

## VNE 544 ECR1 Midpoint - November

Latitude: 40.40 N Longitude: 73.39 W

### Weather Days

Wave Height > 4.0 ft Mean: 11.1 days Range: 8.0 - 14.1 days p50:12 days p75:11 days p90:8 days

Wave Height > 5.0 ft Mean: 6.7 days Range: 4.1 - 9.2 days p50:7.5 days p75:5.5 days p90:4.5 days

Wave Height > 6.0 ft Mean: 4.1 days Range: 2.0 - 6.2 days p50:4.5 days p75:3 days p90:2 days

Wind Speed > 20.0 knots Mean: 6.3 days Range: 4.2 - 8.5 days p50:7 days p75:5 days p90:4 days

Wind Speed > 25.0 knots Mean: 2.1 days Range: 0.9 - 3.2 days p50:2.5 days p75:1.5 days p90:1 days

Wind Speed > 30.0 knots Mean: 0.5 days Range: 0.0 - 1.1 days p50:0.5 days p75:0.5 days p90:0.5 days

### Working Window Probability

Wave Height < 4.0 ft                    3 days or longer: 42%  
   5 days or longer: 9%  
   7 days or longer: 3%

Wave Height < 5.0 ft                    3 days or longer: 60%  
   5 days or longer: 23%  
   7 days or longer: 11%

Wave Height < 6.0 ft                    3 days or longer: 71%  
   5 days or longer: 42%  
   7 days or longer: 25%

### Waves

Mean Height: 2 - 4 ft

The wave heights will occasionally reach 12 - 14 ft, but rarely higher.

Mean Period: 6 - 8 sec

The wave periods will occasionally reach 14 - 16 sec, but rarely longer.

Principle Direction, from: ESE

WindSea/Swell: 36% / 64%

### Winds

Mean Speed: 10 - 15 kts

The winds will occasionally reach 30 - 35 kts, but rarely greater.

