



Herne Bay Step Gauge

Location			
OS	616895 E 169377 N		
WGS84	Latitude: 51° 22.919' N Longitude: 01° 06.934' E		
Instrument type			
Etrometa Step Gauge			
Water depth	N/A	Step gauge in situ on offshore dolphin. Photo courtesy of Fugro GB Marine Limited	Location of step gauge (Google mapping)

Data Quality

Recovery rate (%)	Sample interval
95	30 minutes

Monthly Averages - 2017

All times are GMT

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)	No. of days
January	0.09	3.5	3.0	-	-	30
February	0.09	3.4	2.8	-	-	23
March	0.09	3.2	2.9	-	-	30
April	0.09	3.2	2.8	-	-	28
May	0.10	3.2	2.7	-	-	28
June	0.07	2.9	2.7	-	-	28
July	0.08	3.1	2.7	-	-	29
August	0.06	3.0	2.8	-	-	31
September	0.07	3.0	2.7	-	-	29
October	0.09	3.1	2.8	-	-	31
November	0.12	3.2	2.9	-	-	29
December	0.12	3.3	2.9	-	-	29

Monthly Averages - All Years (January 2012 – December 2016)

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)
January	0.09	3.3	2.8	-	-
February	0.12	3.4	2.9	-	-
March	0.11	3.4	2.9	-	-
April	0.10	3.3	2.8	-	-
May	0.10	3.2	2.8	-	-
June	0.09	3.1	2.8	-	-
July	0.07	2.9	2.7	-	-
August	0.07	3.0	2.7	-	-
September	0.08	3.1	2.8	-	-
October	0.11	3.4	2.9	-	-
November	0.10	3.4	2.9	-	-
December	0.09	3.2	2.8	-	-

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)
11-Dec-2017 08:00	0.97	5.7	5.5	-	1.51	HW +2	3.50	0.41	0.67
01-Dec-2017 10:30	0.70	4.5	3.9	-	2.08	HW	4.14	0.00	0.16
27-Dec-2017 17:30	0.68	4.4	4.2	-	2.11	HW -1	3.38	0.69	0.83
12-Nov-2017 19:00	0.67	4.7	4.0	-	2.58	HW	3.82	0.67	0.69
12-Jan-2017 22:30	0.66	4.5	4.0	-	1.77	HW -2	4.51	0.68	0.36

* Tidal information is obtained from the Herne Bay step gauge. 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)
2012	0.88	0.56	0.47	0.38	0.27	0.20	27-Oct-2012 08:30	1.06
2013	1.07	0.58	0.49	0.42	0.32	0.25	12-Mar-2013 00:00	1.43
2014	0.82	0.53	0.43	0.37	0.26	0.20	27-Dec-2014 05:30	0.96
2015	0.75	0.49	0.41	0.35	0.27	0.21	21-Nov-2015 19:00	0.88
2016	0.92	0.55	0.47	0.40	0.29	0.22	31-May-2016 06:00	1.01
2017	0.67	0.49	0.43	0.37	0.28	0.21	11-Dec-2017 08:00	0.97

