

MSC50 OFFSHORE WIND AND WAVE CLIMATE

1. Trinity Bay – MSC50 M6013845, Wave Climate

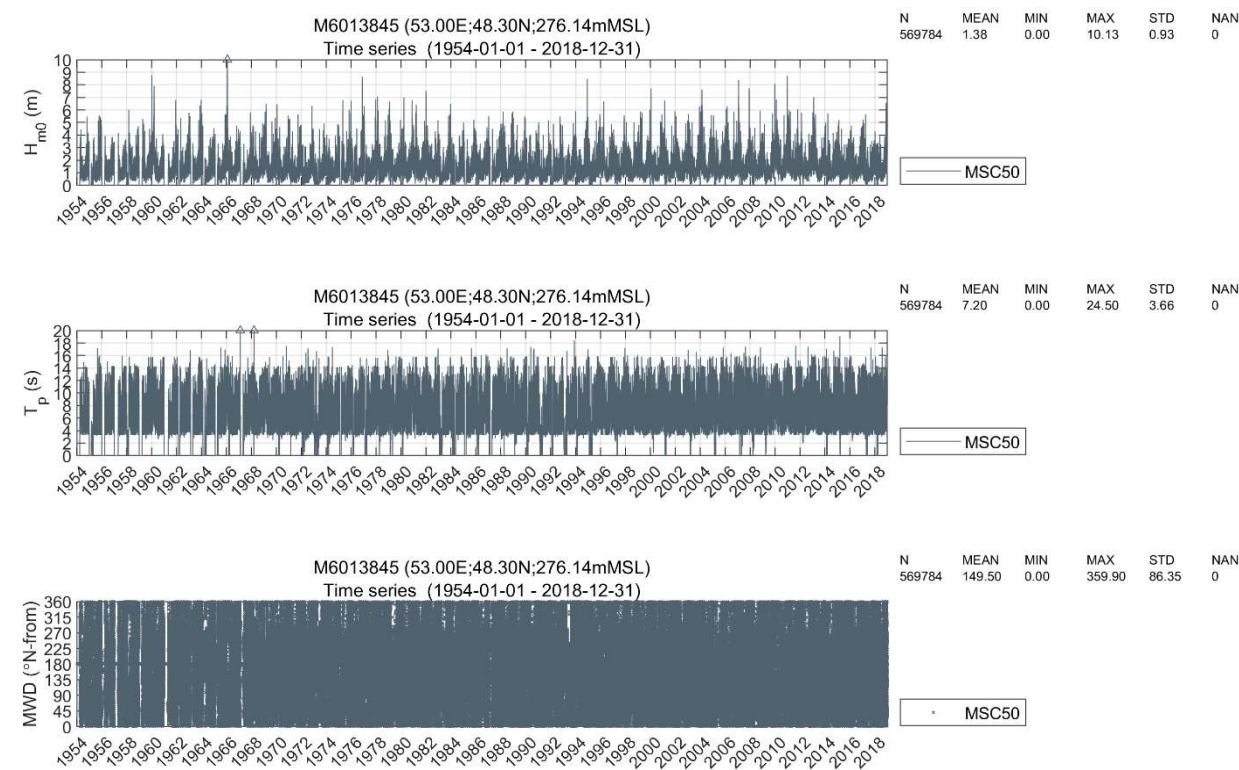


Figure 1: M60113845 timeseries (1954-2018), significant wave height (top), peak wave period (middle) and wave direction (bottom)

M6013845 (53.000000°W; 48.300000°N; d=276.1mMSL)
(1954-01-01 2018-12-31)
Frequency of Occurrence [%]
MWD [°N-from]

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Accum
9-10	-	-	-	-	0.002	-	-	-	-	-	-	-	-	-	-	-	0.002	99.999
8-9	-	-	0.002	0.001	0.006	0.002	-	-	-	-	-	-	-	-	-	-	0.011	99.997
7-8	-	-	0.006	0.006	0.006	0.004	-	-	-	-	-	-	-	-	-	-	0.021	99.986
6-7	-	-	0.035	0.025	0.016	0.009	0.003	-	-	-	-	-	-	-	-	-	0.067	99.964
5-6	-	0.018	0.093	0.070	0.049	0.041	0.025	0.005	0.001	-	-	-	-	-	-	-	0.301	99.877
4-5	0.014	0.065	0.249	0.220	0.175	0.132	0.108	0.031	0.008	0.006	0.003	0.001	0.001	0.002	0.003	0.007	1.024	99.576
3-4	0.085	0.289	0.700	0.672	0.561	0.496	0.341	0.183	0.102	0.068	0.066	0.120	0.092	0.038	0.032	0.046	3.892	96.552
2-3	0.661	1.357	2.337	1.839	1.571	1.580	1.110	0.733	0.542	0.536	0.710	0.913	0.781	0.391	0.311	0.384	15.757	94.659
1-2	1.477	2.134	4.709	3.715	3.397	3.584	2.916	1.991	1.929	2.563	3.921	3.607	2.180	1.495	1.288	1.285	42.375	78.902
0-1	0.413	0.628	2.252	3.228	2.927	3.608	3.968	1.855	9.788	1.652	1.684	1.798	1.420	0.643	0.370	0.315	36.528	36.528
Total	2.650	4.491	10.384	9.774	8.709	9.457	8.472	4.797	12.351	4.825	6.385	6.638	4.454	2.670	2.004	2.036	99.999	-
Accum	2.650	7.141	17.625	27.299	36.009	45.466	53.938	58.735	71.086	75.911	82.296	88.935	93.389	95.959	97.963	99.999	-	-

Figure 2: Significant Wave Height (H_s , m) M60113845 Frequency of occurrence per direction

M6013845 (53.000000°W; 48.300000°N; d=276.1mMSL) (1954-01-01 2018-12-31) Omni Frequency of Occurrence [%] H_{m0} [m]												
	[0-1[	[1-2[	[2-3[	[3-4[	[4-5[	[5-6[	[6-7[	[7-8[	[8-9[	[9-10[	Total	Accum
[18-20[	0.001	-	-	0.001	-	-	-	-	-	-	0.001	99.999
[16-18[	0.039	0.025	0.012	0.002	-	-	-	-	-	-	0.078	99.997
[14-16[	0.334	1.147	0.812	0.288	0.083	0.031	0.011	0.001	0.001	-	2.688	99.919
[12-14[	1.055	2.779	2.123	0.789	0.318	0.130	0.051	0.017	0.010	0.002	7.274	97.231
[10-12[	2.006	5.053	2.944	0.938	0.329	0.119	0.024	0.003	-	-	11.416	89.956
[8-10[	7.573	9.279	3.557	1.231	0.274	0.022	-	-	-	-	21.936	78.540
[6-8[	6.608	4.844	2.978	0.607	0.019	-	-	-	-	-	15.054	58.604
[4-6[	3.554	18.343	3.331	0.057	-	-	-	-	-	-	25.284	41.550
[2-4[	6.840	0.906	-	-	-	-	-	-	-	-	7.746	16.265
[0-2[	8.519	-	-	-	-	-	-	-	-	-	8.519	8.519
Total	36.527	42.375	15.757	3.892	1.024	0.301	0.087	0.021	0.011	0.002	99.999	-
Accum	36.527	78.902	94.659	98.551	99.575	99.877	99.964	99.985	99.997	99.999	-	-

Figure 3: Peak wave Period (T_p , s) M60113845 Frequency of occurrence per Significant Wave Height (H_s , m) bin.

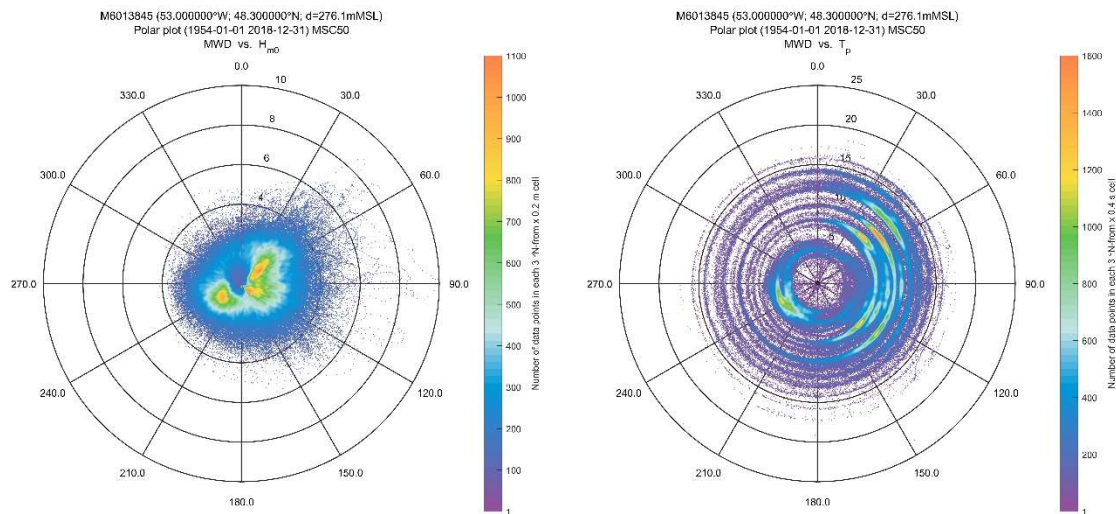


Figure 4: M6013845 Significant Wave Height Polar Plot (left), Peak Wave Period Polar Plot (right)

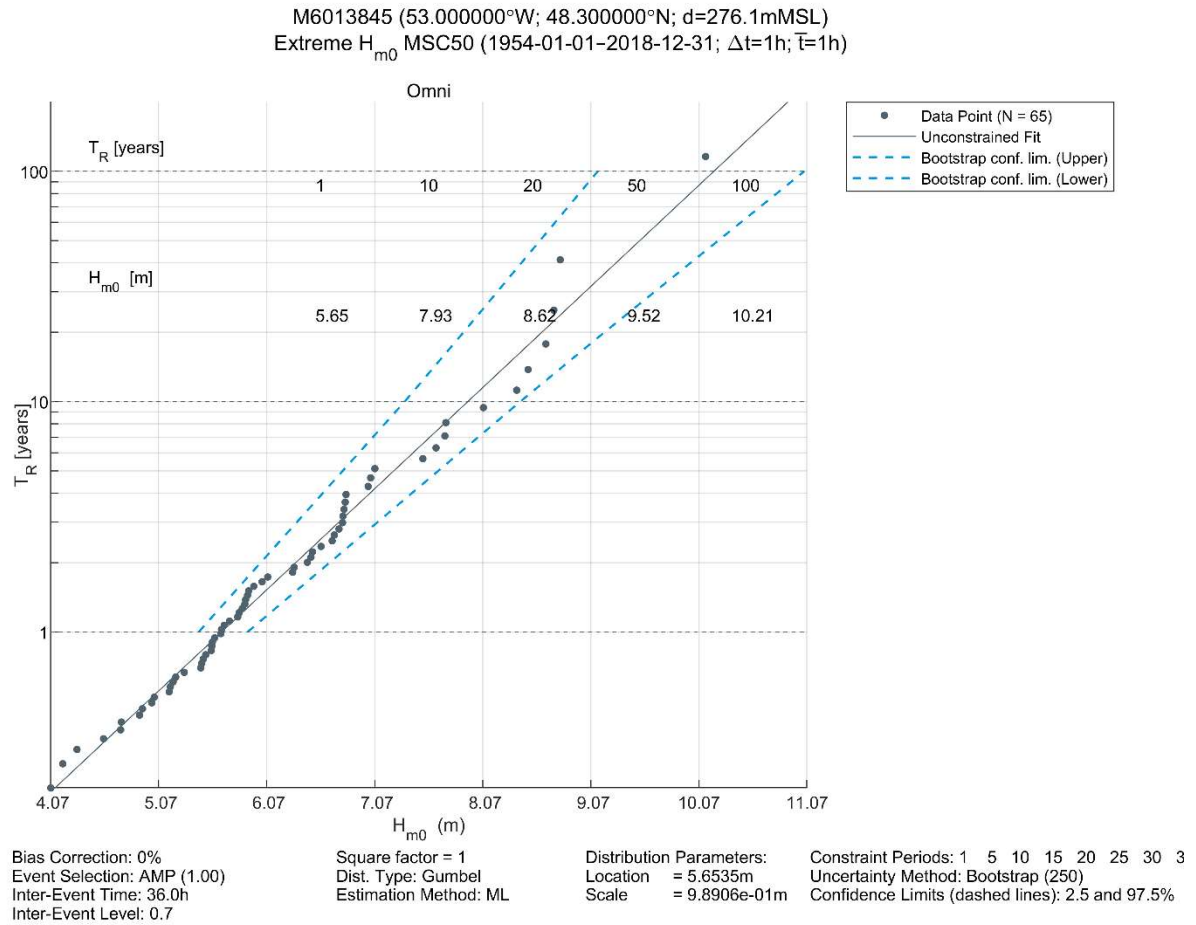


Figure 5: Extreme Value Analysis, MSC50 M6013845, Significant Wave Height (H_s , m)

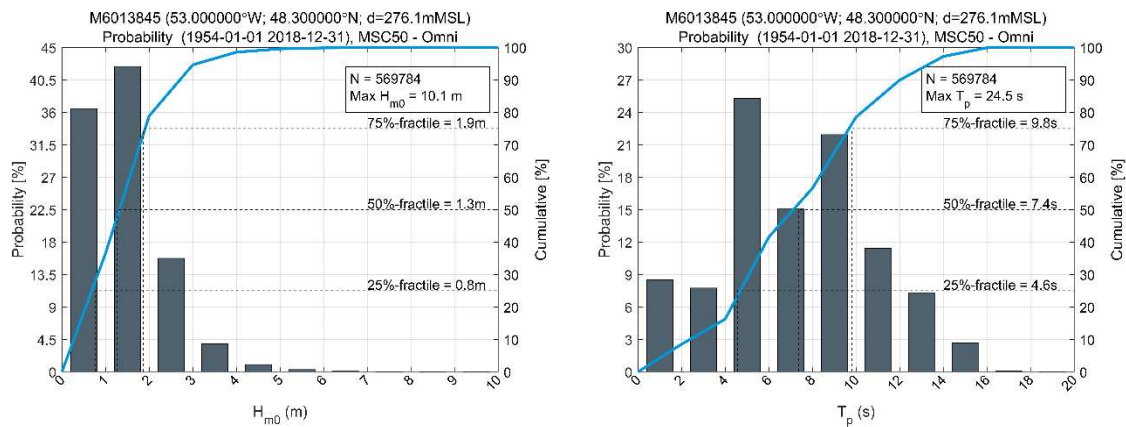


Figure 6: M6013845 Significant Wave Height probability of occurrence (left), Peak Wave Period probability of occurrence (right)

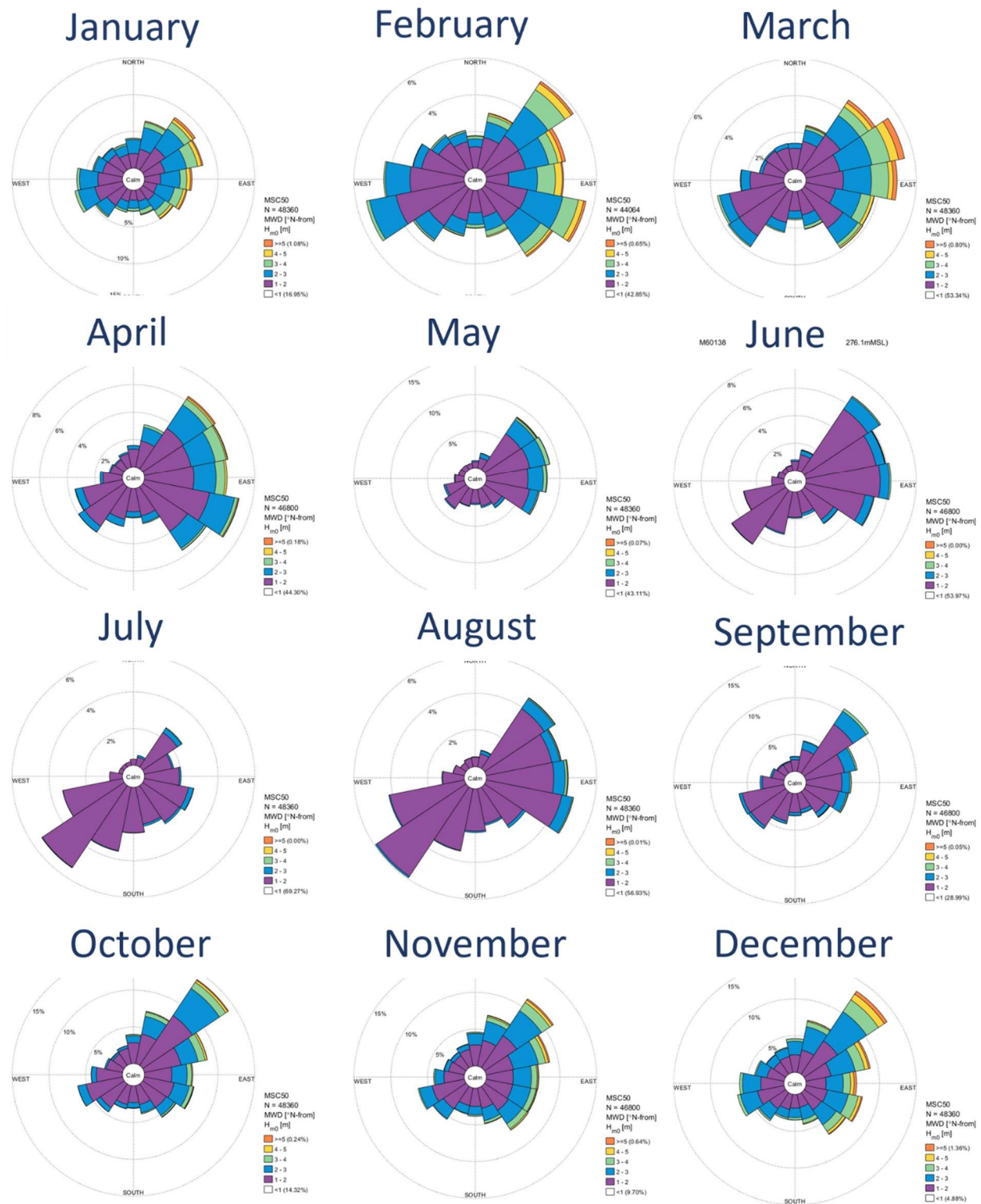


Figure 7: Monthly significant wave height roses (Hs, m) in the period 1954-2018

2. Trinity Bay – MSC50 M6013845, Wind Climate

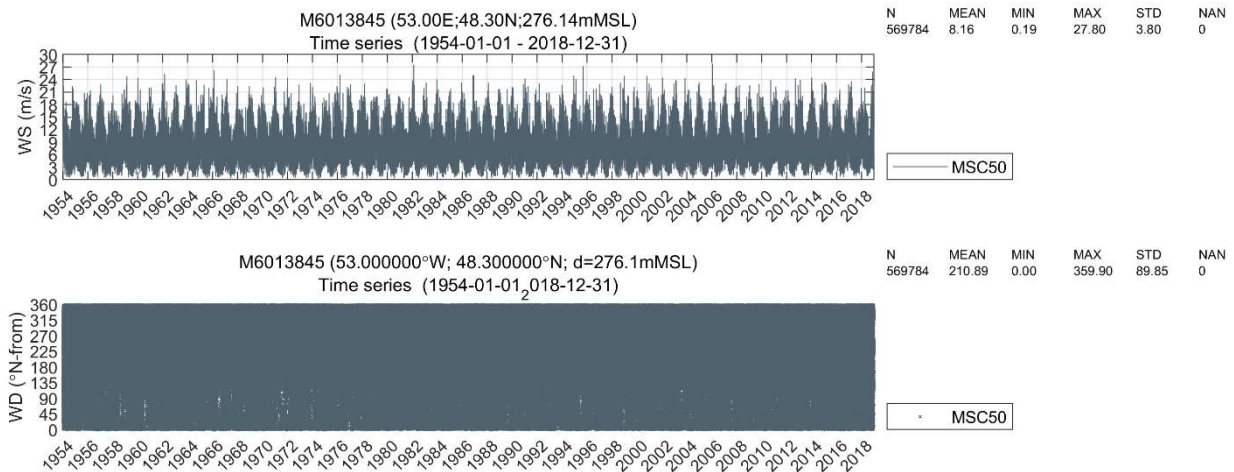


Figure 8: M6013845 timeseries (1954-2018), Wind Speed (top) and wind direction (bottom)

M6013845 (53.000000°W; 48.300000°N; d=276.1mMSL)
(1954-01-01 - 2018-12-31)
Frequency of Occurrence [%]
WD [°N-from]

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Accum
[25-30]	-	-	-	-	-	-	-	-	-	-	-	-	-	0.004	0.002	-	0.006	100.000
[20-25]	0.014	0.002	0.002	0.005	0.004	0.005	0.013	0.012	0.010	0.010	0.026	0.058	0.080	0.075	0.045	0.036	0.398	99.994
[15-20]	0.218	0.146	0.119	0.068	0.054	0.129	0.218	0.278	0.263	0.215	0.368	0.537	0.710	0.676	0.479	0.417	4.892	99.596
[10-15]	1.127	0.870	0.671	0.536	0.534	0.851	0.880	1.262	1.580	1.750	2.064	2.164	2.711	2.779	2.326	1.741	23.669	84.704
[5-10]	2.151	1.773	1.647	1.514	1.490	1.620	1.858	2.659	4.036	5.207	6.210	4.793	4.363	3.982	3.253	2.613	48.257	71.034
[0-5]	0.798	0.783	0.773	0.804	0.788	0.875	1.112	1.416	1.658	2.359	2.734	2.281	1.801	1.397	1.063	0.996	21.777	21.777
Total	4.267	3.554	3.213	2.928	2.860	3.280	4.181	5.650	7.747	9.540	11.401	9.832	9.683	8.882	7.188	5.773	100.000	-
Accum	4.267	7.841	11.053	13.982	16.842	20.122	24.303	29.953	37.699	47.239	58.641	68.473	78.156	87.039	94.227	100.000	-	-

Figure 9: Wind Speed (WS, m/s) M6013845 Frequency of occurrence per direction

M6013845
Exceedance (1954-01-01 - 2018-12-31) MSC50 - Directional
Exceedance [%]

	Omni	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
0	100.000	4.287	3.554	3.213	2.928	2.860	3.280	4.181	5.650	7.747	9.540	11.401	9.832	9.683	8.882	7.188	5.773
5	78.223	3.491	2.791	2.440	2.124	2.072	2.405	3.070	4.232	5.888	7.181	8.668	7.552	7.883	7.515	6.105	4.807
10	28.966	1.359	1.018	0.792	0.610	0.592	0.785	1.111	1.573	1.853	1.975	2.458	2.759	3.500	3.533	2.852	2.194
15	5.296	0.232	0.148	0.121	0.073	0.058	0.134	0.231	0.290	0.272	0.225	0.394	0.595	0.790	0.754	0.526	0.453
20	0.404	0.014	0.002	0.002	0.005	0.004	0.005	0.013	0.012	0.010	0.010	0.026	0.058	0.080	0.078	0.047	0.036
25	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	0.004	0.002	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Figure 10: Wind speed (m/s) M6013845 exceedance probability per direction.

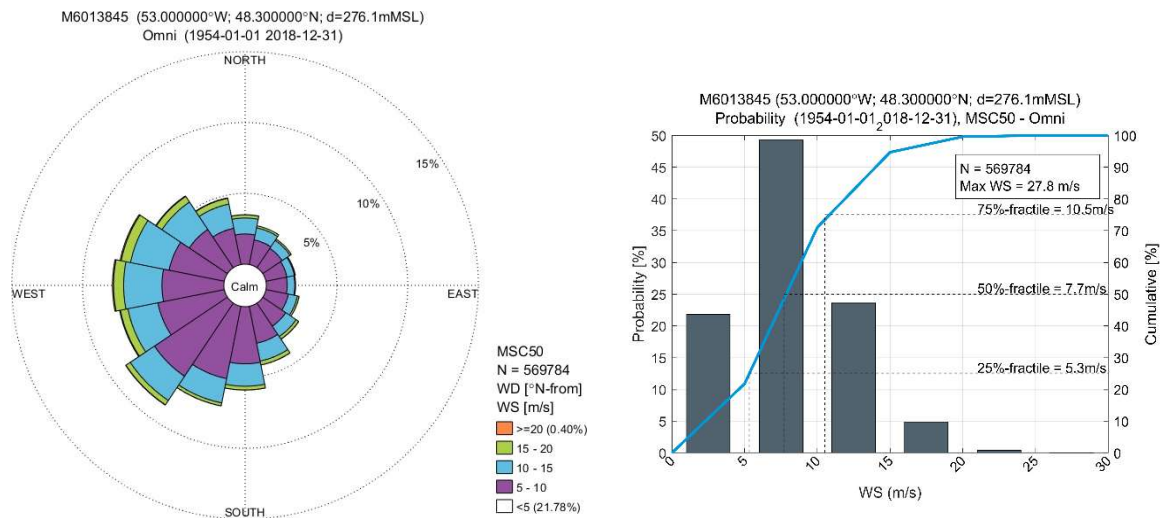


Figure 11: M6013845 Wind rose plot (left) and wind speed (m/s) probability of occurrence.

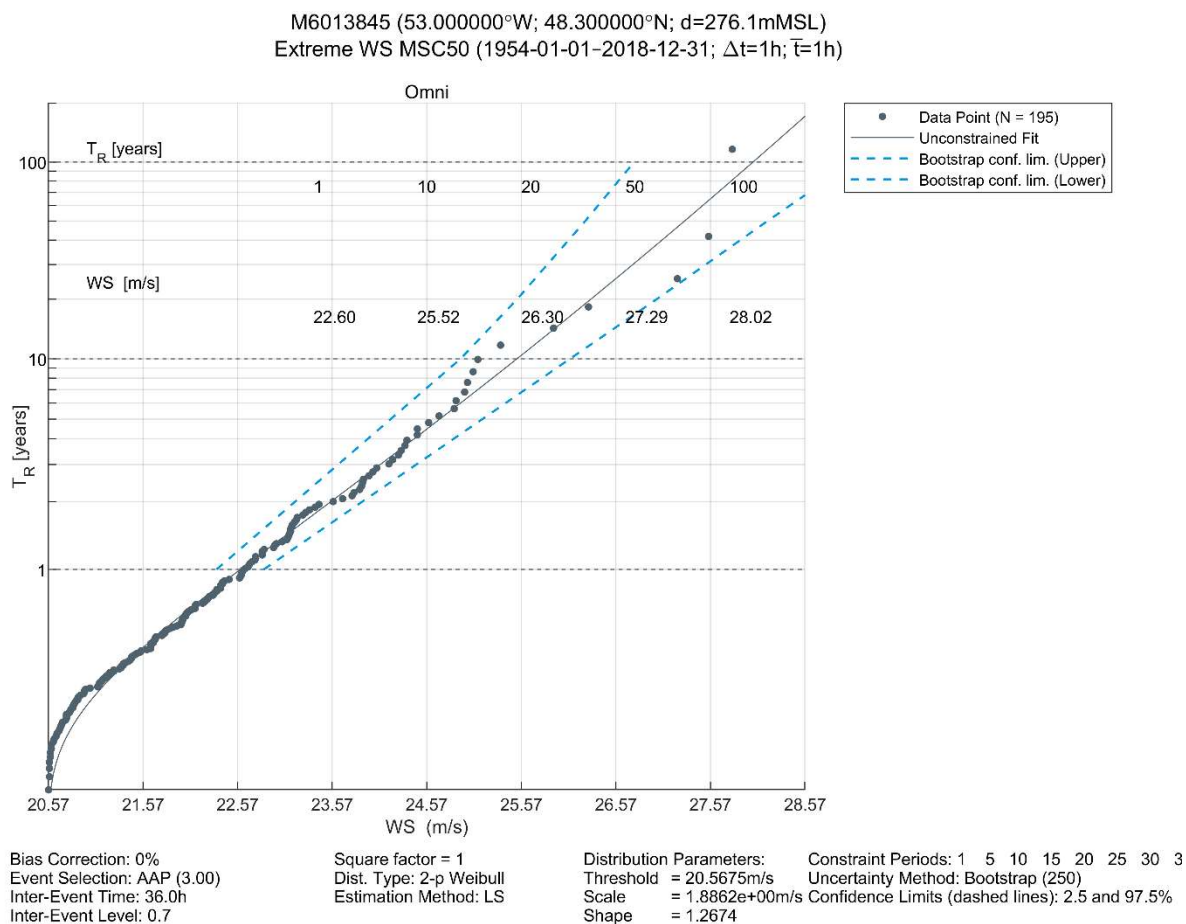


Figure 12: M6013845 wind speed extreme value analysis

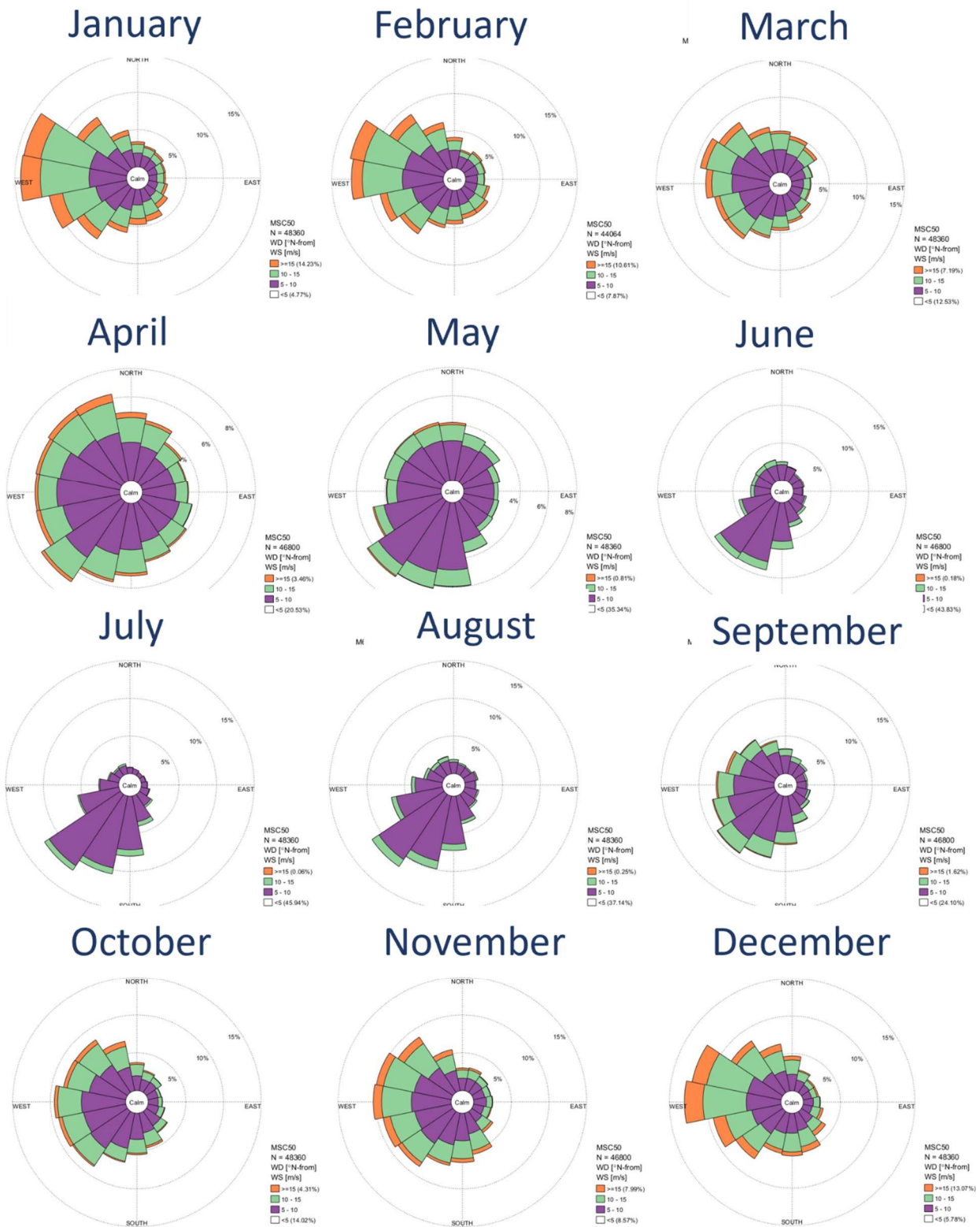


Figure 13: Monthly sustained winds (m/s) in the period 1954-2018

3. Conception Bay – MSC50 M6013197, Wave Climate

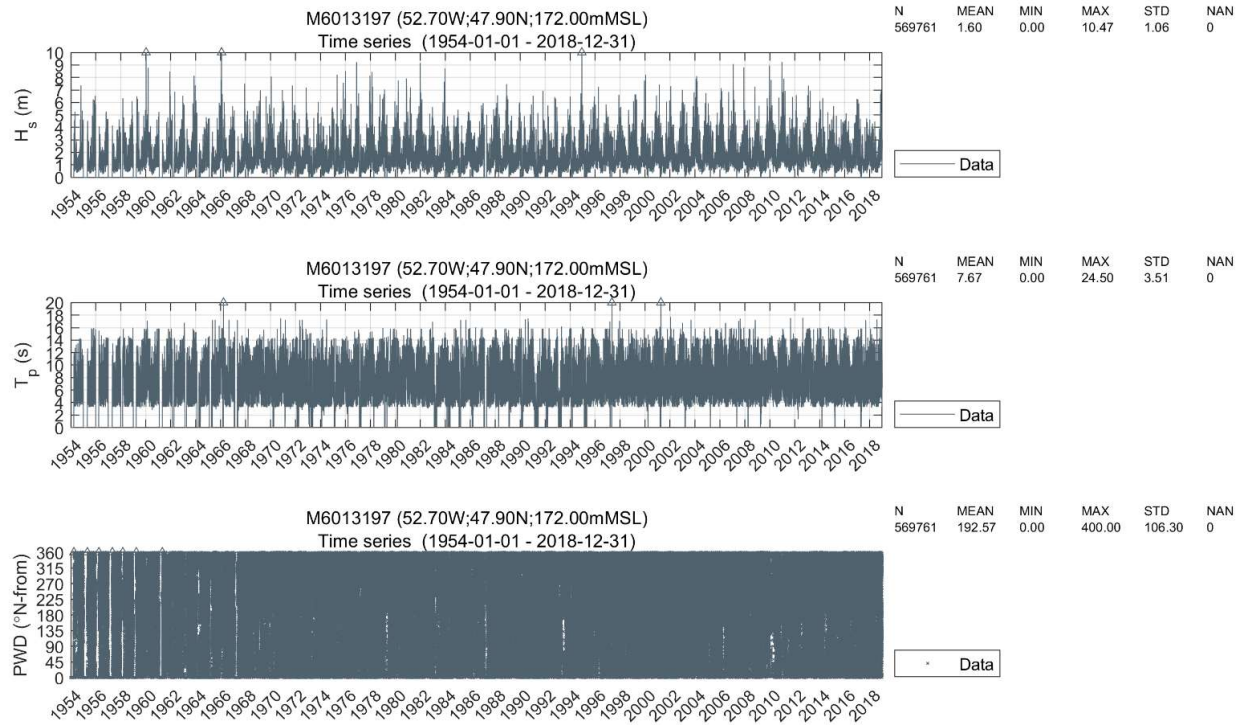


Figure 14: M6013197 timeseries (1954-2018), significant wave height (top), peak wave period (middle), wave direction (bottom)

M6013197 (52.70000°W, 47.90000°N, d=171.6mMSL) (1954-01-01 2018-12-31) Frequency of Occurrence [%] MWD [°N-from]																			
H _{m0} [m]		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Accum
	[9-10]	-	0.002	0.001	0.001	0.004	0.001	-	-	-	-	-	-	-	-	-	-	0.009	99.997
	[8-9]	-	0.015	0.001	0.007	0.004	0.002	-	-	-	-	-	-	-	-	-	-	0.030	99.988
	[7-8]	0.001	0.037	0.018	0.010	0.003	0.004	0.002	-	-	-	-	-	-	-	-	-	0.078	99.958
	[6-7]	0.022	0.067	0.046	0.023	0.017	0.011	0.016	0.001	-	-	-	-	-	-	-	0.001	0.224	99.882
	[5-6]	0.096	0.190	0.129	0.067	0.072	0.040	0.054	0.010	-	-	-	-	-	-	-	0.005	0.632	99.659
	[4-5]	0.209	0.518	0.316	0.223	0.208	0.160	0.159	0.059	0.012	0.006	0.002	0.001	0.001	0.001	0.009	0.027	1.912	99.027
	[3-4]	0.771	1.389	1.007	0.671	0.616	0.597	0.474	0.263	0.106	0.054	0.055	0.062	0.078	0.091	0.111	0.201	6.548	97.115
	[2-3]	2.276	3.003	2.172	1.584	1.577	1.674	1.358	0.972	0.557	0.400	0.383	0.500	0.560	0.608	0.633	1.203	19.459	90.567
	[1-2]	2.485	4.002	3.993	3.014	2.986	3.320	3.358	2.329	1.984	1.970	2.352	2.246	1.668	1.607	1.948	2.193	41.544	71.107
[0-1]	0.602	1.428	1.797	1.721	1.771	2.338	3.361	2.147	0.031	1.060	0.985	0.698	0.768	0.727	0.500	0.420	29.583	29.583	
Total	6.432	10.761	9.481	7.322	7.259	8.147	8.762	5.781	11.891	3.519	3.757	3.705	3.075	3.034	3.202	4.049	99.997	-	
Accum	6.432	17.193	26.674	33.996	41.255	49.402	58.163	63.964	75.855	79.175	82.932	86.637	89.712	92.746	95.948	99.997	-	-	

Figure 15: Significant Wave Height (Hs, m) M6013197 Frequency of occurrence per direction

M6013197 (52.700000°W; 47.900000°N; d=171.6mMSL)
(1954-01-01 2018-12-31) Omni
Frequency of Occurrence [%]
 H_{m0} [m]

T_p [s]	[0-1[	[1-2[	[2-3[	[3-4[	[4-5[	[5-6[	[6-7[	[7-8[	[8-9[	[9-10[	Total	Accum
[18-20[	-	-	-	-	-	-	-	-	-	-	-	99.996
[16-18[	0.030	0.047	0.005	0.003	-	-	-	-	-	-	0.085	99.996
[14-16[	0.188	0.719	1.154	0.543	0.161	0.059	0.033	0.012	0.007	0.001	2.876	99.911
[12-14[	0.605	2.056	2.096	1.061	0.452	0.216	0.110	0.055	0.022	0.008	6.682	97.034
[10-12[	1.814	6.438	4.451	1.729	0.709	0.290	0.077	0.008	0.001	-	15.518	90.352
[8-10[	4.889	11.786	4.772	2.179	0.551	0.064	0.002	-	-	-	24.244	74.835
[6-8[	7.939	7.448	3.930	0.970	0.039	0.002	-	-	-	-	20.329	50.591
[4-6[	2.218	12.387	3.050	0.062	-	-	-	-	-	-	17.718	30.261
[2-4[	3.937	0.664	-	-	-	-	-	-	-	-	4.601	12.544
[0-2[	7.942	-	-	-	-	-	-	-	-	-	7.942	7.942
Total	29.563	41.544	19.459	6.548	1.912	0.632	0.224	0.076	0.030	0.009	99.996	-
Accum	29.563	71.107	90.566	97.115	99.026	99.658	99.882	99.958	99.988	99.996	-	-

Figure 16: Peak wave Period (T_p , s) M6013197 frequency of occurrence per Significant Wave Height (H_s , m) bin.

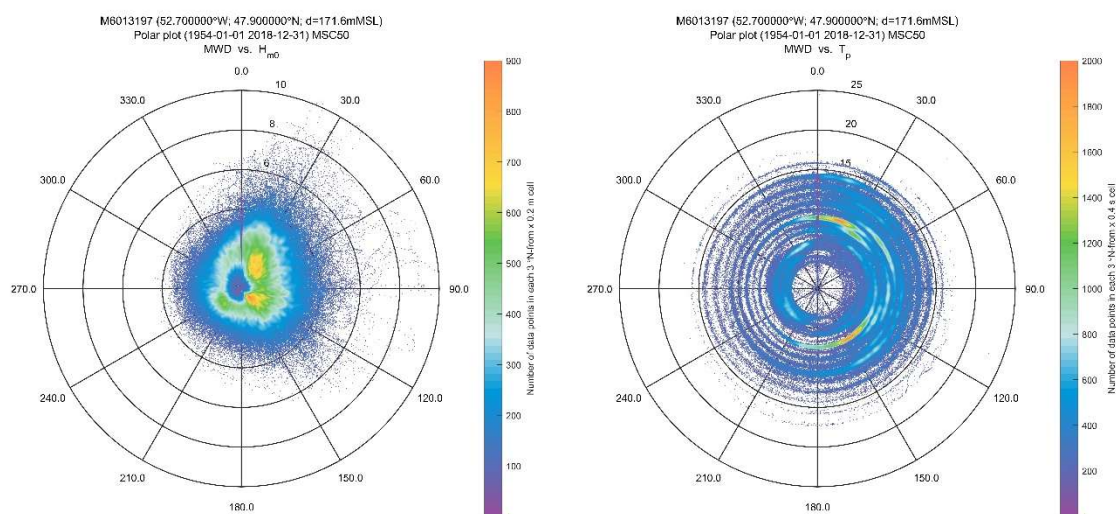


Figure 17: M6013197 Significant Wave Height Polar Plot (left), Peak Wave Period Polar Plot (right)

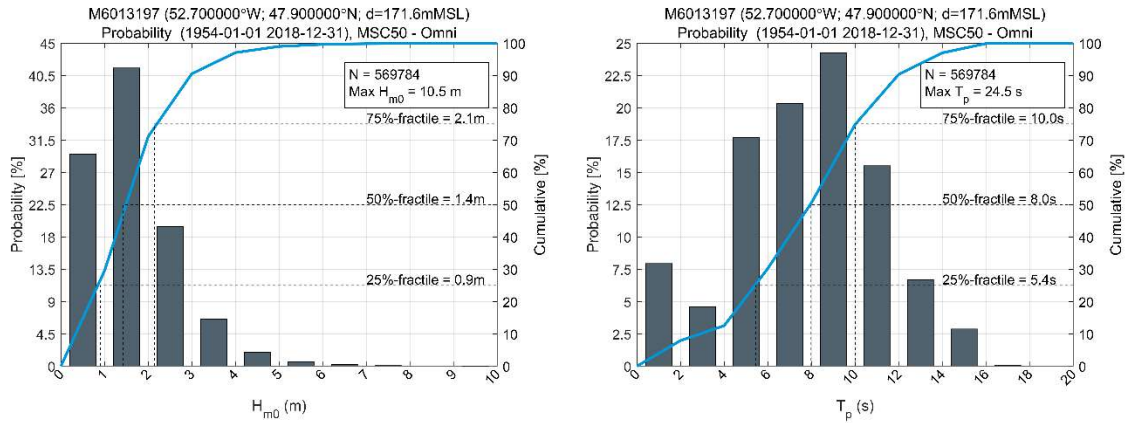


Figure 18: M6013197 Significant Wave Height probability of occurrence (left), Peak Wave Period probability of occurrence (right)

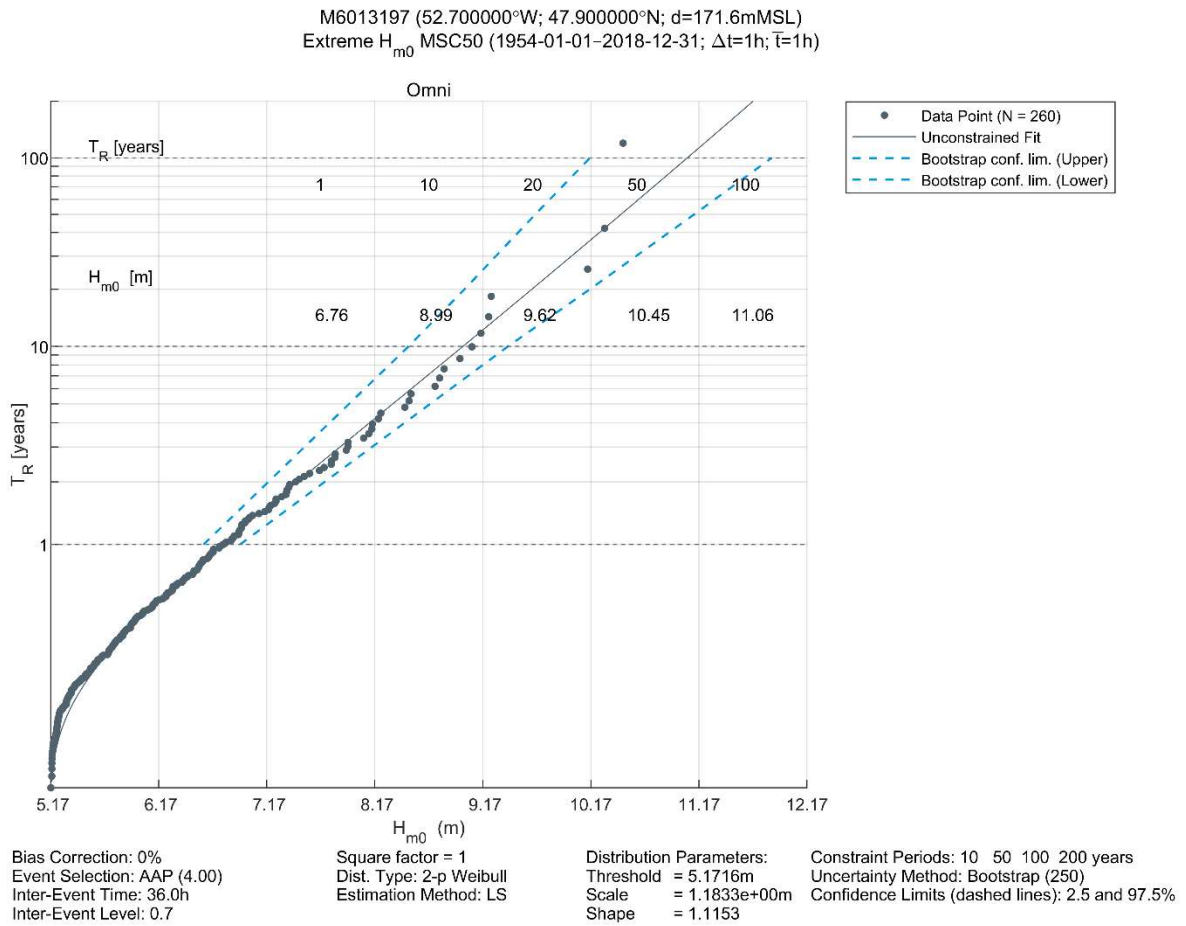


Figure 19: Extreme Value Analysis, MSC50 M6013197, Significant Wave Height (H_s , m)

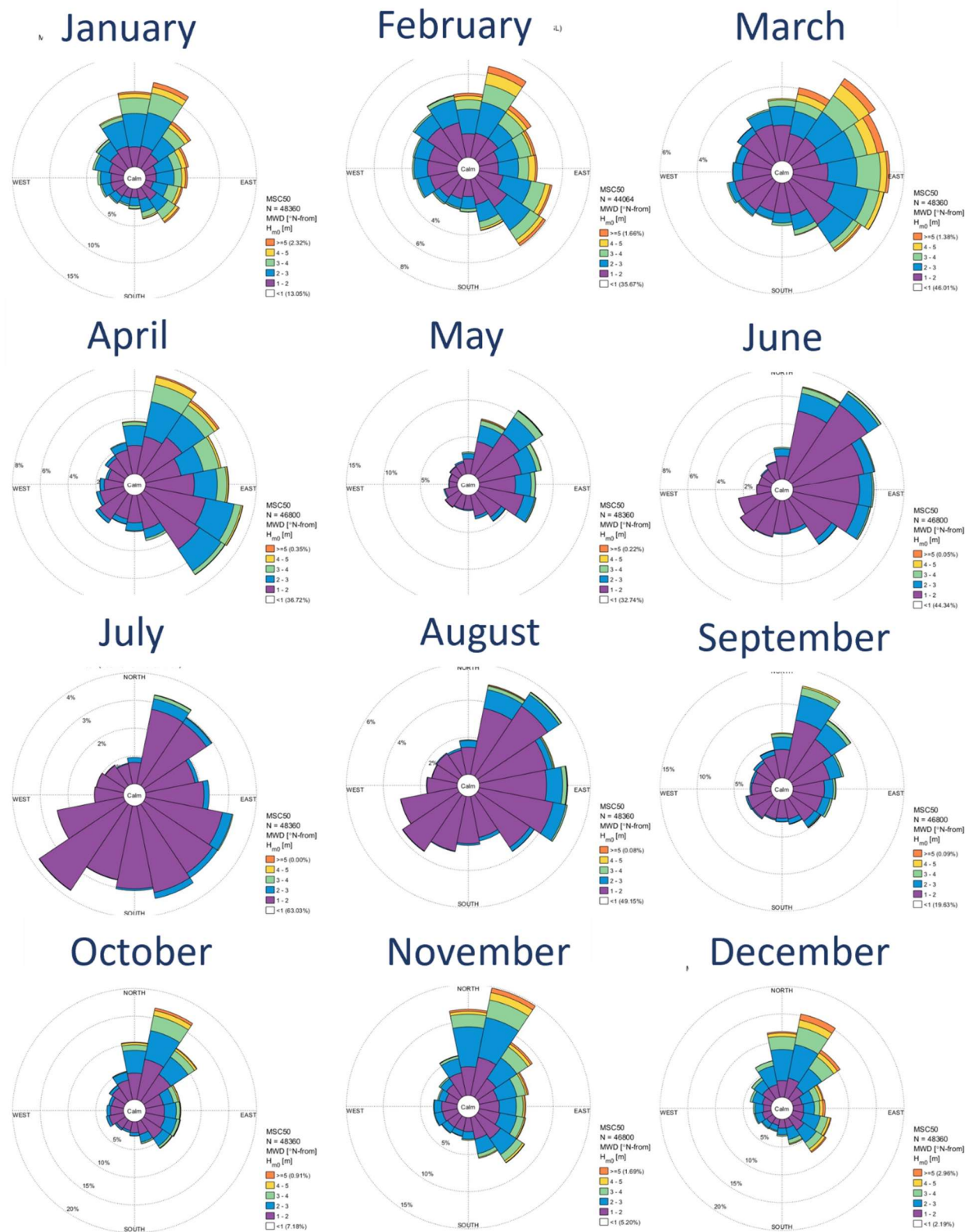


Figure 20: Monthly significant wave height roses (Hs, m) in the period 1954-2018

4. Conception Bay – MSC50 M6013197, Wind Climate

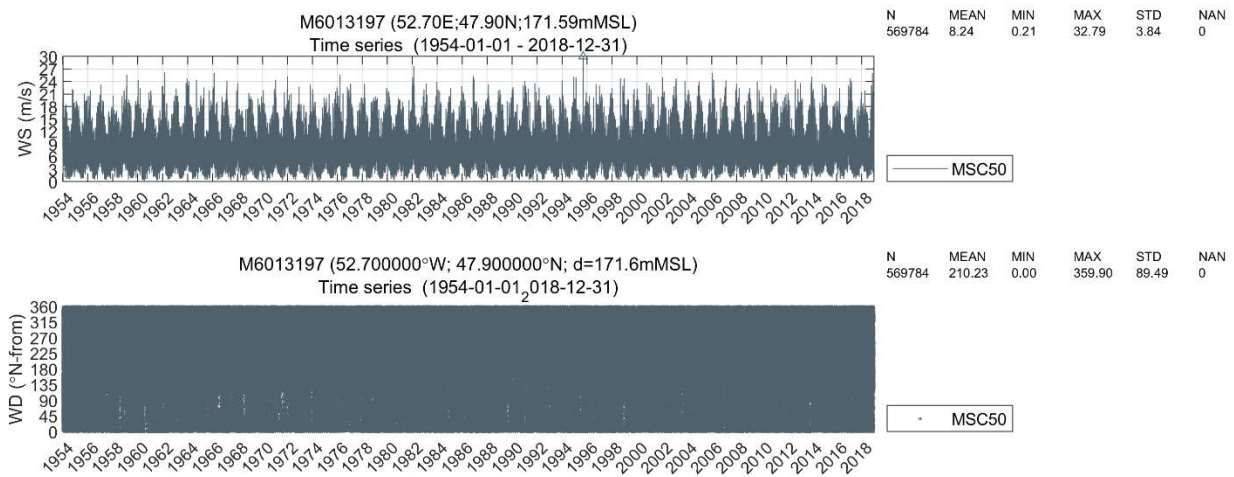


Figure 21: M6013197 timeseries (1954-2018), Wind Speed (top) and wind direction (bottom)

M6013197 (52.700000°W; 47.900000°N; d=171.6mMSL)
(1954-01-01_2018-12-31)
Frequency of Occurrence [%]
WD [°N-from]

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Accum
[25-30]	-	-	-	-	-	-	-	-	-	-	-	-	0.001	0.004	0.002	0.001	0.009	100.000
[20-25]	0.016	0.003	0.004	0.005	0.006	0.006	0.014	0.015	0.011	0.011	0.033	0.071	0.091	0.075	0.049	0.034	0.444	99.991
[15-20]	0.213	0.169	0.138	0.075	0.067	0.124	0.225	0.291	0.296	0.250	0.362	0.801	0.771	0.680	0.482	0.416	5.180	99.547
[10-15]	1.132	0.885	0.716	0.578	0.557	0.661	0.879	1.300	1.616	1.803	2.180	2.285	2.751	2.789	2.287	1.683	24.081	94.367
[5-10]	2.058	1.714	1.096	1.514	1.474	1.936	1.961	2.641	4.036	5.224	6.295	4.927	4.357	3.861	3.110	2.440	43.932	70.286
[0-5]	0.781	0.740	0.812	0.823	0.784	0.898	1.022	1.339	1.763	2.323	2.895	2.318	1.780	1.367	1.090	0.903	21.354	21.354
Total	4.178	3.514	3.277	3.054	2.889	3.265	4.111	5.587	7.712	9.611	11.558	10.202	9.750	8.798	6.969	5.625	100.000	-
Accum	4.178	7.692	10.969	14.023	16.912	20.178	24.287	29.873	37.585	47.196	58.754	68.957	78.708	87.504	94.474	100.000	-	-

Figure 22: Wind Speed (WS, m/s) M6013197 Frequency of occurrence per direction

M6013197
Exceedance (1954-01-01_2018-12-31) MSC50 - Directional
Exceedance [%]

	Omni	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
0	100.000	4.178	3.514	3.277	3.054	2.889	3.265	4.111	5.587	7.712	9.611	11.558	10.202	9.750	8.798	6.969	5.526
5	78.646	3.397	2.771	2.454	2.231	2.105	2.397	3.079	4.247	5.959	7.268	8.882	7.684	7.970	7.430	5.909	4.623
10	29.714	1.361	1.057	0.856	0.657	0.630	0.790	1.118	1.605	1.924	2.064	2.595	2.957	3.613	3.549	2.800	2.134
15	5.633	0.229	0.173	0.142	0.080	0.073	0.130	0.239	0.305	0.308	0.261	0.415	0.673	0.862	0.761	0.533	0.450
20	0.453	0.016	0.003	0.004	0.005	0.006	0.006	0.014	0.015	0.012	0.011	0.033	0.071	0.091	0.081	0.051	0.035
25	0.009	-	-	-	-	-	-	-	-	-	-	-	-	0.001	0.004	0.002	0.001
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Figure 23: Wind speed (m/s) M6013197 exceedance probability per direction.

