgements

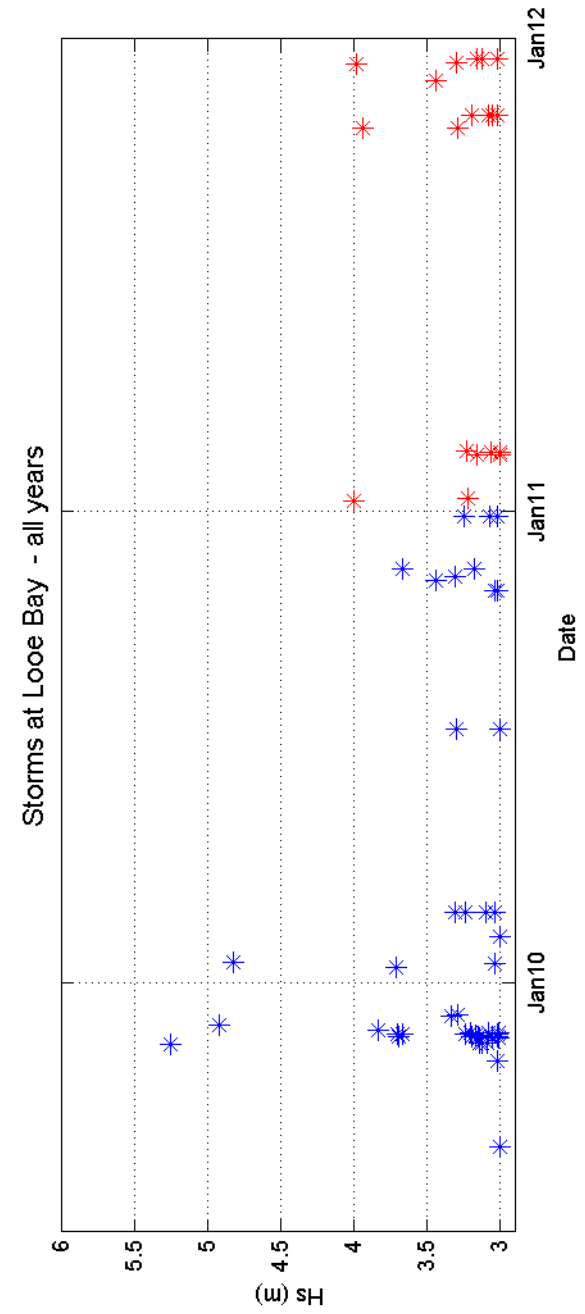
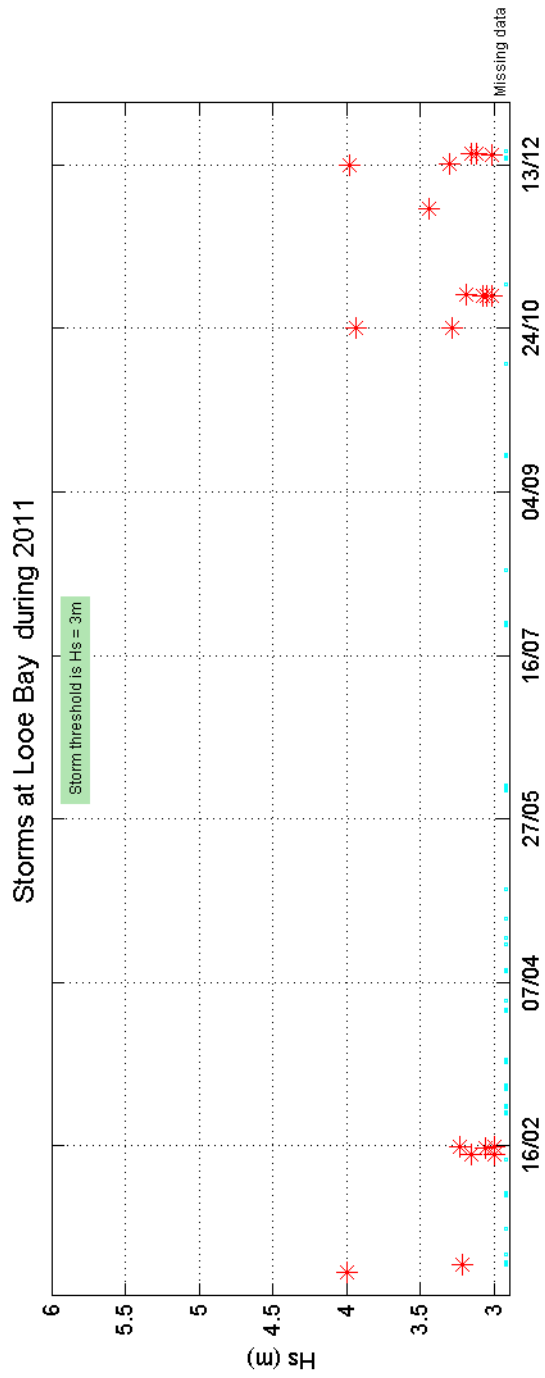
The shore station for the Waverider is kindly hosted by the Maritime & Coastguard Agency. Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.





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Looe Bay 2009 to 2011 - Joint distribution (% of occurrence)