* i.e. 5 % of the H_s values measured in 2012 exceeded 0.27 m

Distribution plots

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

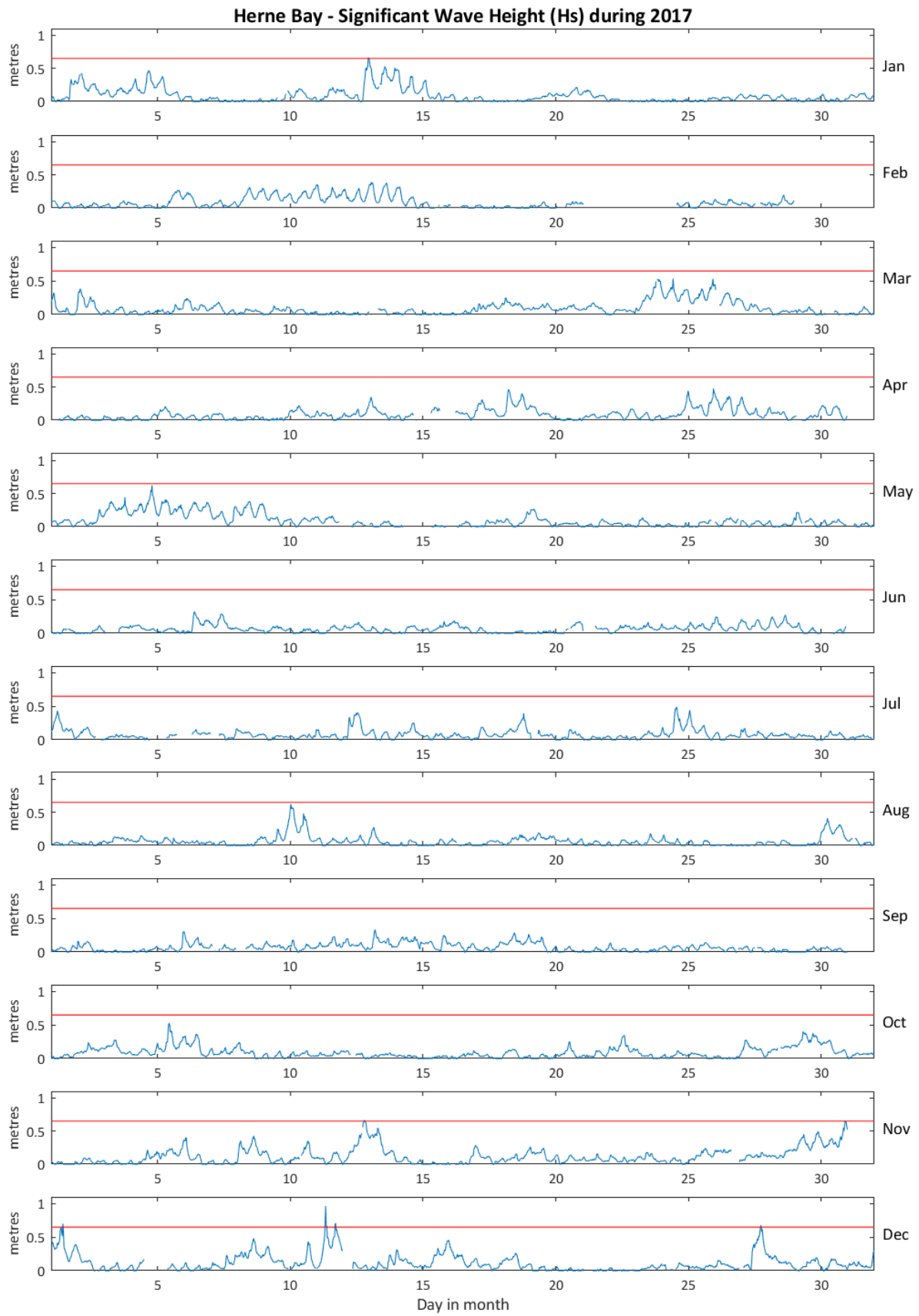
- Annual time series of H_s (red line is 0.65 m storm alert threshold)
- Incidence of storm waves for 2017. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown
- Wave height exceedance each year since deployment
- Percentage of occurrence of H_s, T_p, T_z and Direction for 2017
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