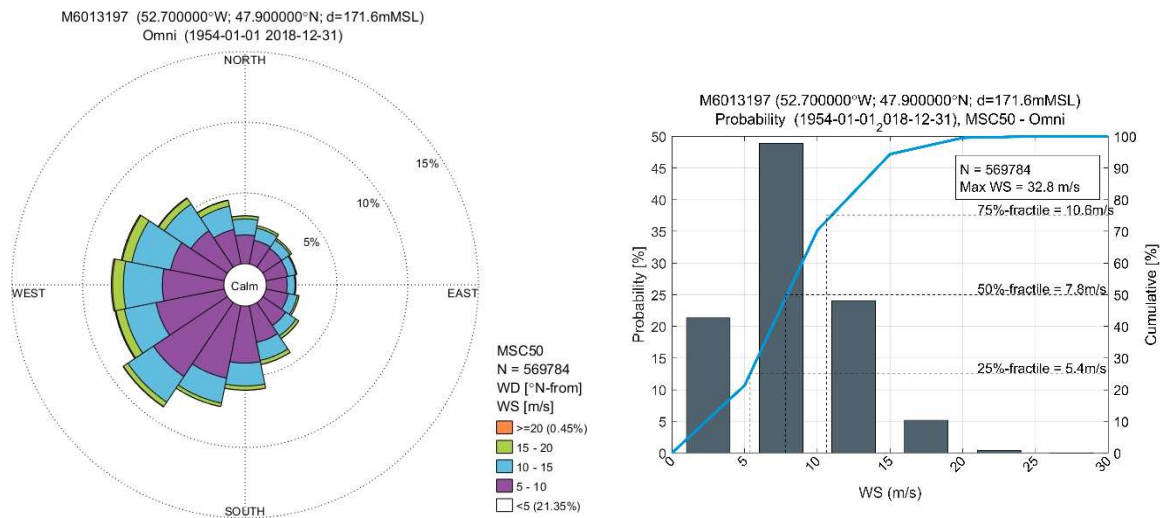


Figure 24: M6013197 Wind rose plot (left) and wind speed (m/s) probability of occurrence.

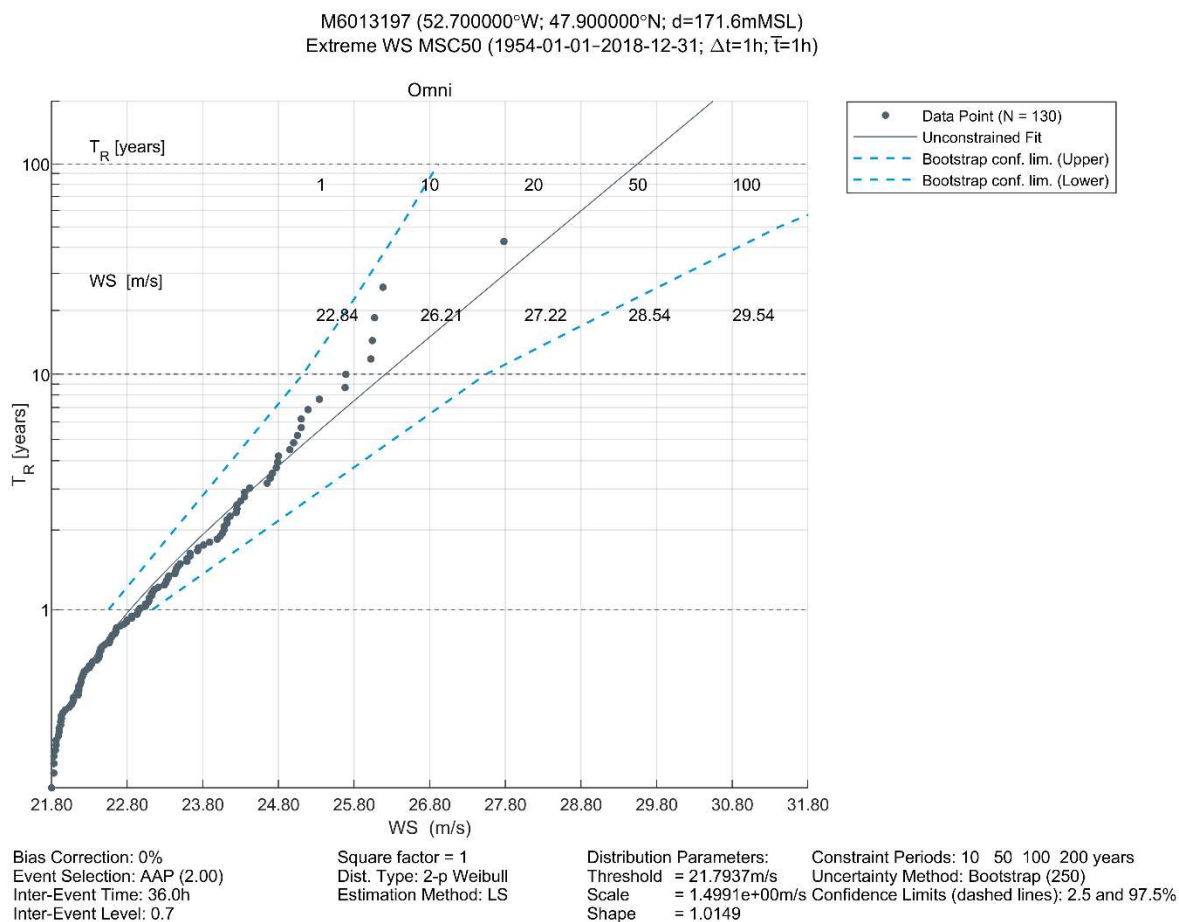


Figure 25: M6013197 wind speed extreme value analysis

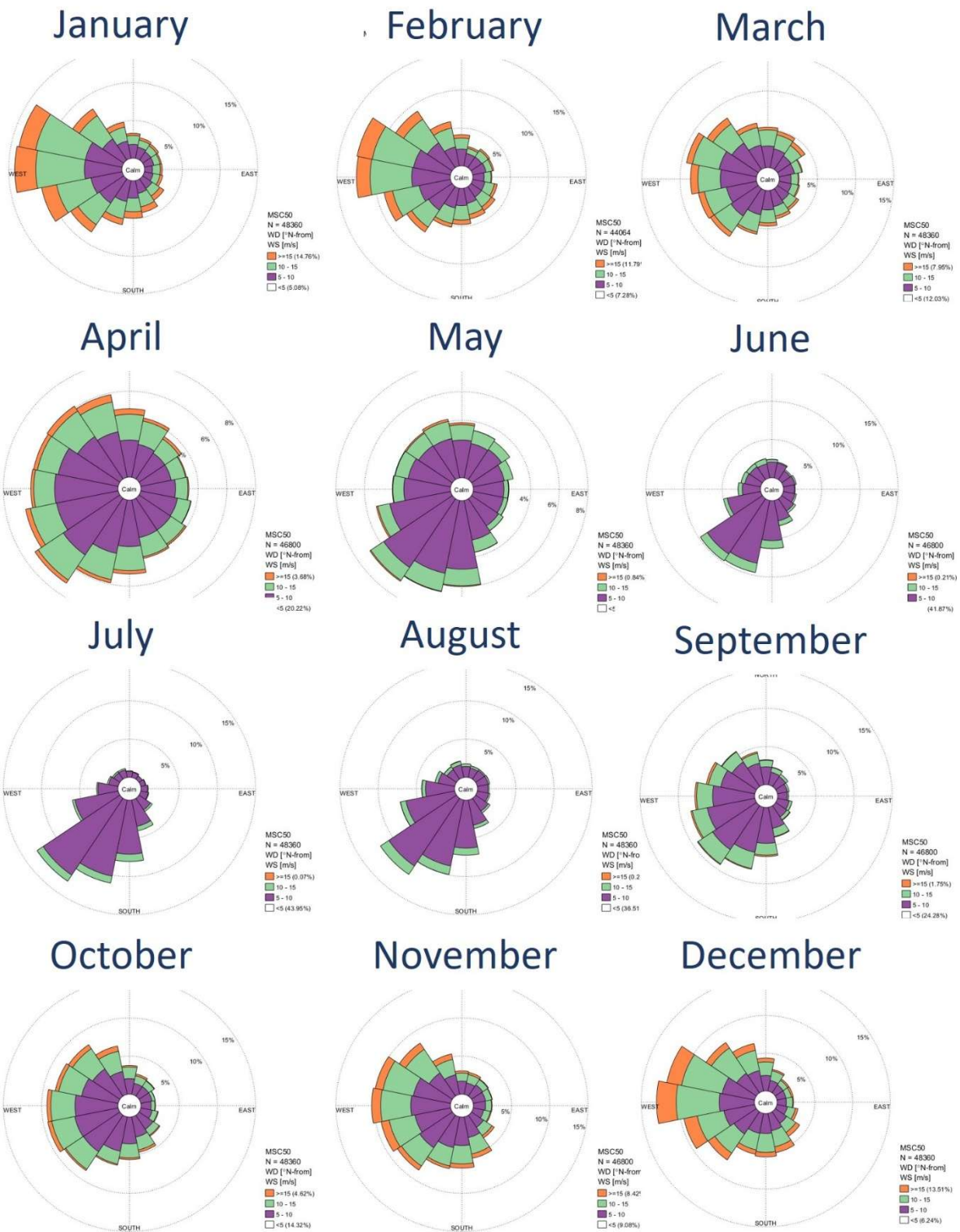


Figure 26: Monthly sustained winds (m/s) in the period 1954-2018

5. Ferryland – MSC50 M6011567, Wave Climate

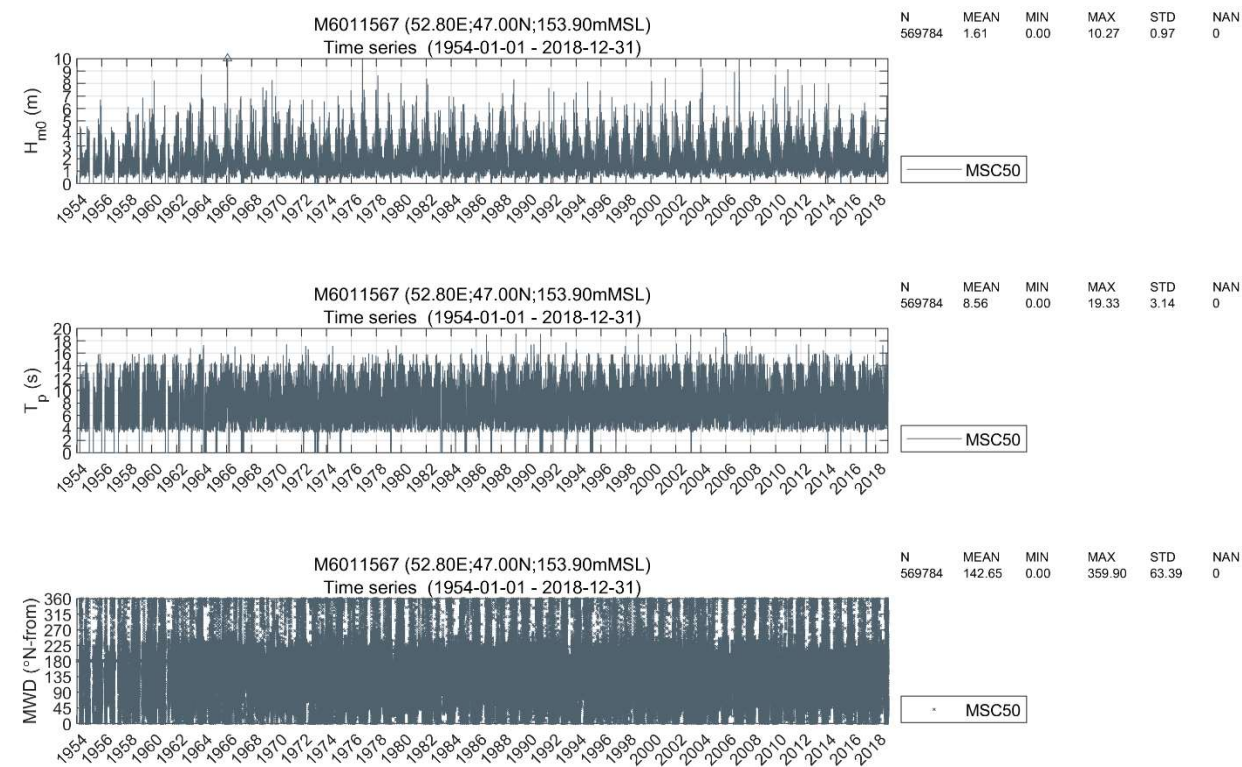


Figure 27: M6011567 timeseries (1954-2018), significant wave height (top), peak wave period (middle) and wave direction (bottom)

M6011567 (52.800000°W; 47.000000°N; d=153.9mMSL)
(1954-01-01 2018-12-31)
Frequency of Occurrence [%]
MWD [°N-from]

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Accum
9-10°	-	-	-	-	0.002	0.003	0.001	-	-	-	-	-	-	-	-	-	0.006	99.999
9-9°	-	-	0.001	0.003	0.004	0.002	0.003	-	-	-	-	-	-	-	-	-	0.016	99.993
7-9°	-	-	0.001	0.006	0.009	0.003	0.008	0.015	0.001	-	-	-	-	-	-	-	0.043	99.977
6-7°	-	-	0.011	0.031	0.025	0.013	0.025	0.043	0.011	-	-	-	-	-	-	-	0.163	99.934
5-6°	-	0.003	0.052	0.057	0.077	0.059	0.105	0.114	0.063	0.006	-	-	-	-	-	-	0.536	99.772
4-5°	-	0.028	0.175	0.226	0.255	0.227	0.249	0.331	0.233	0.041	-	-	-	-	-	-	1.765	99.236
3-4°	0.010	0.133	0.515	0.704	0.792	0.747	0.726	0.914	0.857	0.368	0.046	0.003	0.001	0.001	0.002	0.002	5.820	97.471
2-3°	0.190	0.717	1.999	1.976	1.844	2.037	1.998	2.524	2.958	1.472	0.408	0.116	0.065	0.030	0.046	0.056	18.332	91.861
1-2°	0.855	1.985	4.467	3.879	3.954	4.037	4.490	5.578	8.572	5.953	1.914	0.645	0.380	0.340	0.377	0.533	47.545	73.320
0-1°	0.171	0.280	0.809	1.270	1.251	1.320	2.054	3.451	10.543	2.794	0.910	0.342	0.173	0.132	0.130	0.144	25.776	25.776
Total	1.166	3.148	8.029	7.953	7.613	8.448	9.620	13.371	23.238	10.634	3.279	1.106	0.608	0.502	0.554	0.733	99.999	-
Accum	1.166	4.311	12.340	20.293	27.906	36.354	45.974	59.345	82.583	93.217	96.496	97.602	98.210	98.712	99.266	99.998	-	-

Figure 28: Significant Wave Height (H_s , m) M6011567 Frequency of occurrence per direction

M6011567 (52.800000°W; 47.000000°N; d=153.9mMSL)
(1954-01-01 2018-12-31) Omni
Frequency of Occurrence [%]
H_{m0} [m]

	[0-1[	[1-2[	[2-3[	[3-4[	[4-5[	[5-6[	[6-7[	[7-8[	[8-9[	[9-10[	Total	Accum
[18-20[	0.002	0.005	0.002	-	-	-	-	-	-	-	0.008	99.999
[16-18[	0.019	0.053	0.017	0.002	-	-	-	-	-	-	0.091	99.991
[14-16[	0.251	1.693	0.889	0.252	0.076	0.017	0.003	0.001	-	-	3.182	99.899
[12-14[	0.711	2.852	2.369	0.914	0.313	0.115	0.058	0.025	0.014	0.006	7.378	96.717
[10-12[	1.916	11.261	6.053	1.913	0.732	0.305	0.094	0.017	0.002	-	22.294	89.340
[8-10[	7.216	15.016	4.329	2.024	0.621	0.100	0.006	-	-	-	29.312	67.046
[6-8[	7.567	9.266	4.184	0.708	0.022	-	-	-	-	-	21.748	37.734
[4-6[	1.723	7.128	0.489	0.006	-	-	-	-	-	-	9.346	15.986
[2-4[	1.316	0.270	-	-	-	-	-	-	-	-	1.587	6.640
[0-2[	5.053	-	-	-	-	-	-	-	-	-	5.053	5.053
Total	25.775	47.545	18.332	5.820	1.765	0.536	0.163	0.043	0.016	0.006	99.999	-
Accum	25.775	73.320	91.651	97.471	99.236	99.772	99.934	99.977	99.993	99.999	-	-

Figure 29: Peak wave Period (Tp, s) M6011567 Frequency of occurrence per Significant Wave Height (Hs, m) bin.

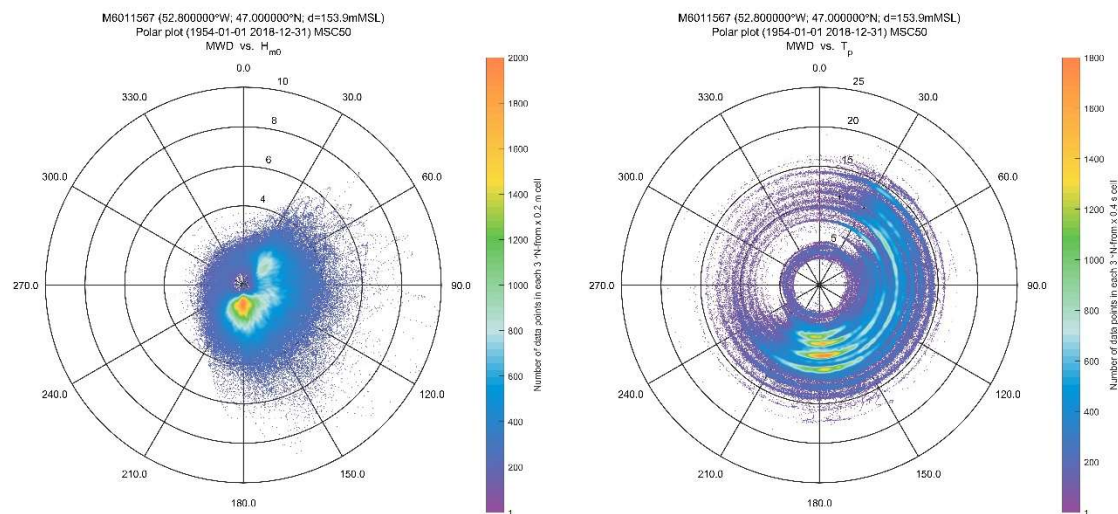


Figure 30: M6011567 Significant Wave Height Polar Plot (left), Peak Wave Period Polar Plot (right)

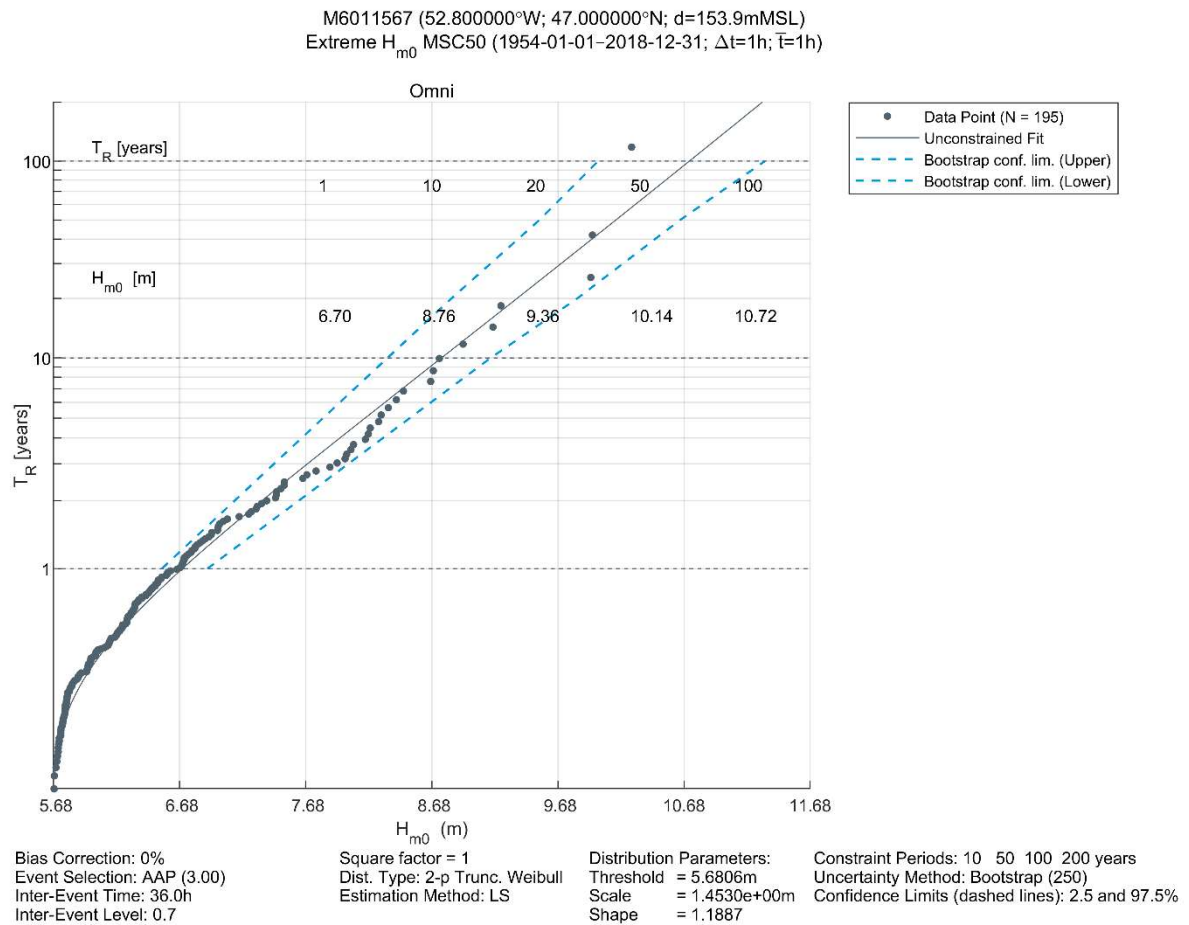


Figure 31: Extreme Value Analysis, MSC50 M6011567, Significant Wave Height (H_s , m)

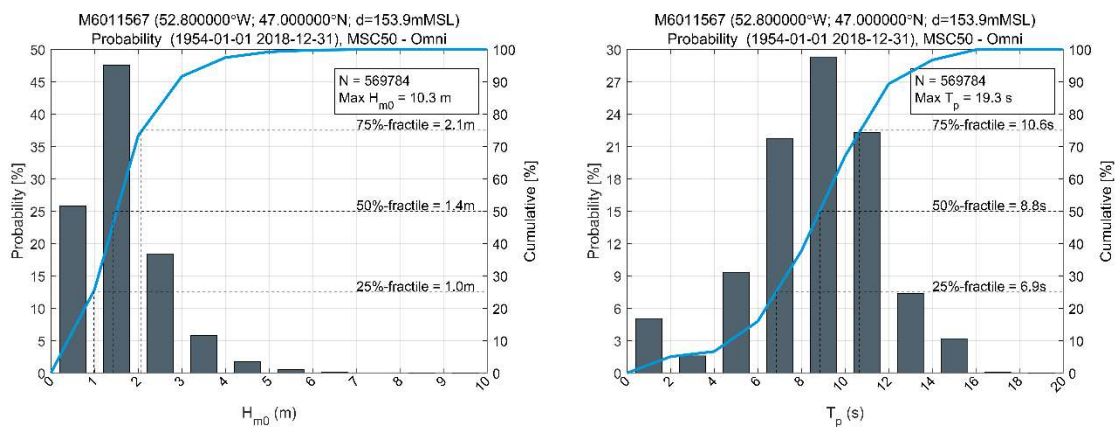


Figure 32: M6011567 Significant Wave Height probability of occurrence (left), Peak Wave Period probability of occurrence (right)

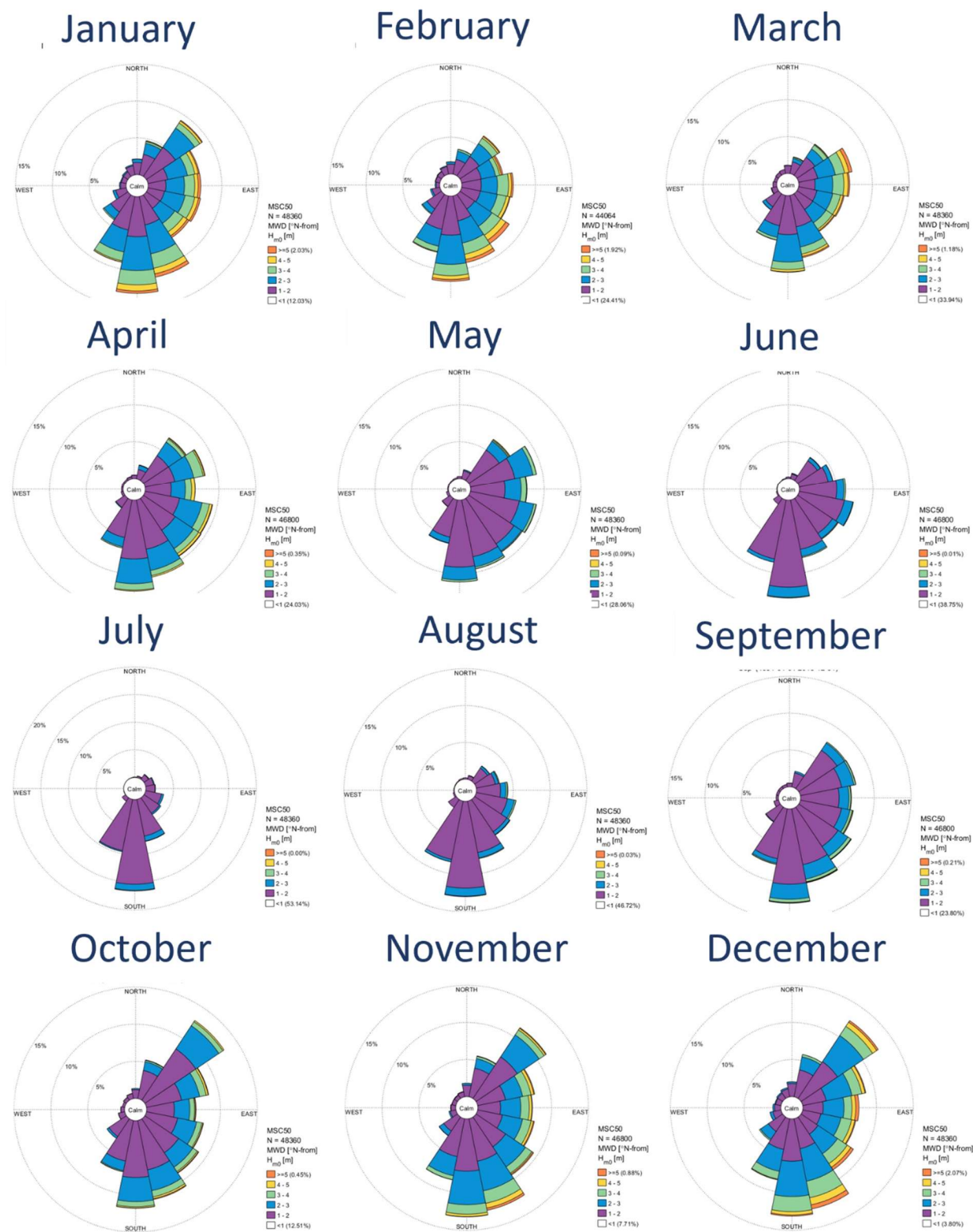


Figure 33: Monthly significant wave height roses (Hs, m) in the period 1954-2018

6. Ferryland – MSC50 M6011567, Wind Climate

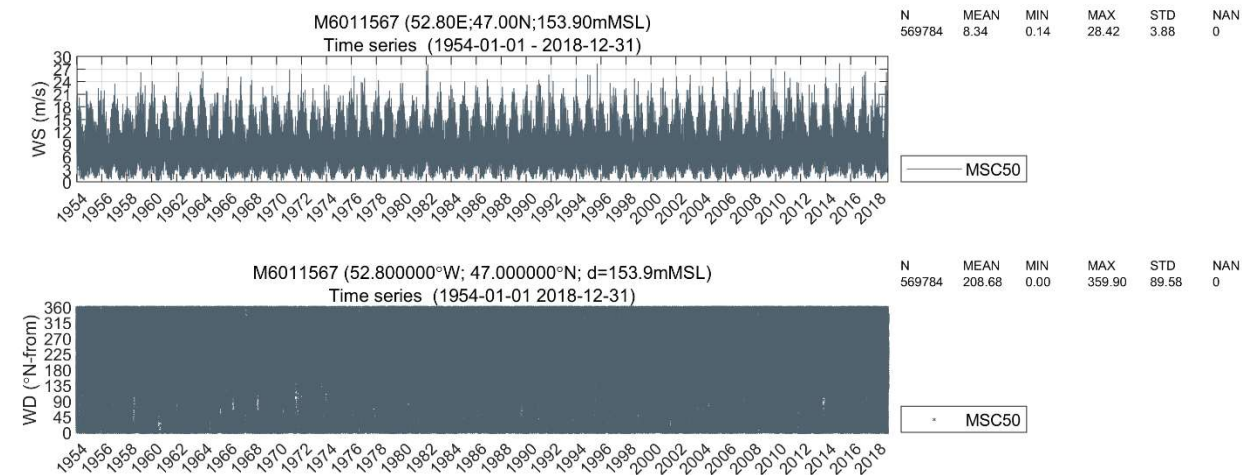


Figure 34: M6011567 timeseries (1954-2018), Wind Speed (top) and wind direction (bottom)

M6011567 (52.800000°W; 47.000000°N; d=153.9mMSL)
(1954-01-01 2018-12-31)
Frequency of Occurrence [%]
WD [°N-from]

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total	Accum
[25-30]	0.001	0.001	-	-	-	-	-	-	-	0.001	0.001	0.001	0.005	0.003	0.002	-	0.018	100.000
[20-25]	0.016	0.007	0.011	0.011	0.012	0.010	0.016	0.017	0.014	0.013	0.033	0.063	0.113	0.083	0.043	0.029	0.520	99.984
[15-20]	0.169	0.200	0.172	0.131	0.098	0.143	0.221	0.292	0.312	0.282	0.362	0.691	0.924	0.720	0.449	0.347	5.520	99.494
[10-15]	1.050	0.882	0.807	0.803	0.632	0.705	0.979	1.285	1.556	1.657	2.245	2.935	2.898	2.819	2.196	1.571	24.440	93.944
[5-10]	1.874	1.673	1.619	1.728	1.945	1.707	1.994	2.503	3.898	4.989	6.354	5.318	4.480	3.623	3.059	2.337	48.897	69.504
[0-5]	0.770	0.746	0.782	0.789	0.784	0.898	1.054	1.356	1.712	2.100	2.459	2.219	1.707	1.511	1.035	0.881	20.607	20.607
Total	3.909	3.511	3.387	3.461	3.072	3.463	4.164	5.456	7.491	9.022	11.456	10.857	10.128	8.764	6.694	5.165	100.000	-
Accum	3.909	7.420	10.807	14.268	17.340	20.803	24.967	30.423	37.914	46.936	58.392	69.249	79.378	88.141	94.835	100.000	-	-

Figure 35: Wind Speed (WS, m/s) M6011567 Frequency of occurrence per direction

M6011567
Exceedance (1954-01-01 2018-12-31) MSC50 - Directional
Exceedance [%]

	Ommi	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
0	100.000	3.909	3.511	3.387	3.461	3.072	3.463	4.164	5.456	7.491	9.022	11.456	10.857	10.128	8.764	6.694	5.165
5	79.393	3.139	2.763	2.605	2.672	2.288	2.565	3.110	4.097	5.779	6.923	8.966	8.638	8.420	7.453	5.659	4.285
10	30.496	1.265	1.090	0.989	0.944	0.743	0.858	1.117	1.594	1.880	1.933	2.643	3.320	3.940	3.631	2.601	1.948
15	6.056	0.205	0.208	0.182	0.142	0.110	0.153	0.237	0.309	0.326	0.277	0.387	0.785	1.042	0.812	0.495	0.376
20	0.536	0.016	0.008	0.011	0.011	0.012	0.010	0.016	0.017	0.014	0.014	0.034	0.094	0.117	0.085	0.046	0.030
25	0.016	0.001	0.001	-	-	-	-	-	-	-	-	0.001	0.001	0.001	0.005	0.003	0.002
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Figure 36: Wind speed (m/s) M6011567 exceedance probability per direction.

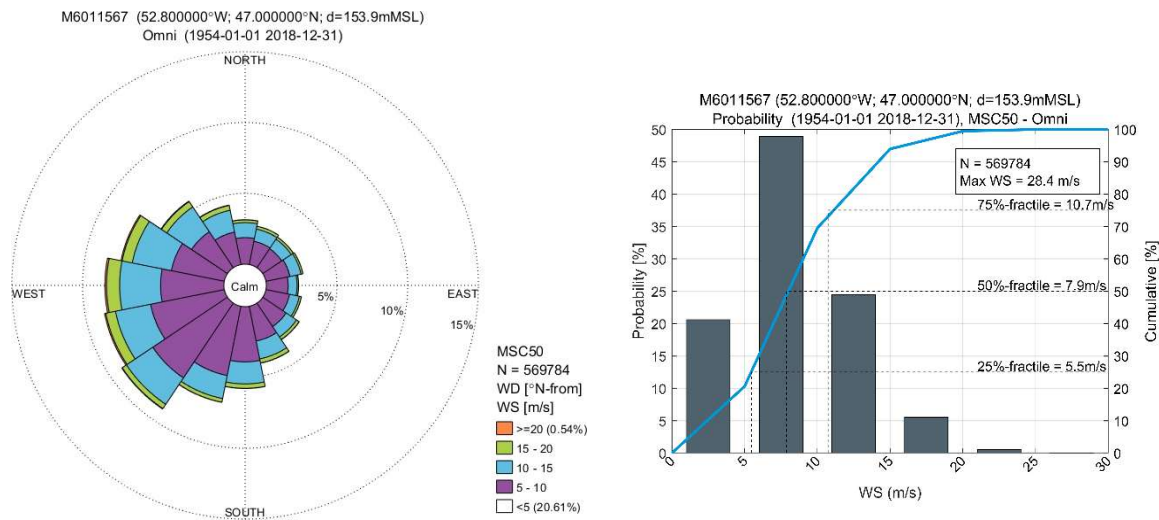


Figure 37: M6011567 Wind rose plot (left) and wind speed (m/s) probability of occurrence.

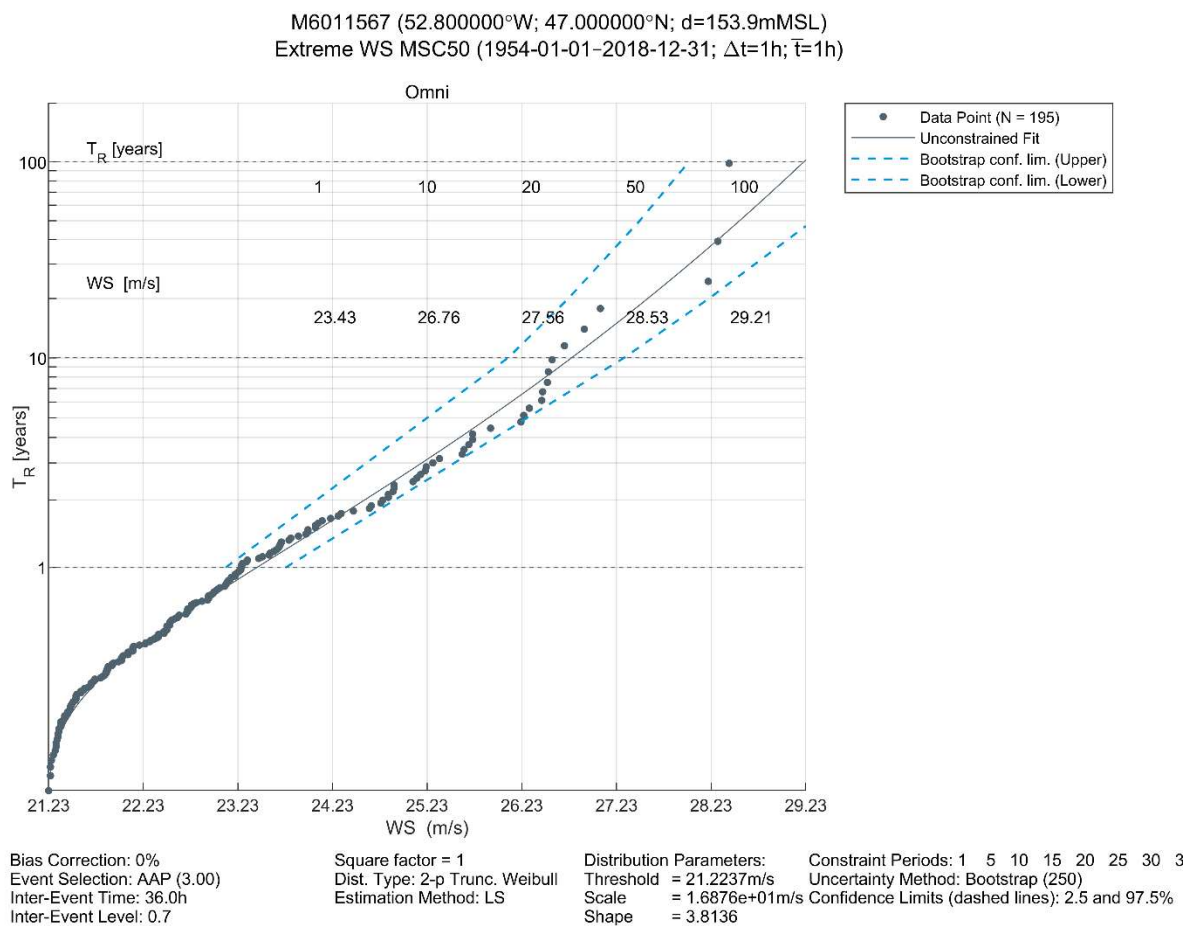


Figure 38: M6013845 wind speed extreme value analysis

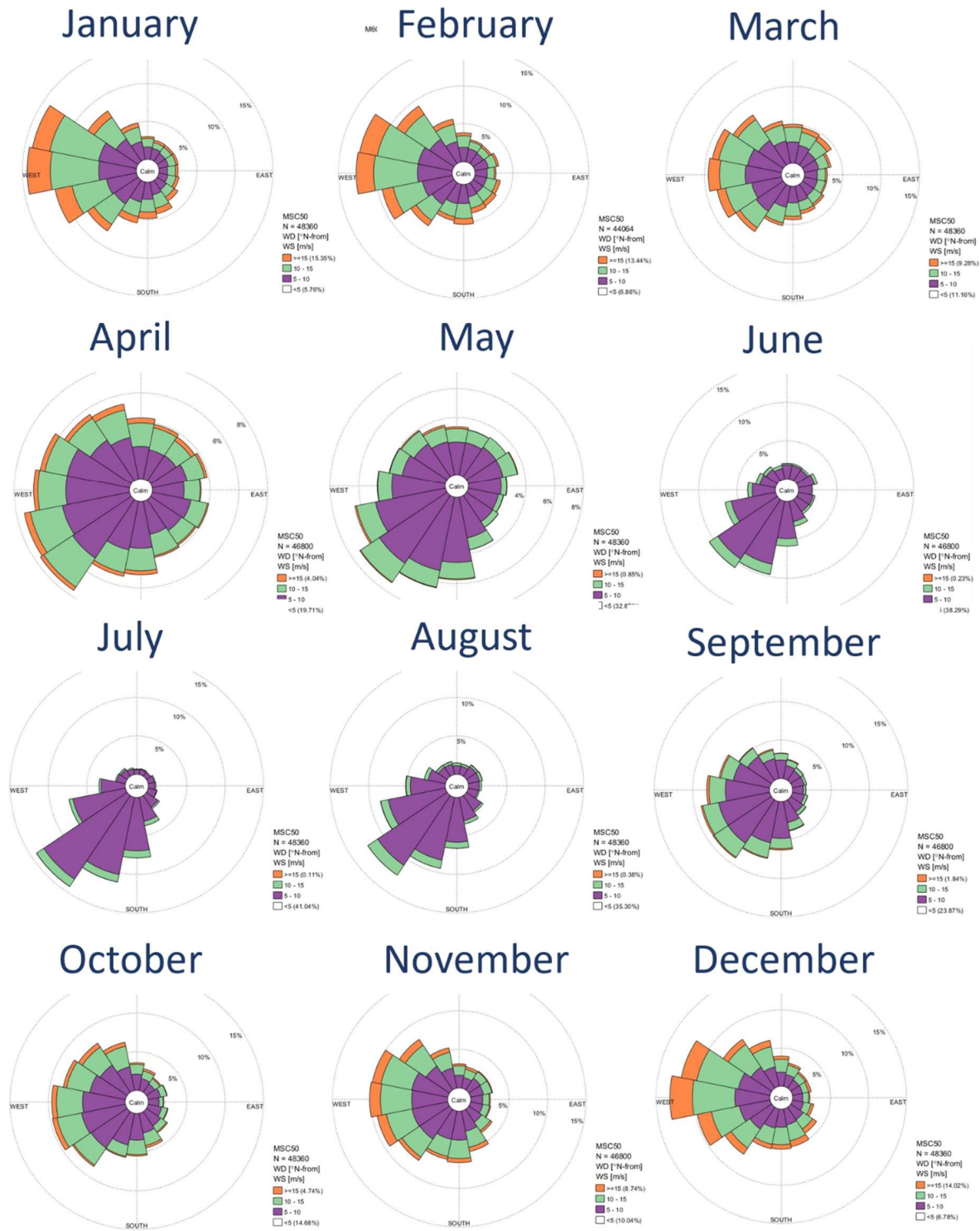


Figure 39: Monthly sustained winds (m/s) in the period 1954-2018

COASTAL WAVE MODELLING RESULTS

1. Hants Harbour – 20-yr Return Period Wave Conditions

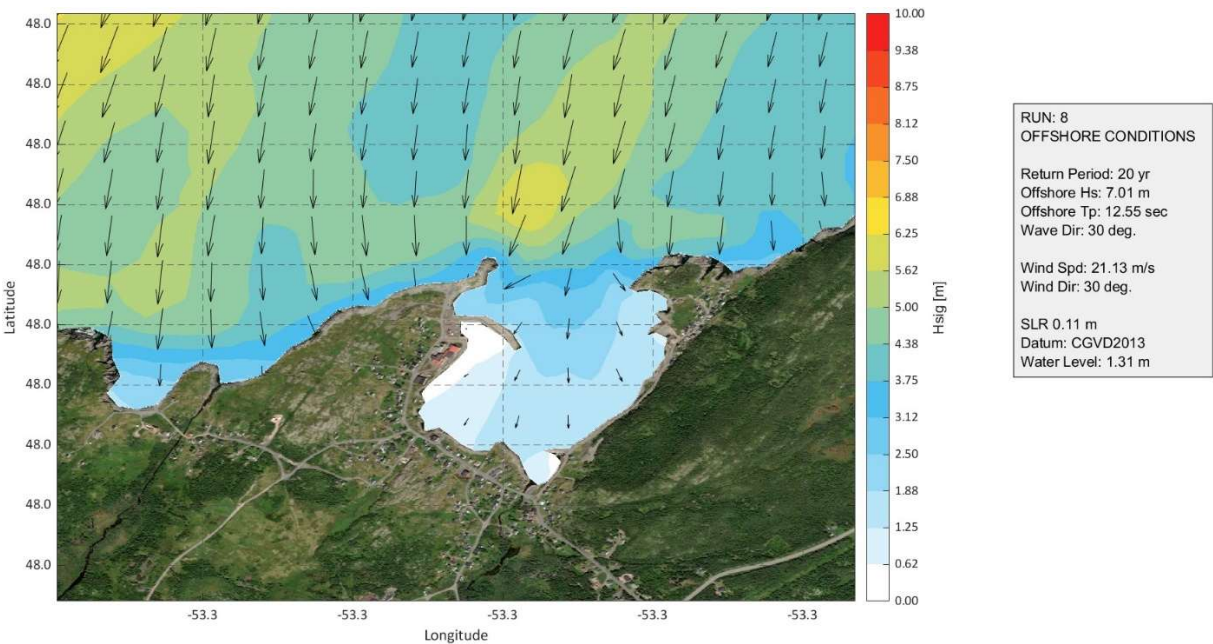


Figure 1: Hants Harbour – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

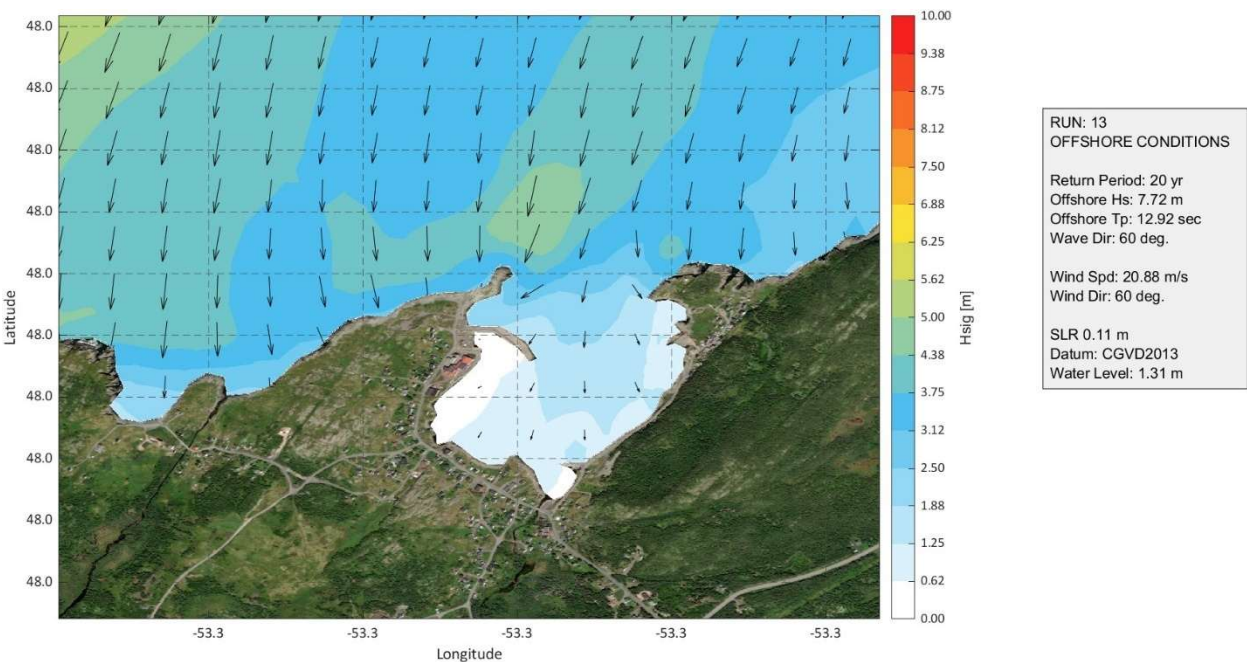


Figure 2: Hants Harbour – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

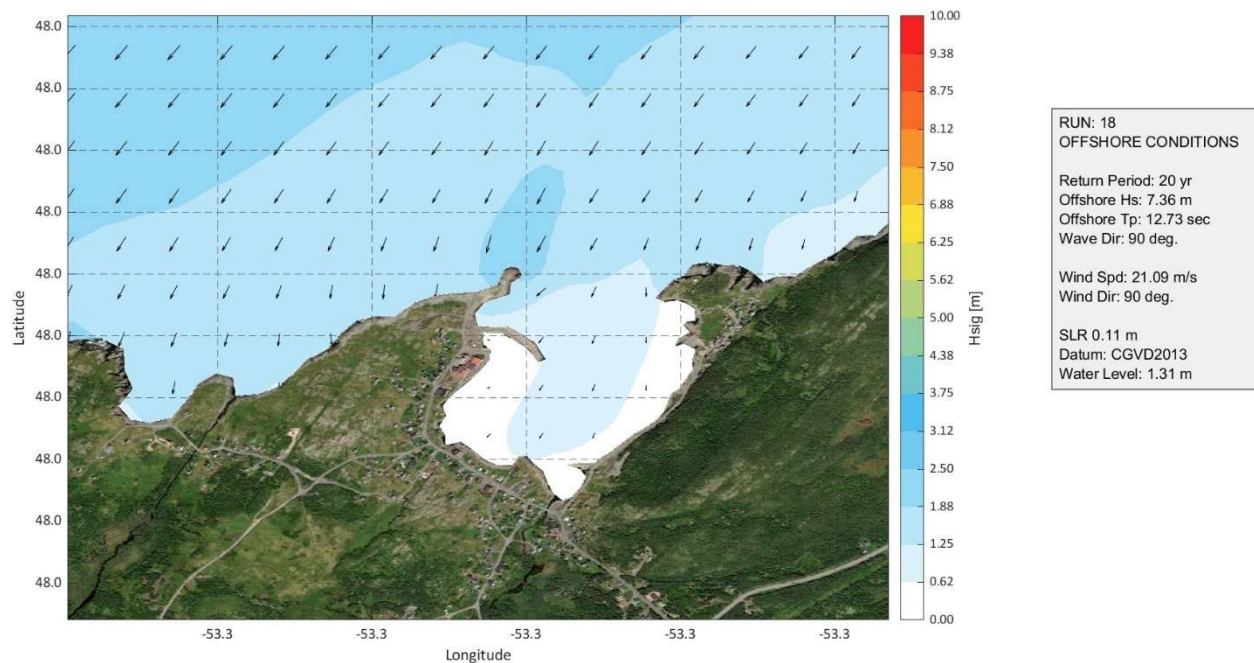


Figure 3: Hants Harbour – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 90°