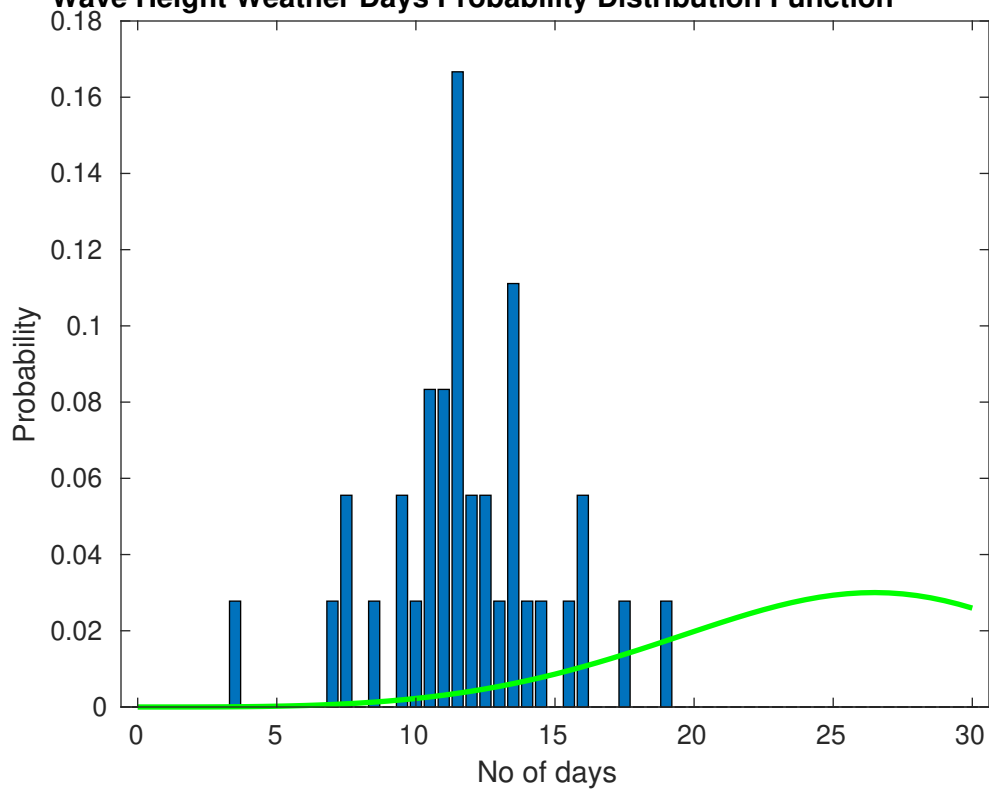
Principle Direction, from: WNW

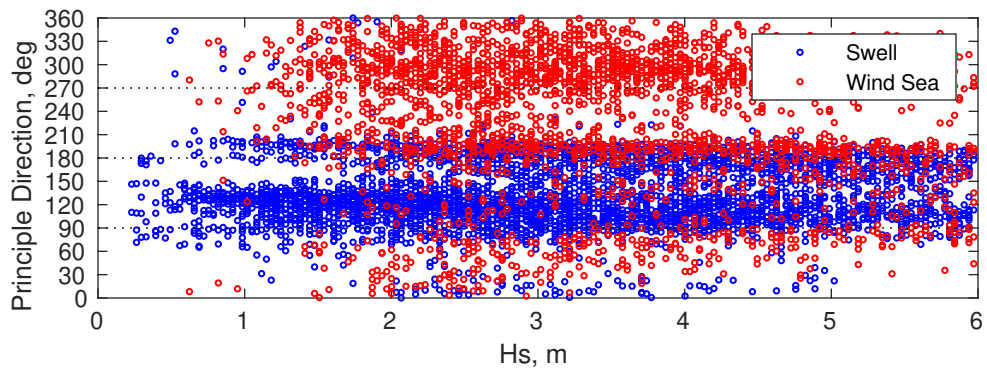
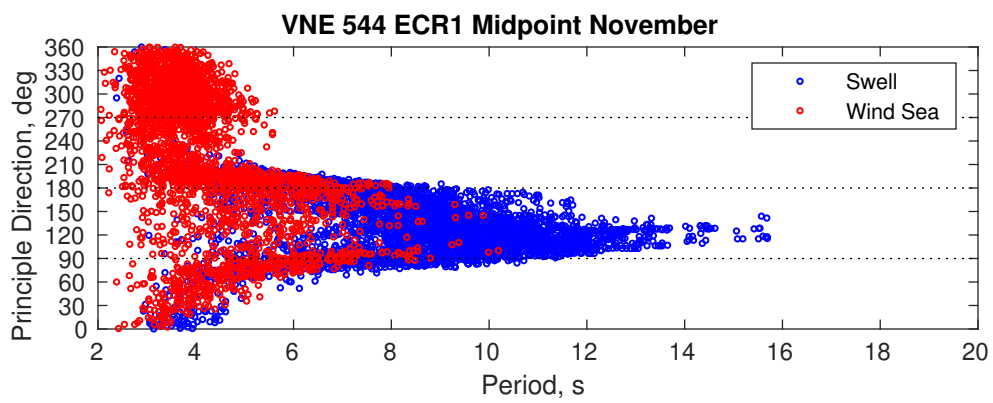
### Severe Storms

There is a 14 % chance of a