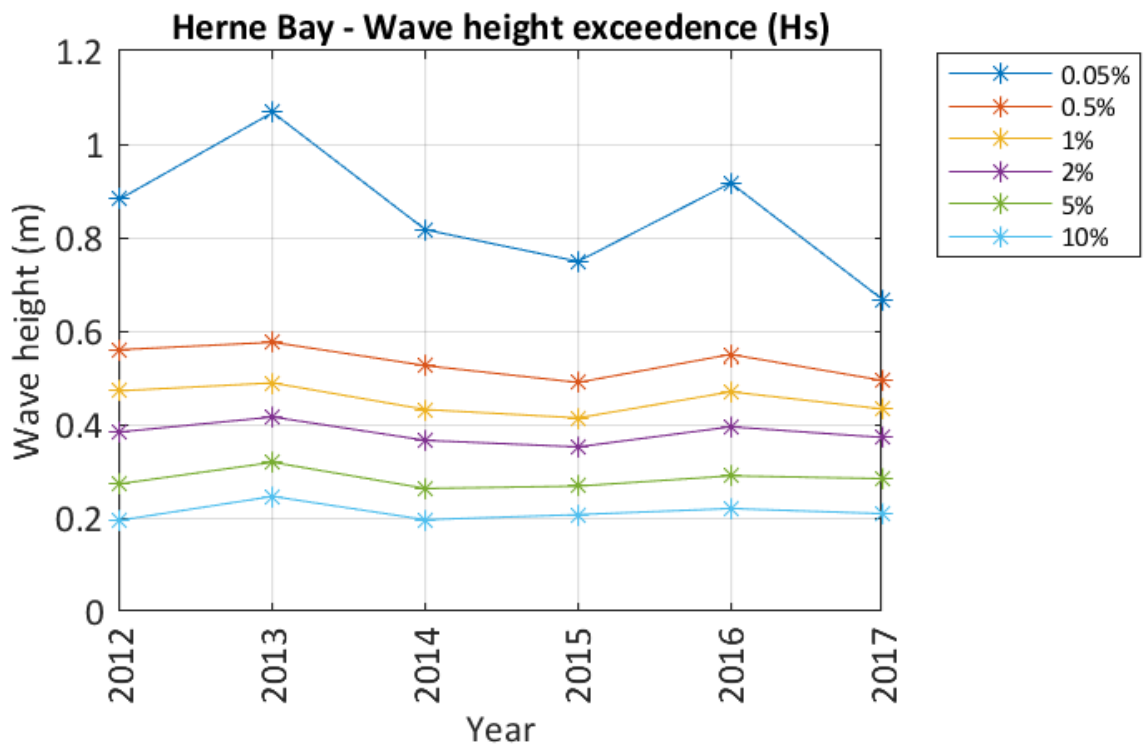
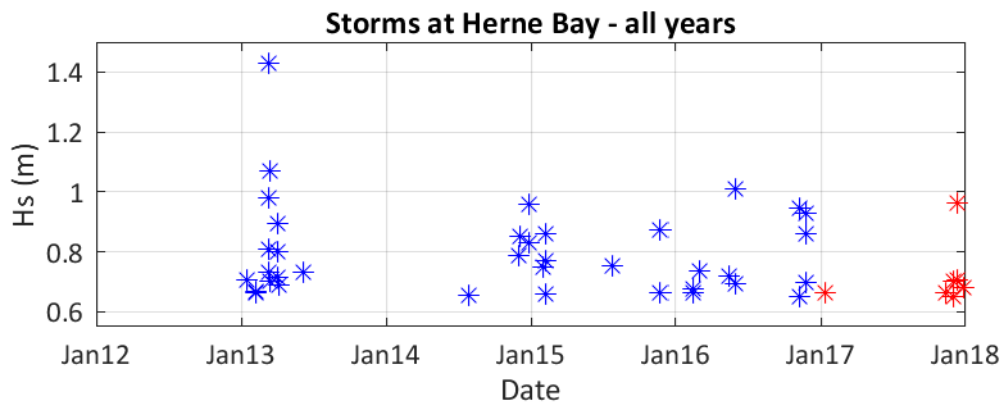
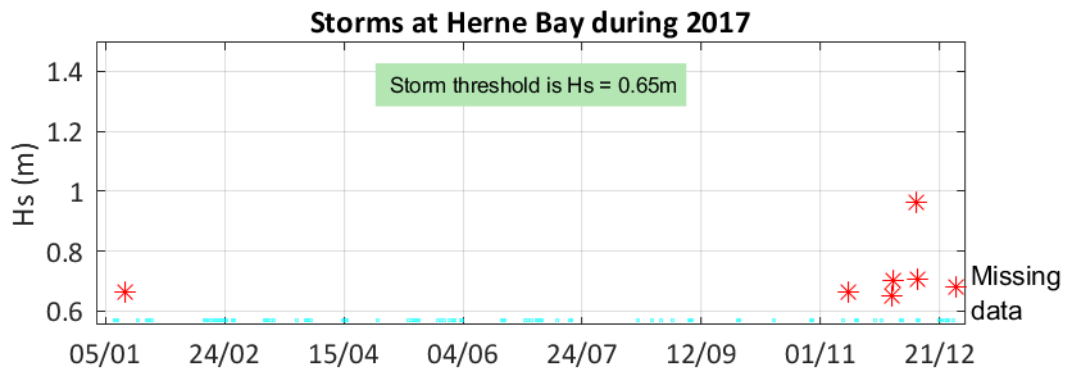
General