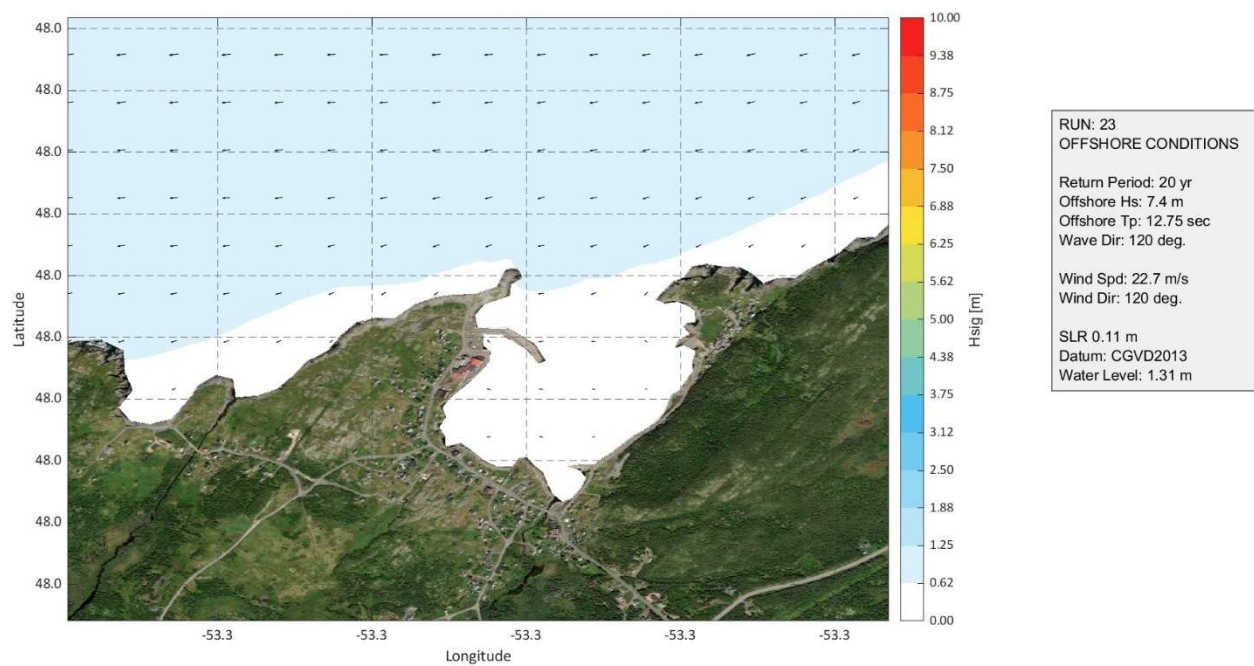


Figure 4: Hants Harbour – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 120°

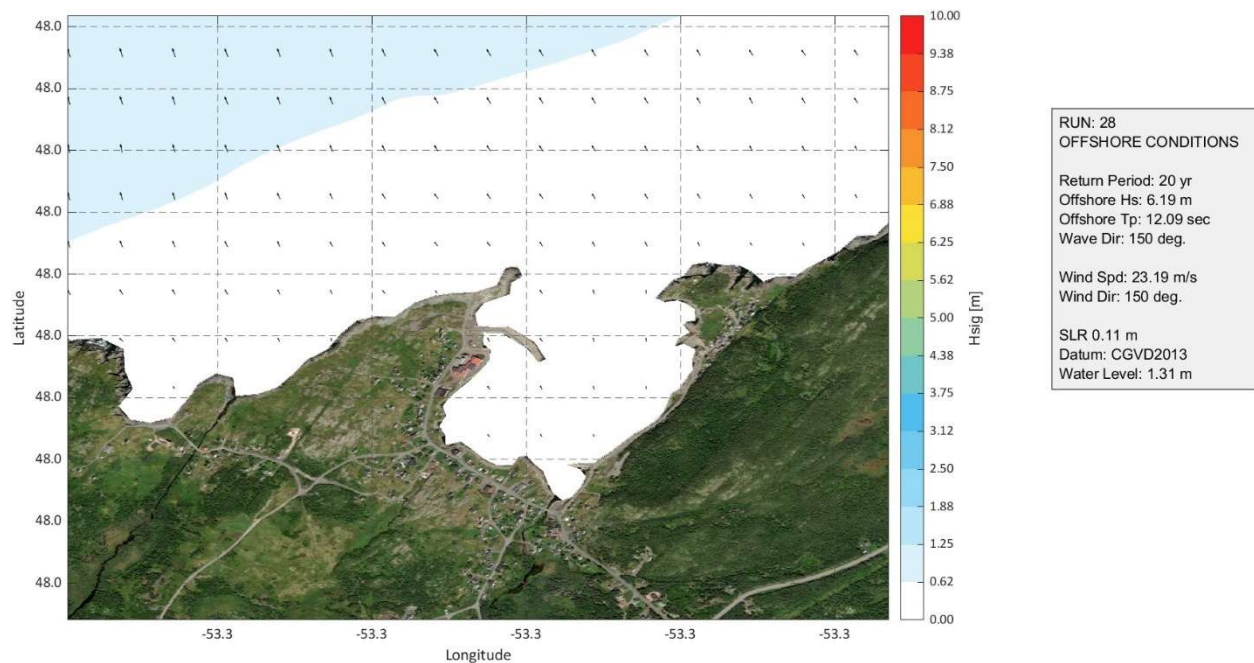


Figure 5: Hants Harbour – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 150°

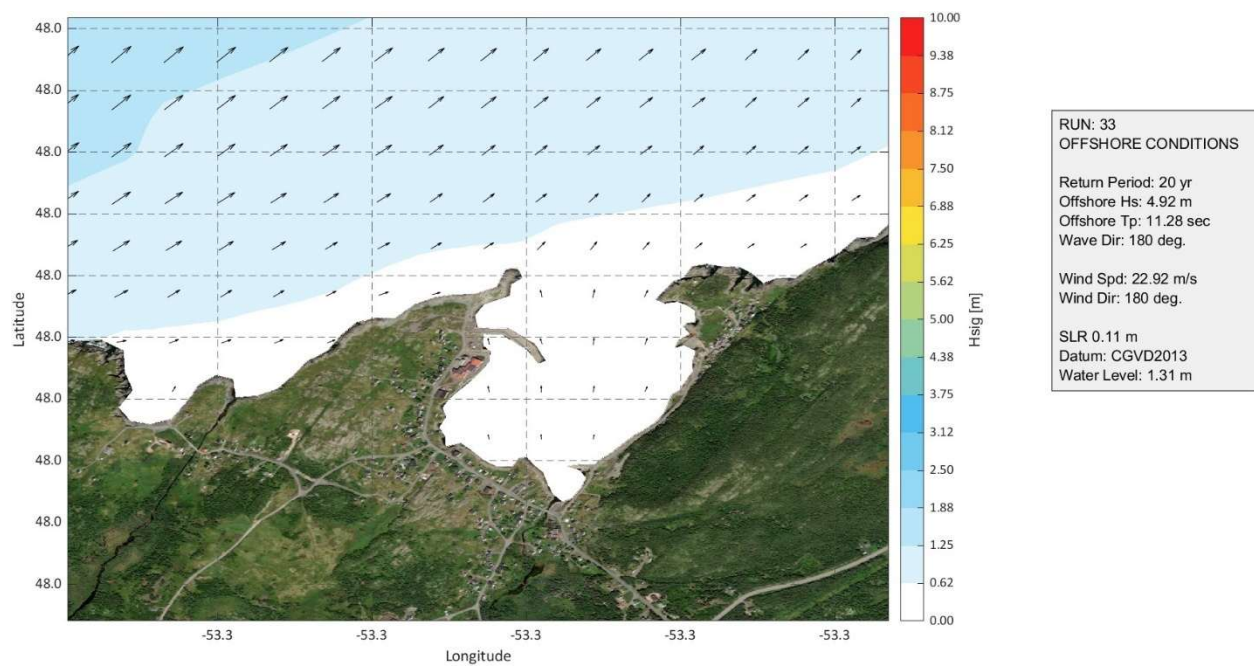


Figure 6: Hants Harbour – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 180°

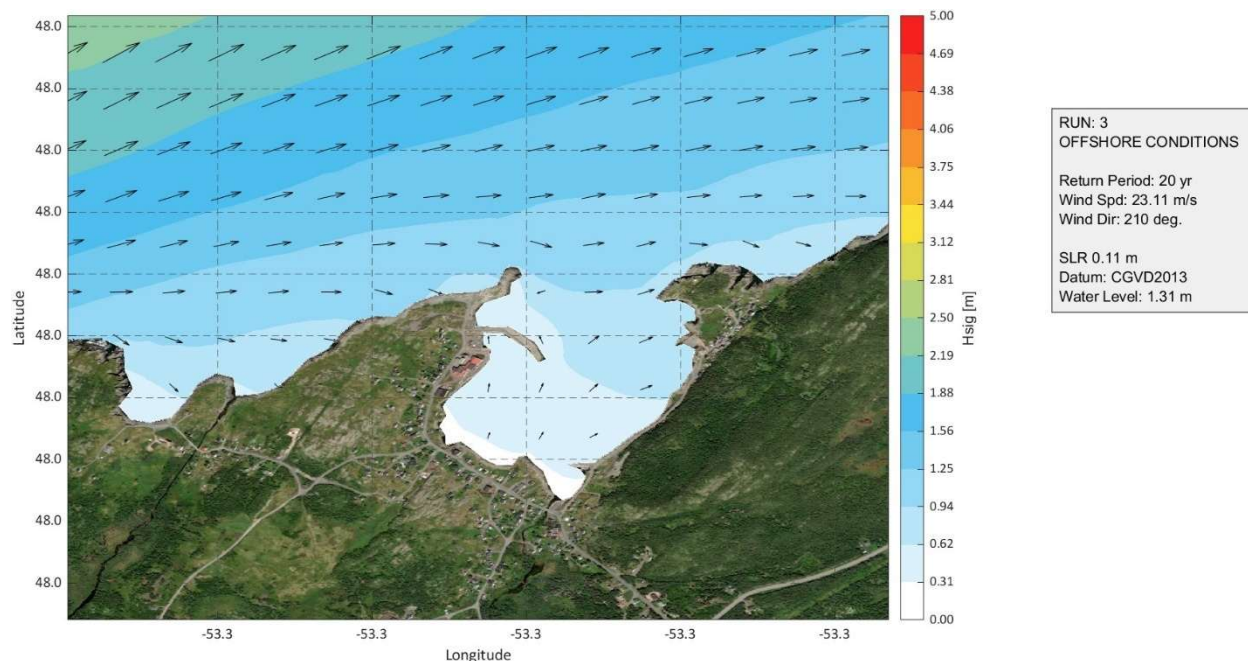


Figure 7: Hants Harbour – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 210°

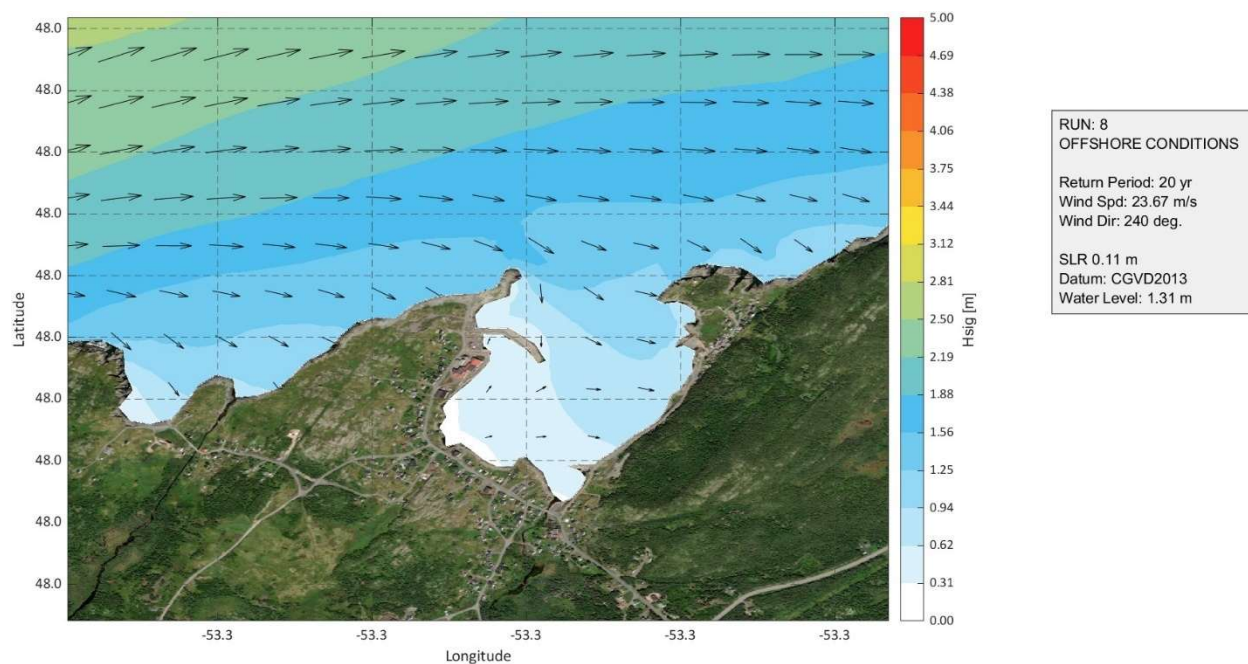


Figure 8: Hants Harbour – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 240°

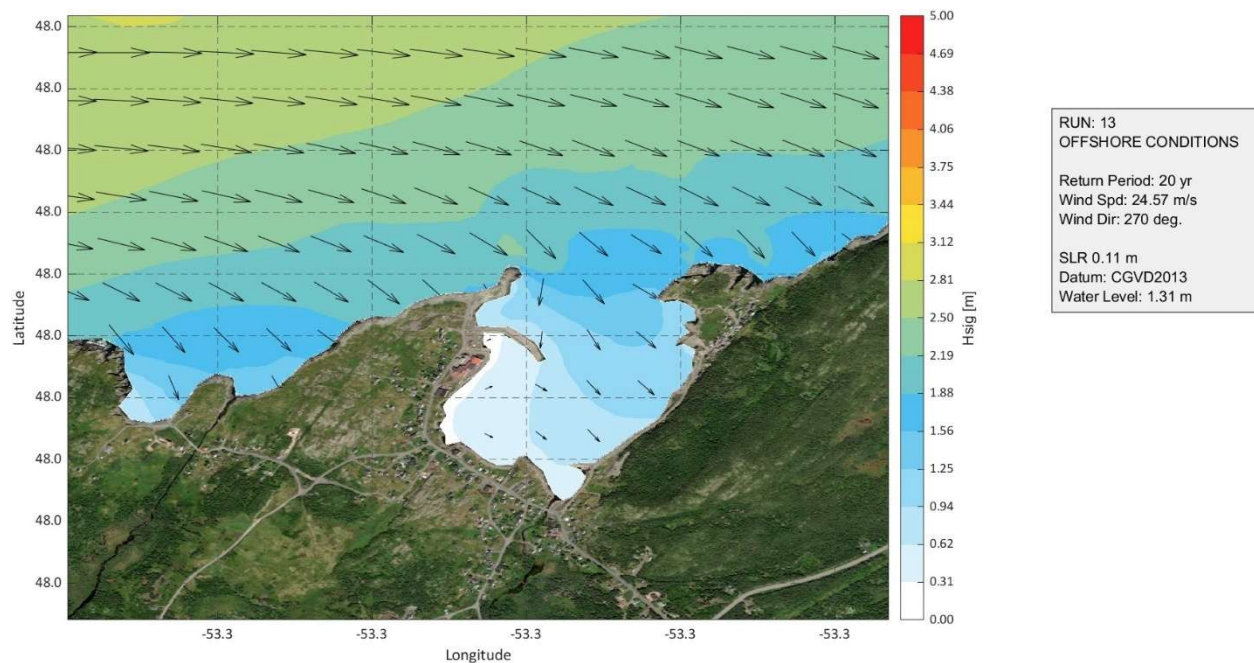


Figure 9: Hants Harbour – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 270°

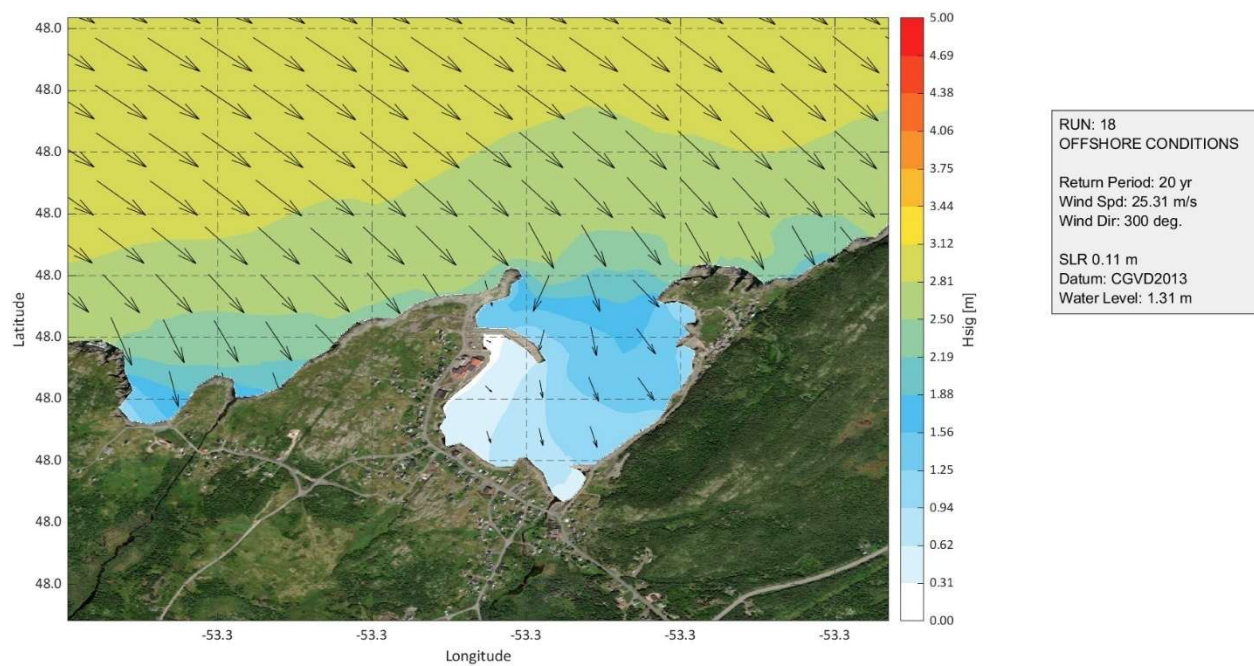


Figure 10: Hants Harbour – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 300°

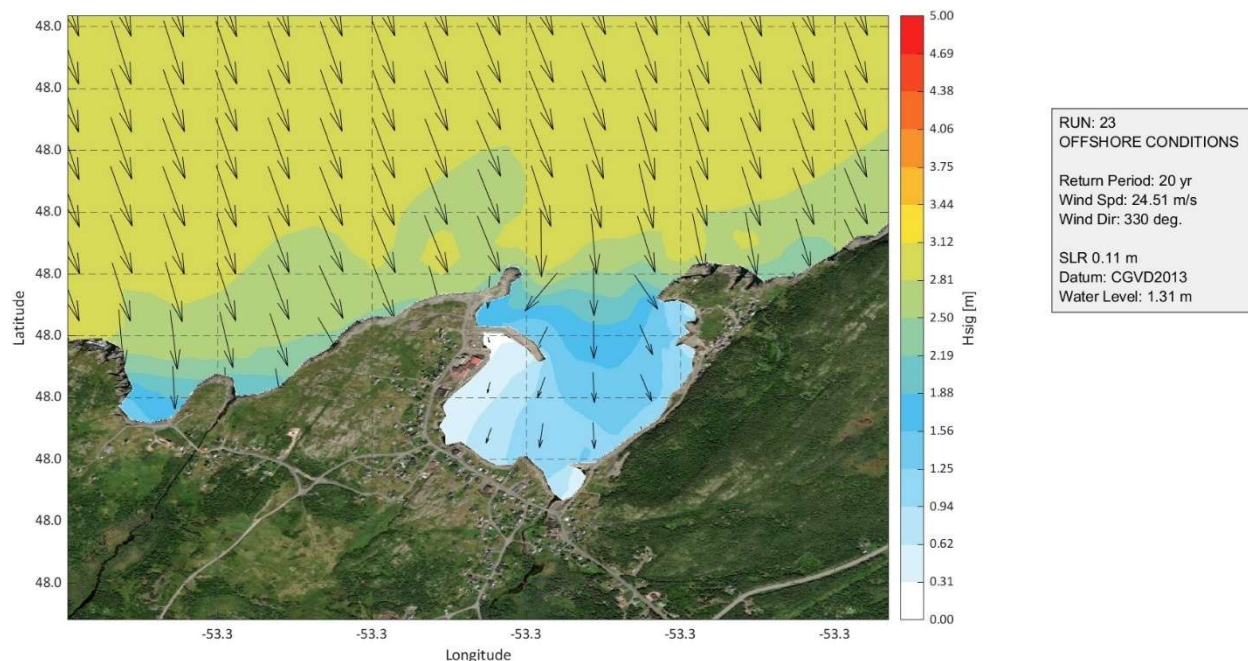


Figure 11: Hants Harbour – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 330°

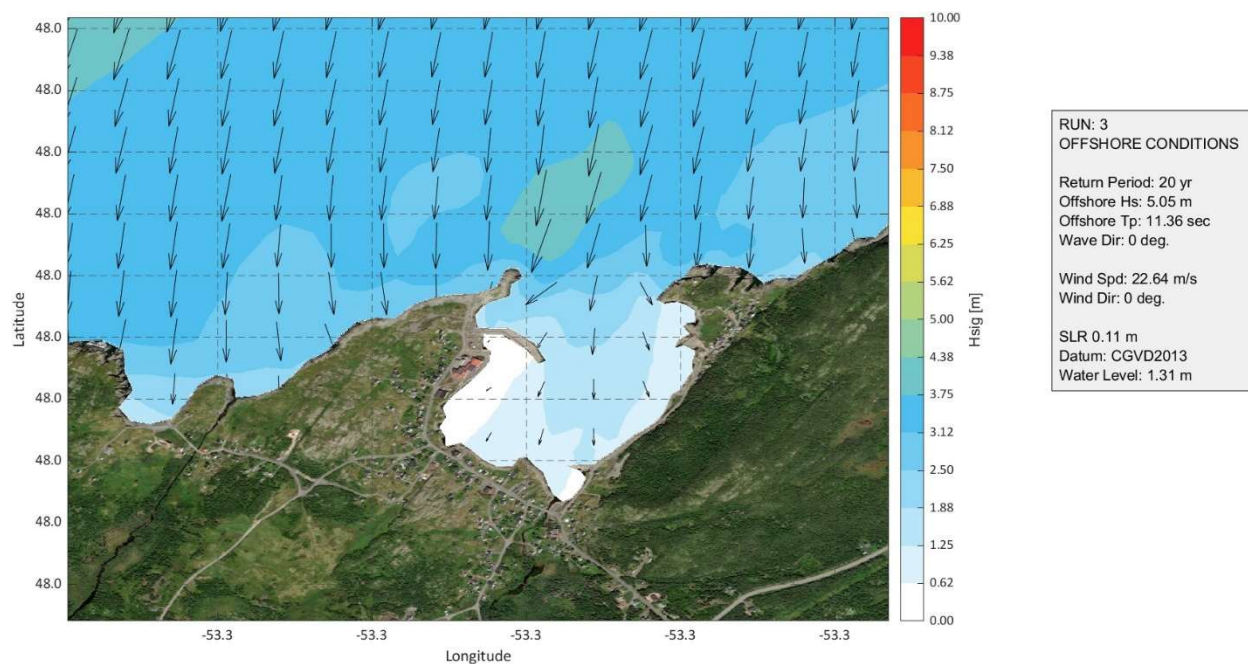


Figure 12: Hants Harbour – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 360°

2. Hants Harbour – 100-yr Return Period Wave Conditions

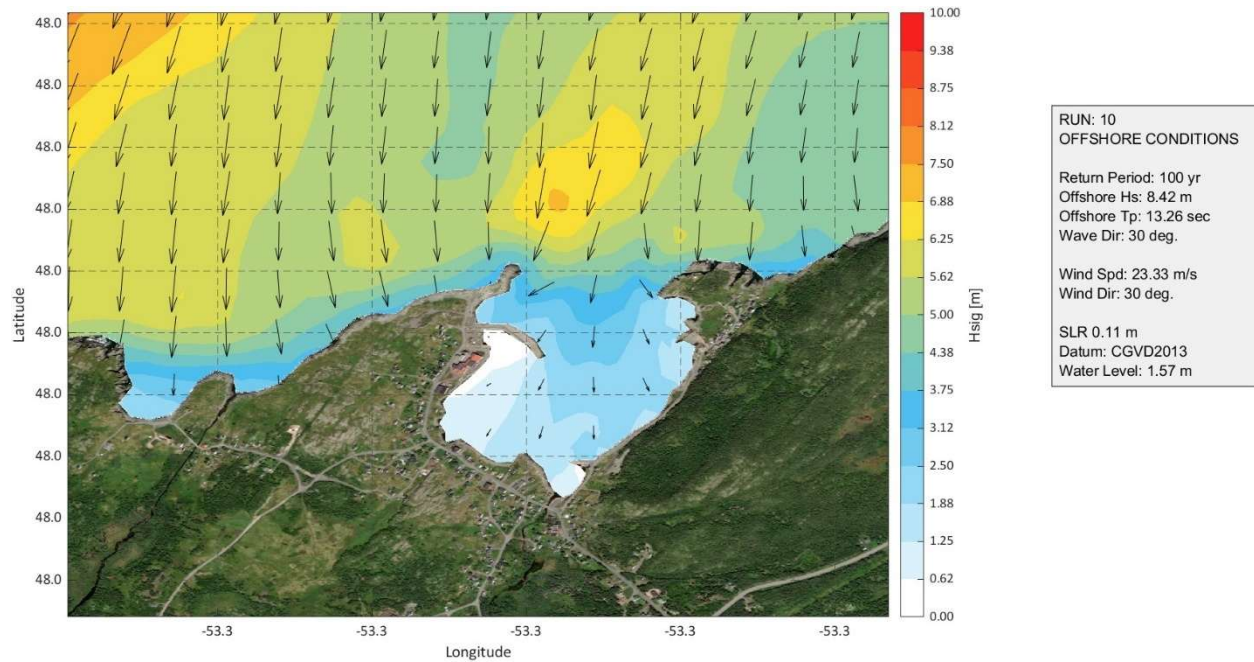


Figure 13: Hants Harbour – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

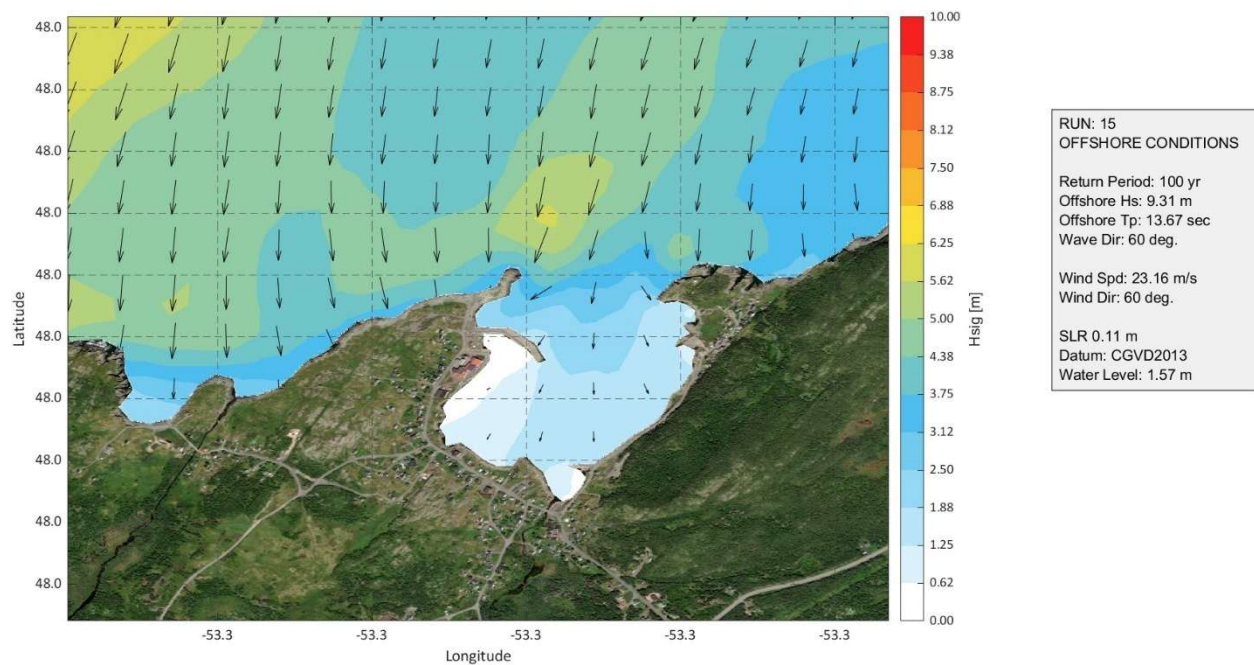


Figure 14: Hants Harbour – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

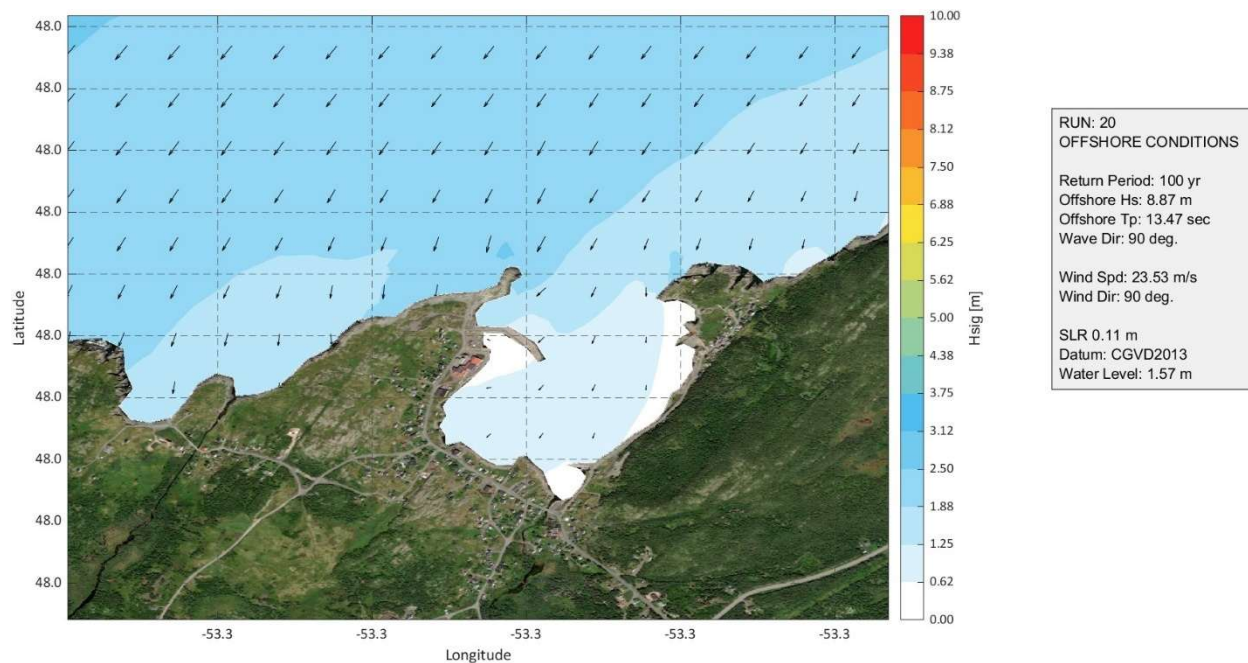


Figure 15: Hants Harbour – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 90°

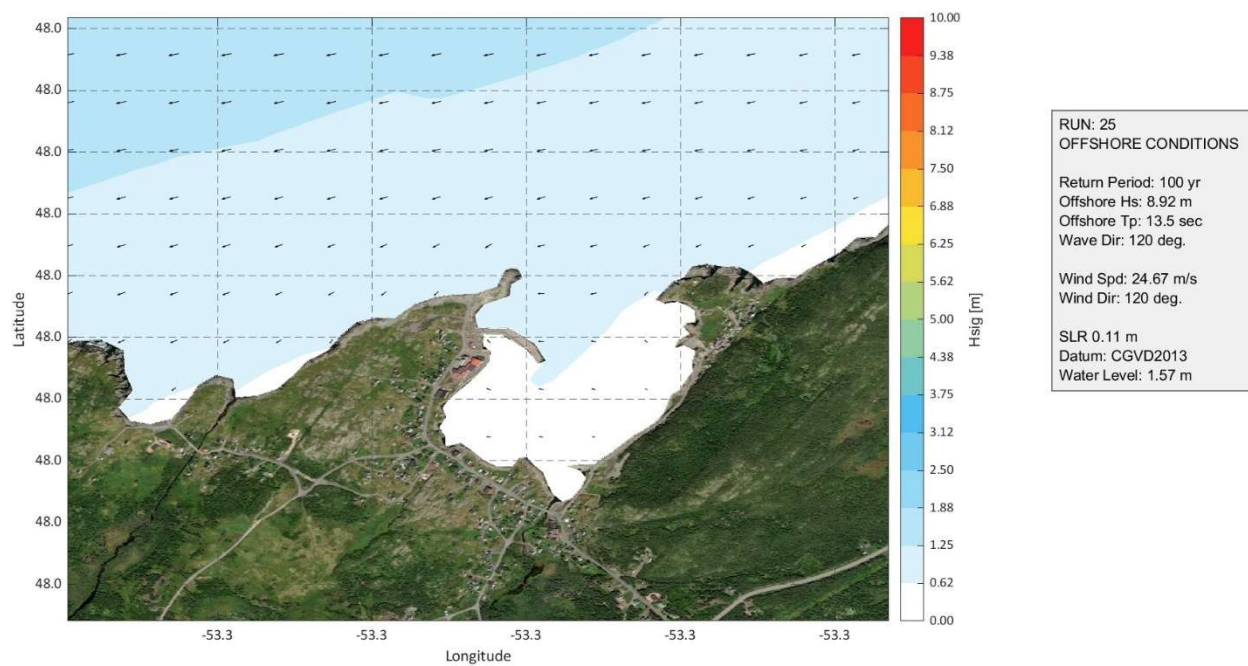


Figure 16: Hants Harbour – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 120°

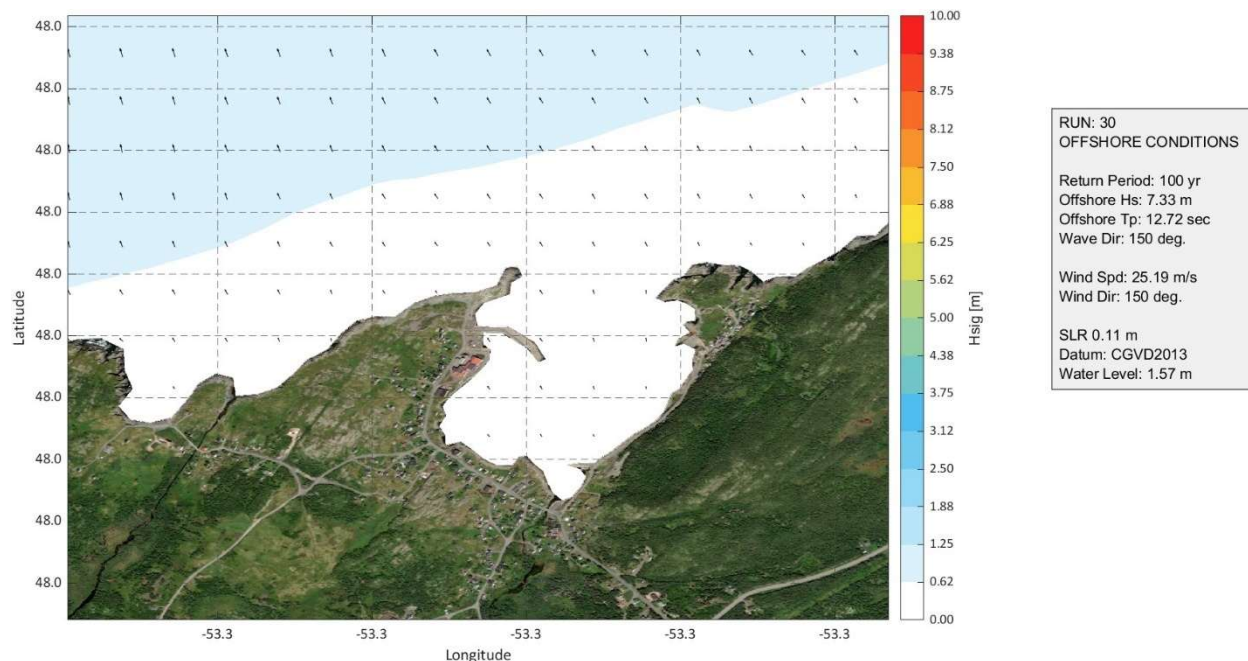


Figure 17: Hants Harbour – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 150°

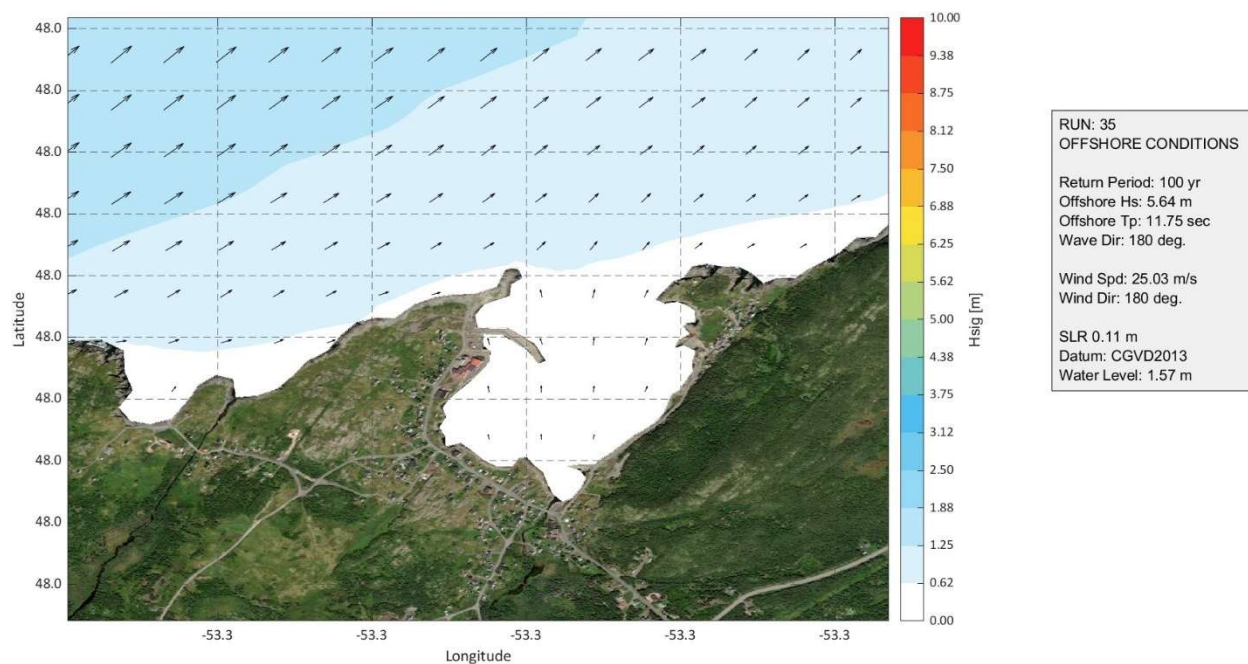


Figure 18: Hants Harbour – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 180°

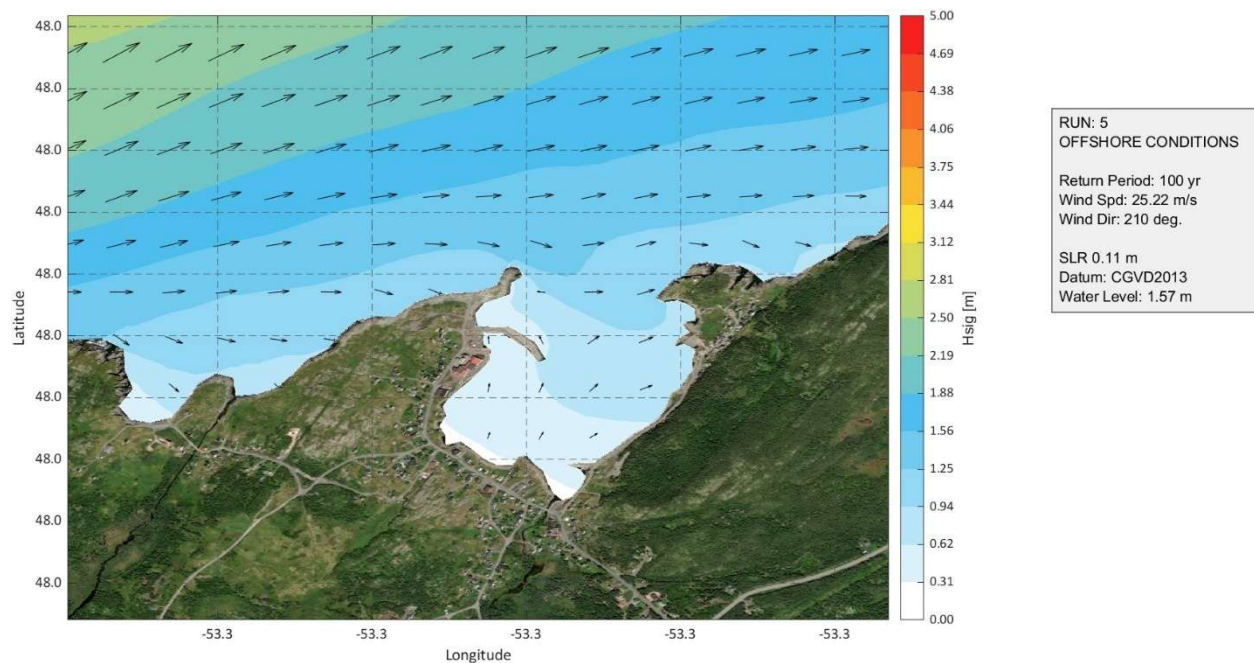


Figure 19: Hants Harbour – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 210°