storm occurring in the month with winds peaking above 34 kts.

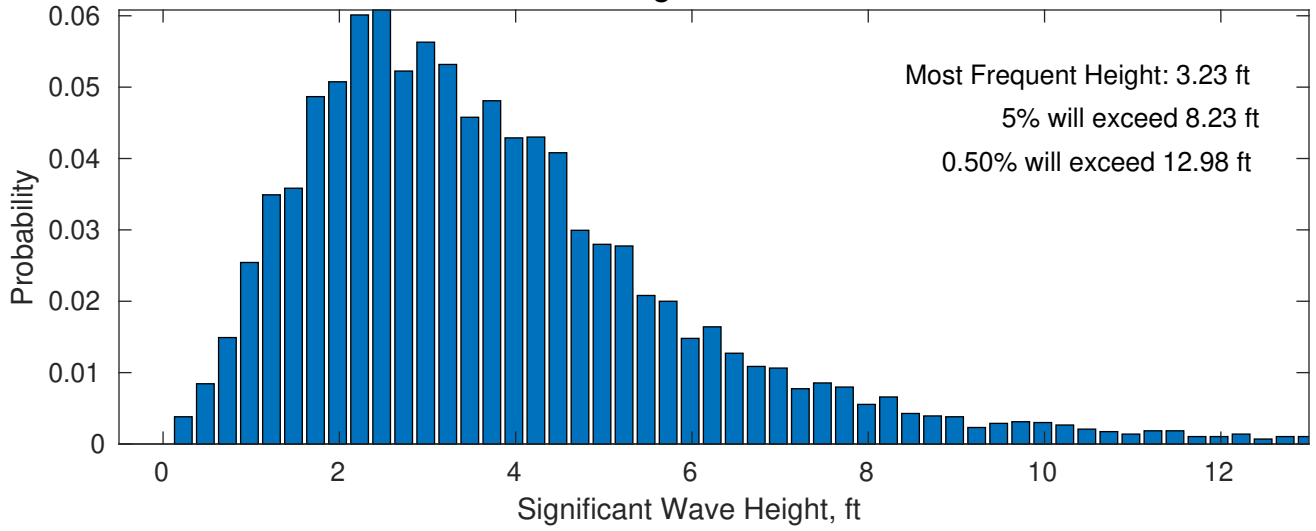
There is a 17 % chance of a storm occurring in the month with waves peaking at 4m (13 ft) or greater.