The Step Gauge was first deployed on 19 March 1996. Sections of the gauge were renewed during February and July 2007. The telemetry system was intermittently faulty for several weeks during the winter months of 2008 to 2011. The lower section of the gauge became damaged in 2013 and was out of action for several months of 2013 and 2014.

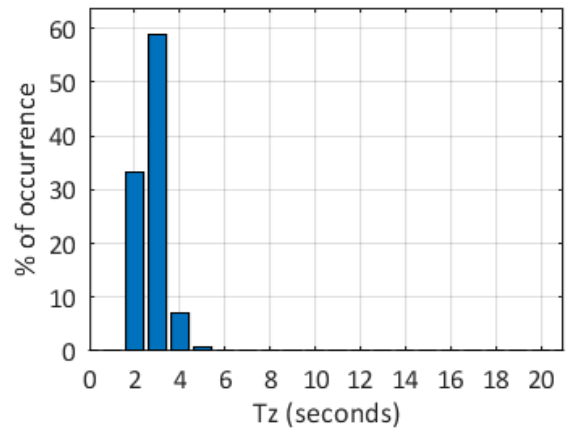
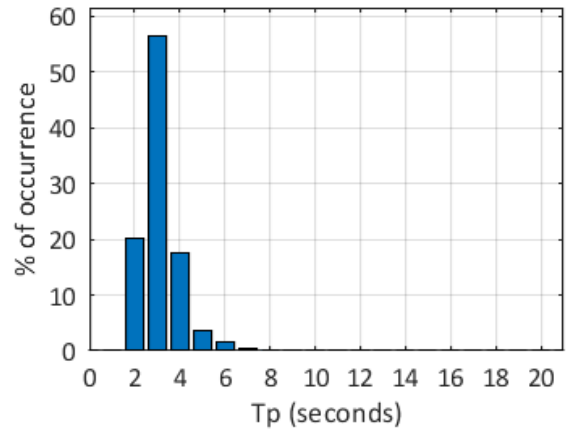
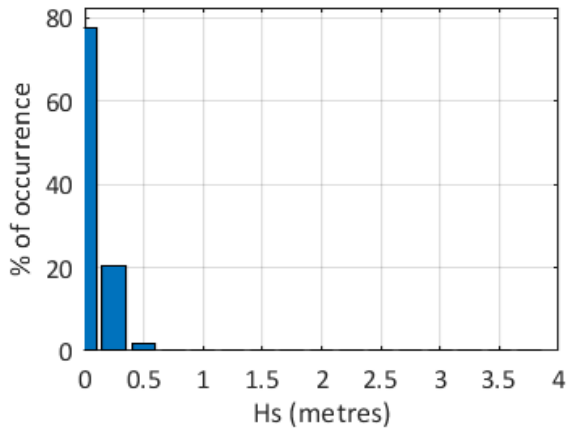
Acknowledgements

Tidal predictions and tide levels were produced by Fugro GB Marine Limited.





Herne Bay 2017



Herne Bay 1996 to 2017 - Joint distribution (% of occurrence)