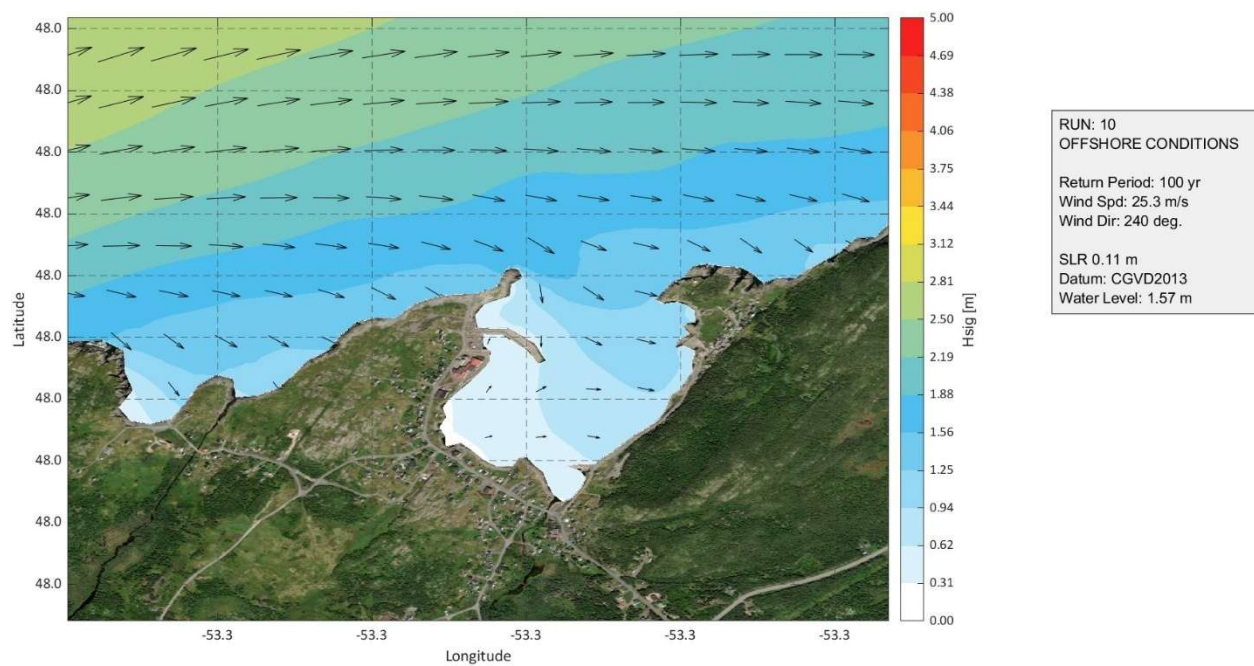


Figure 20: Hants Harbour – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 240°

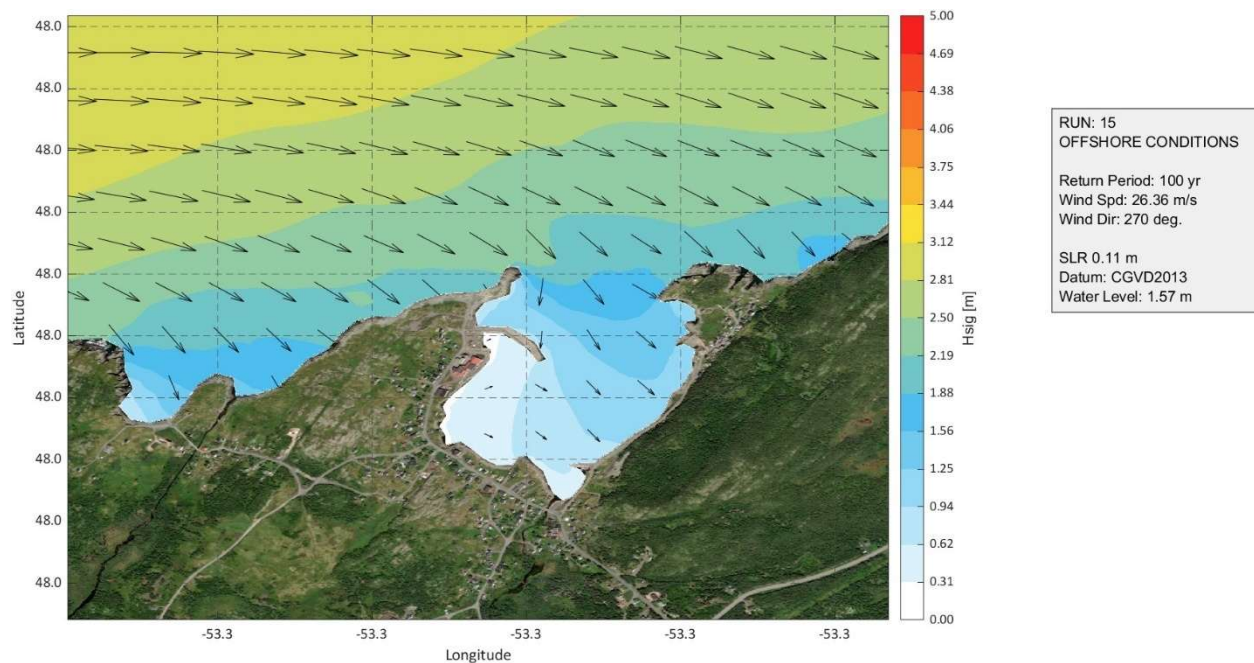


Figure 21: Hants Harbour – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 270°

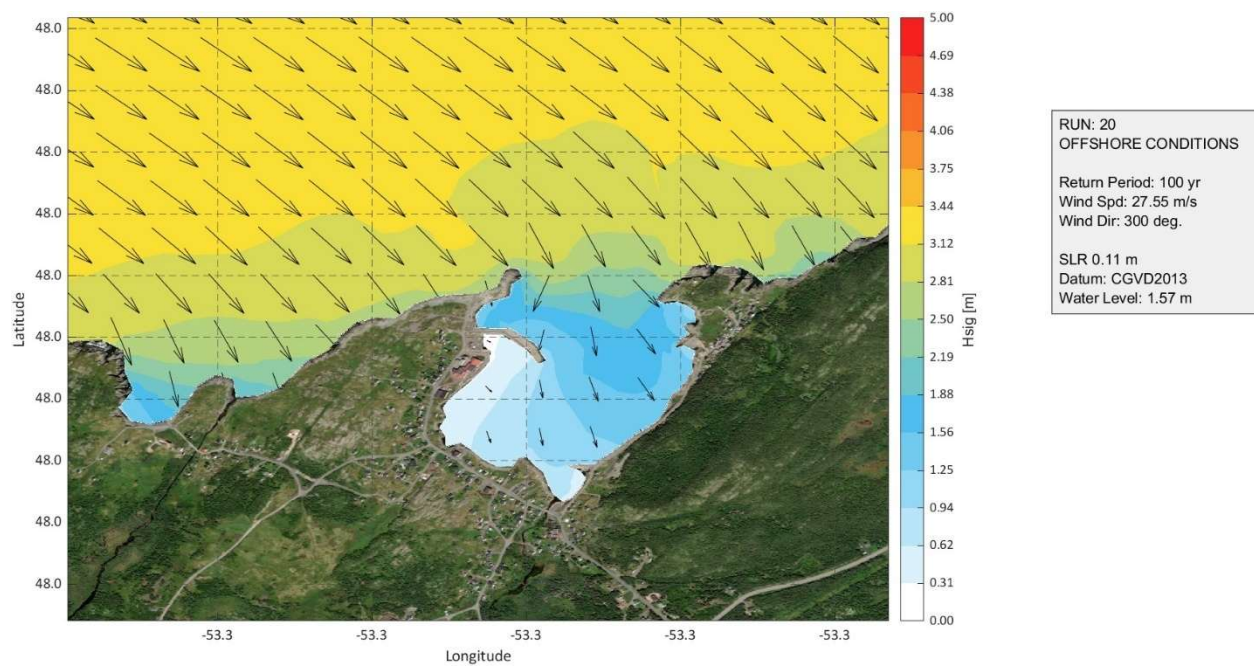


Figure 22: Hants Harbour – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 300°

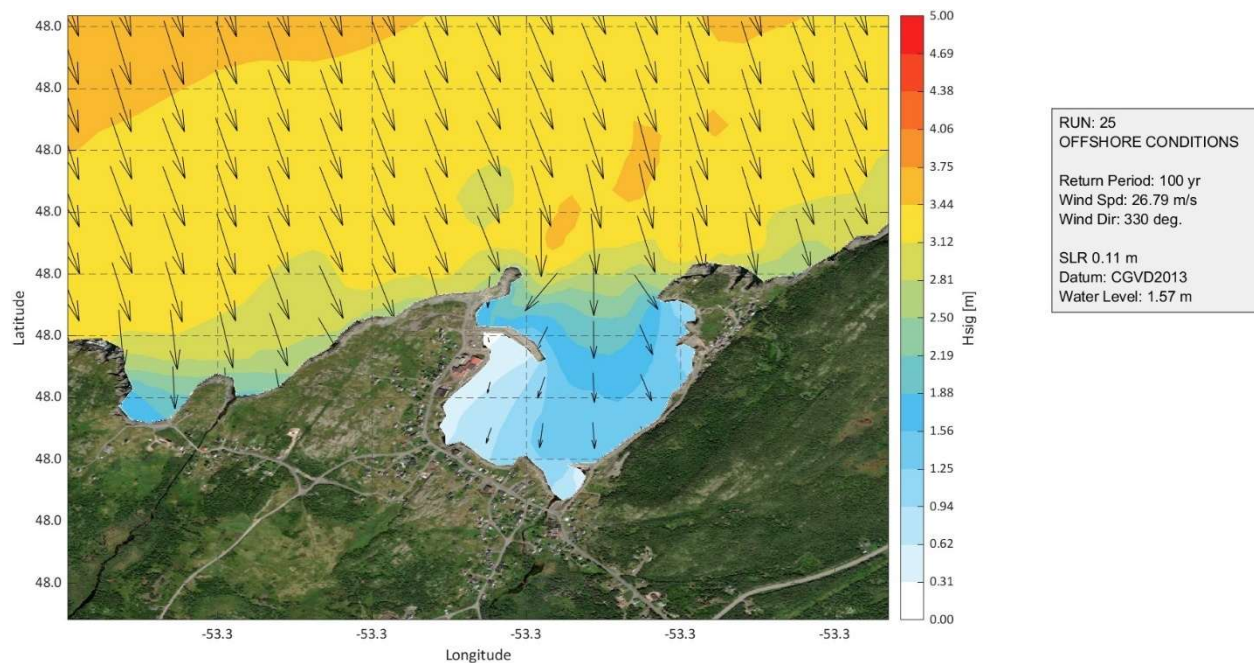


Figure 23: Hants Harbour – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 330°

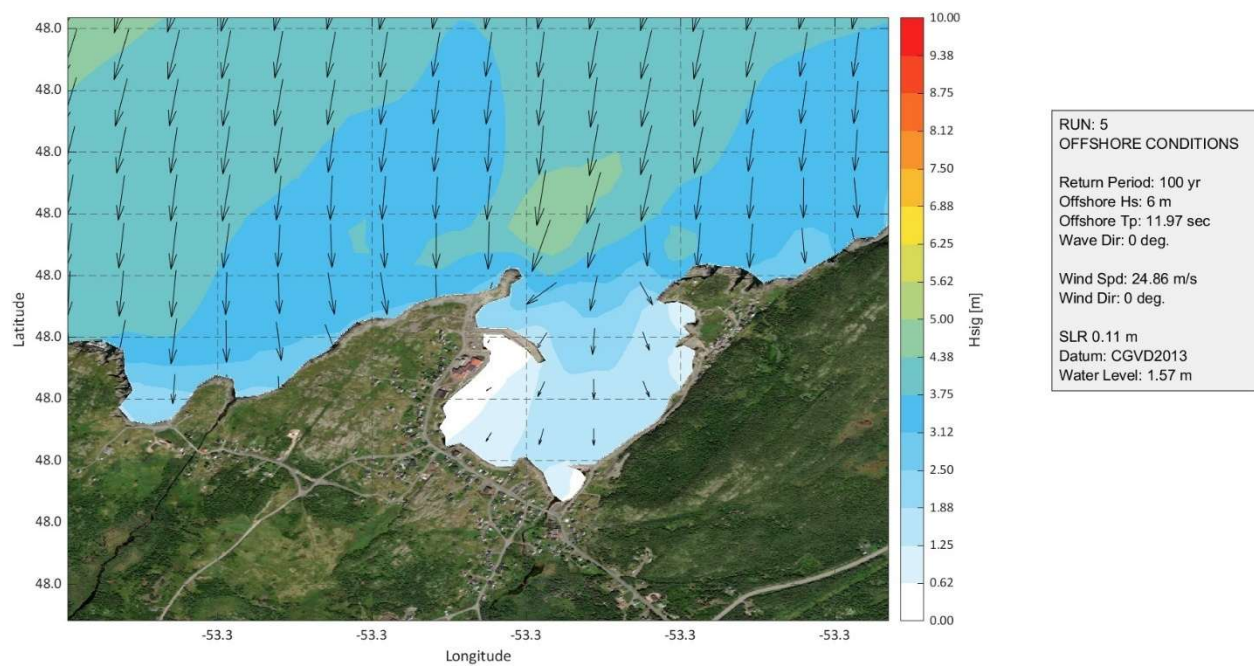


Figure 24: Hants Harbour – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 360°

3. Heart's Delight – 20-yr Return Period Wave Conditions

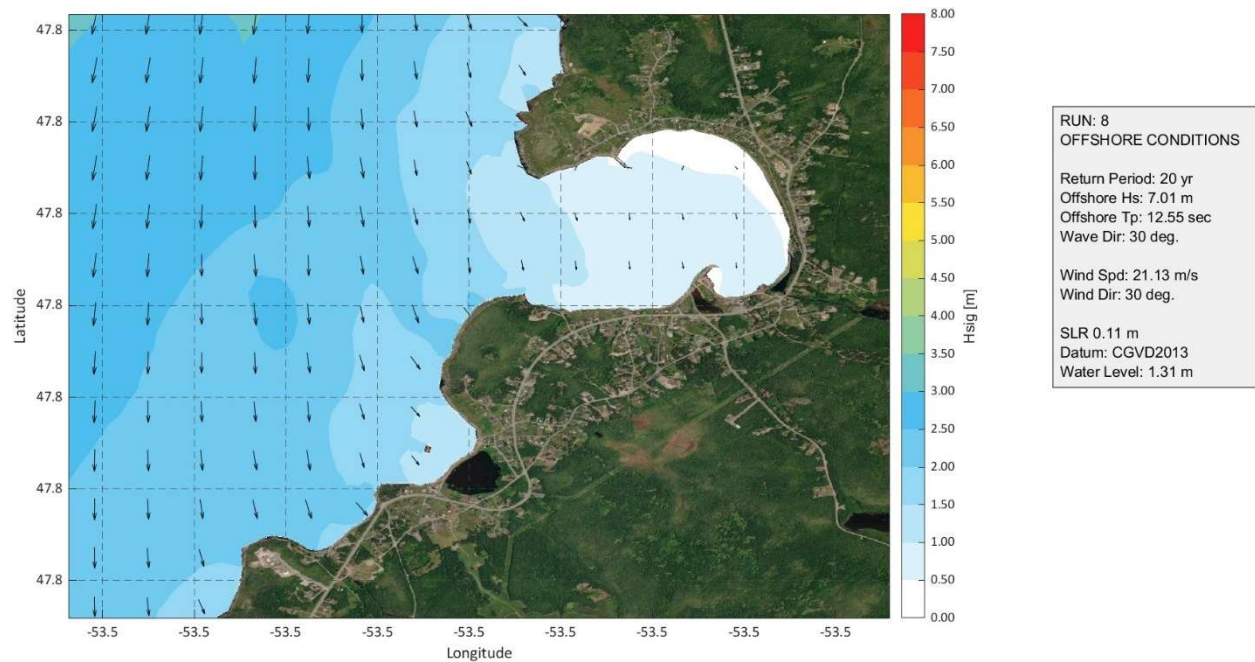


Figure 25: Heart's Delight – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

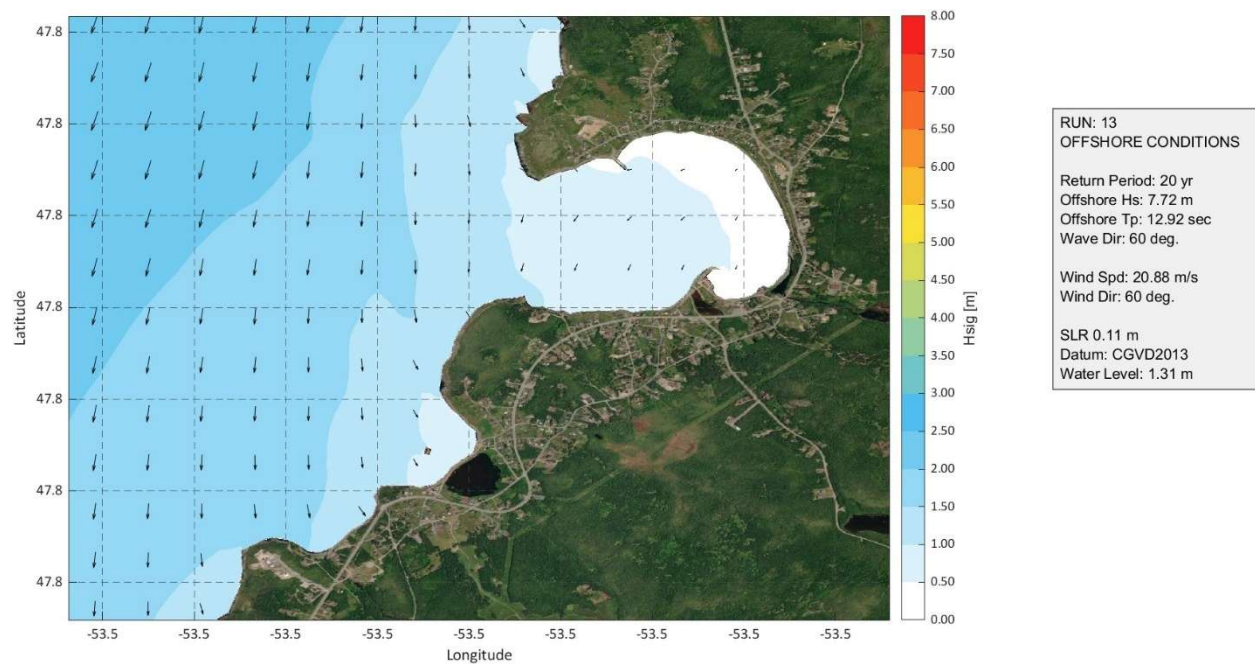


Figure 26: Heart's Delight – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

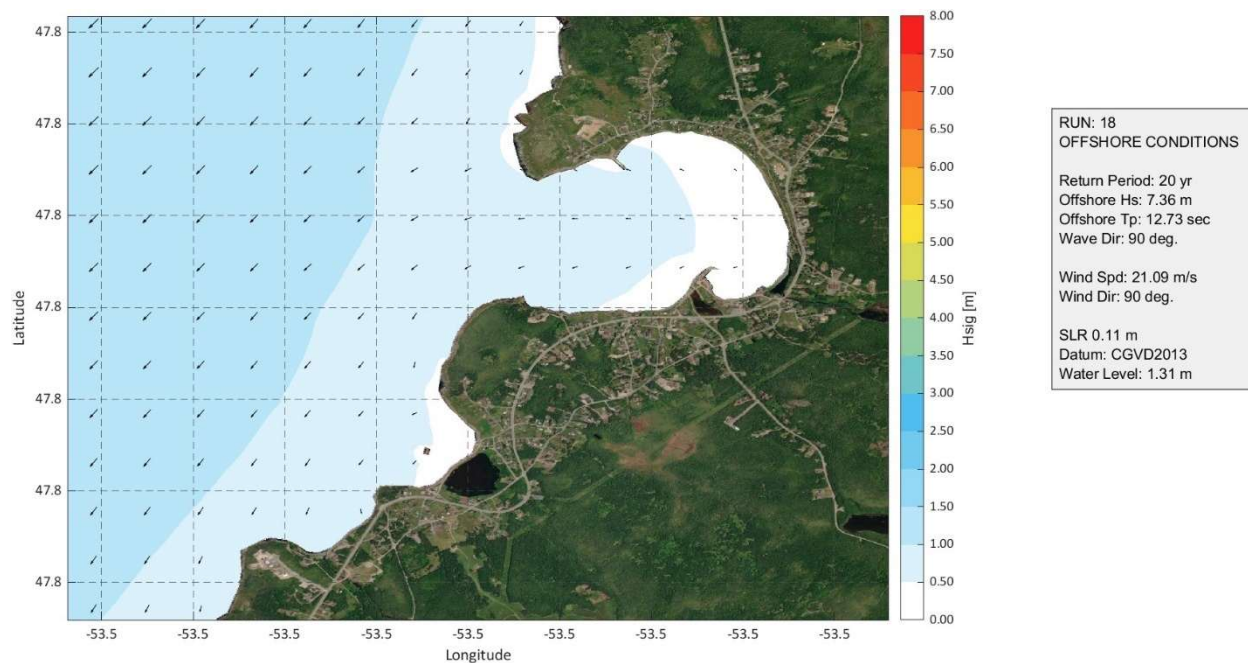


Figure 27: Heart's Delight – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 90°

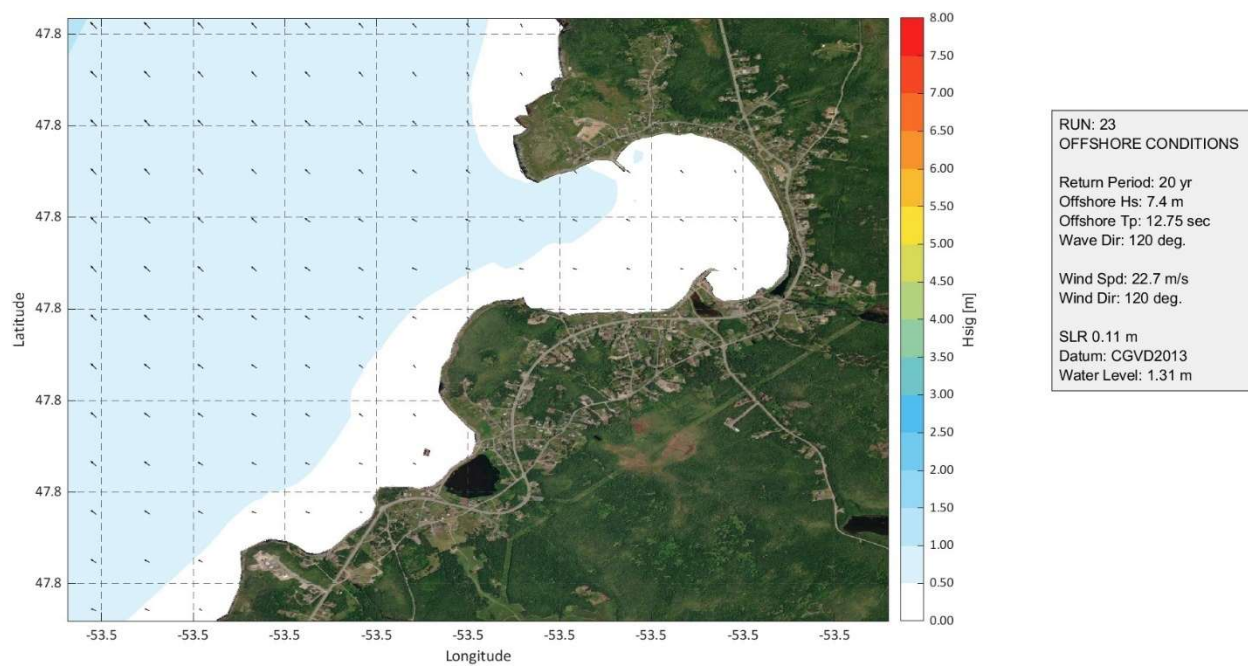


Figure 28: Heart's Delight – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 120°

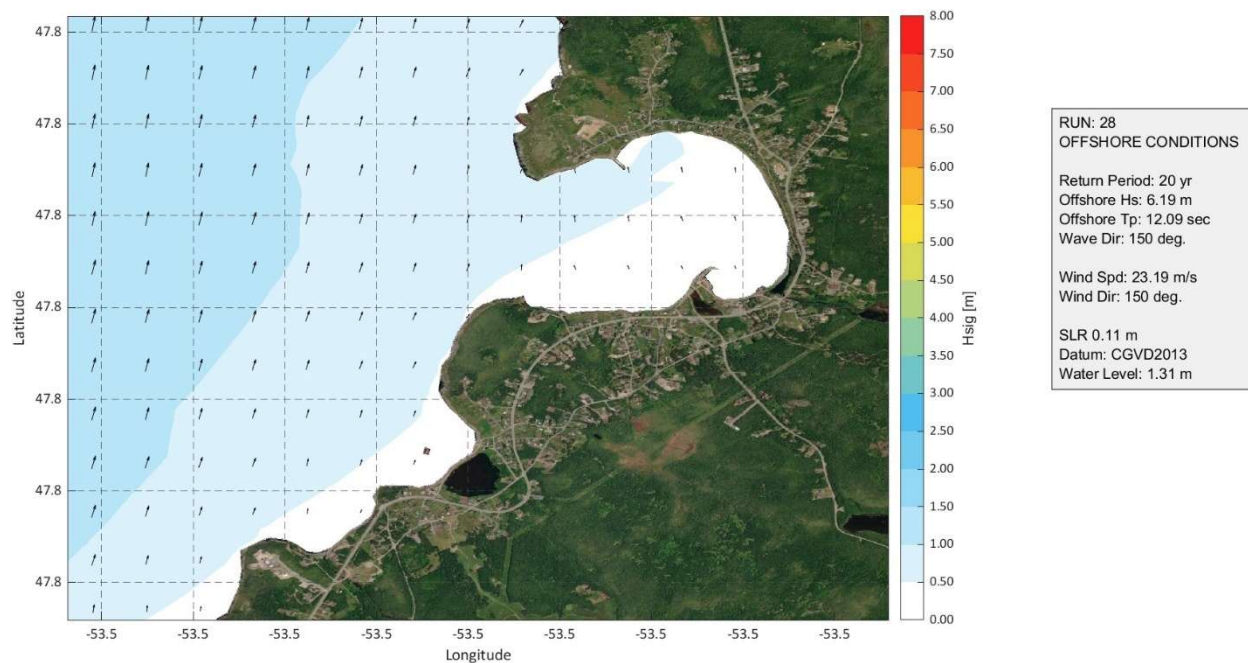


Figure 29: Heart's Delight – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 150°

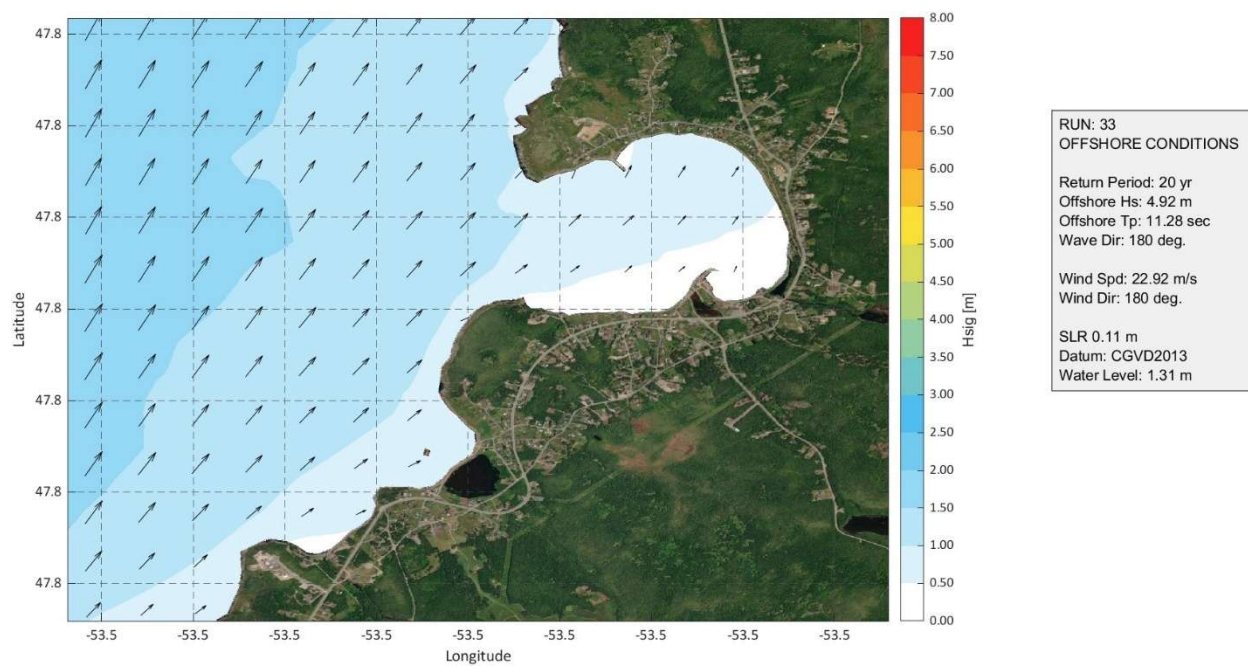


Figure 30: Heart's Delight – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 180°

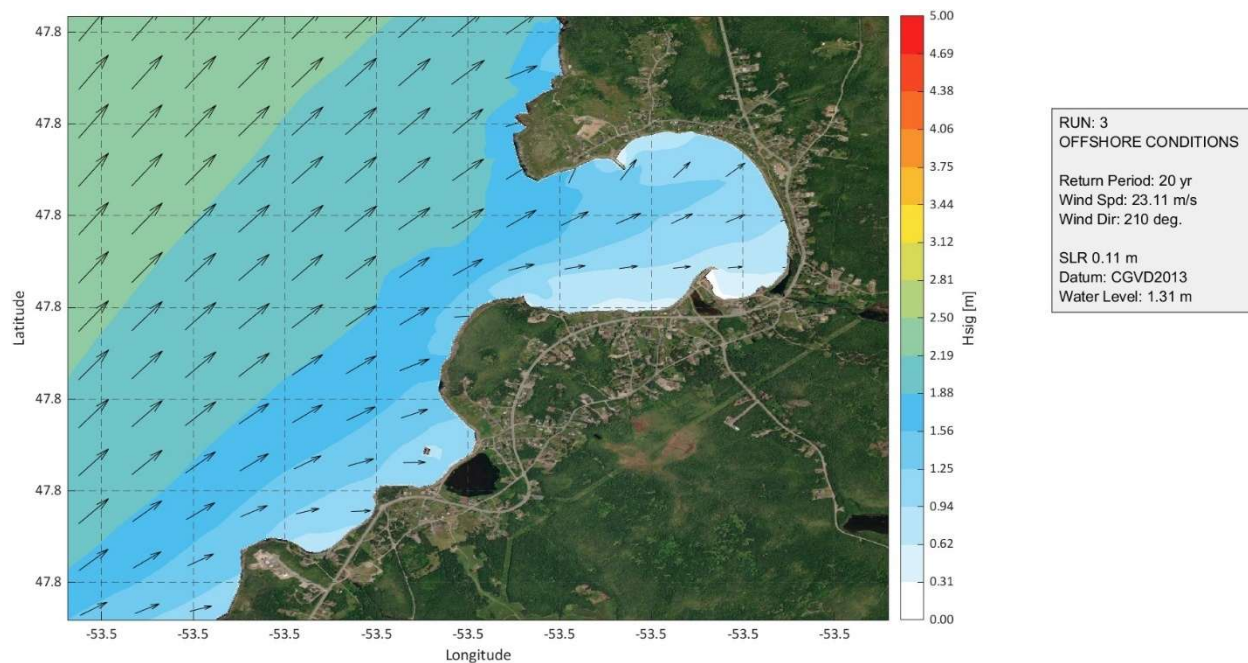


Figure 31: Heart's Delight – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 210°

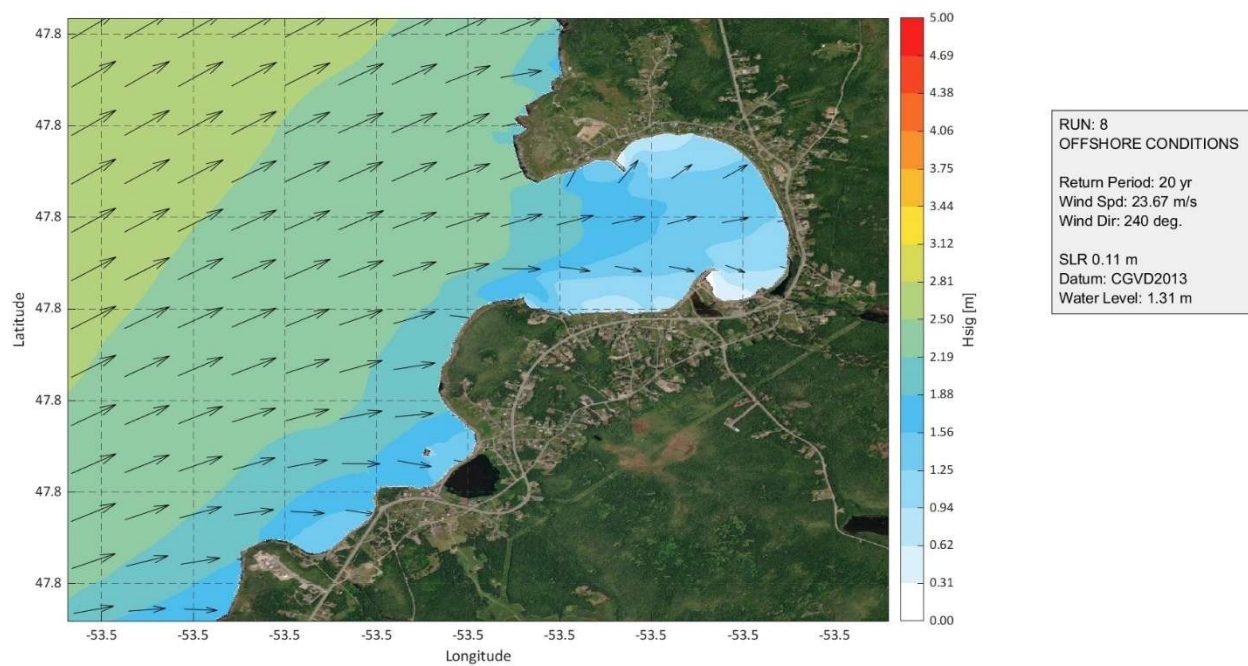


Figure 32: Heart's Delight – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 240°

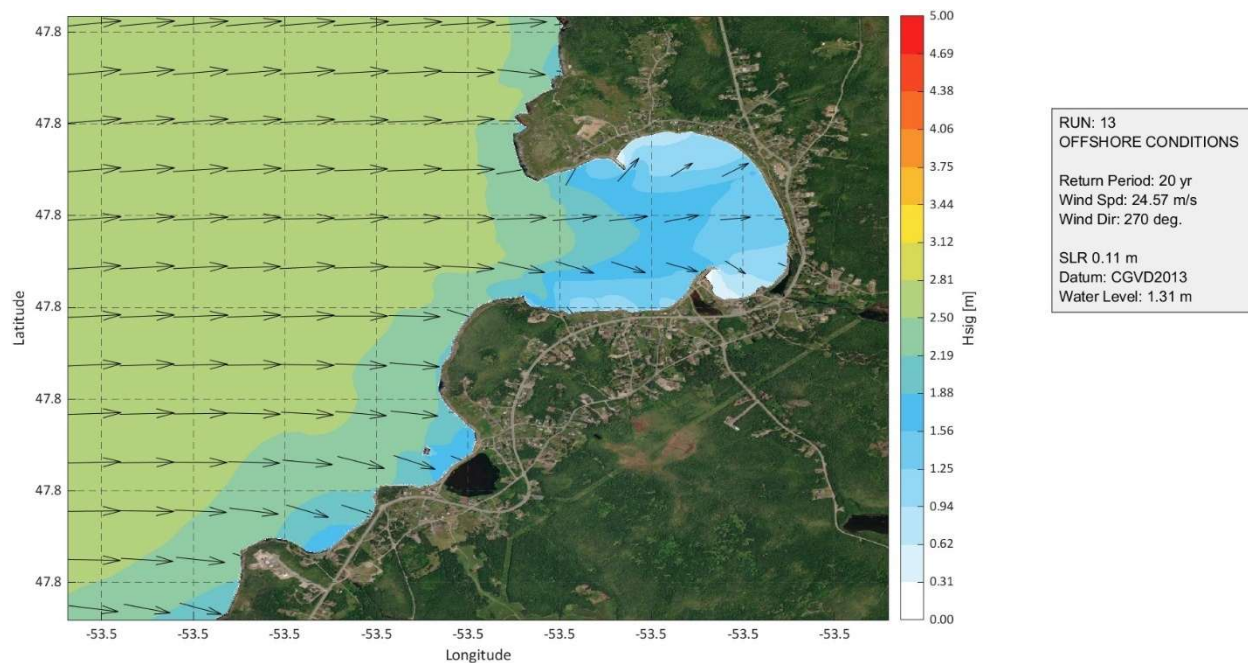


Figure 33: Heart's Delight – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 270°

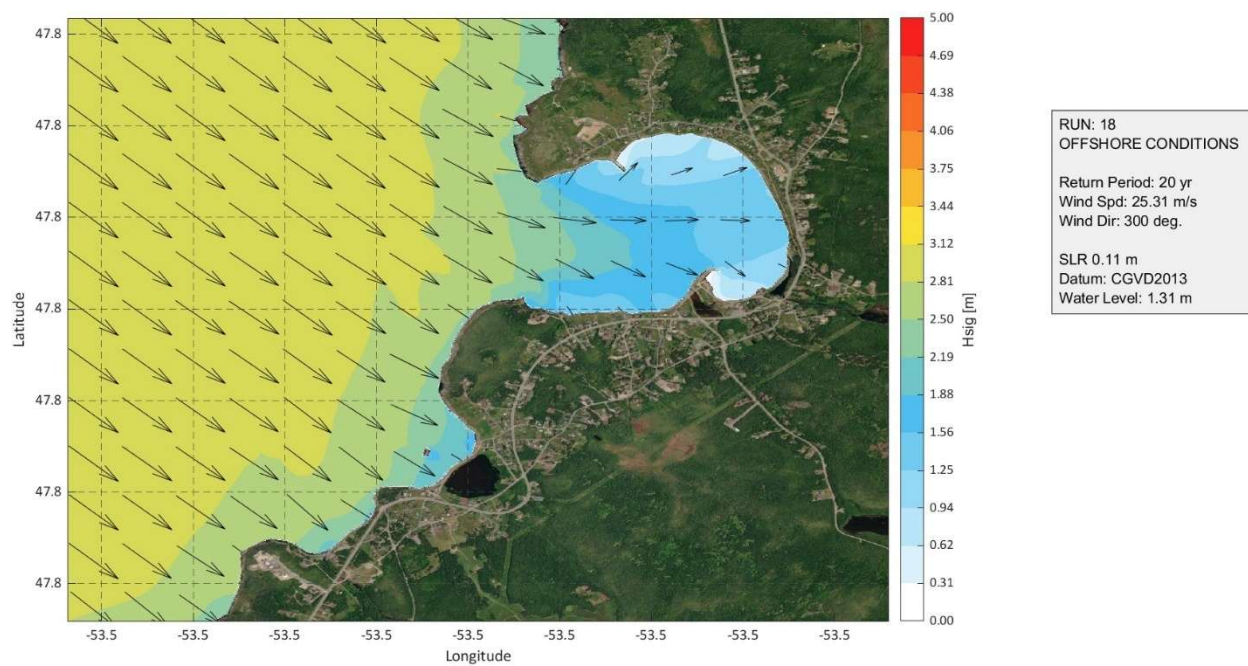


Figure 34: Heart's Delight – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 300°

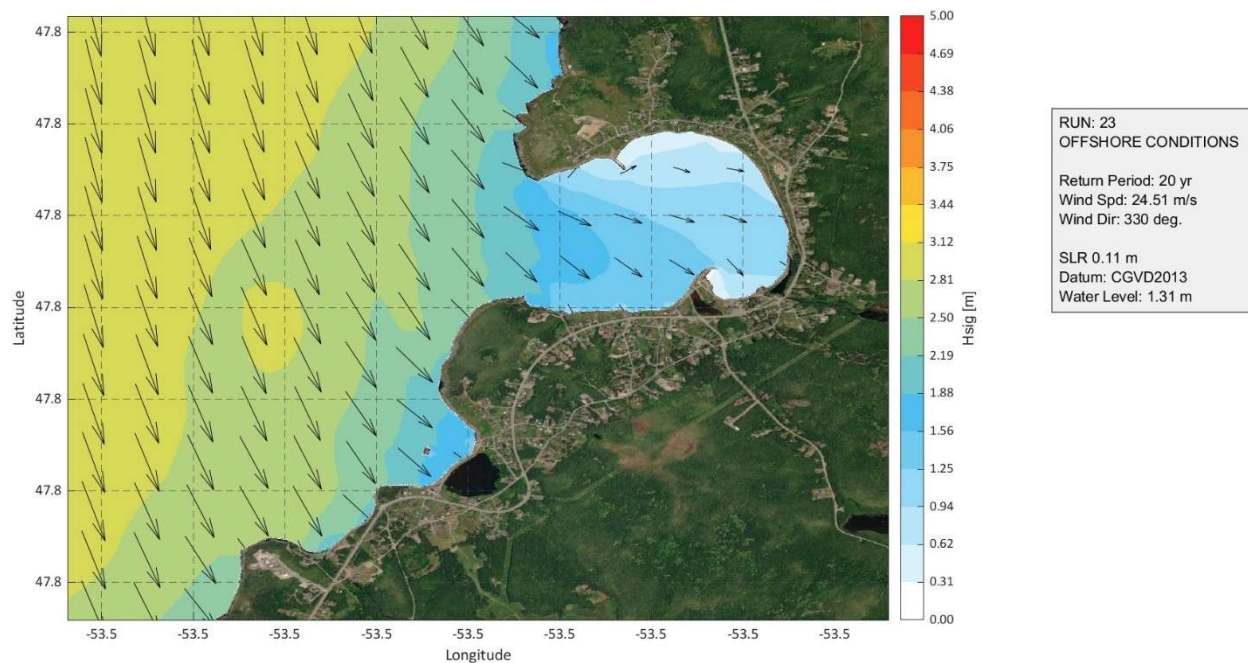


Figure 35: Heart's Delight – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 330°

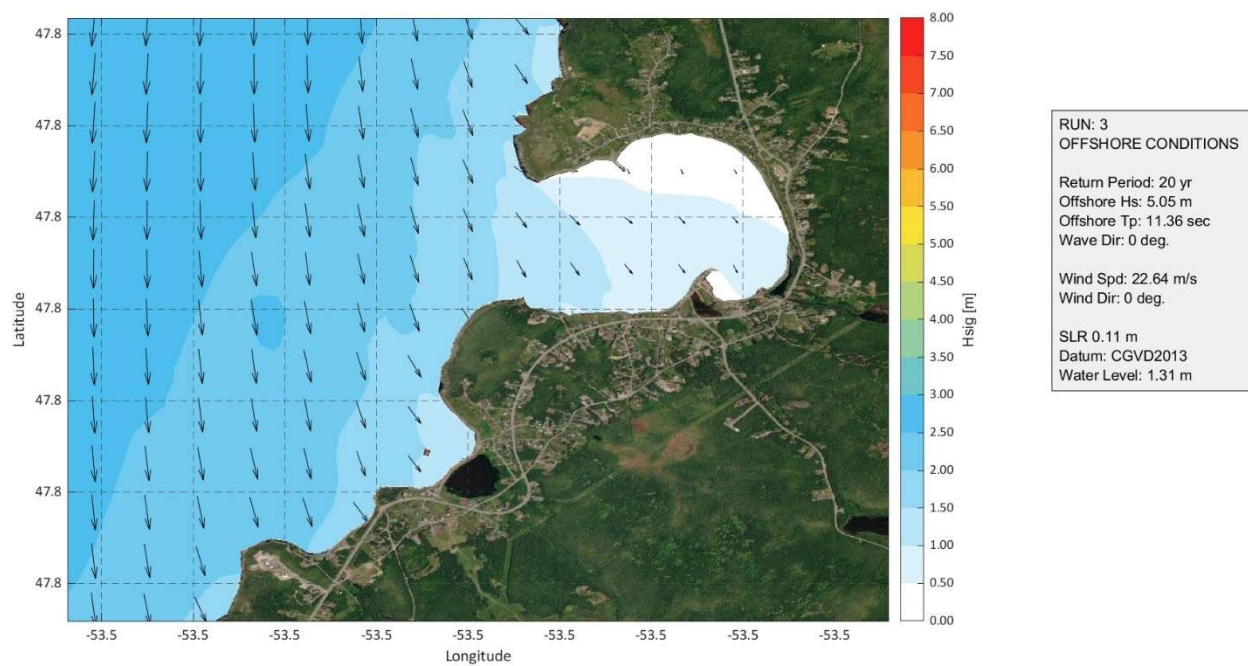


Figure 36: Heart's Delight – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 360°

4. Heart's Delight – 100-yr Return Period Wave Conditions

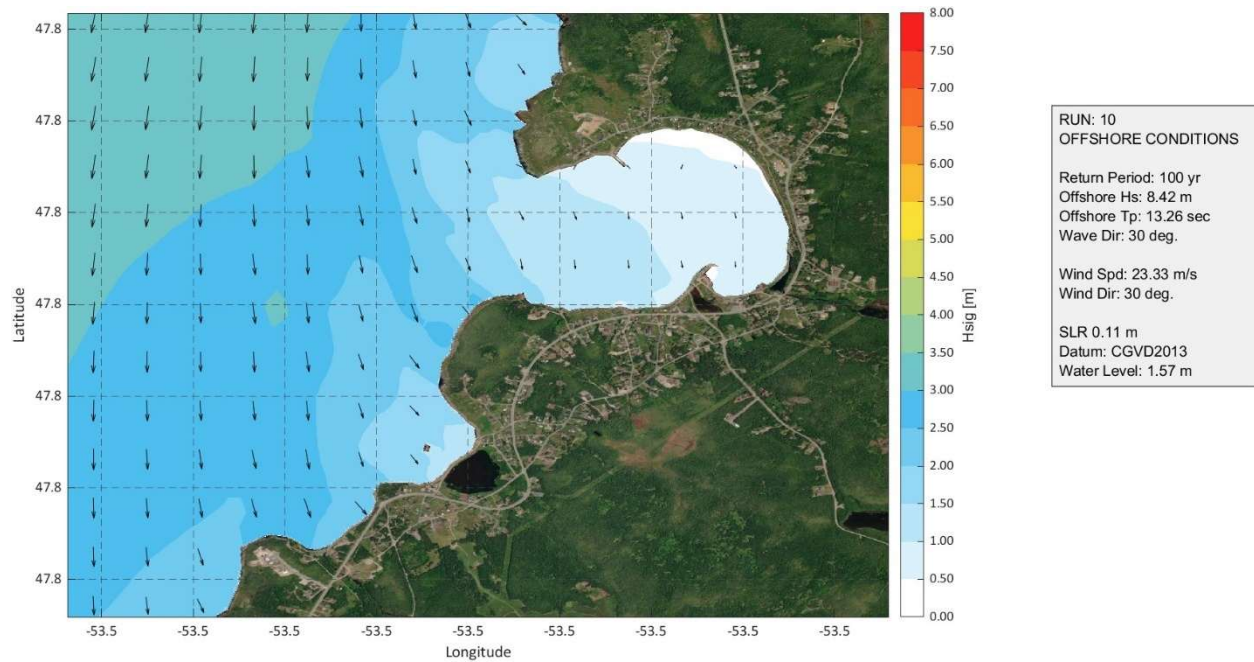


Figure 37: Heart's Delight – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

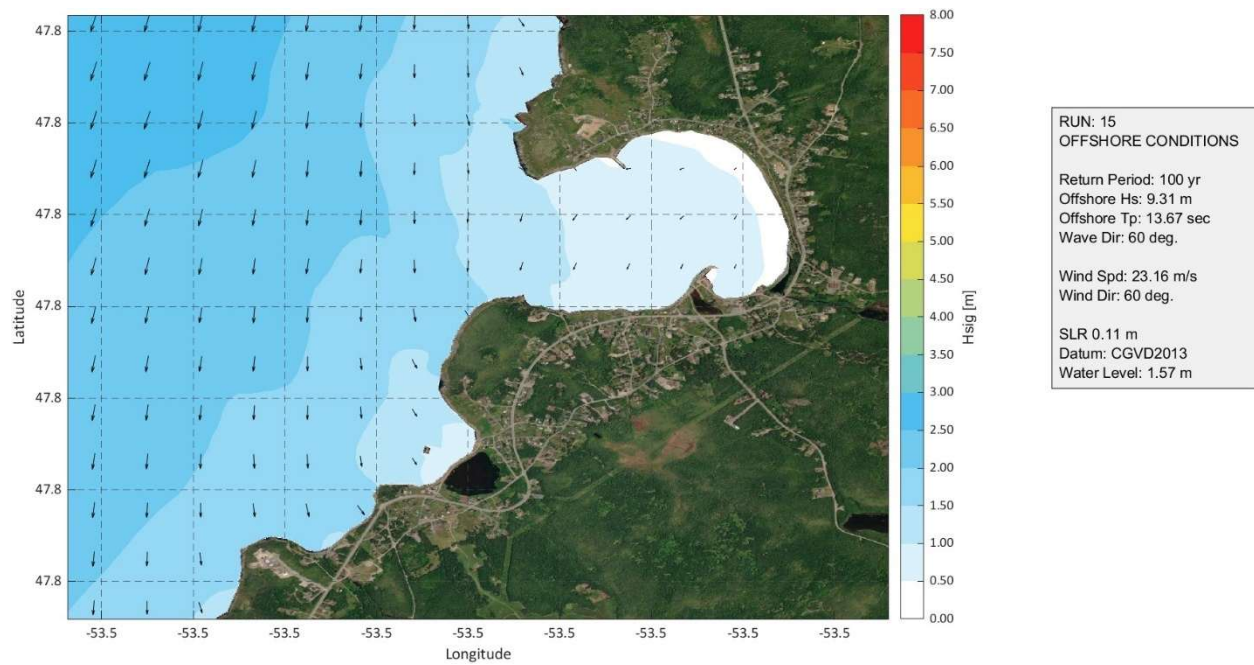


Figure 38: Heart's Delight – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