**Wave Height Weather Days Probability Distribution Function**

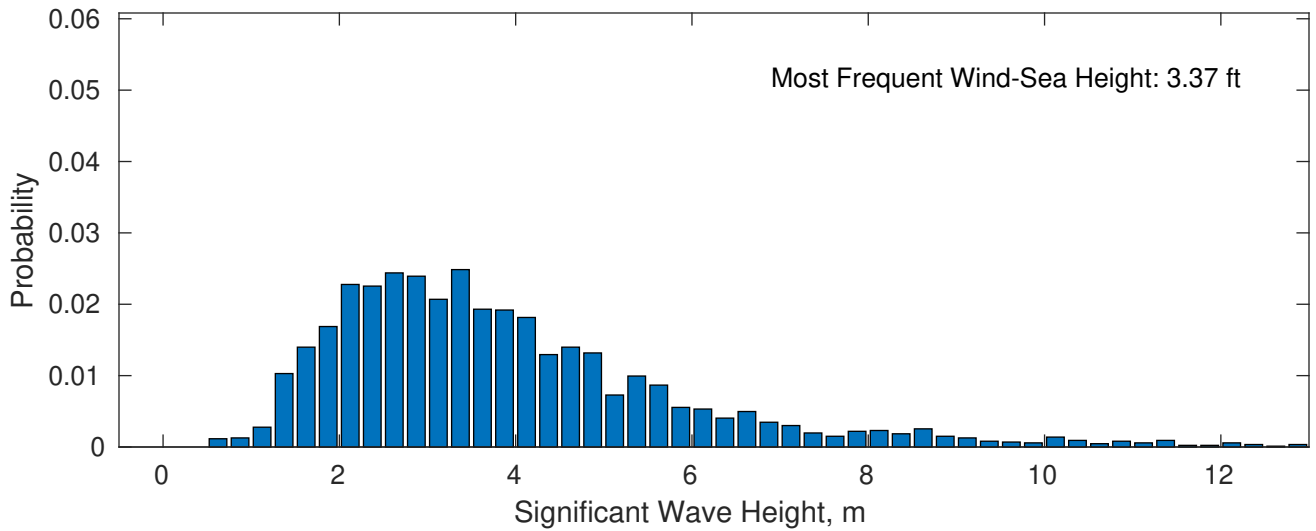




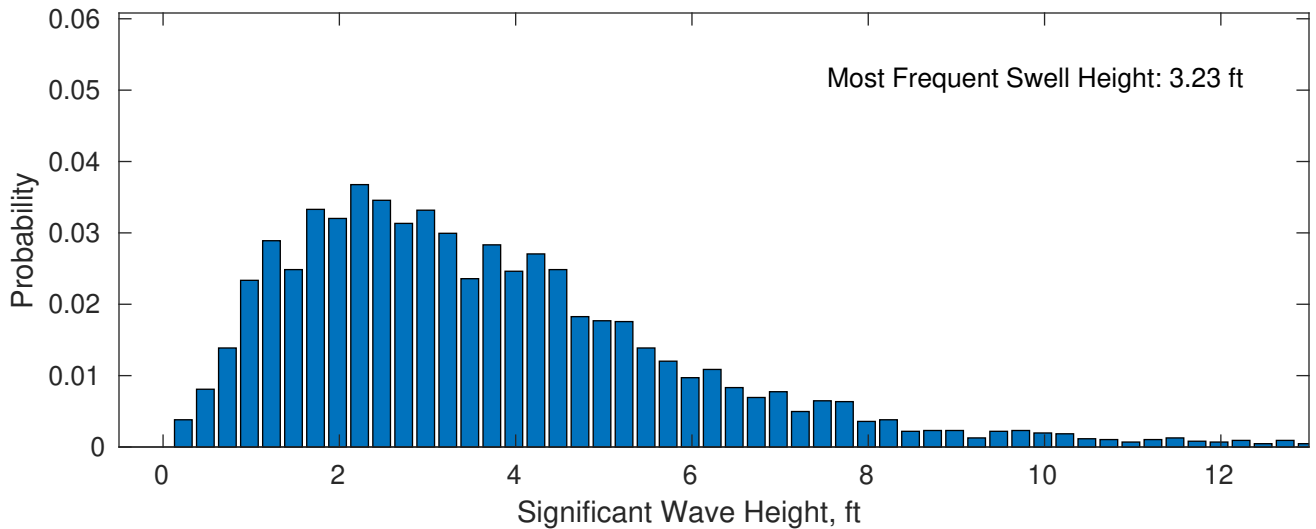
**November Wave Height PDF: 1979 - 2015**