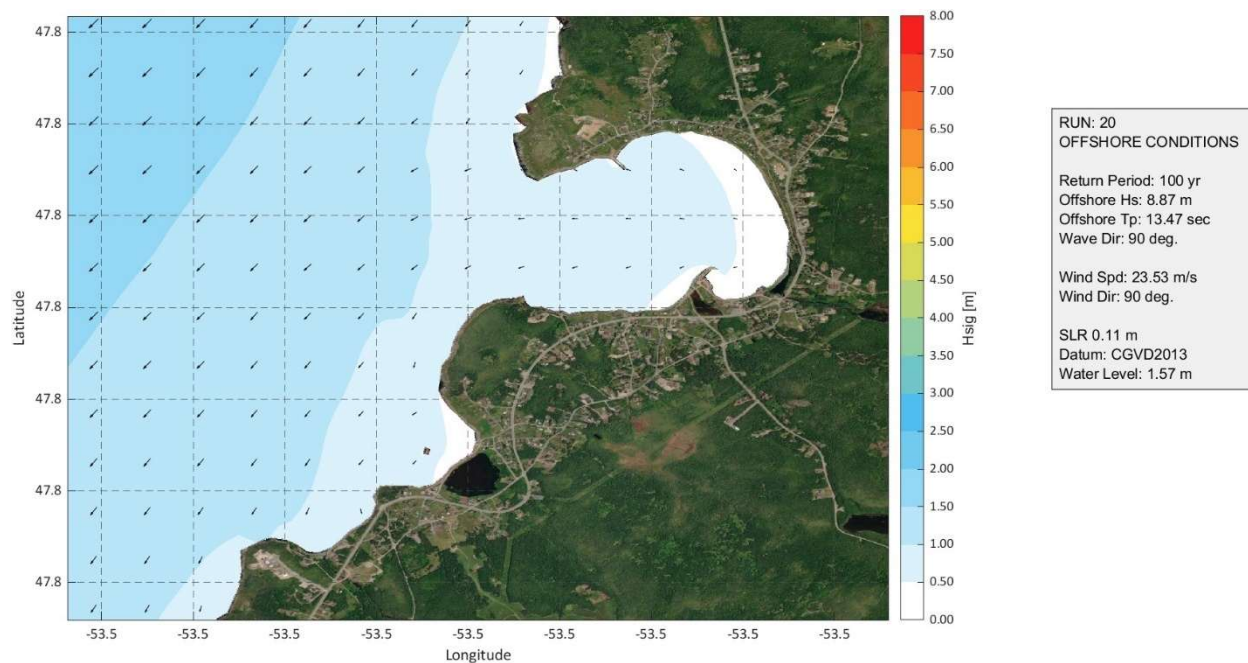


Figure 39: Heart's Delight – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 90°

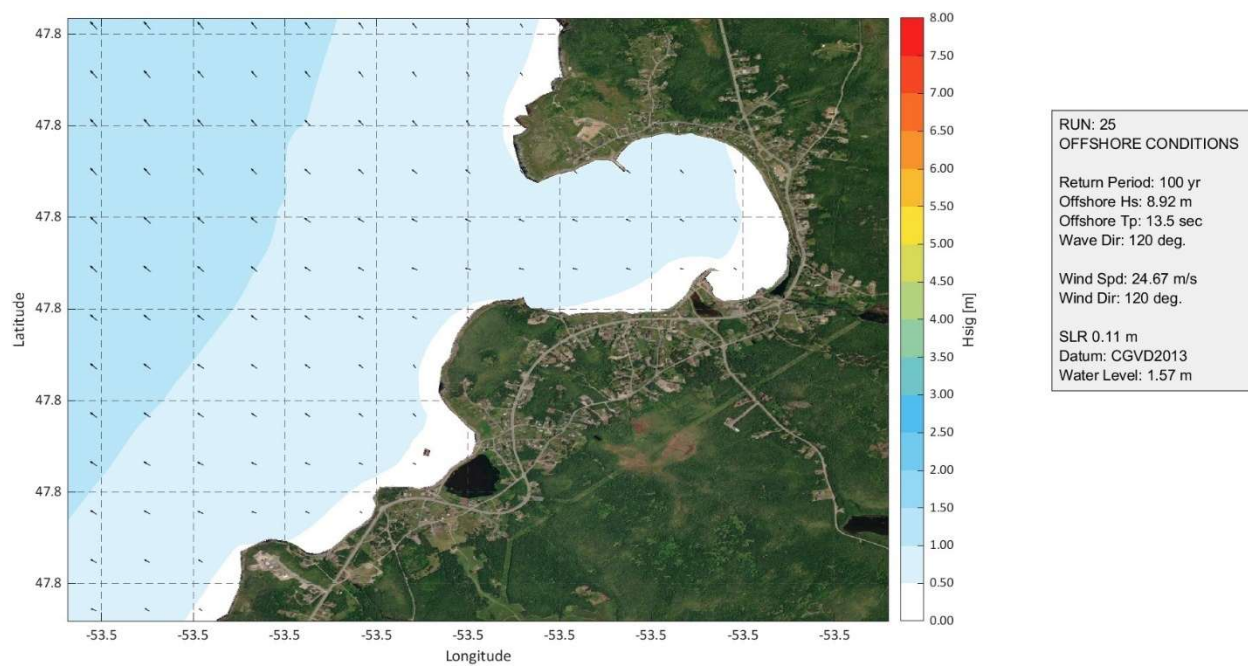


Figure 40: Heart's Delight – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 120°

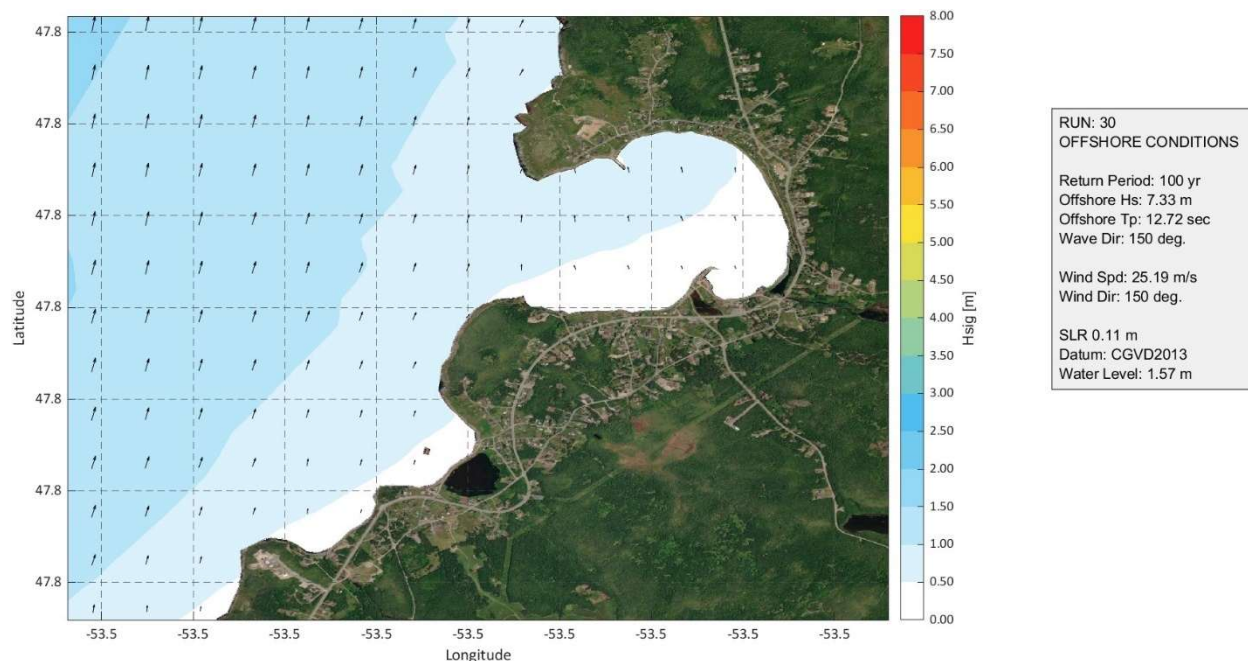


Figure 41: Heart's Delight – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 150°

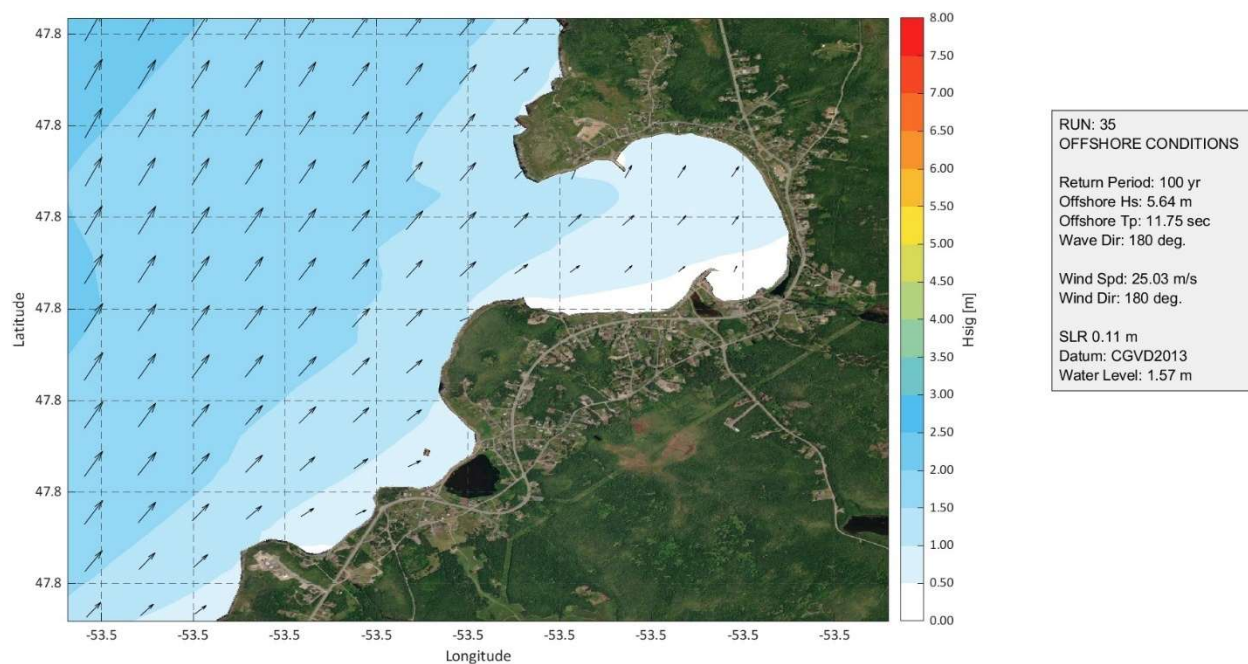


Figure 42: Heart's Delight – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 180°

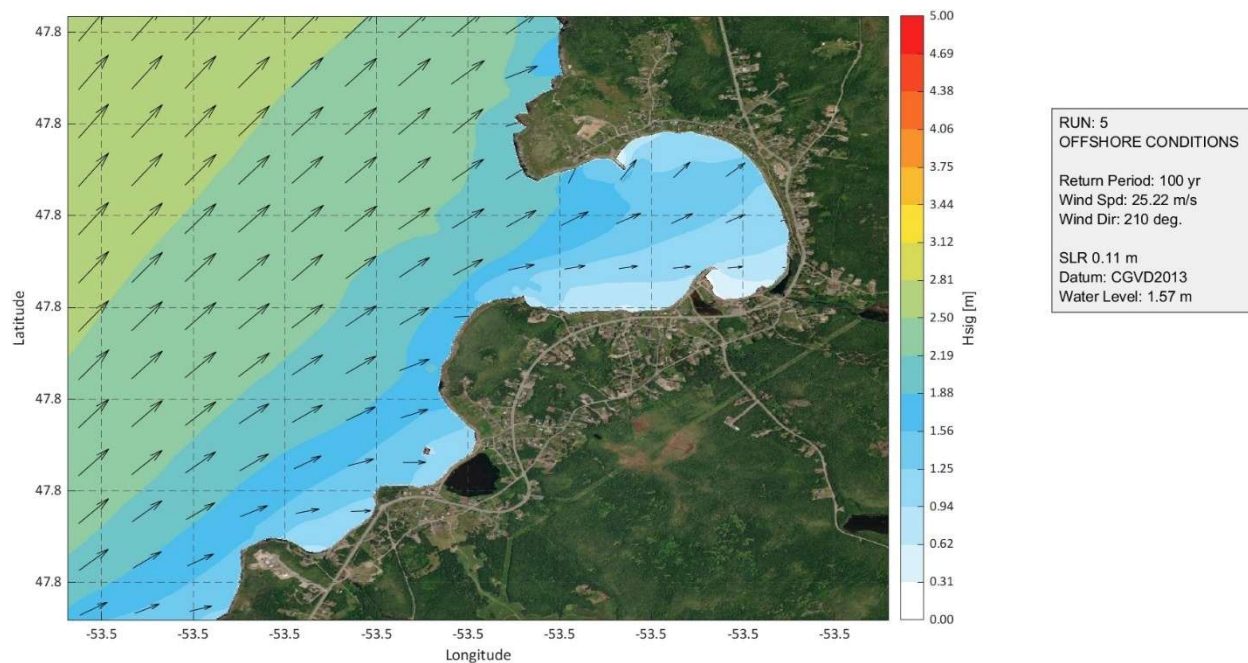


Figure 43: Heart's Delight – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 210°

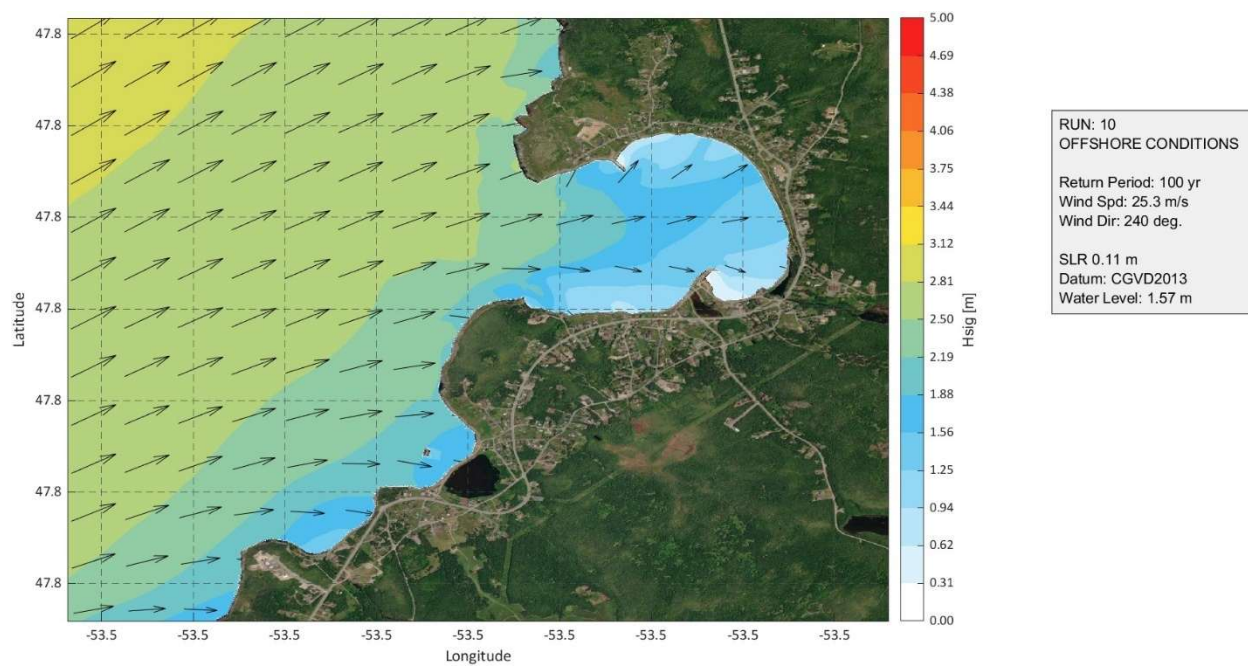


Figure 44: Heart's Delight – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 240°

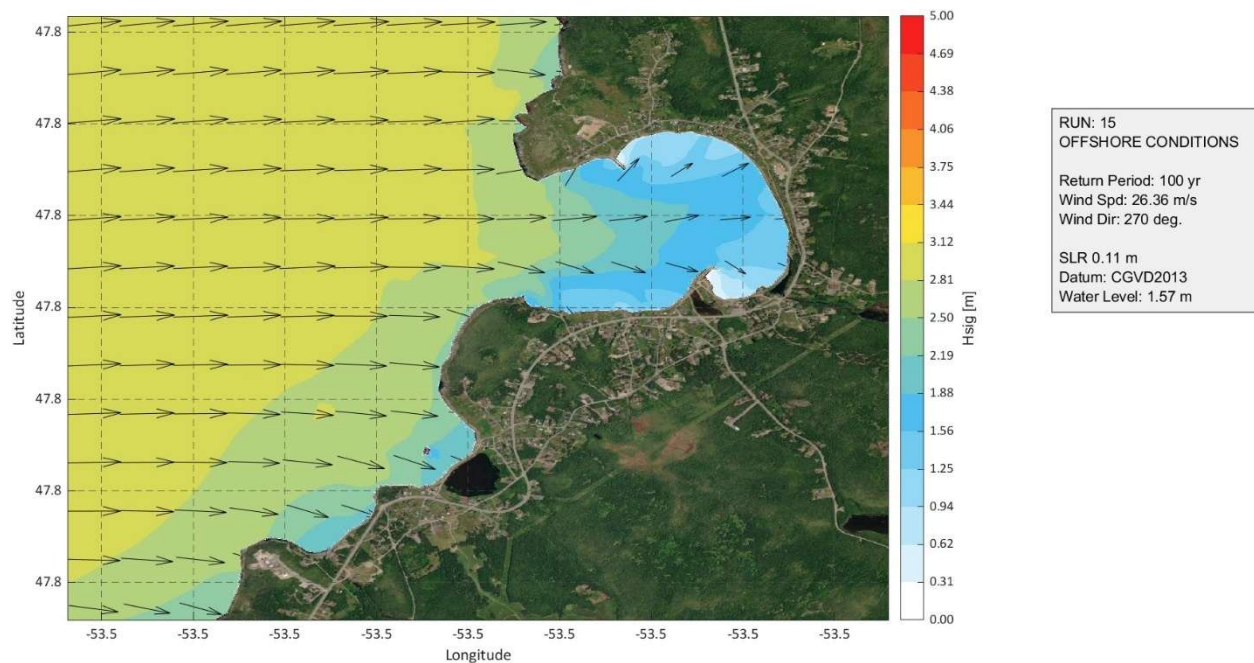


Figure 45: Heart's Delight – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 270°

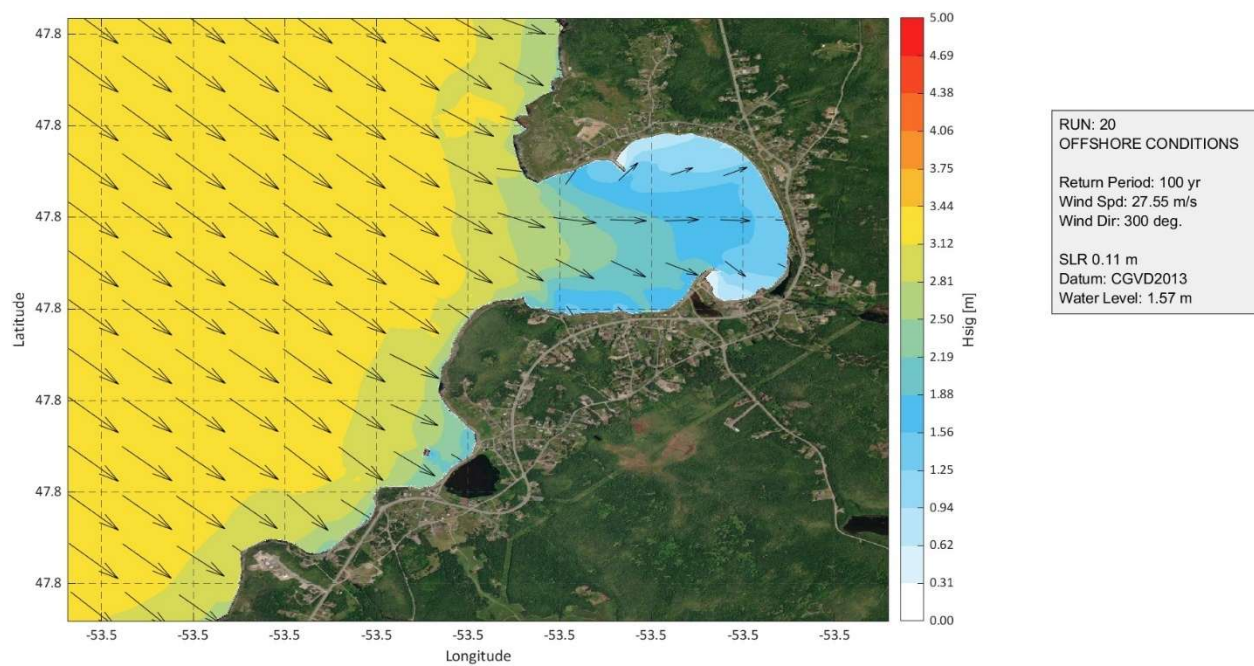


Figure 46: Heart's Delight – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 300°

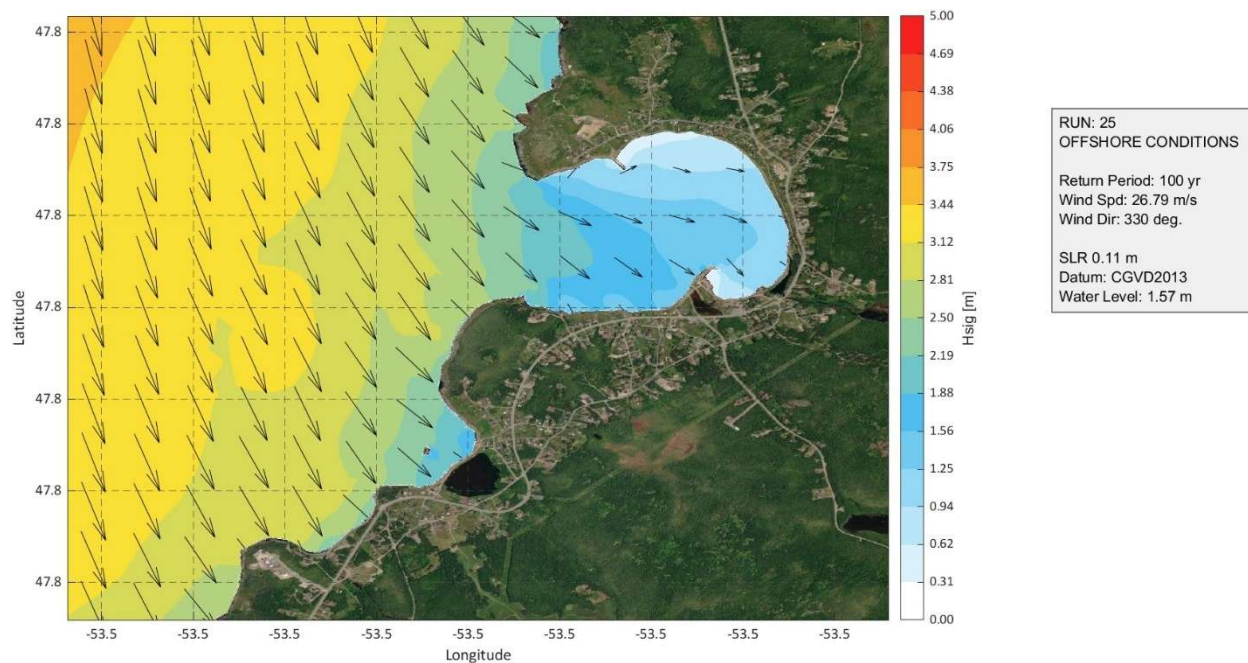


Figure 47: Heart's Delight – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 330°

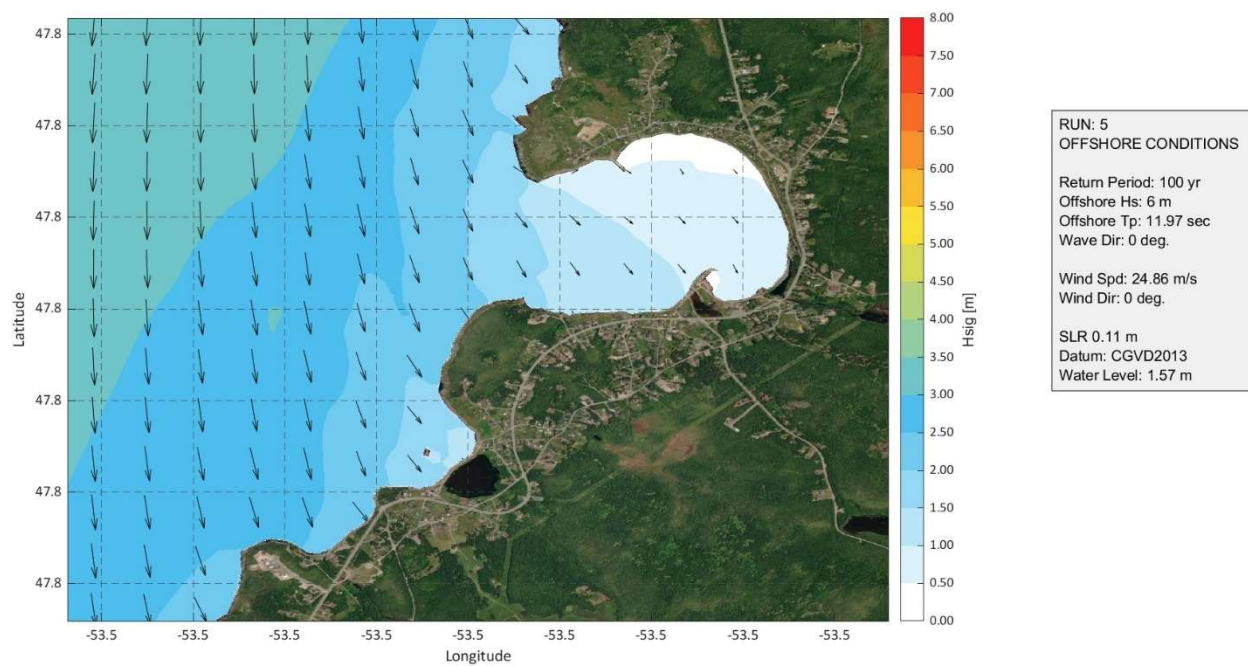


Figure 48: Heart's Delight – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 360°