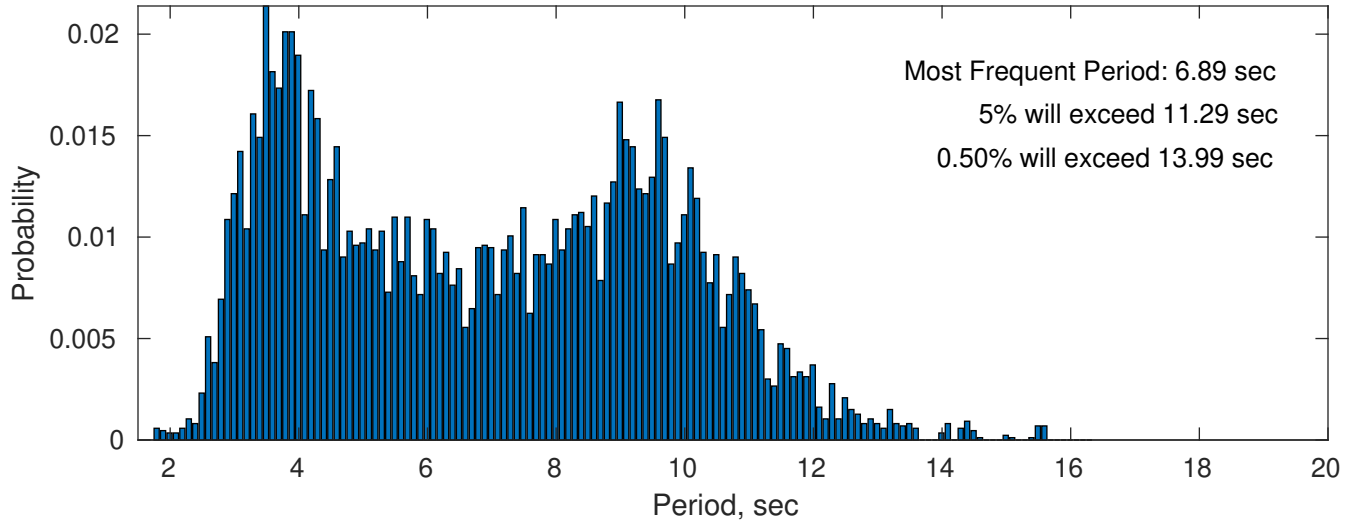
**Wind-Sea: 36.10%**



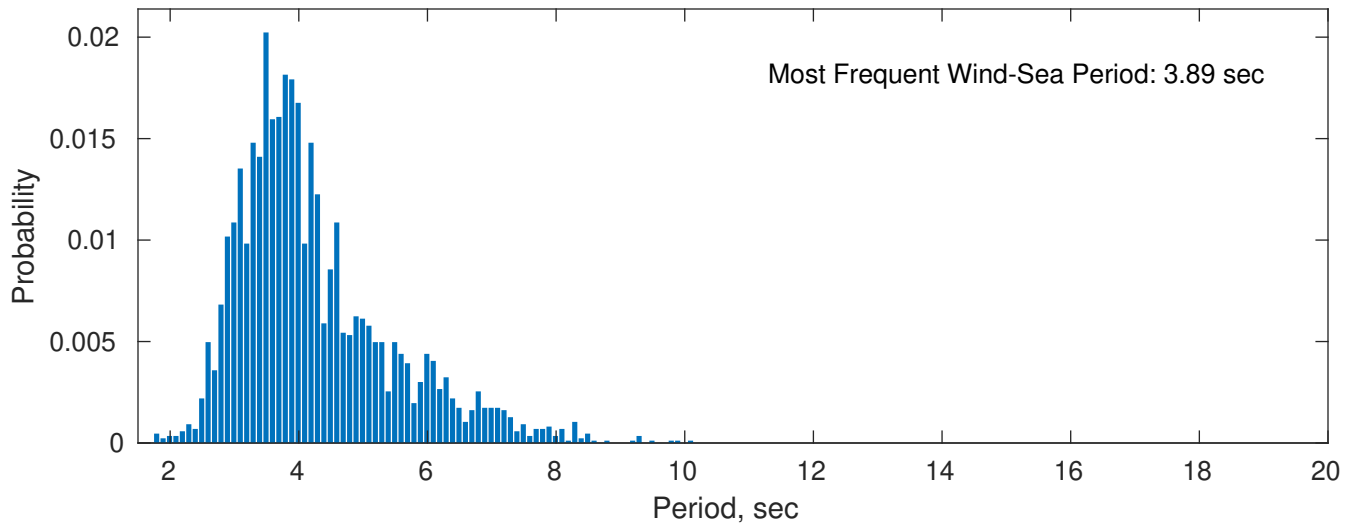
**Swell: 63.90%**



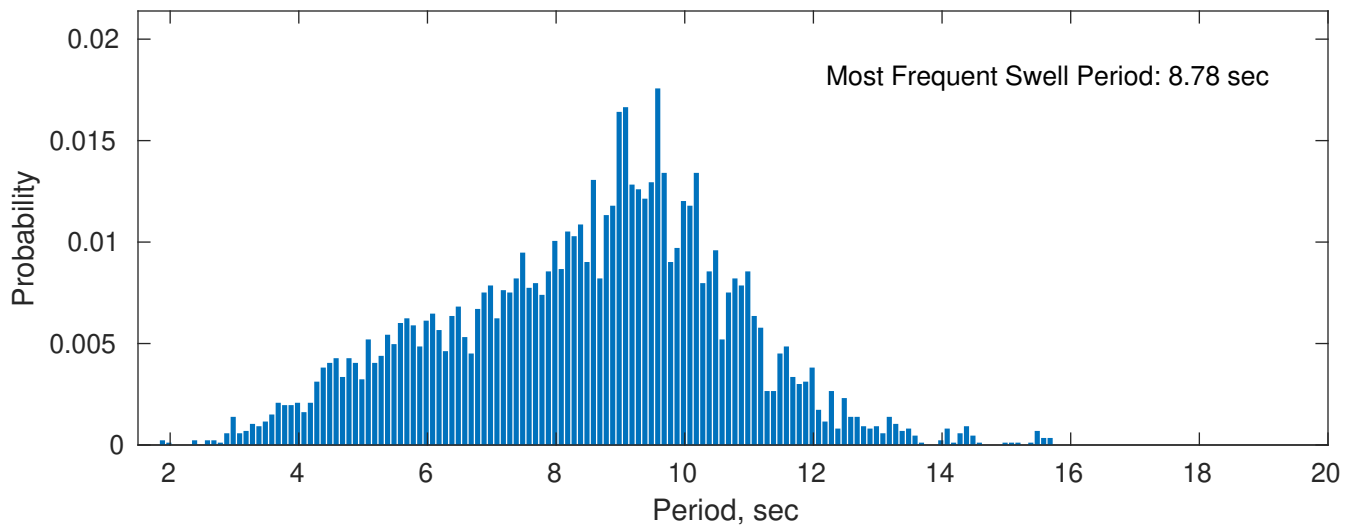
### November Peak Wave Period PDF: 1979 - 2015



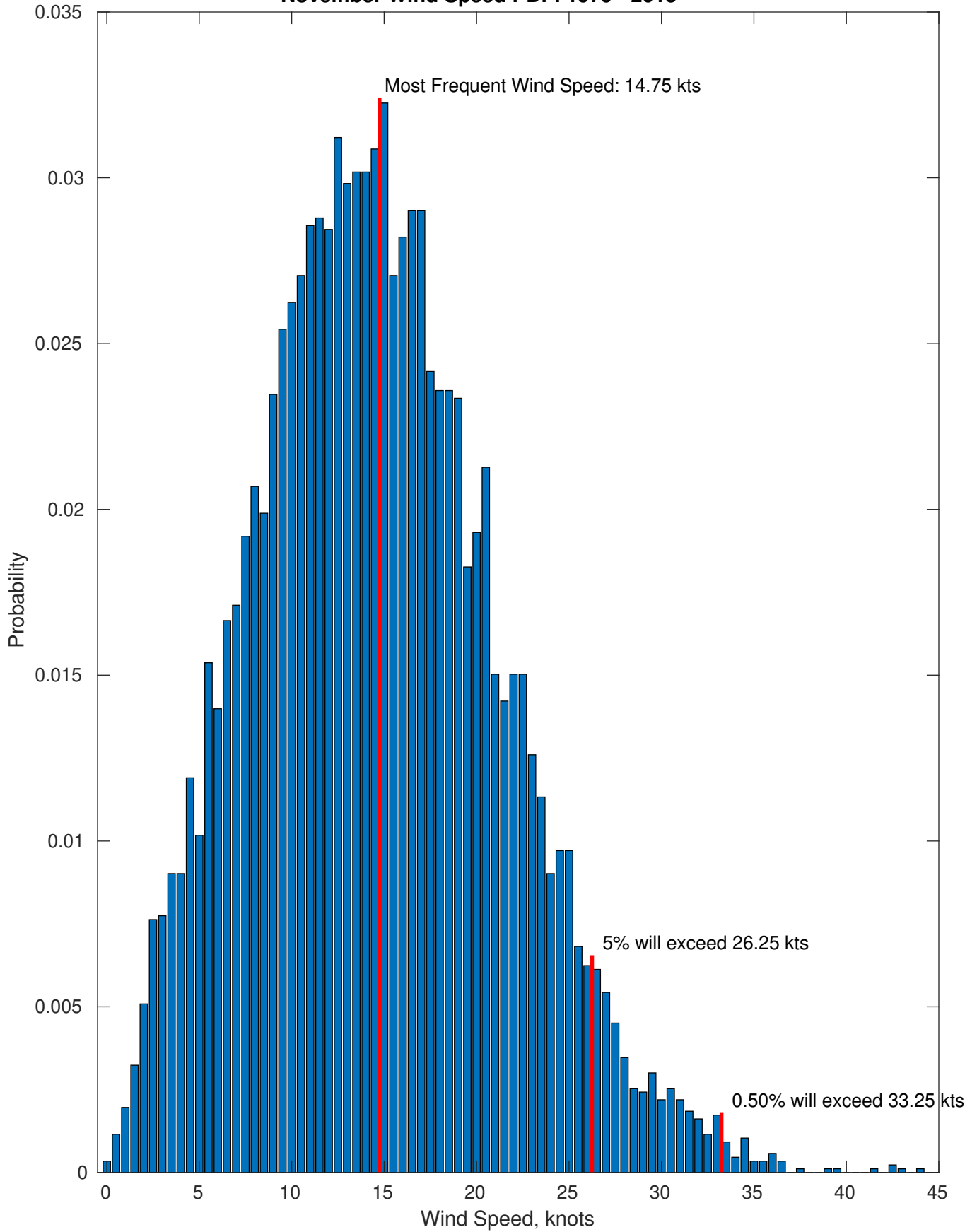
### Wind-Sea: 36.10%



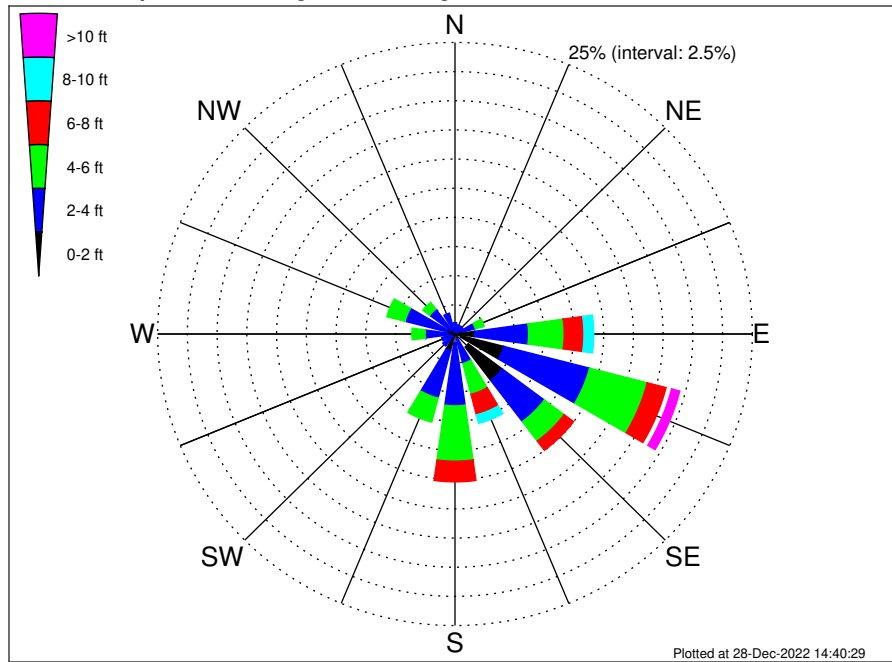
### Swell: 63.90%



November Wind Speed PDF: 1979 - 2015



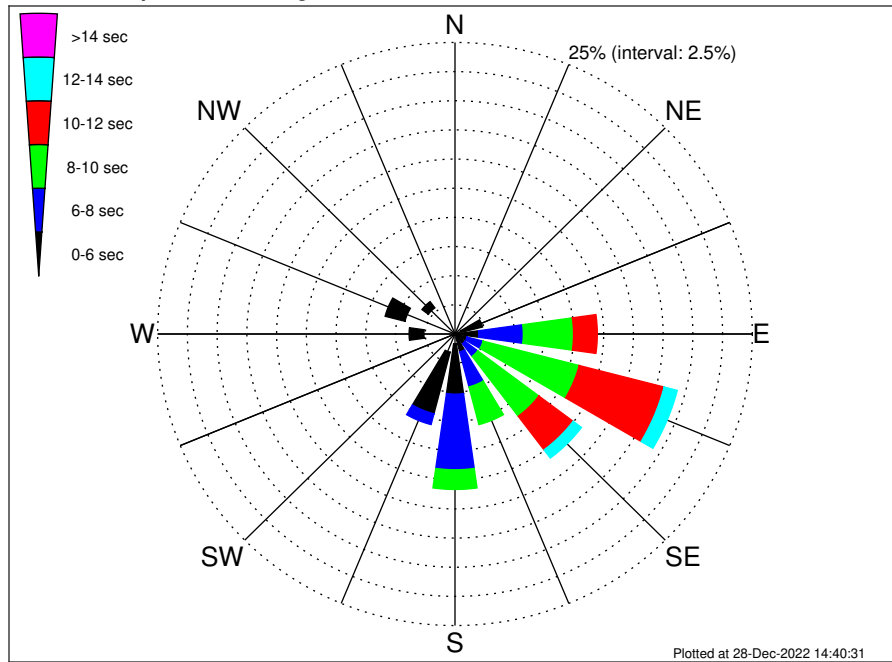
VNE 544 ECR1 Midpoint Climatological WaveHeight Rose for November: 1979 - 2015



Joint Frequency Distribution Table

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
calm	0.01	0.02	•	0.14	0.35	0.53	1.40	0.08	0.20	0.15	0.02	0.05	0.01	0.03	0.02	0.05	3.06
1 - 2 ft	0.18	0.10	0.14	0.34	1.32	3.70	3.58	0.35	0.57	1.32	0.27	0.31	0.45	0.71	0.45	0.36	14.14
2 - 4 ft	0.79	0.68	0.68	1.29	4.52	7.46	4.43	2.18	5.40	4.21	1.01	0.80	2.05	3.60	2.20	1.45	42.73