5. Winterton – 20-yr Return Period Wave Conditions

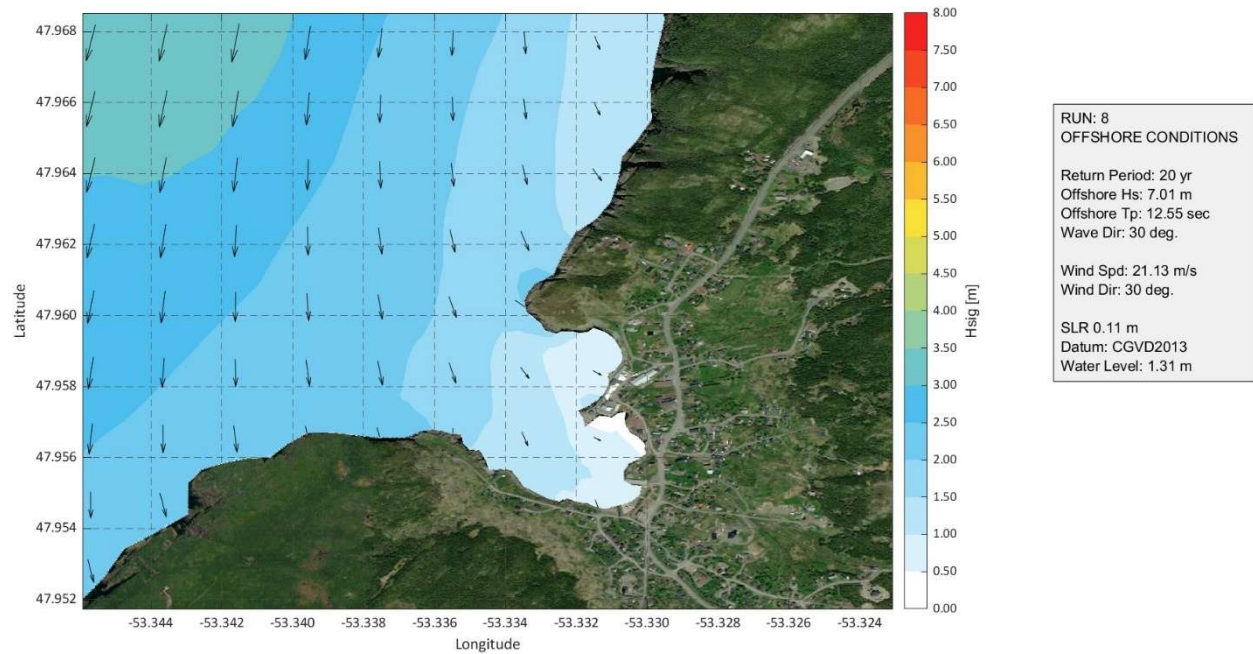


Figure 49: Winterton – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

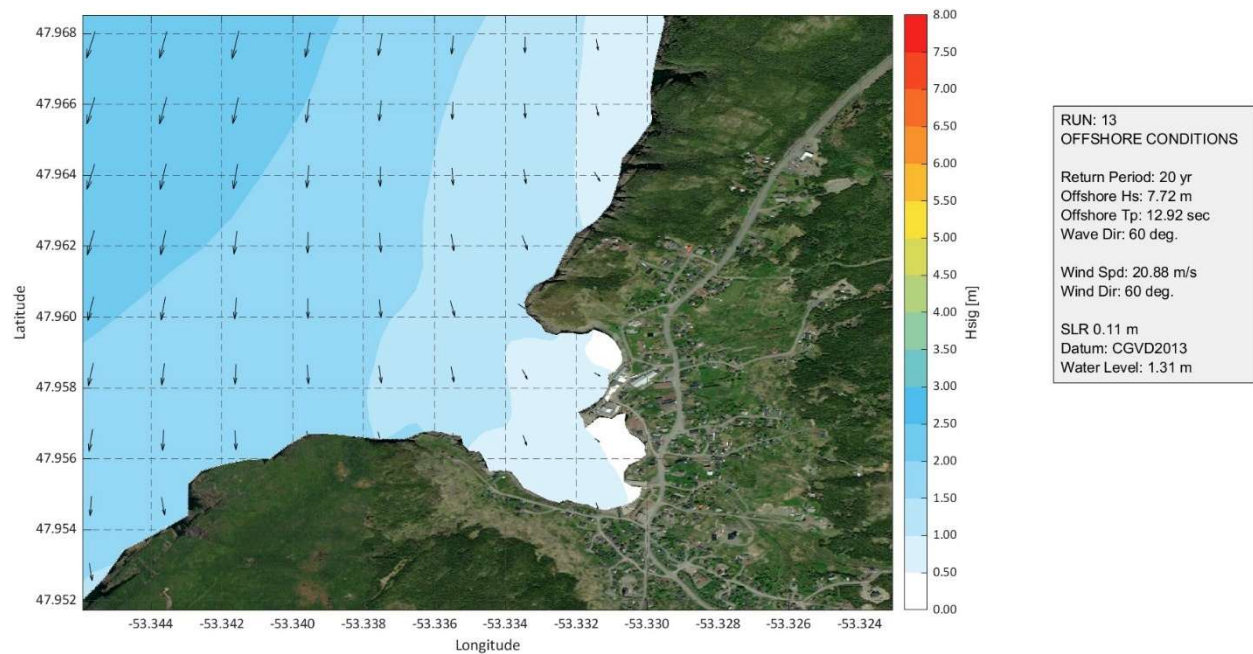


Figure 50: Winterton – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

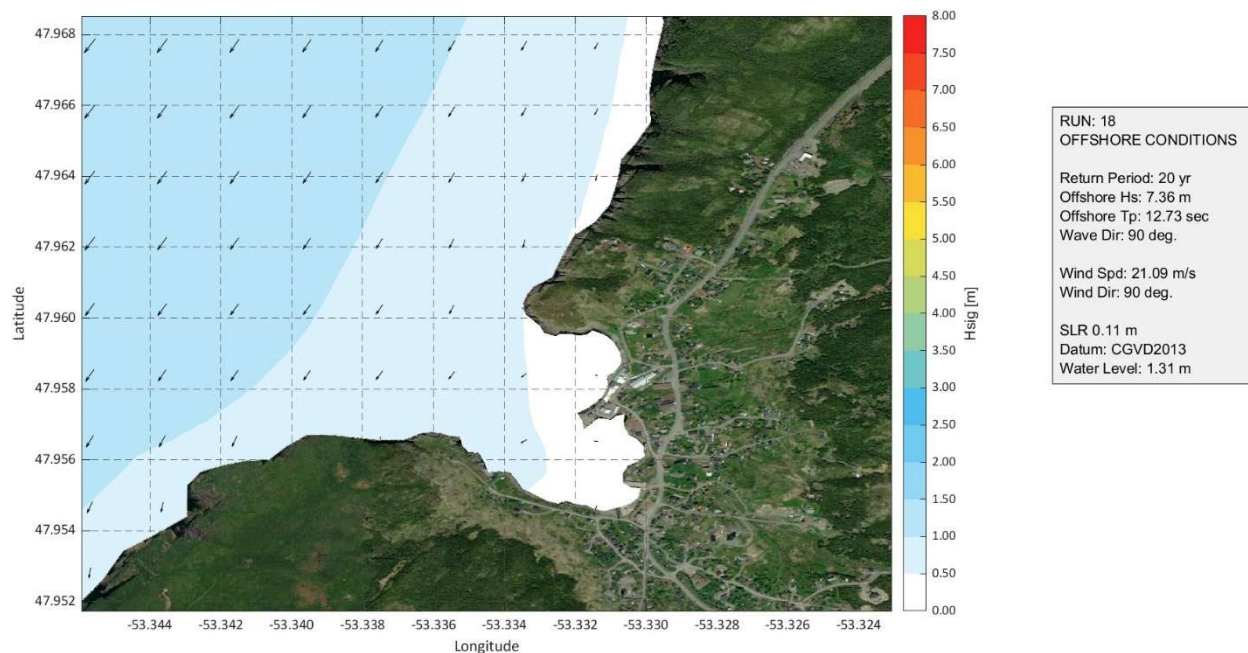


Figure 51: Winterton – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 90°

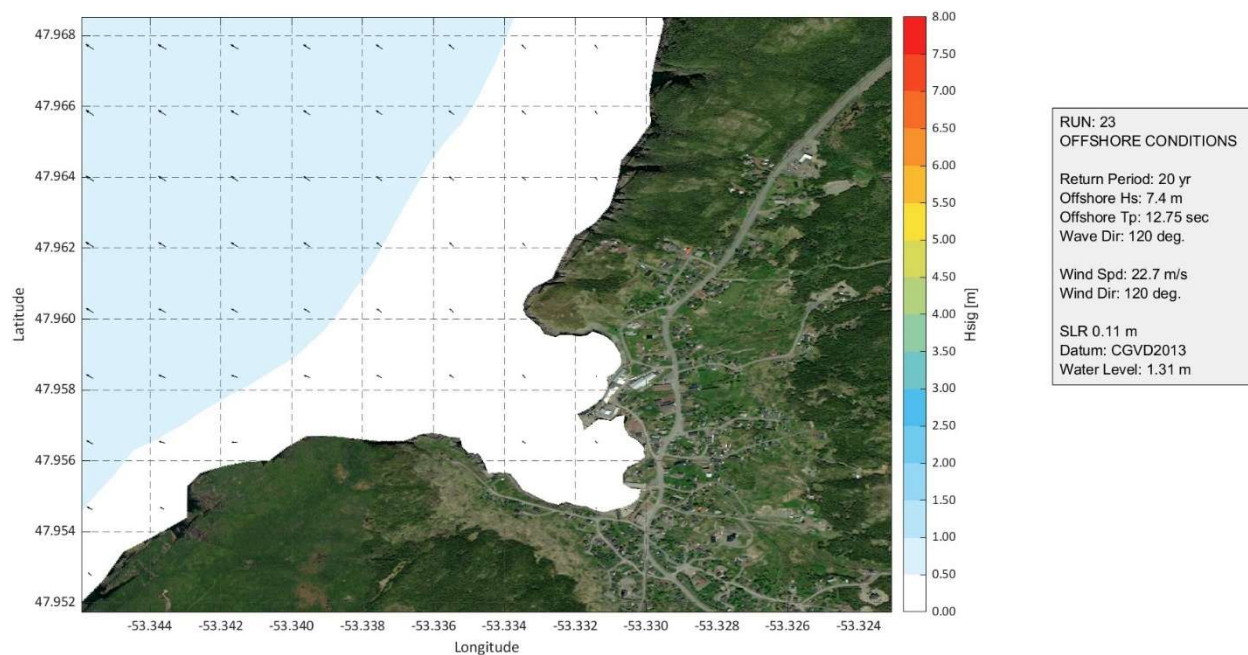


Figure 52: Winterton – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 120°

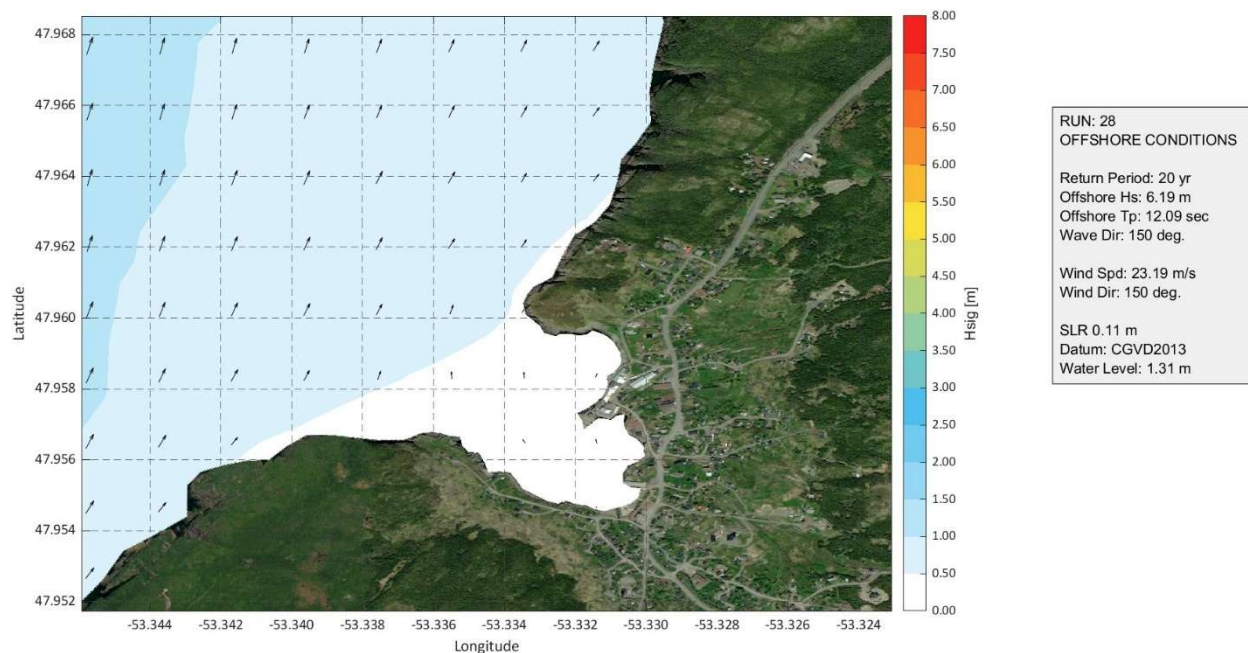


Figure 53: Winterton – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 150°

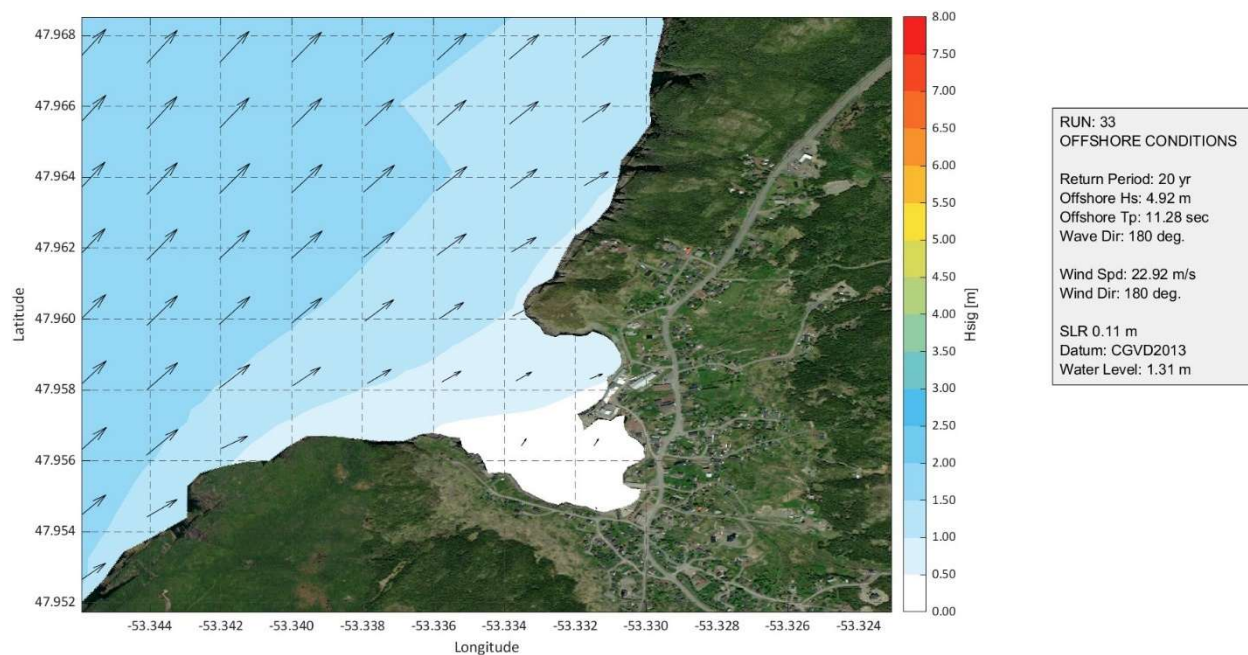


Figure 54: Winterton – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 180°

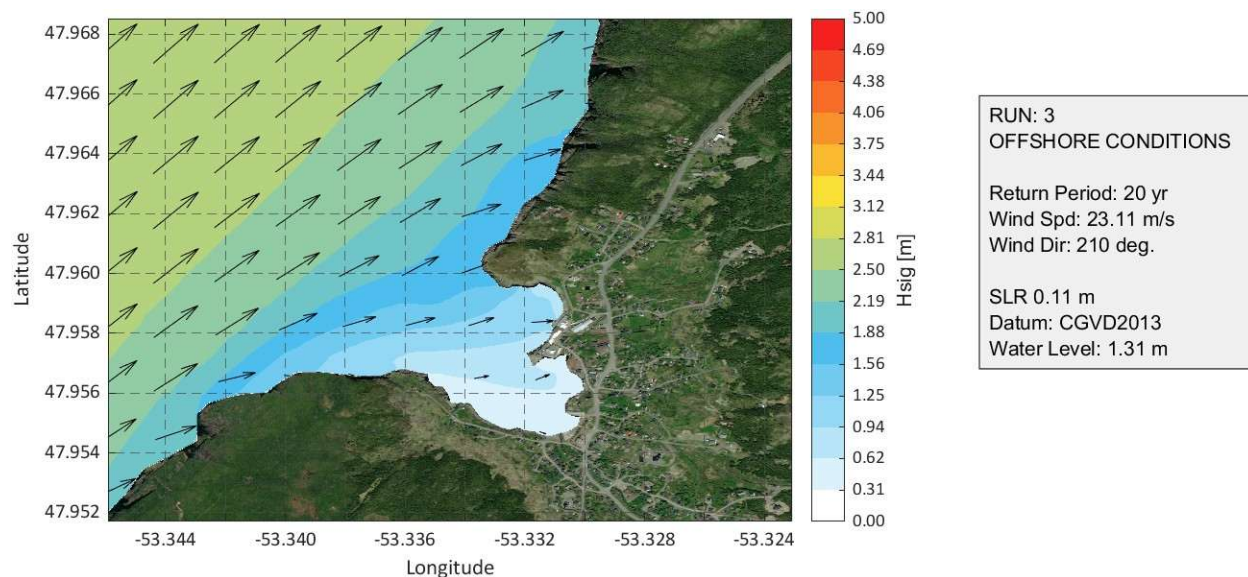


Figure 55: Winterton – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 210°

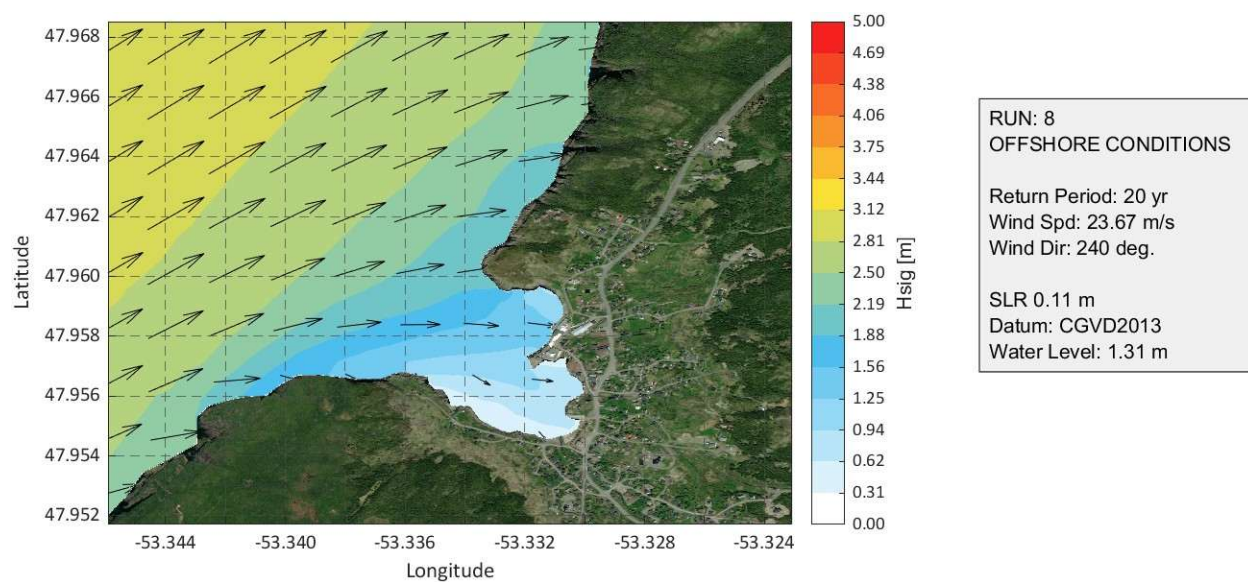


Figure 56: Winterton – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 240°

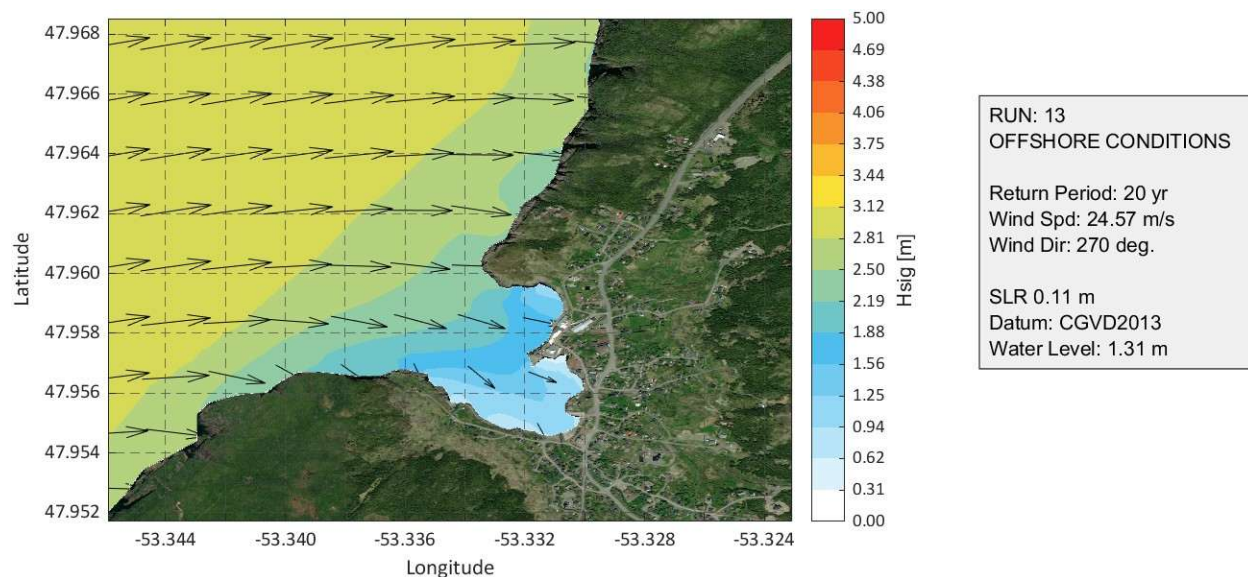


Figure 57: Winterton – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 270°

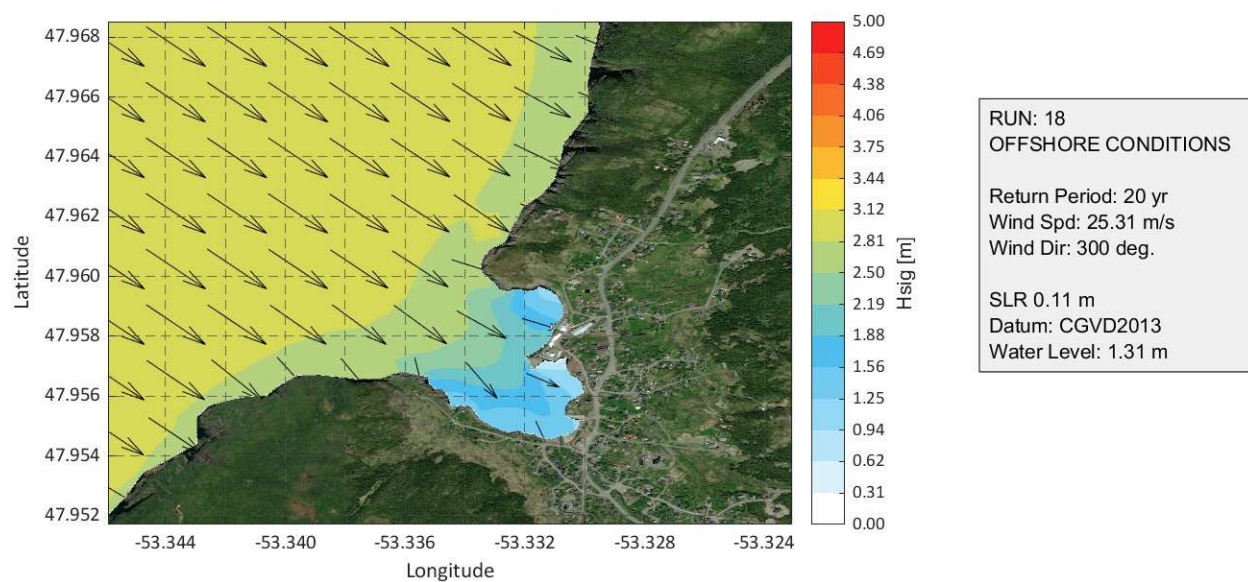


Figure 58: Winterton – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 300°

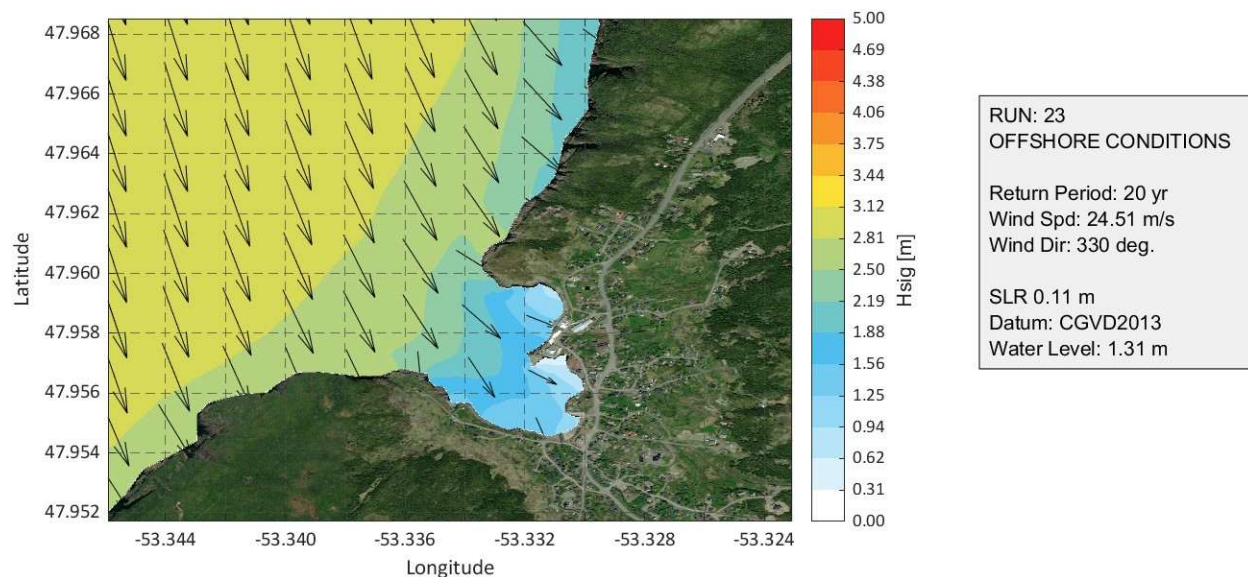


Figure 59: Winterton – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 330°

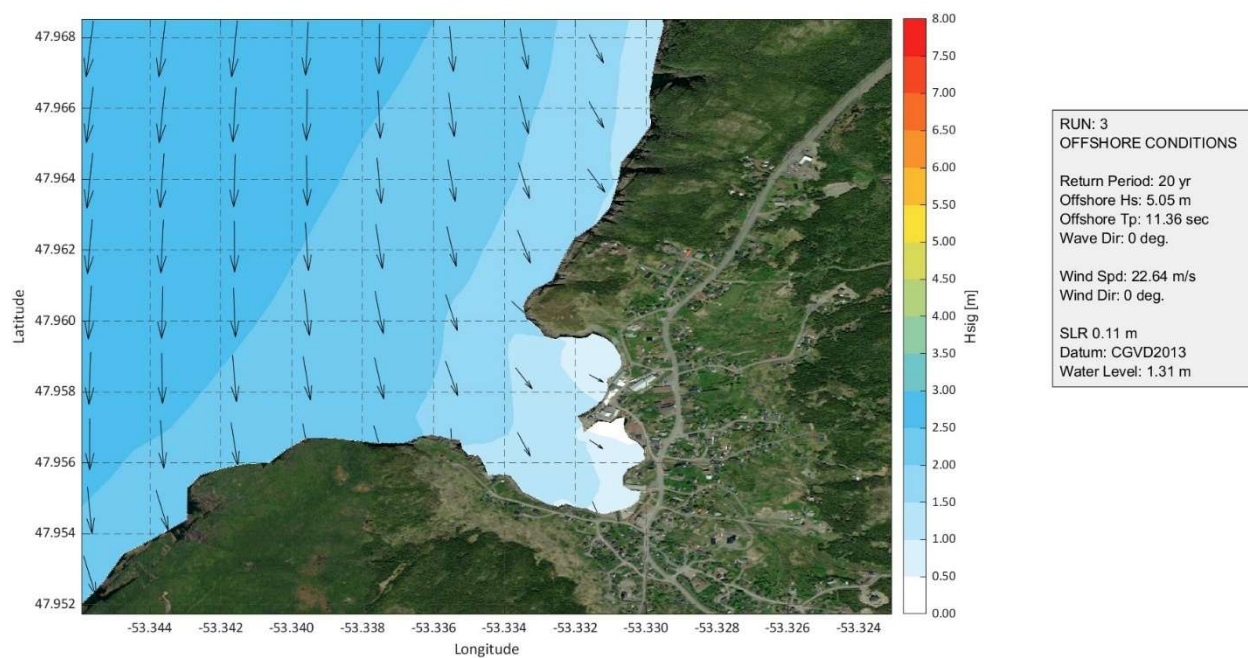


Figure 60: Winterton – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 360°

6. Winterton – 100-yr Return Period Wave Conditions

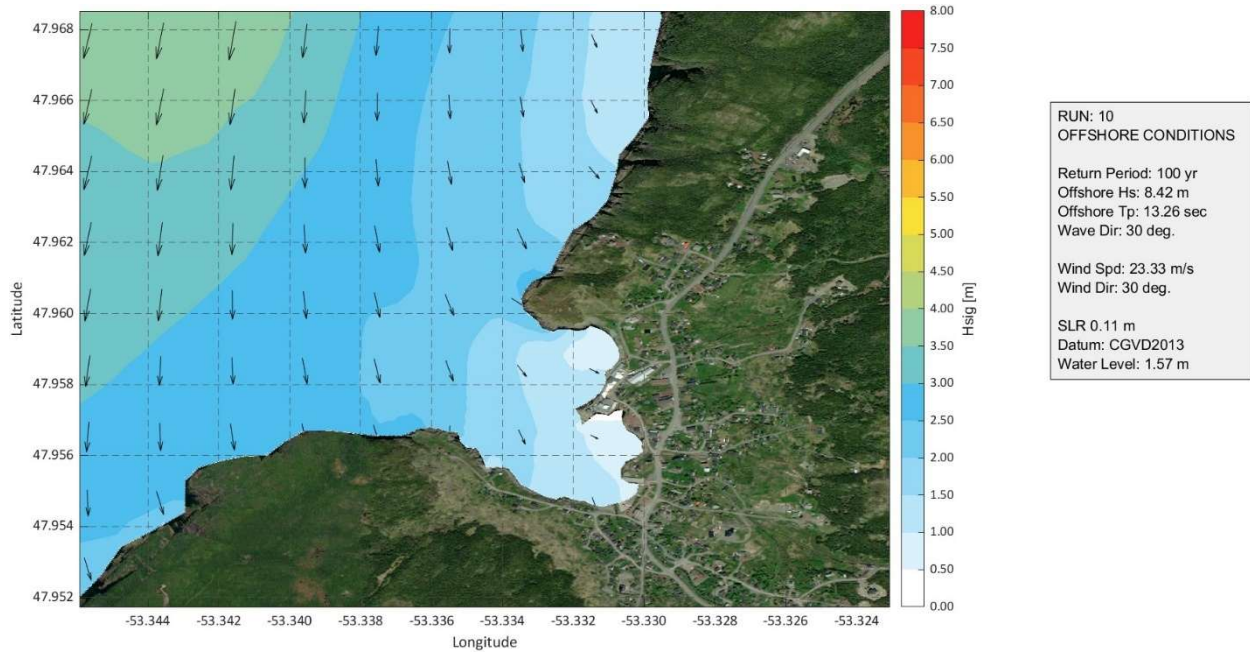


Figure 61: Winterton – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

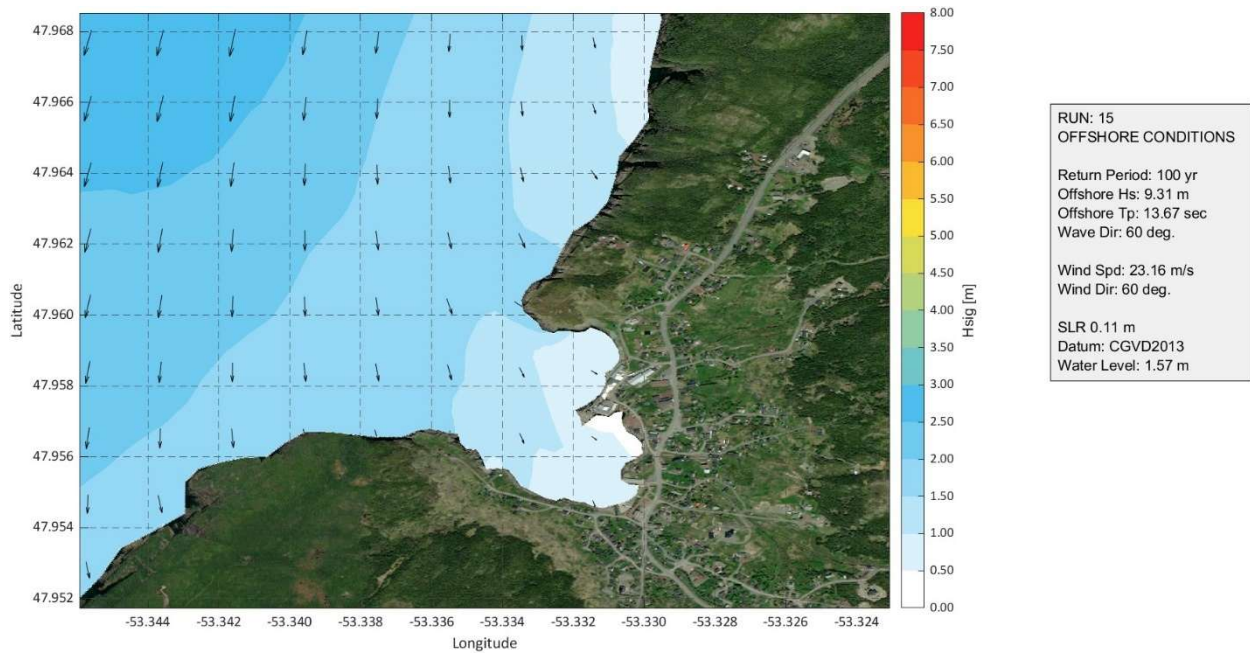


Figure 62: Winterton – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

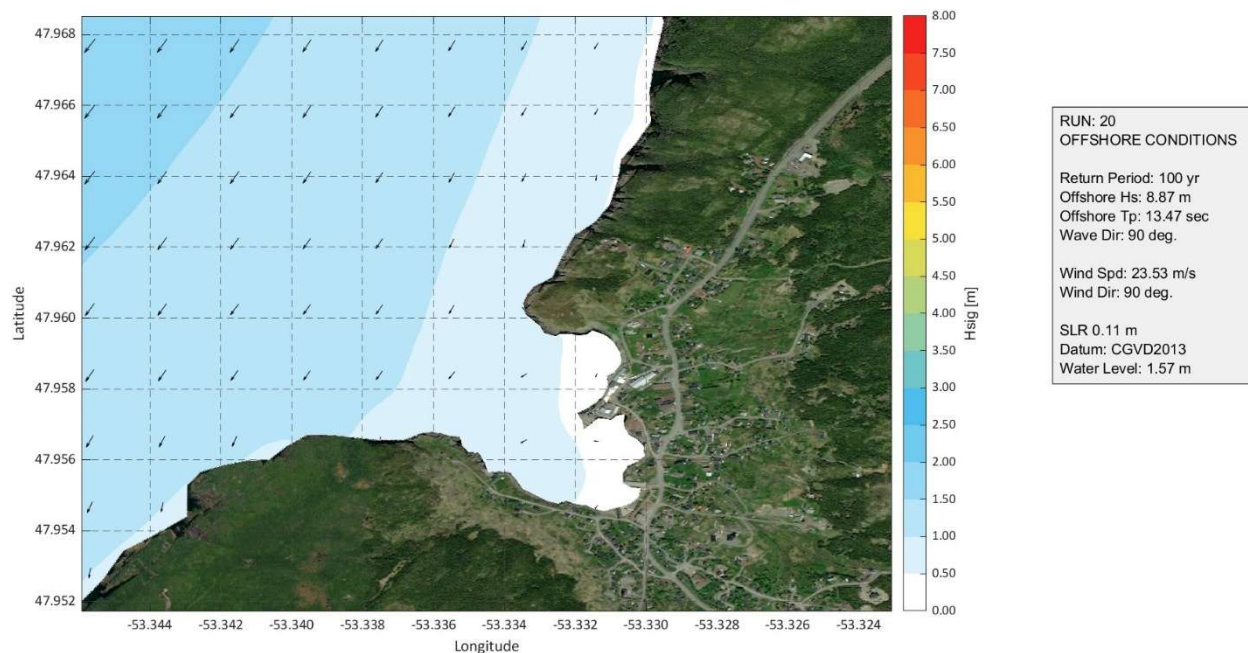


Figure 63: Winterton – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 90°

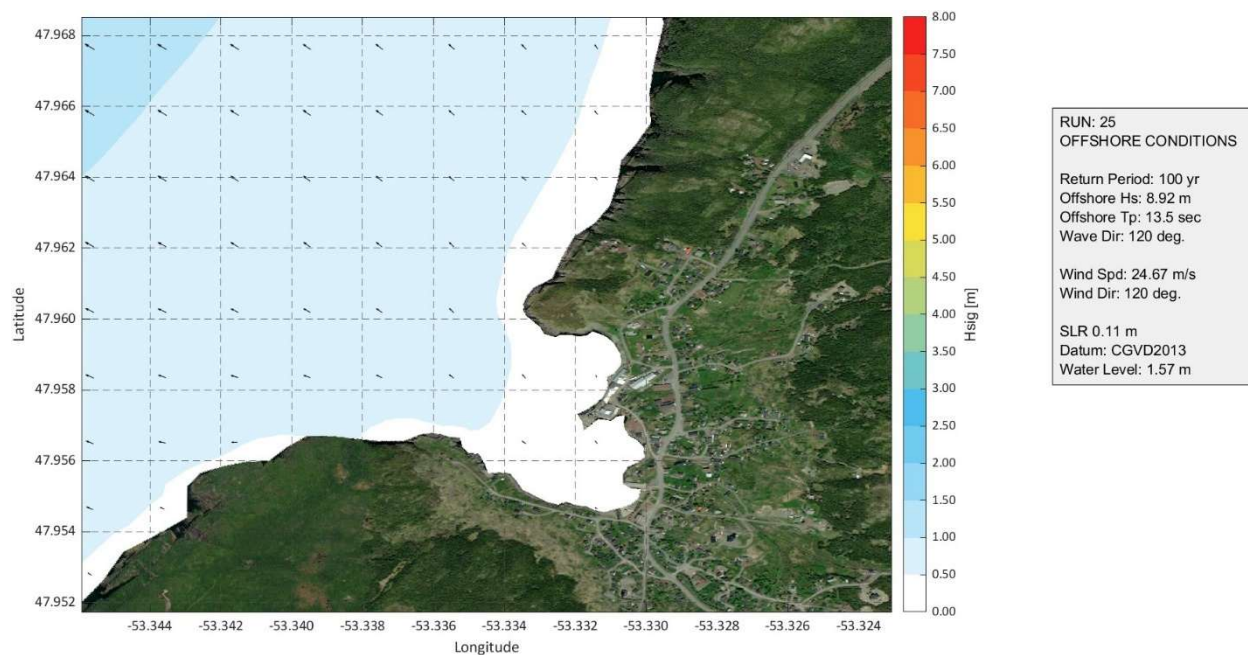


Figure 64: Winterton – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 120°

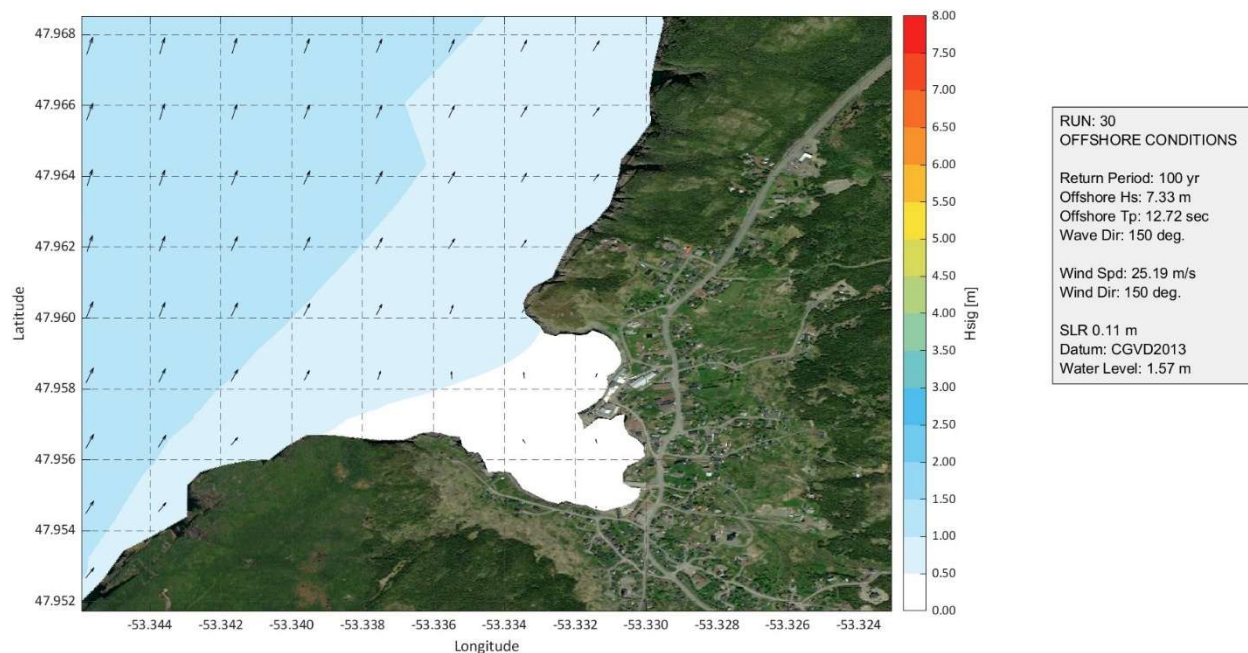


Figure 65: Winterton – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 150°

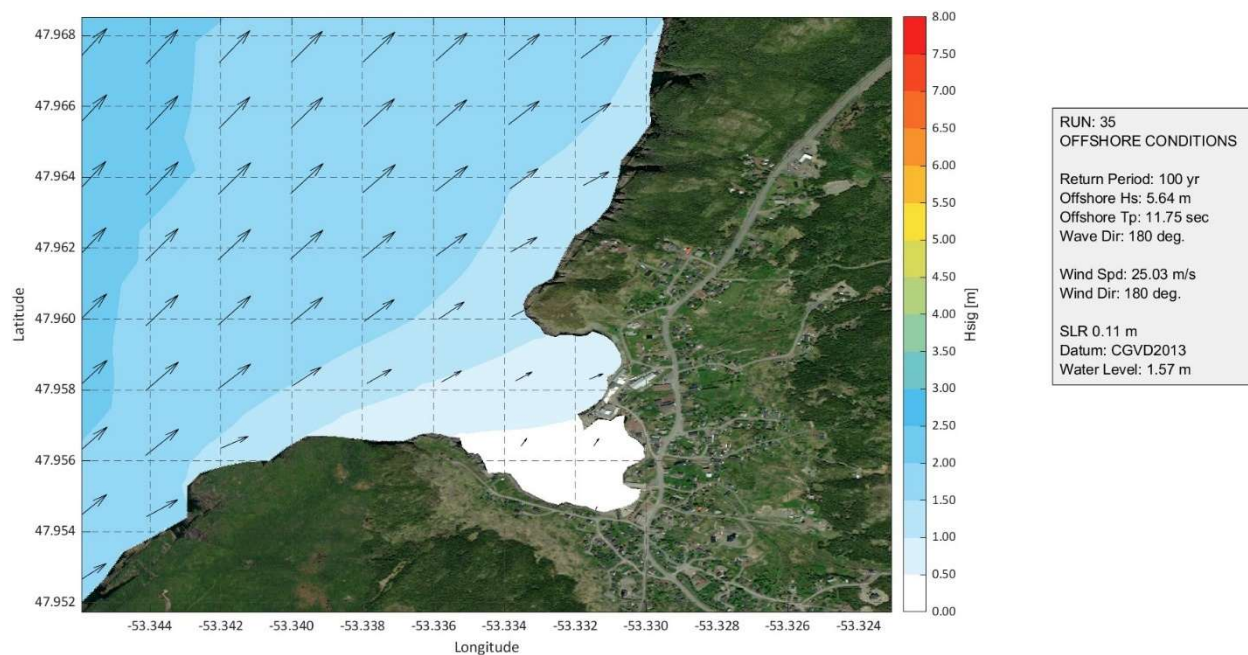


Figure 66: Winterton – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 180°

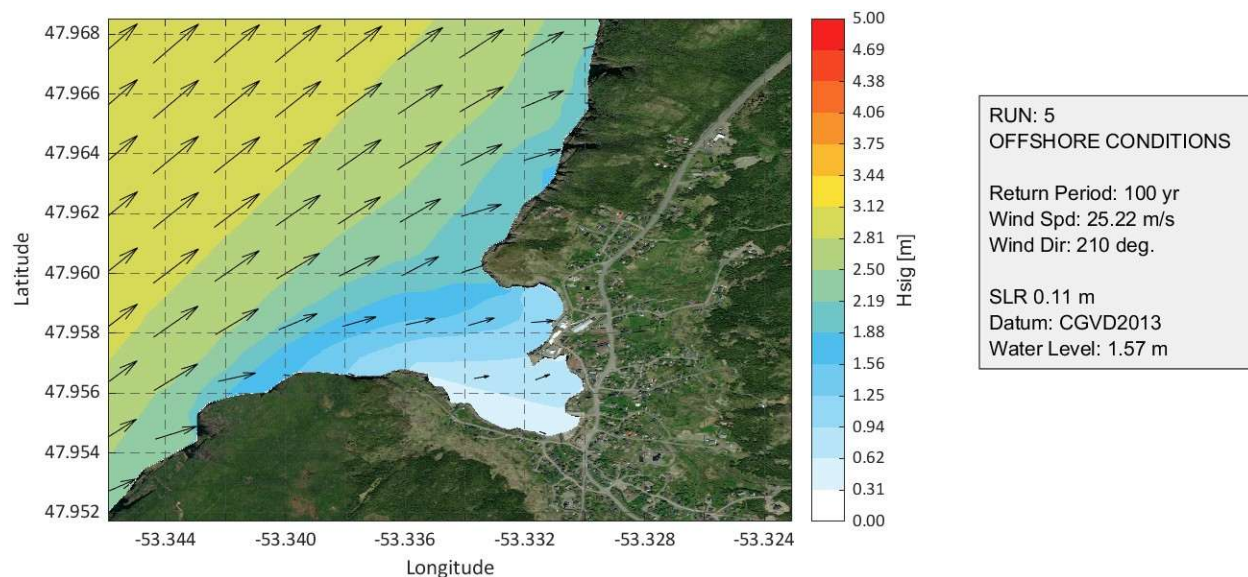


Figure 67: Winterton – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 210°

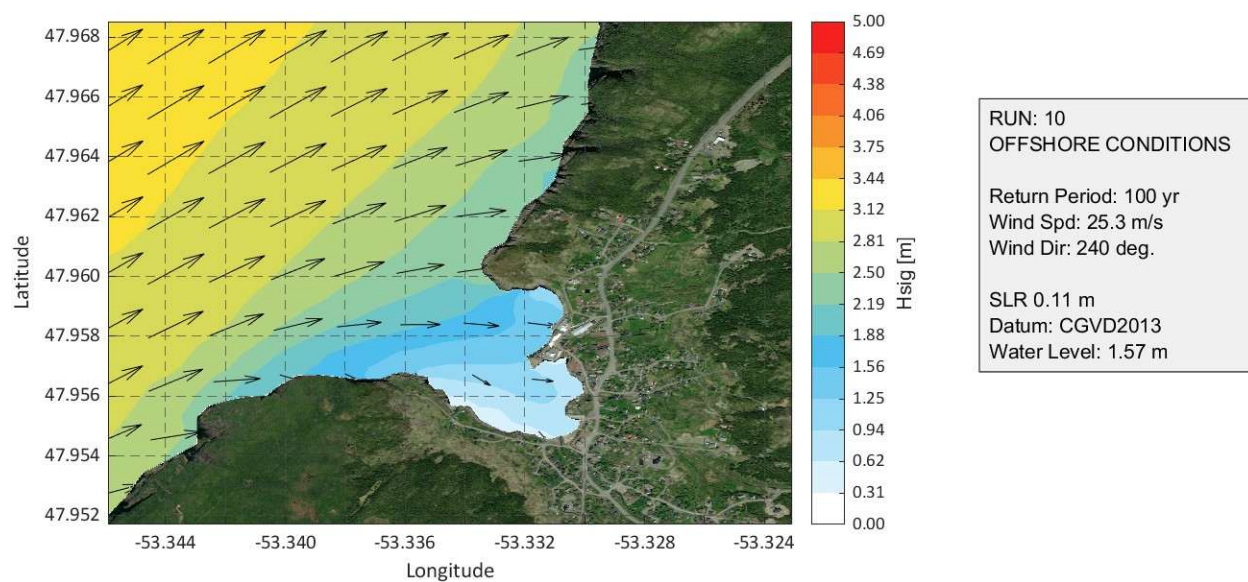


Figure 68: Winterton – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 240°

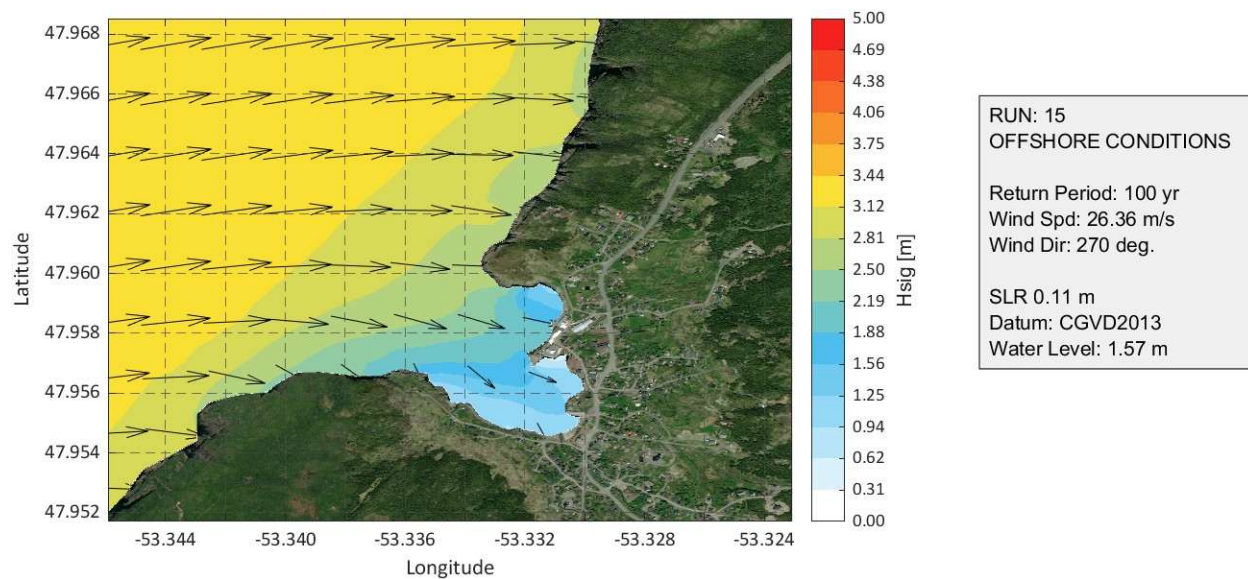


Figure 69: Winterton – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 270°

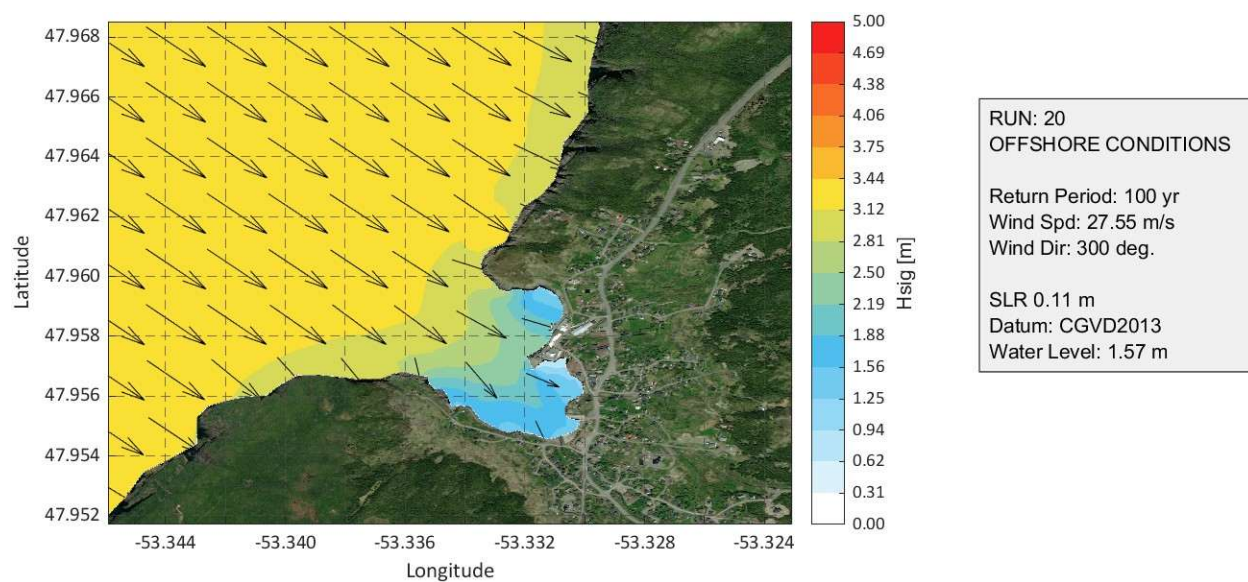


Figure 70: Winterton – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 300°

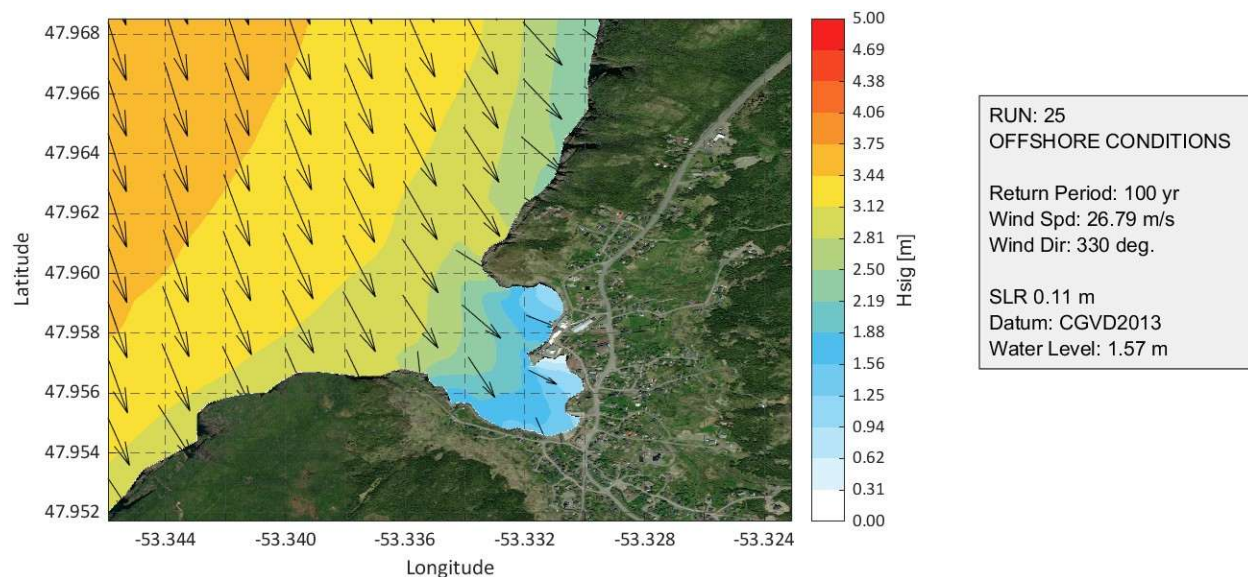


Figure 71: Winterton – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 330°

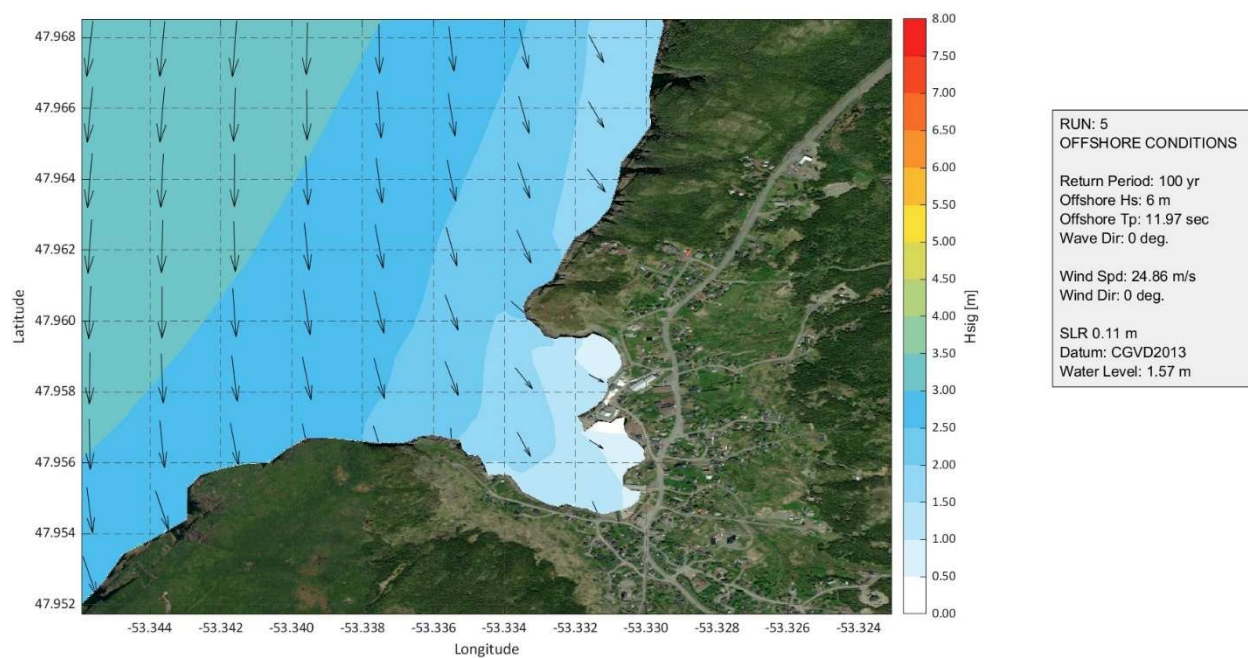


Figure 72: Winterton – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 360°

7. Brigus – 20-yr Return Period Wave Conditions

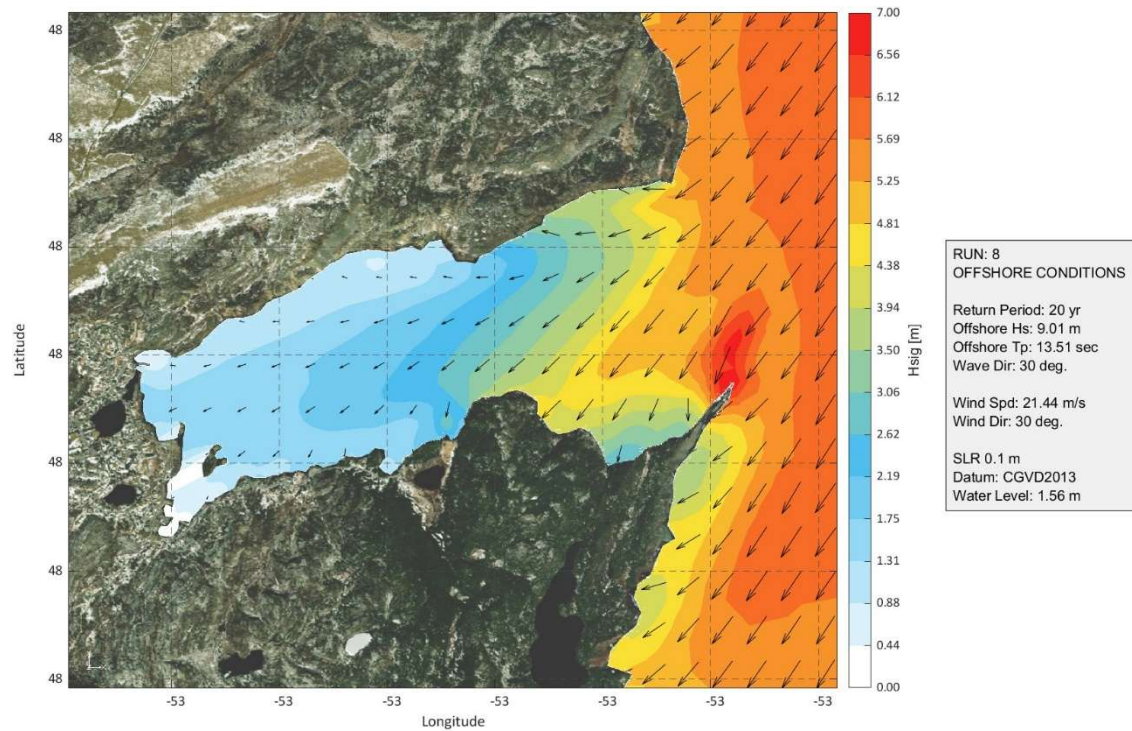


Figure 73: Brigus – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

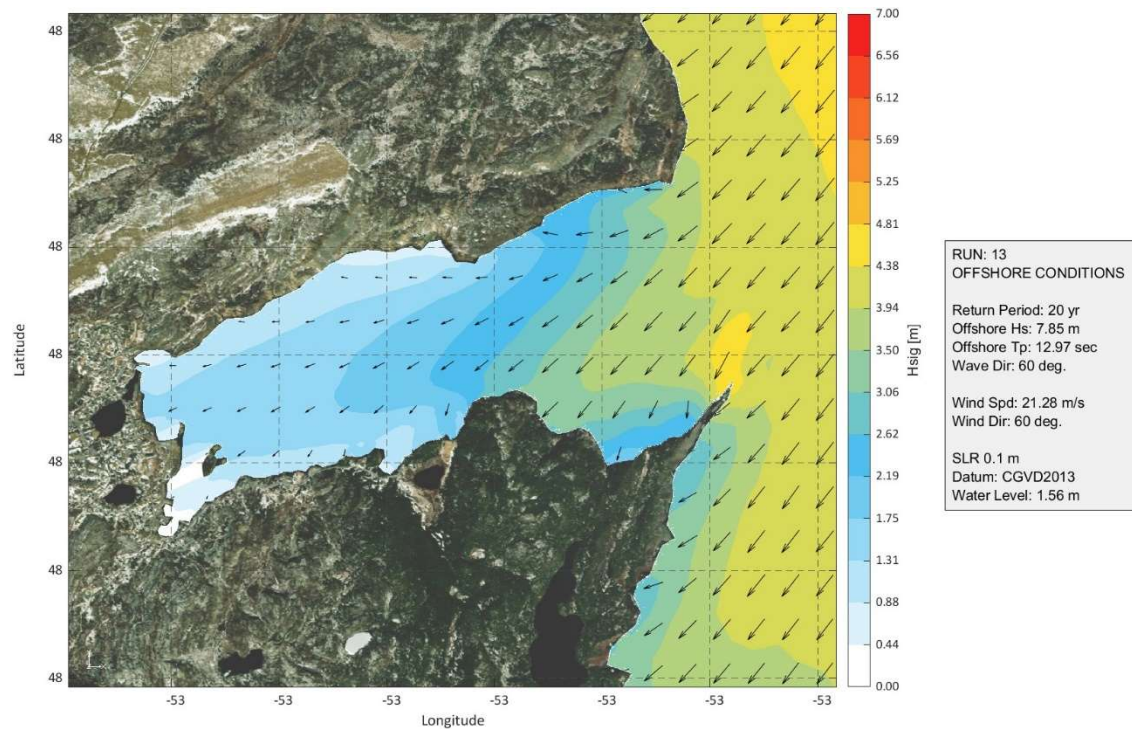


Figure 74: Brigus – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

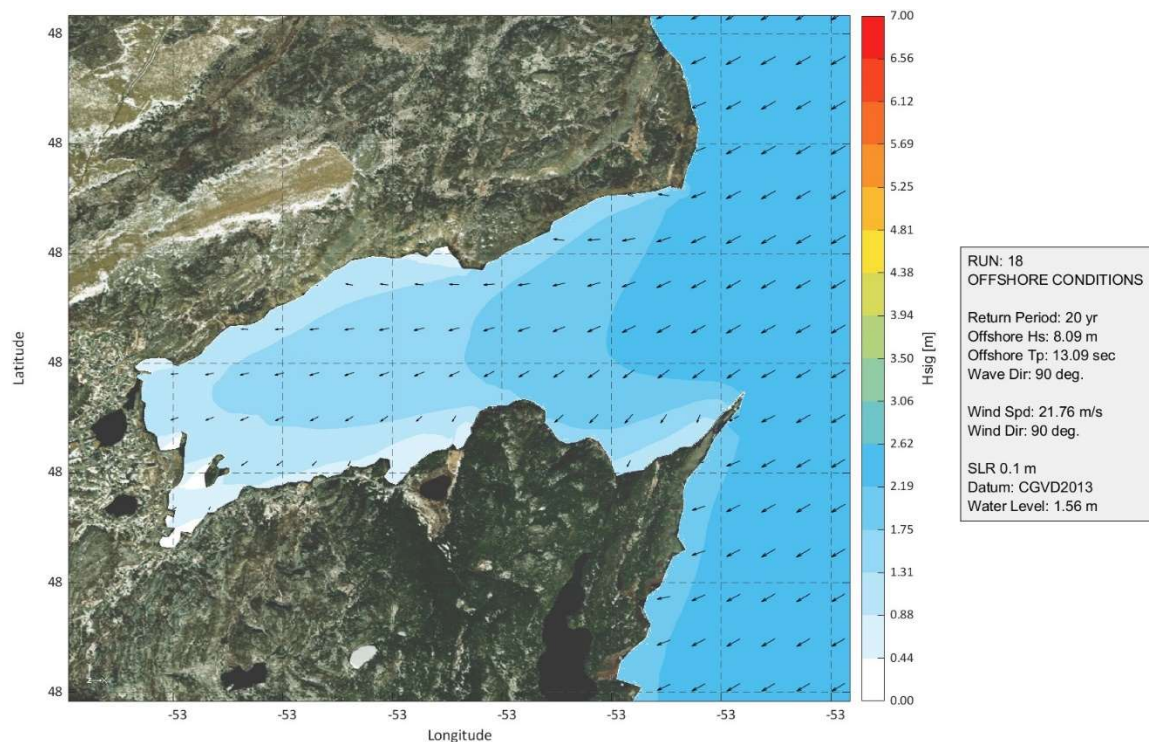


Figure 75: Brigus – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 90°

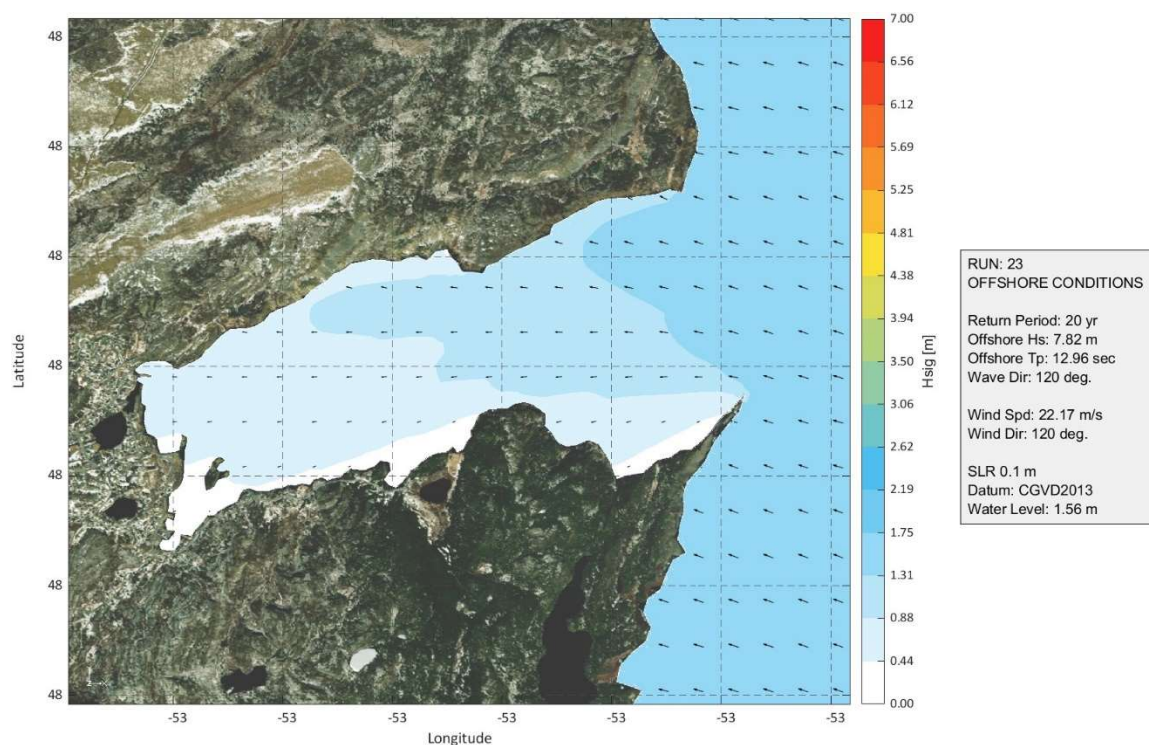


Figure 76: Brigus – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 120°

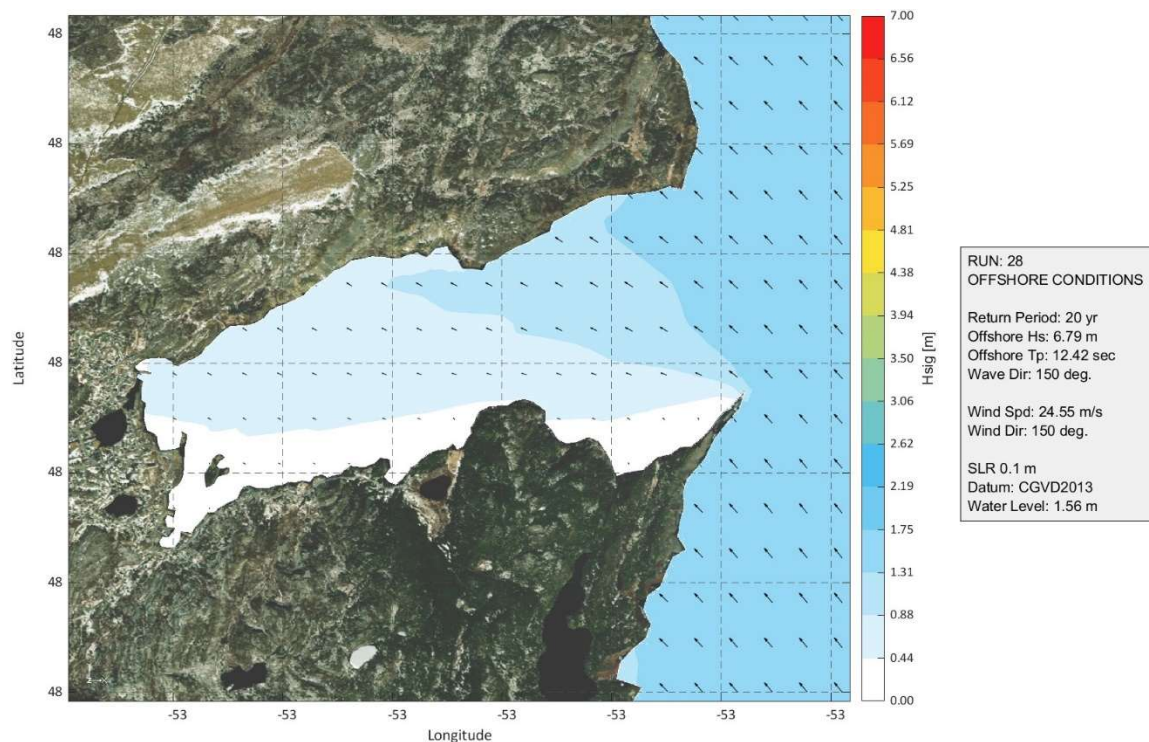


Figure 77: Brigus – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 150°

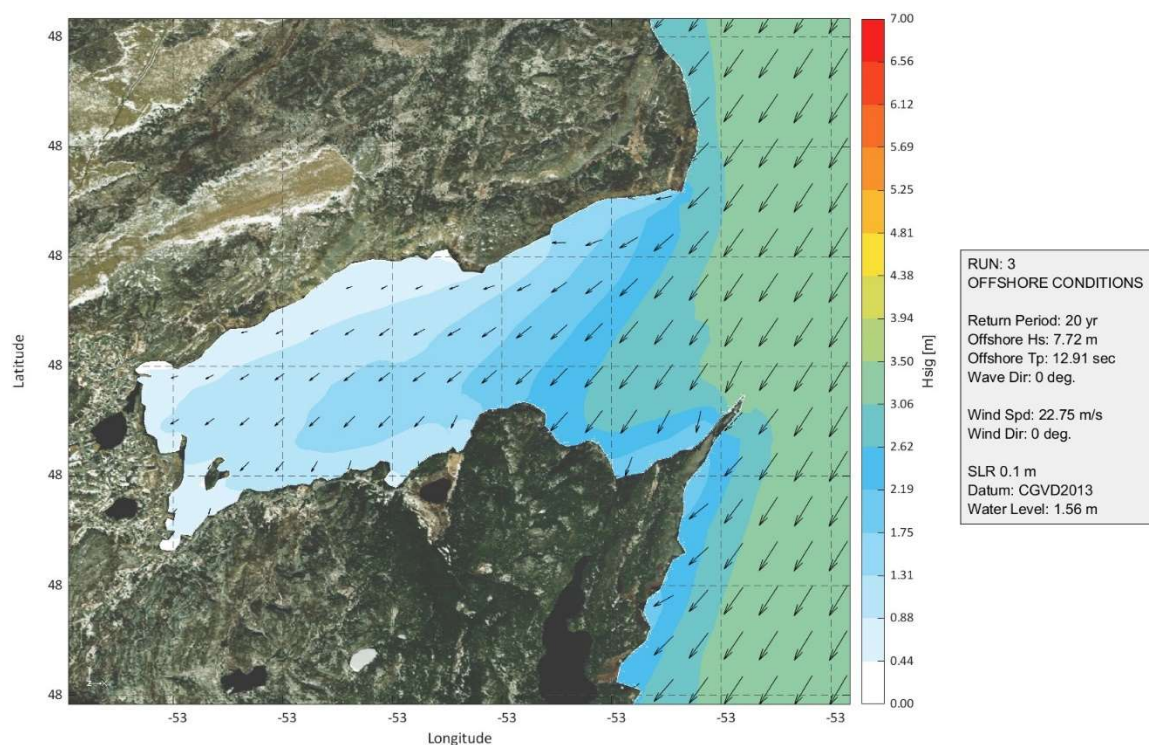


Figure 78: Brigus – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 360°

8. Brigus – 100-yr Return Period Wave Conditions

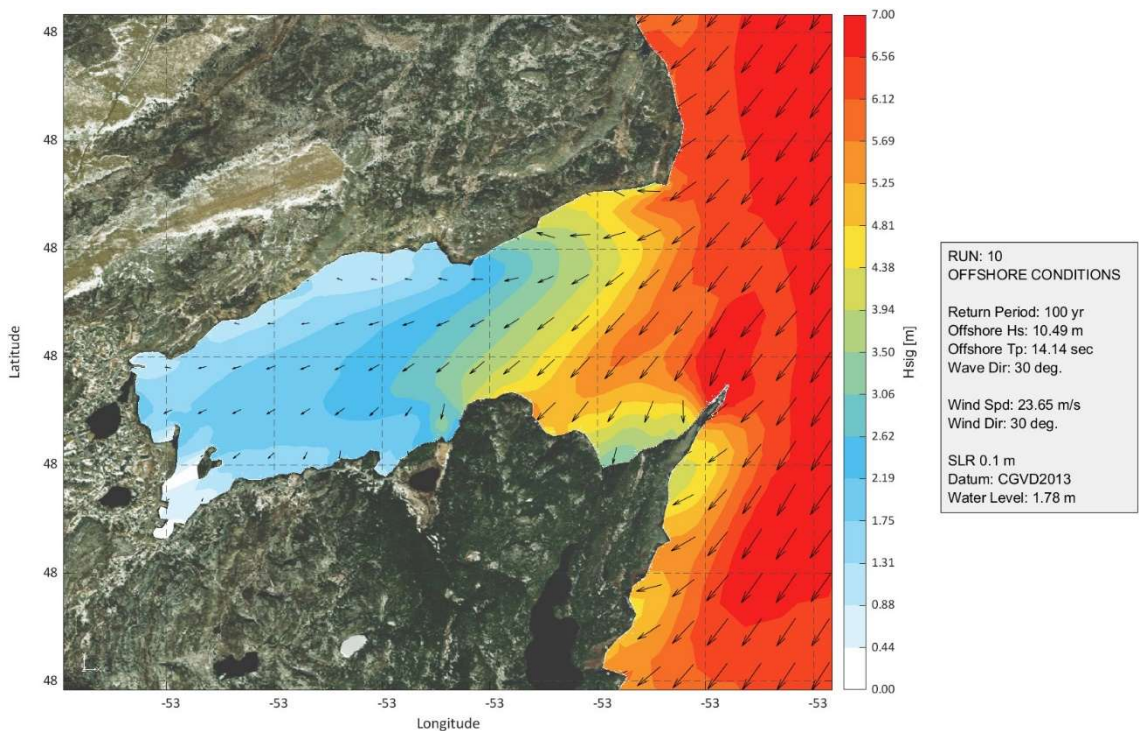


Figure 79: Brigus – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

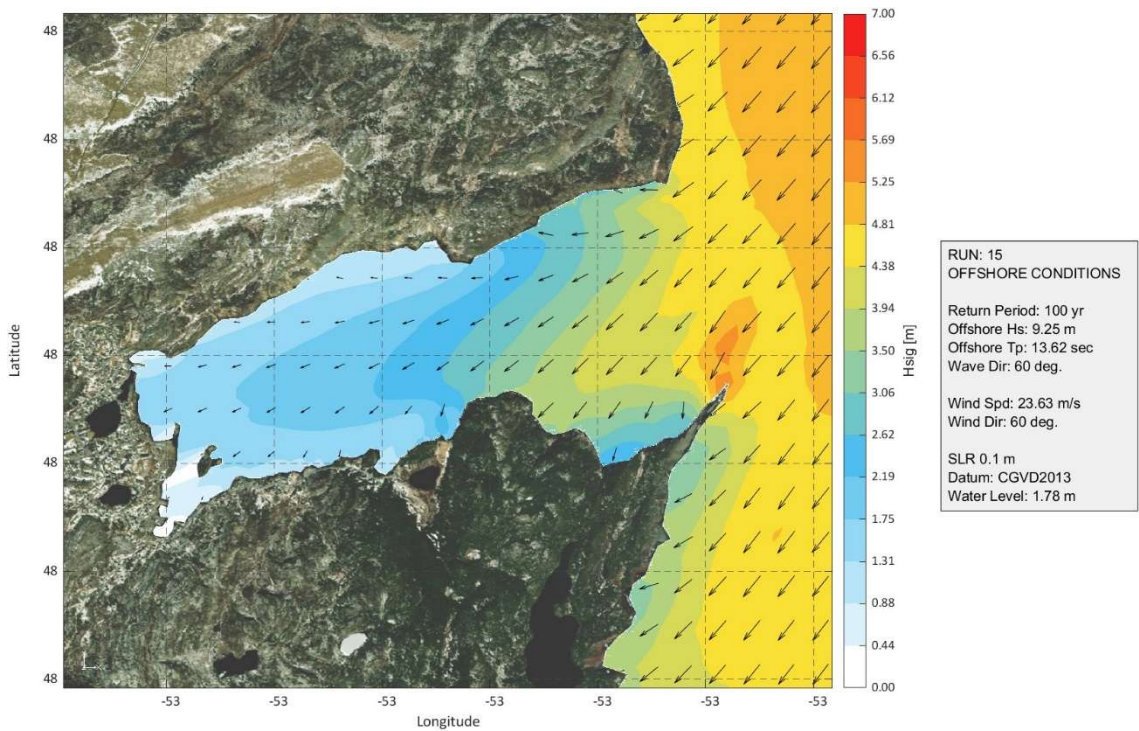


Figure 80: Brigus – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

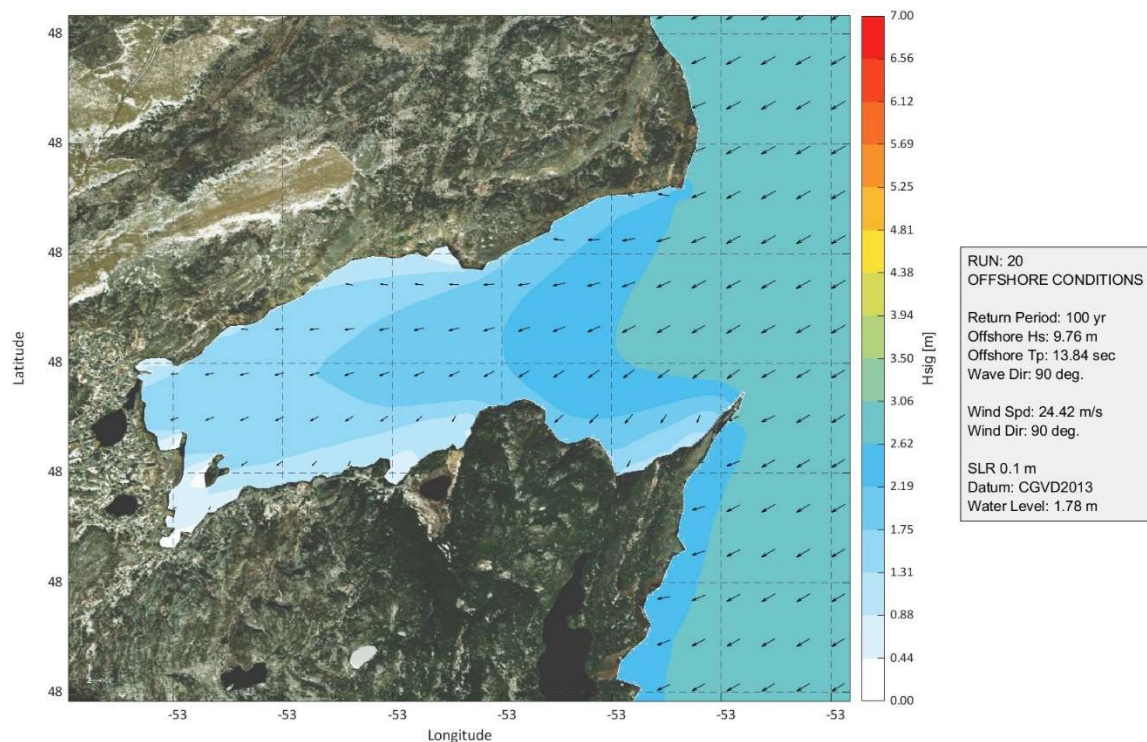


Figure 81: Brigus – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 90°

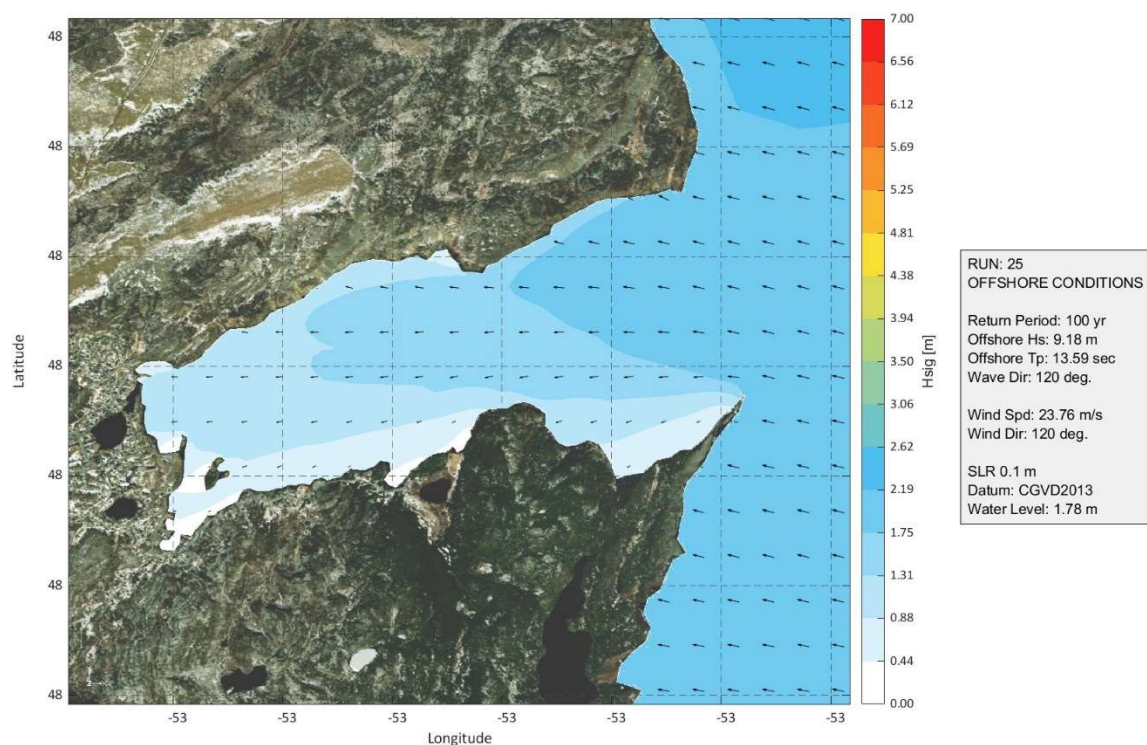


Figure 82: Brigus – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 120°

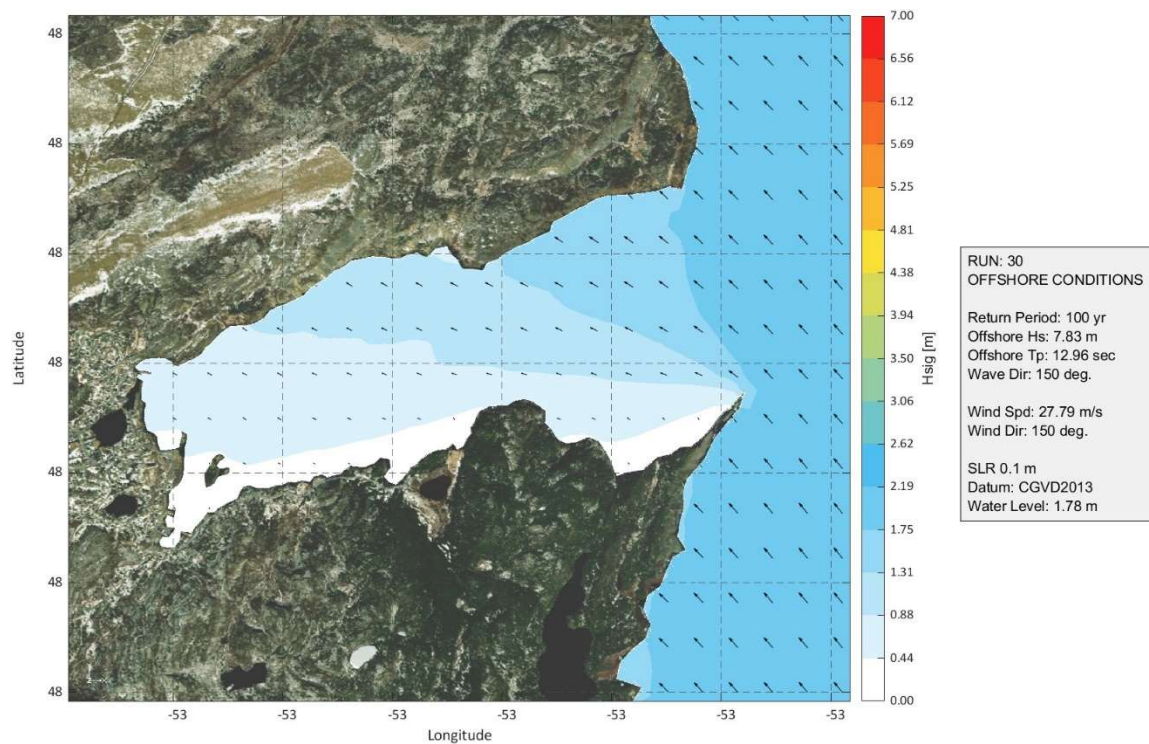


Figure 83: Brigus – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 150°

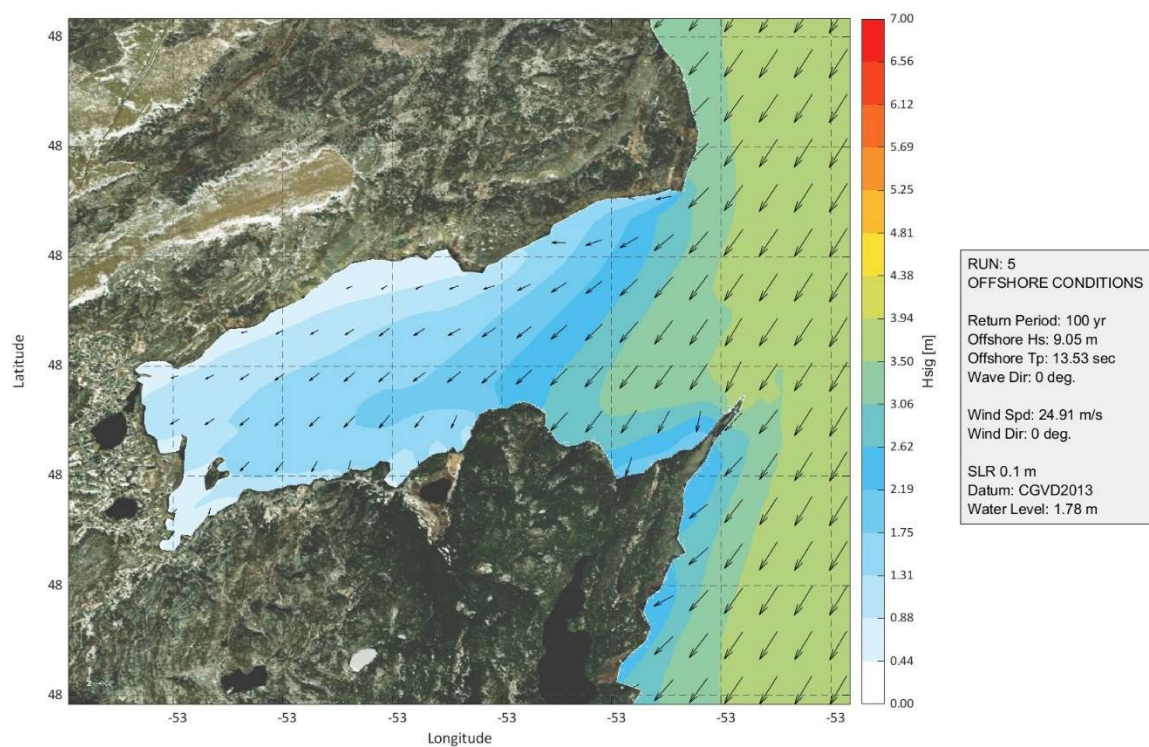


Figure 84: Brigus – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 360°

9. Ferryland – 20-yr Return Period Wave Conditions

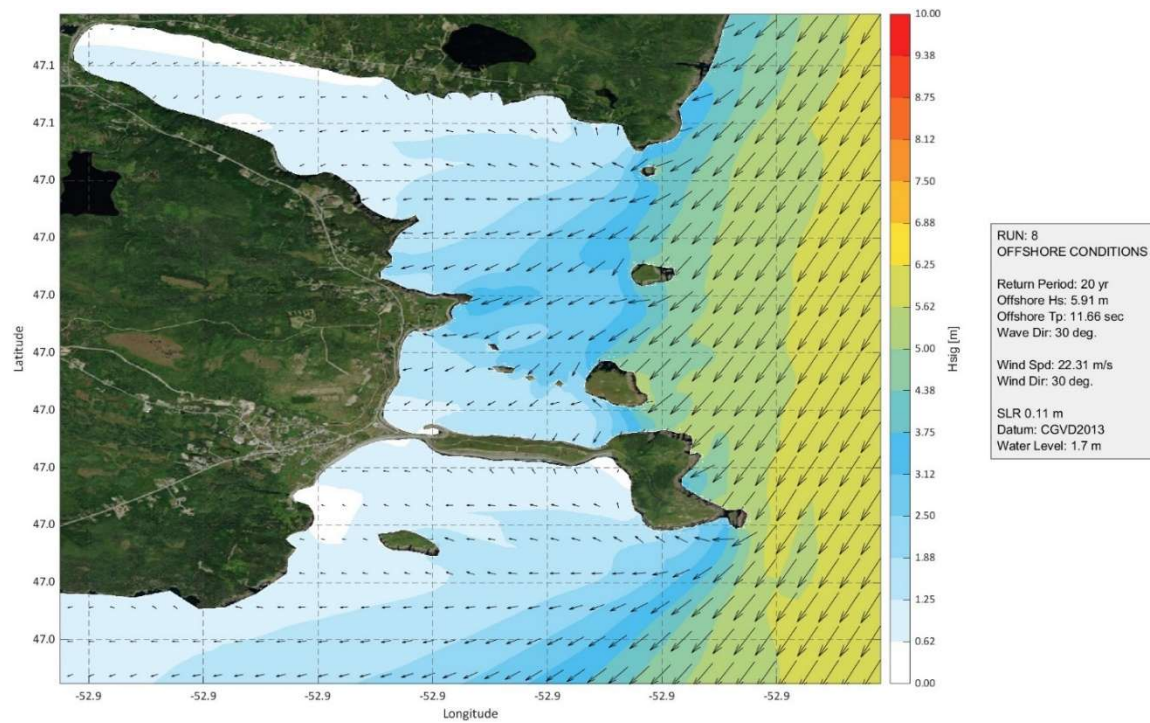


Figure 85: Ferryland – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

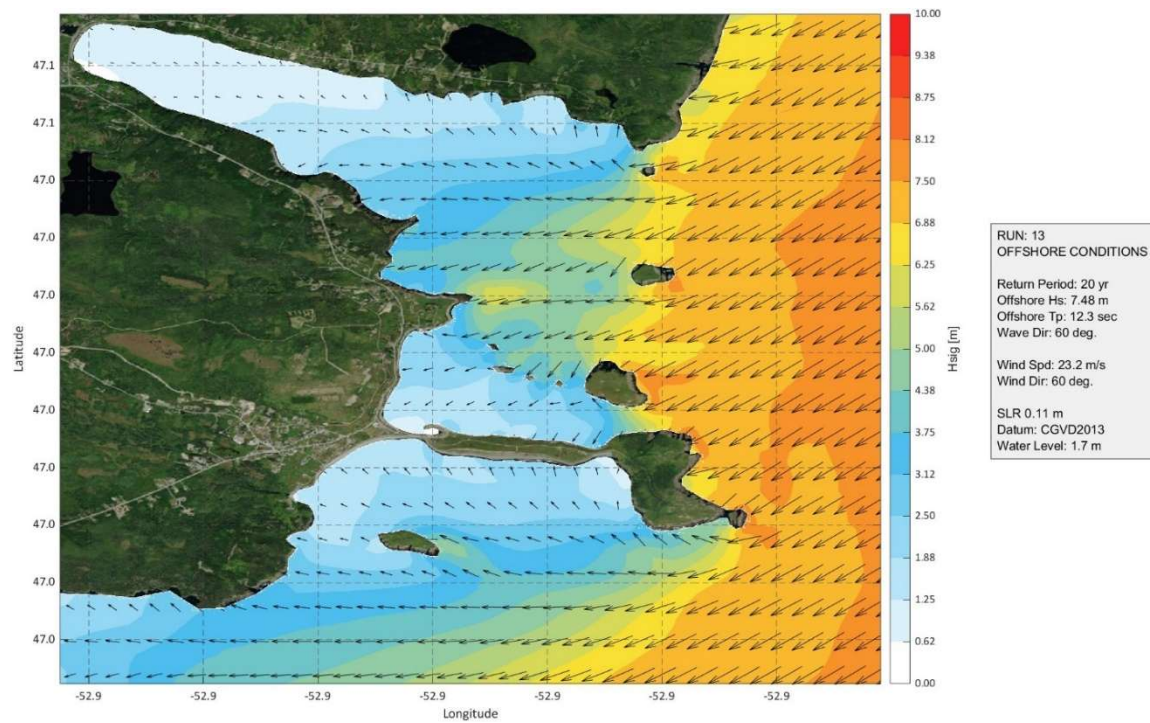


Figure 86: Ferryland – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

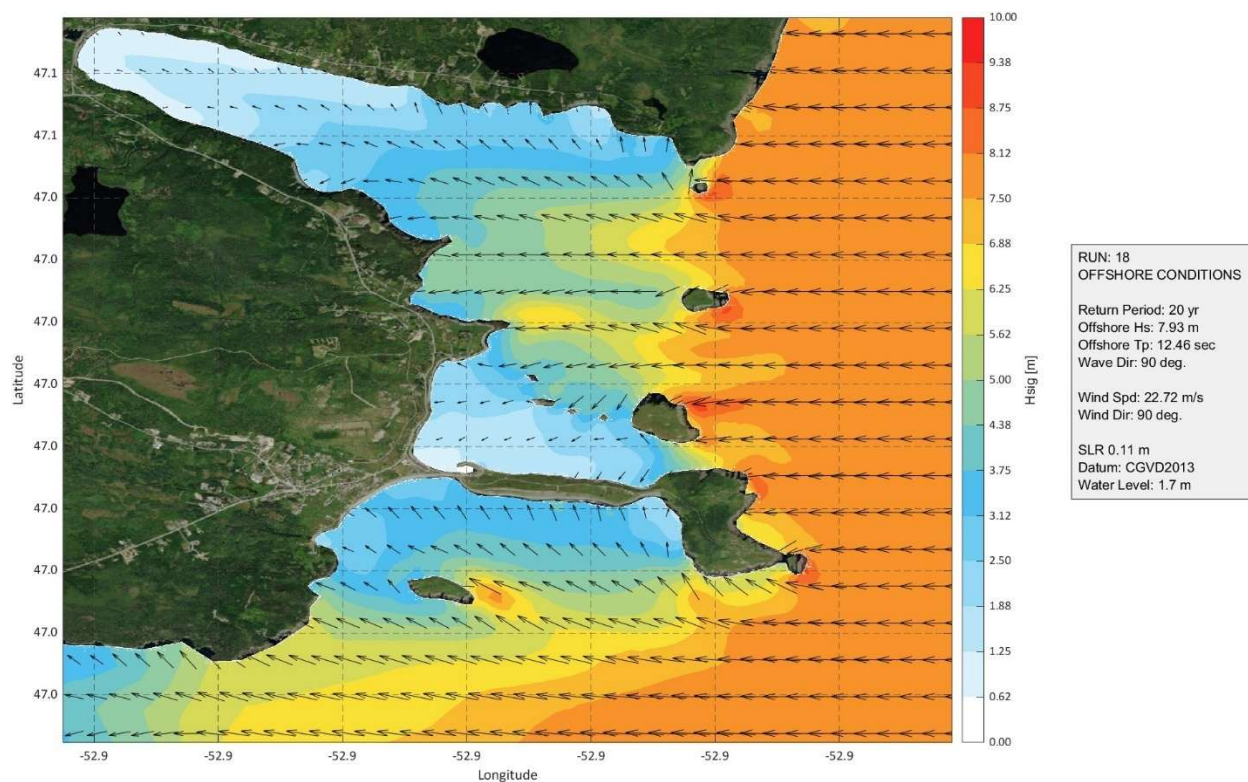


Figure 87: Ferryland – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 90°

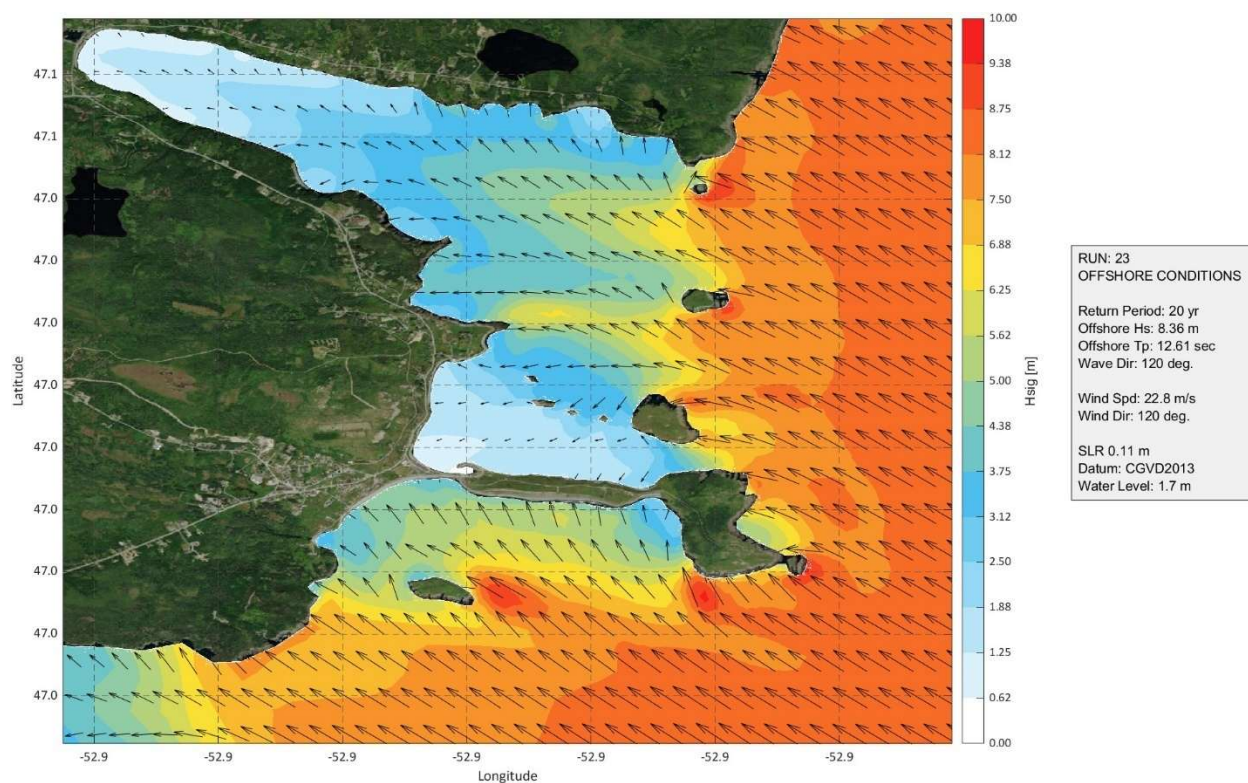


Figure 88: Ferryland – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 120°

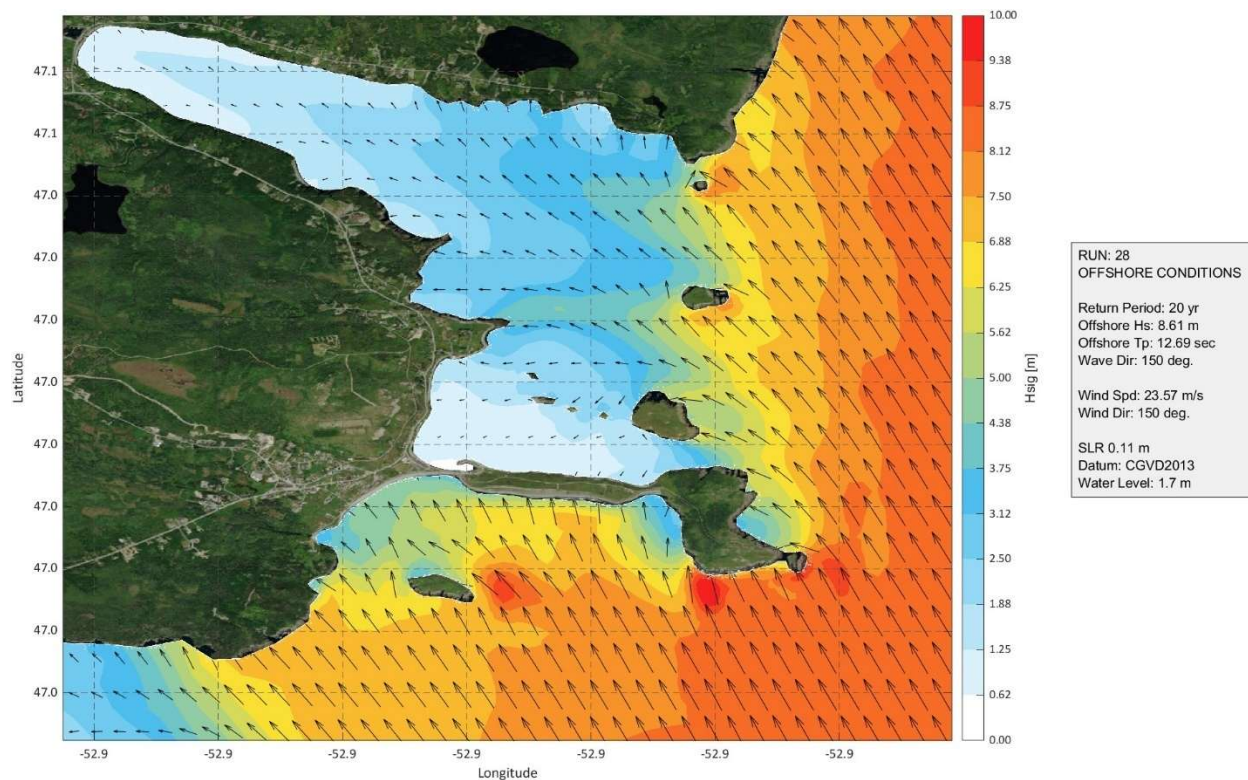


Figure 89: Ferryland – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 150°

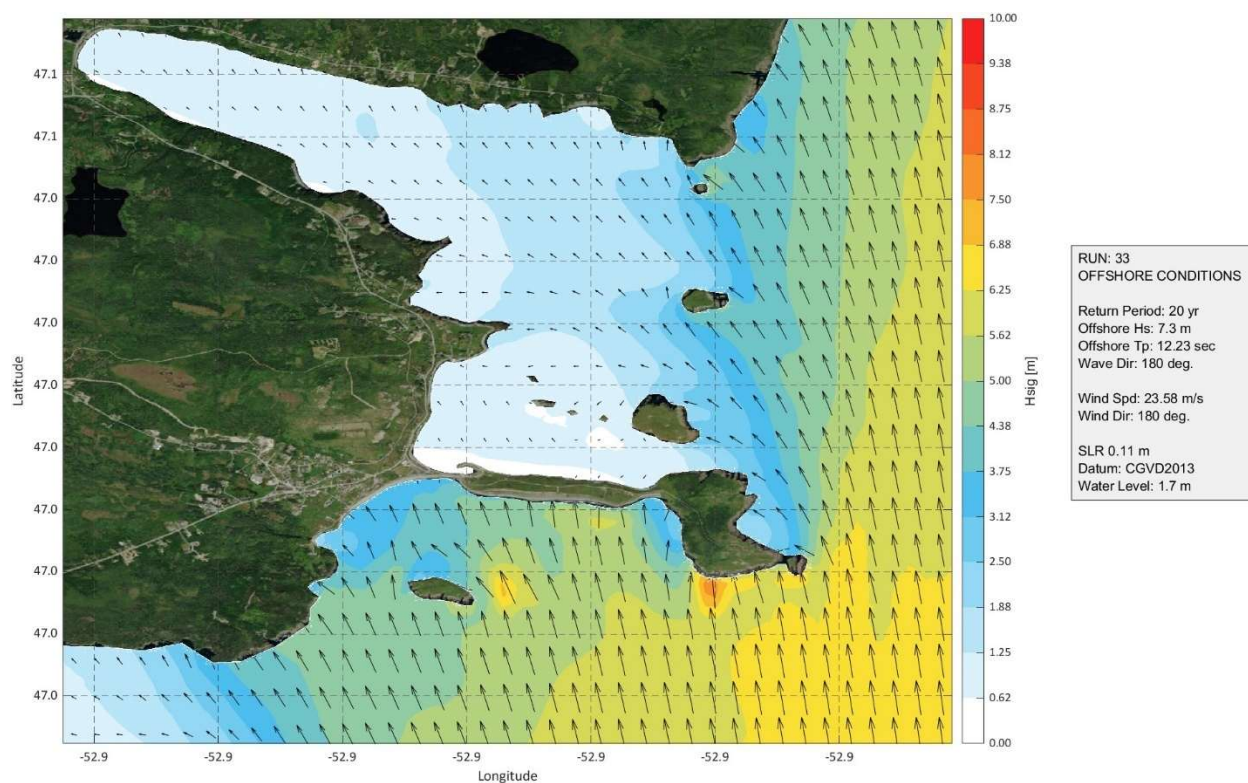


Figure 90: Ferryland – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 180°

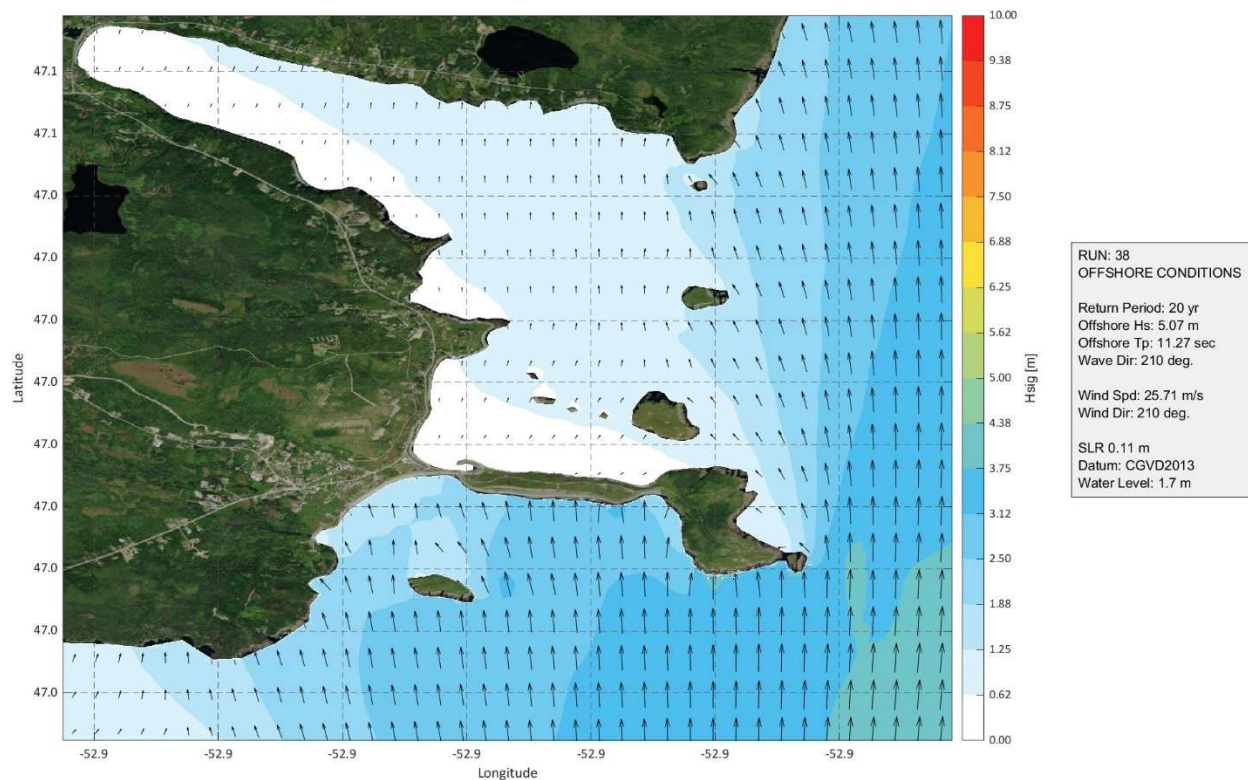


Figure 91: Ferryland – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 210°

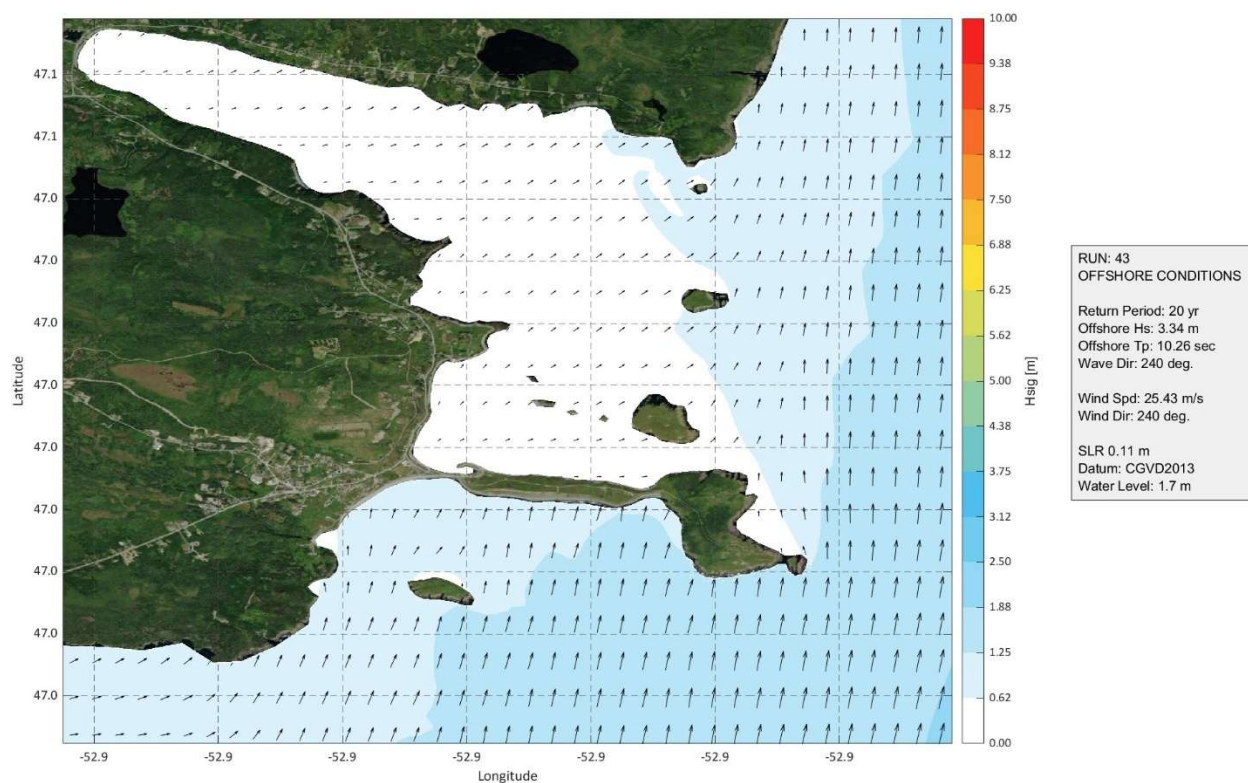


Figure 92: Ferryland – 20-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 240°

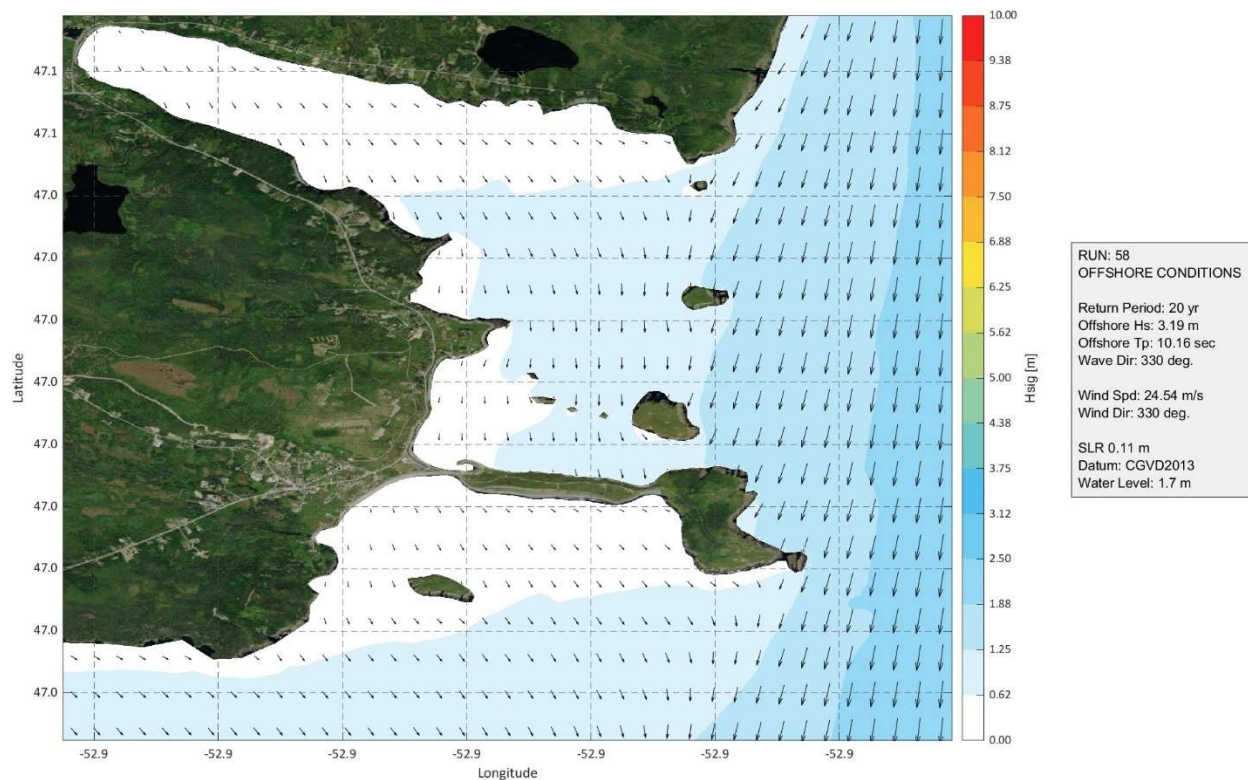


Figure 93: Ferryland – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 330°

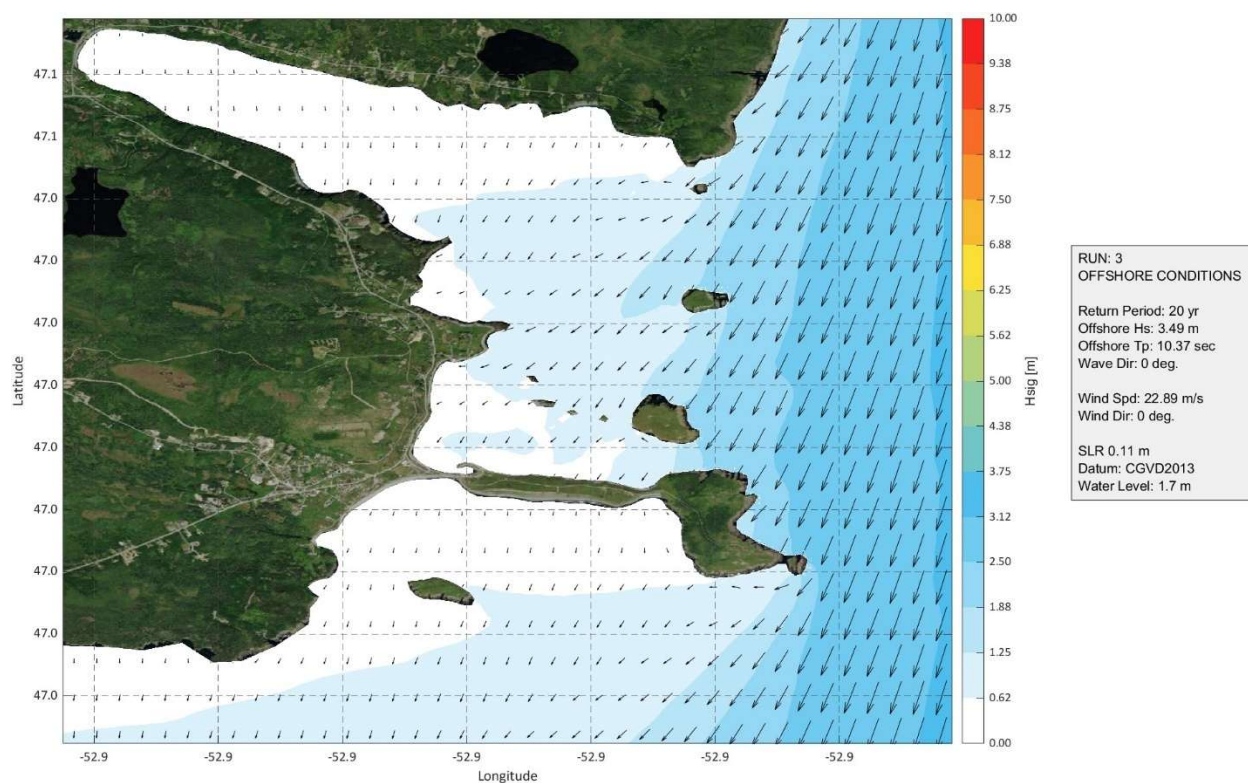


Figure 94: Ferryland – 20-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 360°