4 - 6 ft	0.10	0.18	0.25	0.76	2.99	5.01	2.08	2.73	4.74	2.13	0.12	0.42	1.12	1.58	0.72	0.38	25.32
6 - 8 ft	•	•	0.05	0.30	1.66	1.64	0.99	1.82	1.78	0.22	•	0.03	0.22	0.15	0.09	0.01	8.97
8 - 10 ft	•	•	•	0.02	0.82	0.47	0.55	0.76	0.57	•	0.01	0.02	0.01	•	•	•	3.25
10 - 12 ft	•	•	•	0.01	0.32	0.40	0.28	0.36	0.18	•	•	•	•	•	•	•	1.56
12 - 14 ft	•	•	•	•	0.09	0.15	0.21	0.17	0.02	•	•	•	•	•	•	•	0.65
14 - 16 ft	•	•	•	•	0.01	0.13	0.06	0.02	•	•	•	•	•	•	•	•	0.22
16 - 18 ft	•	•	•	•	0.01	0.02	•	0.02	•	•	•	•	•	•	•	•	0.06
> 18 ft	•	•	•	•	•	0.01	0.02	0.01	•	•	•	•	•	•	•	•	0.05
Total	1.09	0.99	1.12	2.87	12.10	19.53	13.61	8.51	13.46	8.02	1.42	1.63	3.86	6.07	3.48	2.24	100.00

VNE 544 ECR1 Midpoint Climatological WavePeriod Rose for November: 1979 - 2015

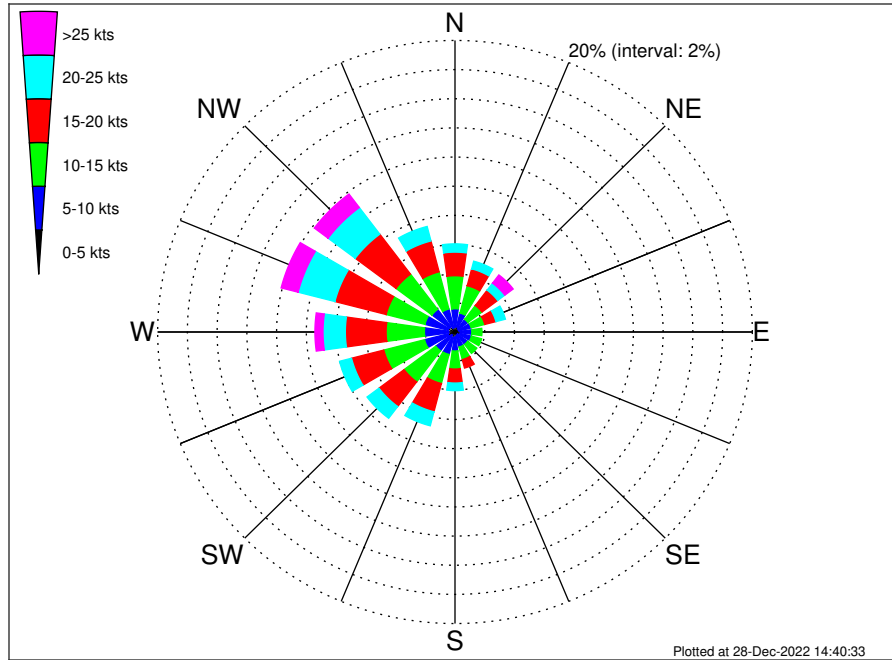


Joint Frequency Distribution Table

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
calm	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1 - 2 sec	•	0.02	•	•	•	0.01	•	0.01	•	•	0.01	0.01	•	0.01	•	0.02	0.10
2 - 4 sec	0.99	0.76	0.55	0.54	0.15	0.30	0.18	0.30	0.84	1.62	1.10	1.04	2.61	4.34	2.81	1.98	20.13
4 - 6 sec	0.09	0.21	0.55	1.85	1.85	0.73	0.86	1.27	4.31	5.45	0.31	0.58	1.25	1.72	0.67	0.24	21.94
6 - 8 sec	•	•	0.01	0.44	3.75	1.40	1.35	3.10	6.49	0.96	•	•	•	•	•	•	17.49
8 - 10 sec	•	•	•	0.03	4.22	8.35	6.44	3.34	1.69	•	•	•	•	•	•	•	24.07
10 - 12 sec	•	•	•	•	2.00	7.38	3.61	0.49	0.13	•	•	•	•	•	•	•	13.60
12 - 14 sec	•	•	•	•	0.14	1.14	0.88	•	•	•	•	•	•	•	•	•	2.16
14 - 16 sec	•	•	•	•	•	0.22	0.29	•	•	•	•	•	•	•	•	•	0.51
18 - 20 sec	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
22 - 24 sec	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Total	1.09	0.99	1.12	2.87	12.10	19.53	13.61	8.51	13.46	8.02	1.42	1.63	3.86	6.07	3.48	2.24	100.00



VNE 544 ECR1 Midpoint Climatological Wind Rose for November: 1979 - 2015



Joint Frequency Distribution Table

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
calm	•	0.01	•	•	0.02	0.02	•	•	0.01	0.01	0.01	0.01	0.02	•	0.01	0.01	0.15
0 - 5 kts	0.34	0.37	0.29	0.27	0.34	0.35	0.22	0.28	0.32	0.42	0.28	0.47	0.40	0.50	0.44	0.29	5.56
5 - 10 kts	1.26	0.96	0.80	0.86	0.77	0.77	0.84	0.79	0.97	1.17	1.33	1.63	1.63	1.60	1.49	1.33	18.20
10 - 15 kts	2.27	1.94	1.19	0.95	0.68	0.71	0.77	0.89	1.24	2.06	2.67	2.83	2.58	2.69	3.03	2.64	29.13
15 - 20 kts	1.62	1.19	1.32	0.77	0.32	0.32	0.46	0.60	0.96	2.00	2.12	2.24	2.74	3.56	3.43	2.18	25.85
20 - 25 kts	0.57	0.54	0.60	0.66	0.31	0.23	0.30	0.31	0.52	0.99	1.01	0.83	1.50	2.55	2.29	1.03	14.25
25 - 30 kts	0.28	0.24	0.52	0.08	0.12	0.08	0.17	0.24	0.21	0.24	0.15	0.23	0.42	0.88	1.02	0.15	5.03
30 - 35 kts	0.08	0.15	0.15	0.14	0.08	0.06	0.03	0.09	0.05	0.12	0.02	0.05	0.09	0.27	0.14	0.06	1.57
35 - 40 kts	•	0.01	0.03	0.01	•	0.01	0.01	0.02	0.02	•	•	•	0.03	0.03	•	•	0.20
40 - 45 kts	•	•	•	0.02	•	•	•	0.03	•	•	•	•	•	•	•	•	0.06
45 - 50 kts	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Total	6.40	5.42	4.90	3.76	2.65	2.55	2.82	3.26	4.30	7.01	7.58	8.30	9.42	12.08	11.85	7.69	100.00