10. Ferryland – 100-yr Return Period Wave Conditions

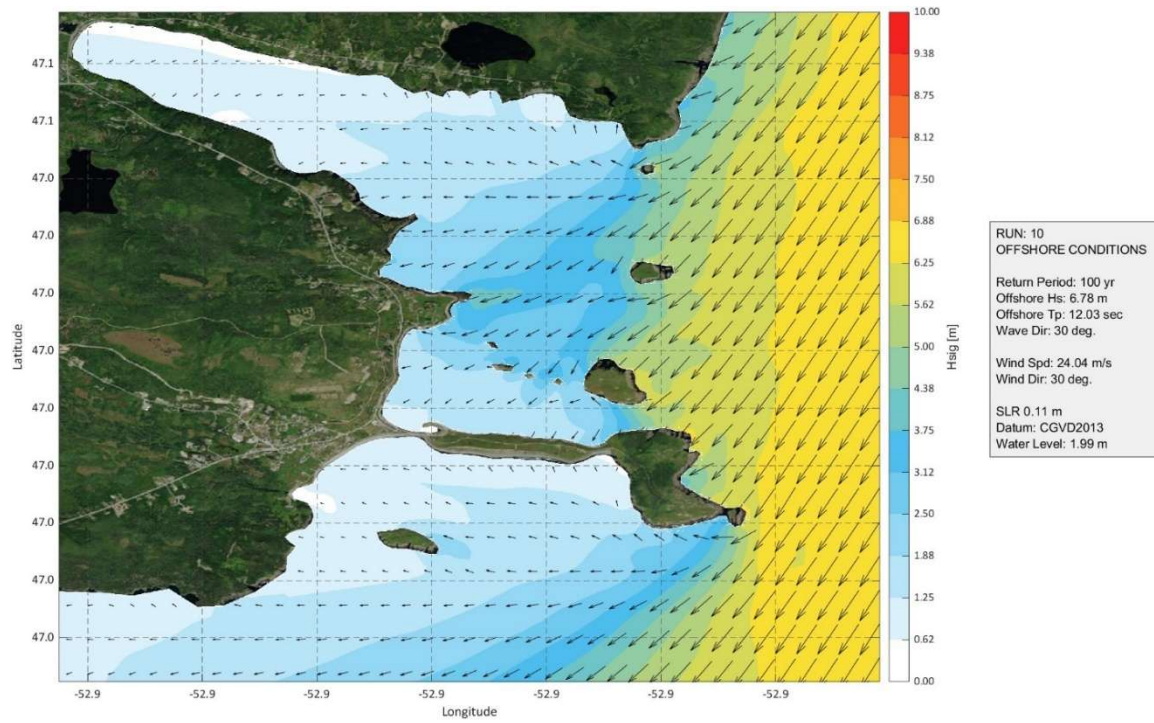


Figure 95: Ferryland – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 30°

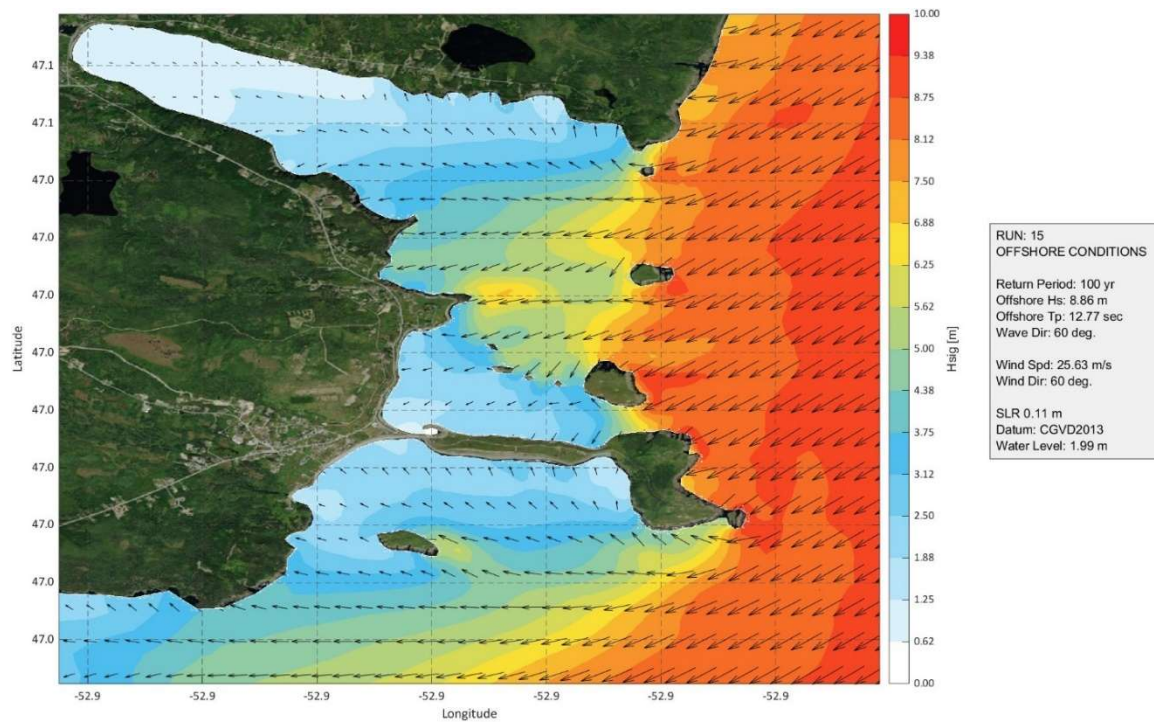


Figure 96: Ferryland – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 60°

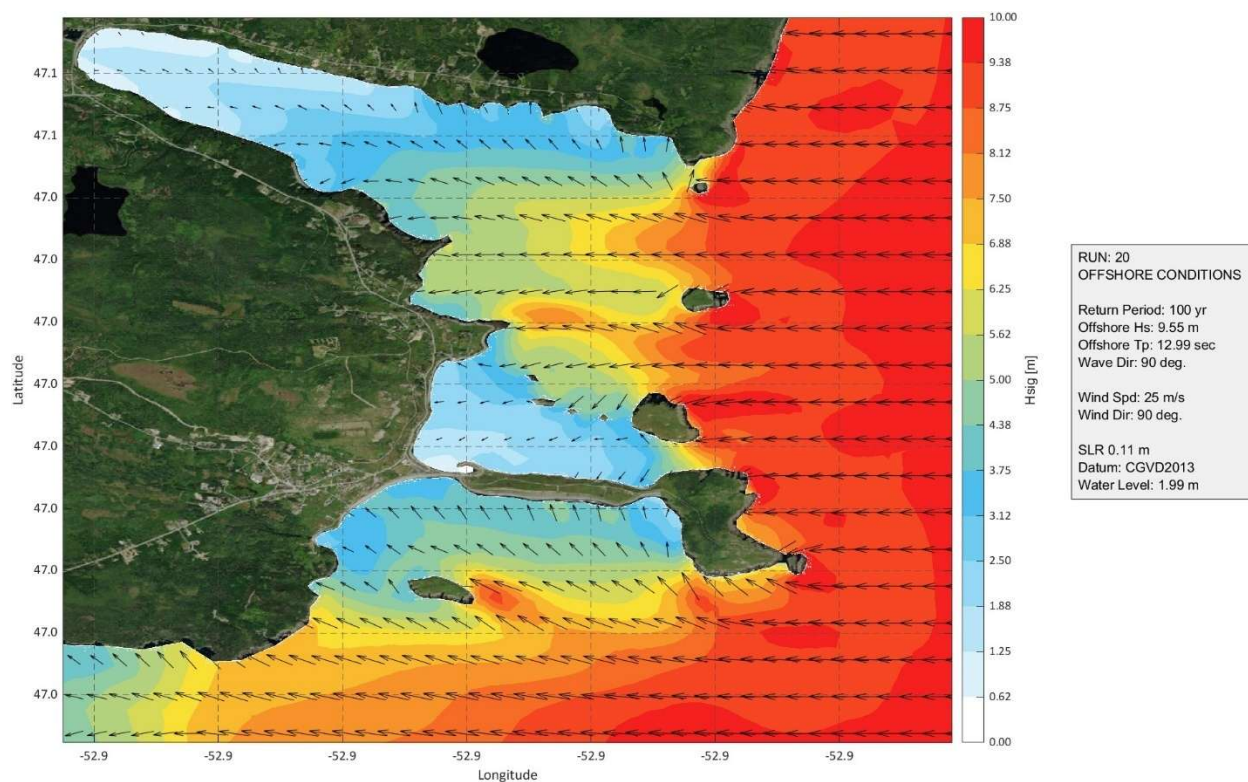


Figure 97: Ferryland – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 90°

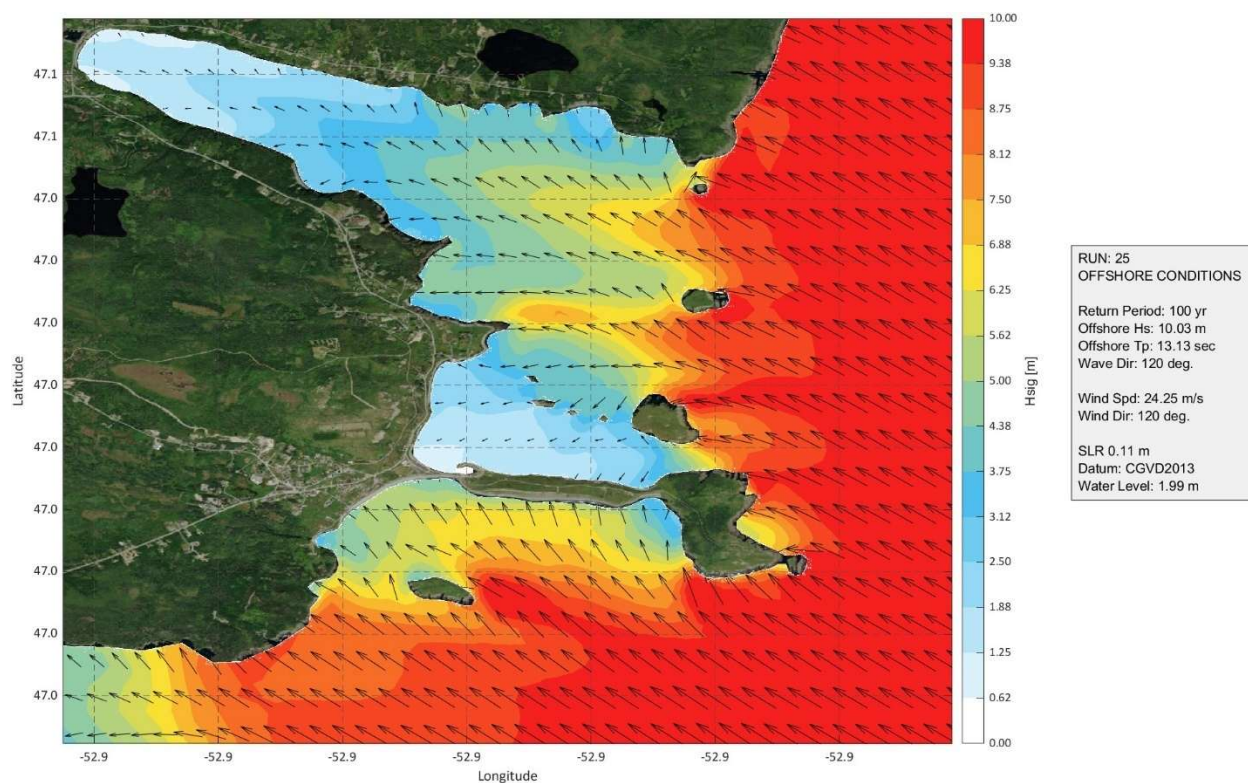


Figure 98: Ferryland – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 120°

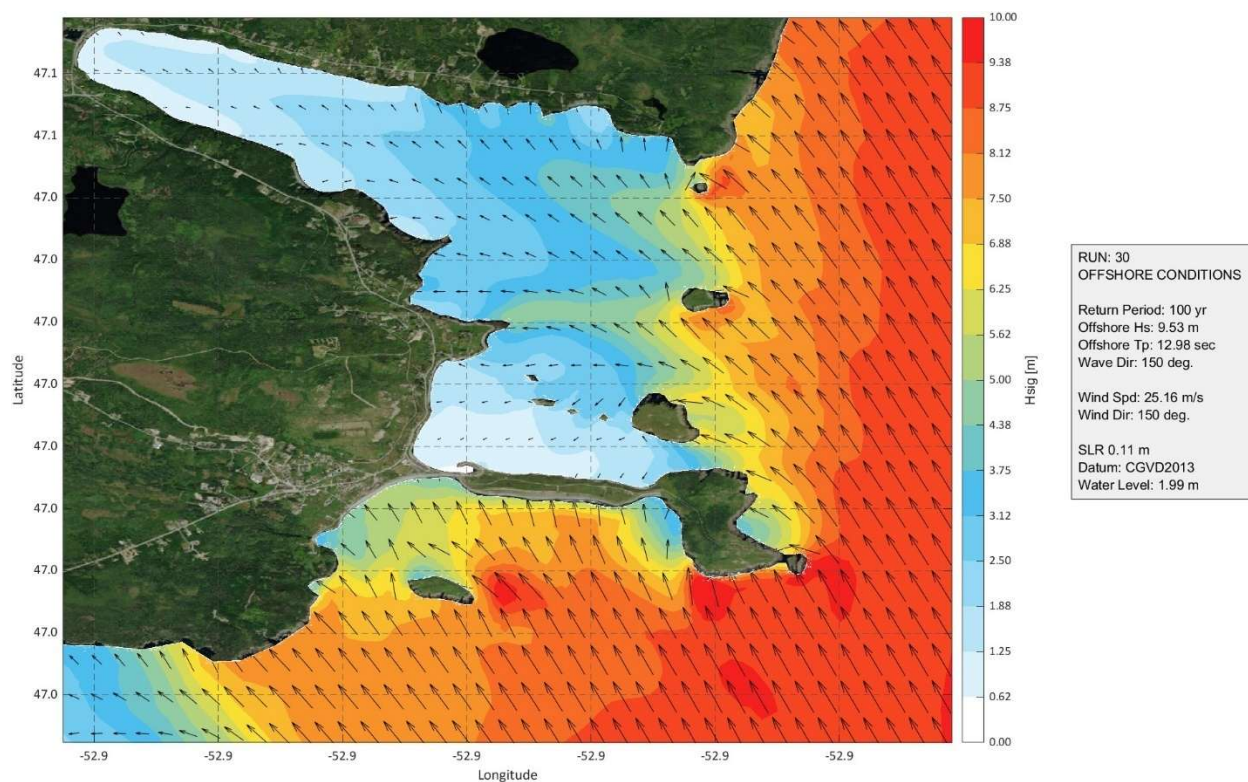


Figure 99: Ferryland – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 150°

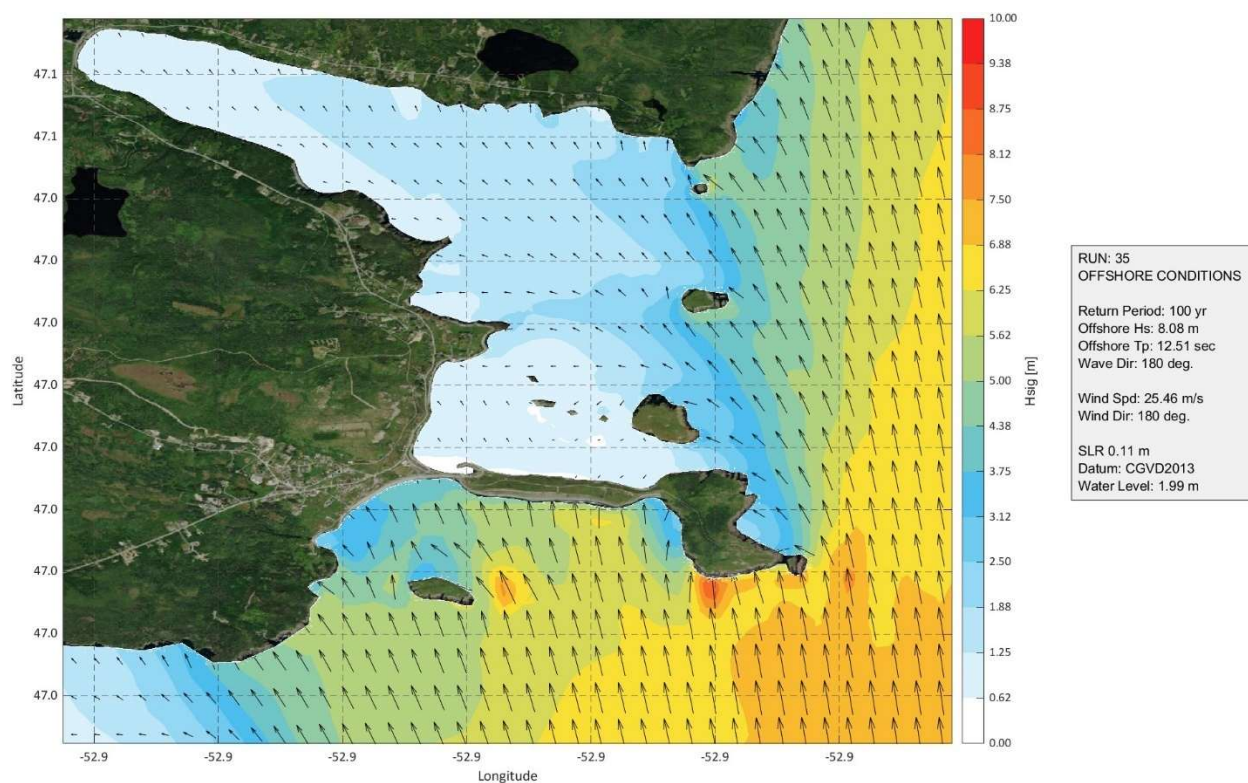


Figure 100: Ferryland – 100-yr Return Period Significant Wave Height (Hs, m) offshore waves & wind from 180°

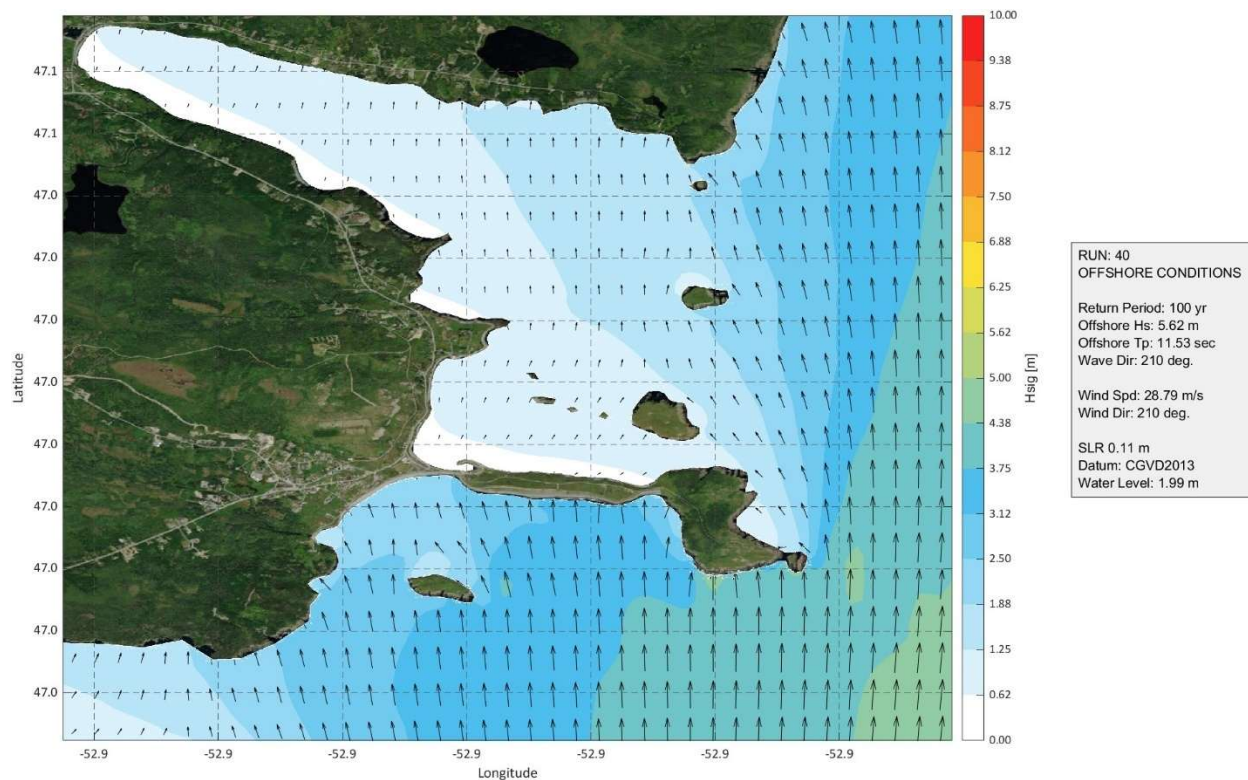


Figure 101: Ferryland – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 210°

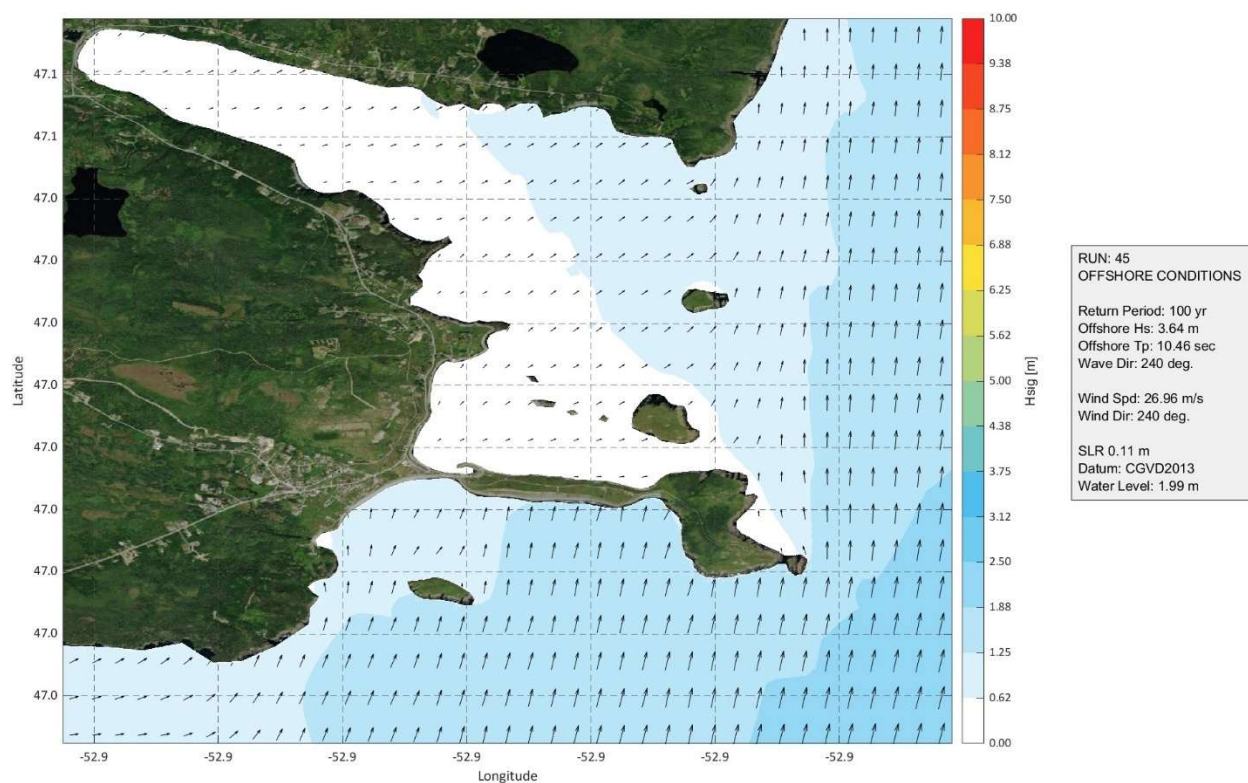


Figure 102: Ferryland – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 240°

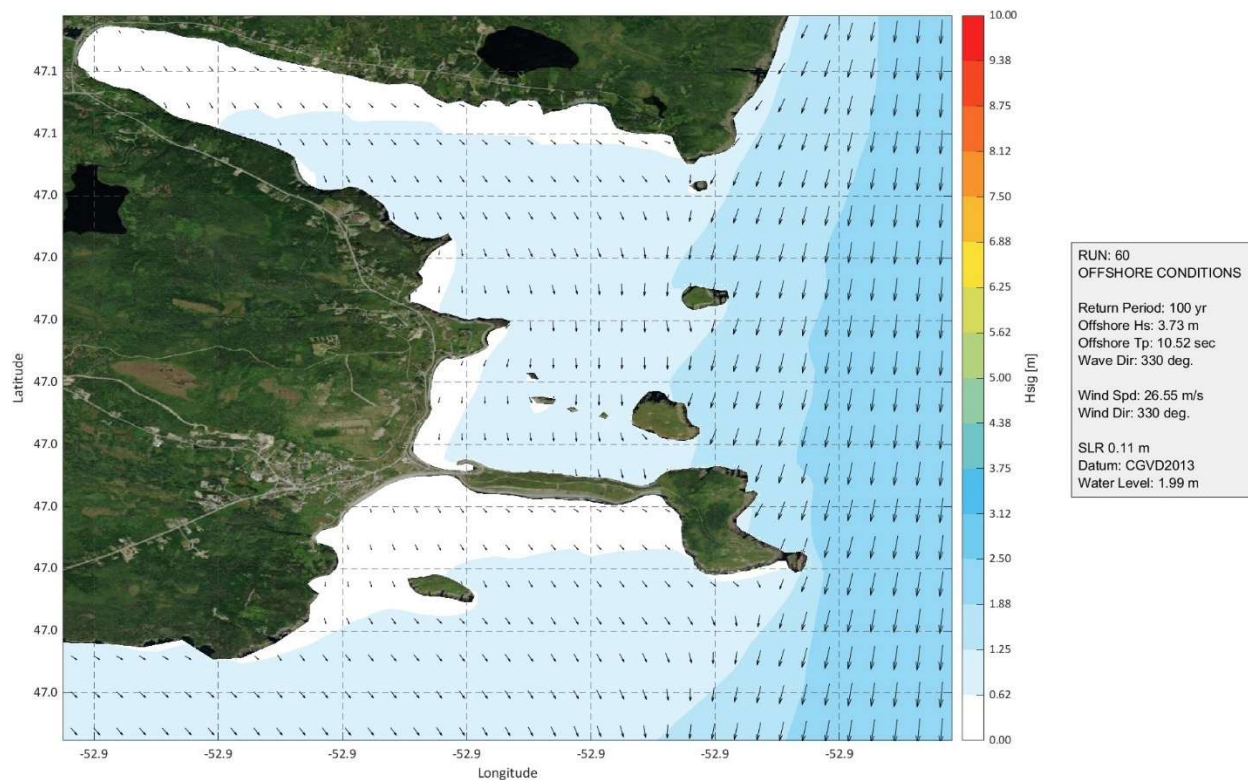


Figure 103: Ferryland – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 330°

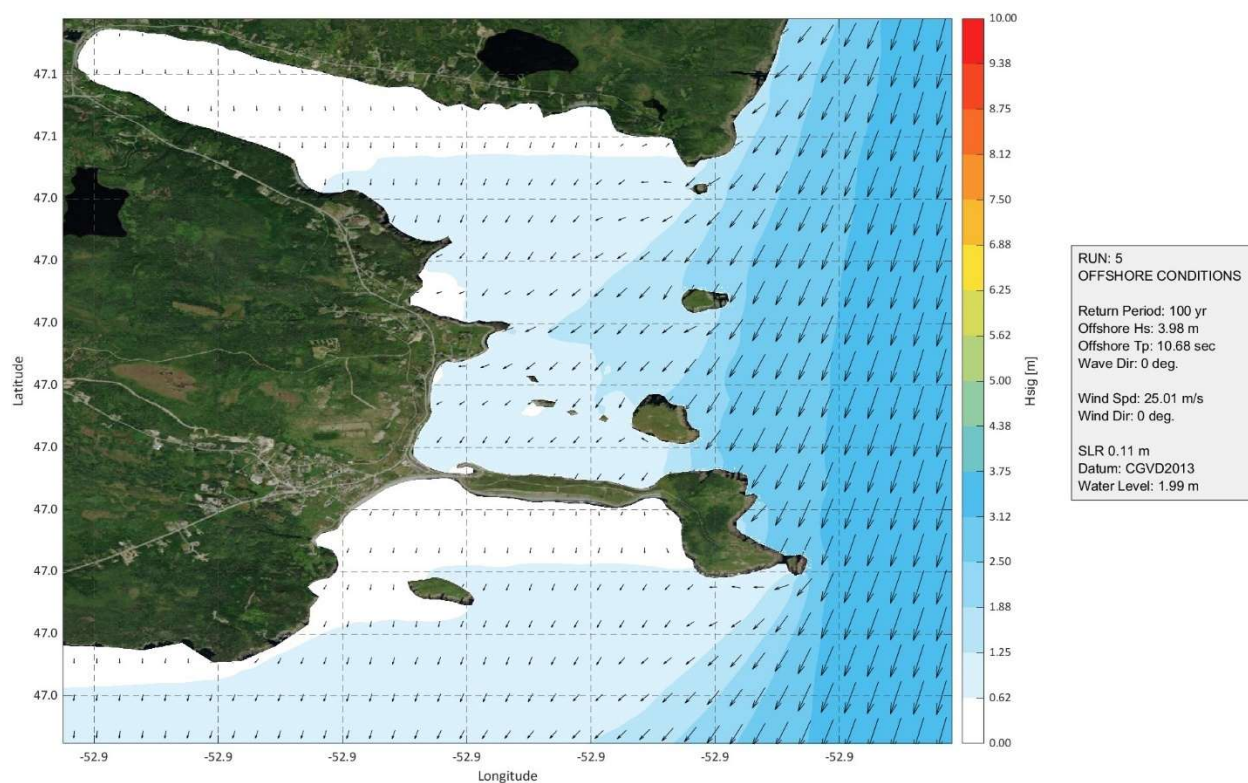


Figure 104: Ferryland – 100-yr Return Period Significant Wave Height (H_s , m) offshore waves & wind from 360°

River Reach	Station (m)	Water Level Difference (m)						Water Level Difference (m)					
		n - 30%	n - 20%	n - 10%	n + 10%	n + 20%	n + 30%	Q - 30%	Q - 20%	Q - 10%	Q + 10%	Q + 20%	Q + 30%
Lambes Brook	0	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.03	-0.02	0.02	0.05	0.08
	100	0.00	-0.01	0.00	0.00	0.00	0.01	-0.04	-0.03	-0.02	0.02	0.05	0.08
	200	-0.03	-0.03	-0.01	0.01	0.02	0.03	-0.07	-0.05	-0.03	0.03	0.06	0.09
	300	-0.08	-0.05	-0.02	0.02	0.04	0.06	-0.08	-0.05	-0.02	0.02	0.04	0.06
	400	-0.15	-0.11	-0.05	0.04	0.09	0.12	-0.17	-0.11	-0.05	0.05	0.09	0.13
	500	-0.16	-0.11	-0.05	0.05	0.09	0.13	-0.17	-0.11	-0.05	0.05	0.09	0.13
	600	-0.20	-0.14	-0.06	0.05	0.10	0.15	-0.22	-0.13	-0.06	0.05	0.10	0.15
	700	-0.12	-0.07	-0.03	0.03	0.07	0.10	-0.13	-0.07	-0.03	0.03	0.07	0.10
	800	-0.12	-0.07	-0.03	0.03	0.05	0.07	-0.12	-0.07	-0.03	0.03	0.05	0.07
	900	-0.13	-0.09	-0.04	0.03	0.06	0.09	-0.14	-0.09	-0.04	0.03	0.06	0.09
	1000	-0.13	-0.08	-0.04	0.03	0.06	0.09	-0.13	-0.08	-0.04	0.03	0.06	0.09
	1100	-0.12	-0.08	-0.04	0.03	0.06	0.09	-0.13	-0.08	-0.04	0.03	0.06	0.09
	1200	-0.17	-0.11	-0.05	0.04	0.08	0.12	-0.17	-0.11	-0.05	0.04	0.09	0.13
	1300	-0.17	-0.11	-0.05	0.05	0.09	0.13	-0.18	-0.11	-0.05	0.05	0.09	0.13
	1400	-0.25	-0.16	-0.07	0.07	0.13	0.18	-0.26	-0.16	-0.08	0.07	0.13	0.18
	1500	-0.25	-0.16	-0.07	0.07	0.13	0.18	-0.26	-0.16	-0.08	0.07	0.13	0.18
	1600	-0.25	-0.16	-0.07	0.07	0.12	0.18	-0.25	-0.16	-0.07	0.07	0.13	0.18
	1700	-0.09	-0.08	-0.04	0.02	0.06	0.09	-0.12	-0.10	-0.04	0.03	0.07	0.11
	1800	-0.08	-0.05	-0.03	0.02	0.04	0.06	-0.08	-0.05	-0.02	0.02	0.04	0.06
	1900	-0.10	-0.06	-0.03	0.03	0.05	0.07	-0.09	-0.06	-0.03	0.02	0.04	0.06
	2000	-0.19	-0.12	-0.06	0.05	0.09	0.12	-0.17	-0.10	-0.05	0.04	0.07	0.10
	2100	-0.13	-0.09	-0.04	0.04	0.07	0.10	-0.14	-0.09	-0.05	0.04	0.07	0.11
	2200	-0.08	-0.05	-0.02	0.02	0.05	0.08	-0.12	-0.07	-0.03	0.04	0.07	0.10
	2300	-0.05	-0.05	-0.02	0.01	0.03	0.04	-0.19	-0.12	-0.05	0.05	0.09	0.15
	2400	-0.06	-0.06	-0.02	0.02	0.03	0.05	-0.20	-0.12	-0.05	0.05	0.10	0.15
	2500	-0.06	-0.06	-0.02	0.02	0.03	0.05	-0.20	-0.12	-0.05	0.05	0.10	0.15
	2600	-0.06	-0.06	-0.02	0.02	0.03	0.05	-0.20	-0.12	-0.06	0.05	0.10	0.15
	2700	-0.06	-0.06	-0.02	0.02	0.03	0.05	-0.20	-0.12	-0.06	0.05	0.10	0.15
	2800	-0.06	-0.06	-0.02	0.02	0.04	0.05	-0.20	-0.12	-0.06	0.05	0.10	0.15
	2900	-0.07	-0.06	-0.02	0.02	0.04	0.05	-0.20	-0.12	-0.06	0.05	0.10	0.15
	3000	-0.09	-0.09	-0.03	0.03	0.05	0.08	-0.19	-0.12	-0.06	0.05	0.10	0.15
	3100	-0.14	-0.13	-0.04	0.04	0.08	0.12	-0.18	-0.12	-0.05	0.05	0.10	0.15
	3200	-0.11	-0.11	-0.04	0.04	0.07	0.10	-0.12	-0.07	-0.04	0.04	0.07	0.10
	3300	-0.07	-0.06	-0.02	0.02	0.04	0.05	-0.07	-0.04	-0.02	0.02	0.04	0.05
	3400	-0.14	-0.12	-0.04	0.04	0.07	0.10	-0.14	-0.09	-0.04	0.04	0.07	0.10
	3500	-0.16	-0.14	-0.05	0.04	0.08	0.11	-0.09	-0.05	-0.03	0.03	0.05	0.07
	3600	-0.05	-0.03	-0.02	0.01	0.03	0.05	-0.23	-0.13	-0.06	0.05	0.09	0.13
	3700	-0.16	-0.10	-0.05	0.04	0.08	0.12	-0.14	-0.09	-0.04	0.04	0.08	0.11
	3800	-0.06	-0.04	-0.02	0.02	0.03	0.05	-0.11	-0.07	-0.03	0.03	0.06	0.08
	3900	-0.11	-0.07	-0.03	0.03	0.06	0.09	-0.11	-0.07	-0.03	0.03	0.06	0.09
	4000	-0.13	-0.08	-0.04	0.04	0.07	0.10	-0.13	-0.08	-0.04	0.04	0.07	0.10
	4100	-0.14	-0.09	-0.04	0.04	0.08	0.12	-0.14	-0.09	-0.04	0.04	0.08	0.12
	4200	-0.11	-0.07	-0.03	0.03	0.06	0.09	-0.11	-0.07	-0.03	0.03	0.06	0.09
	4300	-0.18	-0.12	-0.06	0.05	0.09	0.13	-0.16	-0.10	-0.06	0.04	0.08	0.12
	4400	-0.15	-0.09	-0.04	0.04	0.08	0.11	-0.16	-0.09	-0.04	0.04	0.08	0.12
	4500	-0.10	-0.07	-0.03	0.03	0.06	0.09	-0.10	-0.07	-0.03	0.03	0.06	0.09
Brigus North Brook	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	200	0.00	-0.01	0.00	0.00	0.00	0.00	-0.04	-0.03	-0.02	0.02	0.04	0.07
	300	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.03	-0.02	0.02	0.05	0.08
	400	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.03	-0.02	0.02	0.05	0.08
	500	0.00	-0.01	0.00	0.00	0.00	0.00	-0.04	-0.03	-0.02	0.02	0.05	0.08
	600	-0.03	-0.02	-0.01	0.01	0.02	0.03	-0.07	-0.05	-0.03	0.03	0.06	0.09
	700	-0.06	-0.05	-0.03	0.02	0.04	0.06	-0.11	-0.07	-0.04	0.04	0.07	0.10
	800	-0.18	-0.13	-0.08	0.03	0.06	0.09	-0.14	-0.11	-0.08	0.03	0.05	0.09
	900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1000	-0.16	-0.11	-0.05	0.05	0.09	0.13	-0.16	-0.10	-0.05	0.05	0.09	0.12
	1100	-0.14	-0.09	-0.04	0.04	0.07	0.10	-0.14	-0.08	-0.04	0.04	0.07	0.10
	1200	-0.12	-0.08	-0.04	0.04	0.07	0.11	-0.12	-0.08	-0.04	0.04	0.07	0.11
	1300	-0.12	-0.08	-0.04	0.04	0.07	0.11	-0.12	-0.08	-0.04	0.04	0.08	0.11
	1400	-0.11	-0.07	-0.03	0.03	0.06	0.09	-0.11	-0.07	-0.03	0.02	0.02	0.03
	1500	0.00	0.00	0.00	0.00	0.00	0.00	-1.68	-1.16	-0.66	0.43	0.55	0.62
	1600	-0.07	-0.05	-0.02	0.02	0.04	0.06	-0.07	-0.04	-0.02	0.02	0.04	0.07
	1700	0.00	0.00	0.00	0.00	0.00	0.00	-0.22	-0.04	-0.02	0.02	0.03	0.04
	1800	-0.16	-0.06	-0.03	0.03	0.05	0.08	-0.16	-0.06	-0.03	0.03	0.05	0.08
	1900	-0.11	-0.07	-0.04	0.03	0.07	0.10	-0.11	-0.07	-0.04	0.03	0.06	0.10
	2000	-0.08	-0.05	-0.03	0.02	0.05	0.07	-0.08	-0.05	-0.03	0.02	0.05	0.07
	2100	-0.11	-0.07	-0.03	0.03	0.06	0.08	-0.11	-0.07	-0.04	0.03	0.06	0.08
	2200	-0.09	-0.06	-0.03	0.02	0.05	0.07	-0.09	-0.06	-0.03	0.03	0.05	0.07
	2300	-0.10	-0.06	-0.03	0.03	0.05	0.08	-0.09	-0.06	-0.03	0.03	0.05	0.08
	2400	-0.07	-0.04	-0.02	0.02	0.04	0.06	-0.07	-0.04	-0.02	0.02	0.04	0.06
	2500	-0.07	-0.04	-0.02	0.02	0.04	0.06	-0.07	-0.04	-0.02	0.02	0.04	0.06
	2600	-0.08	-0.05	-0.02	0.02	0.04	0.06	-0.08	-0.05	-0.02	0.02	0.04	0.06
	2700	-0.10	-0.06	-0.03	0.03	0.05	0.07	-0.09	-0.06	-0.03	0.03	0.05	0.07

River Reach	Station (m)	Water Level Difference (m)						Water Level Difference (m)					
		n - 30%	n - 20%	n - 10%	n + 10%	n + 20%	n + 30%	Q - 30%	Q - 20%	Q - 10%	Q + 10%	Q + 20%	Q + 30%
	2800	-0.07	-0.04	-0.02	0.02	0.03	0.05	-0.07	-0.04	-0.02	0.02	0.03	0.05
	2900	-0.05	-0.03	-0.01	0.01	0.03	0.04	-0.04	-0.02	-0.01	0.02	0.03	0.04
	3000	-0.07	-0.04	-0.02	0.02	0.04	0.05	-0.07	-0.04	-0.02	0.02	0.03	0.05
	3100	-0.14	-0.10	-0.04	0.04	0.07	0.10	-0.13	-0.09	-0.05	0.04	0.06	0.10
	3200	-0.07	-0.05	-0.02	0.02	0.04	0.06	-0.08	-0.05	-0.02	0.02	0.04	0.06
Apses Brook	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100	-0.04	-0.02	-0.01	0.01	0.02	0.02	-0.01	-0.01	0.00	0.00	0.01	0.01
	200	-0.06	-0.04	-0.02	0.02	0.04	0.06	-0.05	-0.04	-0.02	0.02	0.04	0.05
	300	-0.02	-0.03	-0.01	0.02	0.03	0.05	-0.18	-0.14	-0.07	0.07	0.14	0.17
	400	-0.01	-0.01	0.00	0.00	0.01	0.01	-0.03	-0.02	-0.01	0.01	0.02	0.03
	500	-0.02	-0.01	-0.01	0.01	0.01	0.02	-0.06	-0.04	-0.02	0.02	0.03	0.04
	600	-0.02	-0.01	-0.01	0.01	0.01	0.02	-0.06	-0.04	-0.02	0.02	0.04	0.04
	700	-0.07	-0.04	-0.02	0.02	0.04	0.05	-0.06	-0.05	-0.02	0.02	0.04	0.05
	800	-0.06	-0.04	-0.02	0.02	0.04	0.05	-0.06	-0.05	-0.02	0.02	0.04	0.05
	900	-0.06	-0.04	-0.02	0.02	0.03	0.05	-0.05	-0.04	-0.02	0.02	0.04	0.05
	1000	-0.05	-0.03	-0.02	0.01	0.02	0.04	-0.04	-0.03	-0.02	0.01	0.03	0.04
	1100	-0.07	-0.04	-0.02	0.02	0.04	0.05	-0.06	-0.05	-0.02	0.02	0.04	0.05
	1200	-0.05	-0.03	-0.02	0.02	0.03	0.05	-0.05	-0.04	-0.02	0.02	0.03	0.04
	1300	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	-0.04	-0.02	0.01	0.03	0.04
	1400	-0.04	-0.03	-0.01	0.01	0.03	0.04	-0.04	-0.03	-0.02	0.02	0.03	0.04
	1500	-0.05	-0.03	-0.01	0.01	0.02	0.04	-0.04	-0.03	-0.02	0.01	0.03	0.03
	1600	-0.03	-0.02	-0.01	0.01	0.02	0.03	-0.03	-0.02	-0.01	0.01	0.02	0.02
	1700	-0.04	-0.03	-0.01	0.01	0.02	0.03	-0.04	-0.03	-0.01	0.01	0.03	0.03
Local Creek 1	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100	-0.05	-0.03	-0.02	0.01	0.03	0.04	-0.09	-0.06	-0.03	0.03	0.05	0.07
	200	-0.05	-0.03	-0.02	0.02	0.03	0.05	-0.09	-0.06	-0.03	0.03	0.05	0.08
	300	-0.09	-0.06	-0.03	0.03	0.05	0.08	-0.08	-0.05	-0.03	0.03	0.05	0.08
	400	-0.09	-0.05	-0.03	0.03	0.05	0.07	-0.08	-0.05	-0.03	0.03	0.04	0.07
	500	-0.08	-0.05	-0.03	0.03	0.06	0.08	-0.11	-0.07	-0.04	0.03	0.06	0.09
	600	-0.06	-0.04	-0.02	0.02	0.03	0.05	-0.06	-0.04	-0.02	0.02	0.03	0.05
	700	0.00	0.00	0.00	0.00	0.00	0.00	-0.11	-0.06	-0.02	0.04	0.06	0.09
	800	-0.08	-0.05	-0.02	0.02	0.05	0.07	-0.08	-0.05	-0.03	0.02	0.05	0.07
	900	-0.06	-0.05	-0.02	0.03	0.05	0.07	-0.08	-0.05	-0.03	0.03	0.05	0.07
	1000	-0.05	-0.03	-0.01	0.02	0.03	0.04	-0.05	-0.03	-0.02	0.02	0.03	0.04
	1100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1200	-0.07	-0.04	-0.02	0.02	0.04	0.06	-0.07	-0.04	-0.02	0.02	0.04	0.06
	1300	-0.06	-0.04	-0.02	0.02	0.03	0.05	-0.06	-0.04	-0.02	0.02	0.03	0.05
	1400	-0.06	-0.04	-0.02	0.02	0.03	0.05	-0.06	-0.04	-0.02	0.02	0.03	0.05
Local Creek 2	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100	-0.07	-0.05	-0.02	0.02	0.04	0.06	-0.07	-0.05	-0.02	0.02	0.04	0.06
	200	-0.06	-0.04	-0.02	0.02	0.04	0.05	-0.06	-0.04	-0.02	0.02	0.04	0.05
	300	-0.05	-0.04	-0.02	0.02	0.03	0.04	-0.05	-0.04	-0.01	0.01	0.03	0.04
	400	-0.06	-0.04	-0.02	0.02	0.04	0.06	-0.06	-0.04	-0.02	0.02	0.04	0.05
	500	-0.06	-0.04	-0.01	0.02	0.04	0.05	-0.06	-0.04	-0.02	0.01	0.03	0.06
	600	-0.03	-0.02	0.00	0.03	0.04	0.05	-0.05	-0.03	-0.01	0.01	0.04	0.05
	700	0.47	0.22	0.43	0.45	0.05	0.59	0.13		0.42	0.01	0.53	0.53
	800	-0.05	-0.04	0.05	0.10	0.04	0.15	-0.06	-0.05	0.07	0.02	0.02	0.17
	900	-0.06	-0.04	-0.02	0.02	0.04	0.05	-0.06	-0.04	-0.02	0.02	0.04	0.05
	1000	-0.07	-0.05	-0.02	0.02	0.04	0.06	-0.07	-0.05	-0.02	0.02	0.04	0.06
	1100	-0.04	-0.02	-0.01	0.01	0.03	0.04	-0.04	-0.03	-0.03	0.00	0.04	0.05
	1200	-0.06	-0.04	-0.02	0.02	0.03	0.05	-0.06	-0.04	-0.02	0.01	0.03	0.05
Local Creek 3	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100	-0.02	-0.01	0.00	0.01	0.01	0.01	-0.03	-0.02	-0.01	0.01	0.02	0.03
	200	-0.02	-0.01	-0.01	0.00	0.01	0.02	-0.03	-0.02	-0.01	0.01	0.02	0.03
	300	-0.05	-0.03	-0.01	0.01	0.02	0.04	-0.05	-0.03	-0.02	0.01	0.03	0.05
	400	-0.03	-0.04	-0.03	0.02	0.04	0.06	-0.08	-0.04	-0.02	0.02	0.04	0.07
	500	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	-0.06	-0.01	0.02	0.04	0.07
	600	0.00	0.00	0.00	0.00	0.00	0.00	-0.08	0.11	0.01	-0.11	0.07	-0.09
	700	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	-0.04	-0.02	0.02	0.03	0.05
	800	-0.06	-0.04	-0.02	0.02	0.04	0.05	-0.07	-0.04	-0.02	0.02	0.04	0.06
	900	-0.06	-0.04	-0.02	0.02	0.03	0.05	-0.06	-0.03	-0.02	0.02	0.03	0.05