

## Madagascar MBES - September

Latitude: 14.97 S Longitude: 45.59 E

### Weather Days

Wave Height > 5.0 ft Mean: 1.2 days Range: 0.3 - 2.2 days p50:1.5 days p75:0.5 days p90:0.5 days  
Wave Height > 6.5 ft Mean: 0.2 days Range: 0.0 - 0.5 days p50:30 days p75:1 days p90:0.5 days  
Wave Height > 8.0 ft Mean: 0.0 days Range: 0.0 - 0.0 days p50:30 days p75:30 days p90:30 days  
Wind Speed > 15.0 knots Mean: 7.2 days Range: 5.2 - 9.2 days p50:7.5 days p75:6 days p90:4.5 days  
Wind Speed > 20.0 knots Mean: 2.0 days Range: 0.9 - 3.2 days p50:2.5 days p75:1.5 days p90:1 days  
Wind Speed > 25.0 knots Mean: 0.2 days Range: 0.0 - 0.5 days p50:0.5 days p75:0.5 days p90:0.5 days

### Working Window

Wave Height < 5.0 ft	A 1 day or longer window will statistically occur 2.4 times per month A 2 day or longer window will statistically occur 2.3 times per month A 3 day or longer window will statistically occur 1.8 times per month
Wave Height < 6.5 ft	A 1 day or longer window will statistically occur 1.2 times per month A 2 day or longer window will statistically occur 1.1 times per month A 3 day or longer window will statistically occur 1.1 times per month
Wave Height < 8.0 ft	A 1 day or longer window will statistically occur 0.9 times per month A 2 day or longer window will statistically occur 0.9 times per month A 3 day or longer window will statistically occur 0.9 times per month

### Waves

Mean Height: 2 - 4 ft  
The wave heights will occasionally reach 6 - 8 ft, but rarely higher.  
Mean Period: 4 - 6 sec  
The wave periods will occasionally reach 18 - 20 sec, but rarely longer.  
Principle Direction, from: E  
WindSea/Swell: 35% / 65%

### Winds

Mean Speed: 10 - 15 kts  
The winds will occasionally reach 25 - 30 kts, but rarely greater.  
Principle Direction, from: ESE

### Currents

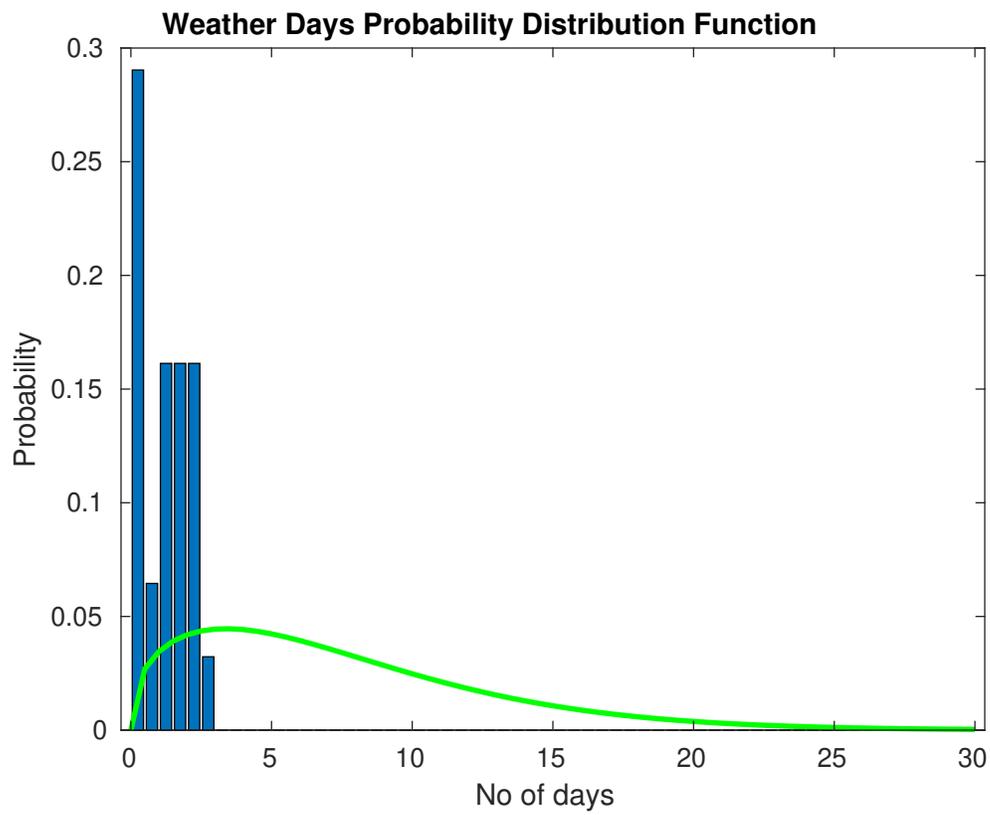
Mean Speed: 0.50-0.75 kts  
The currents will occasionally reach 1.25-1.50 kts, but rarely greater.  
Principle Direction, to: W

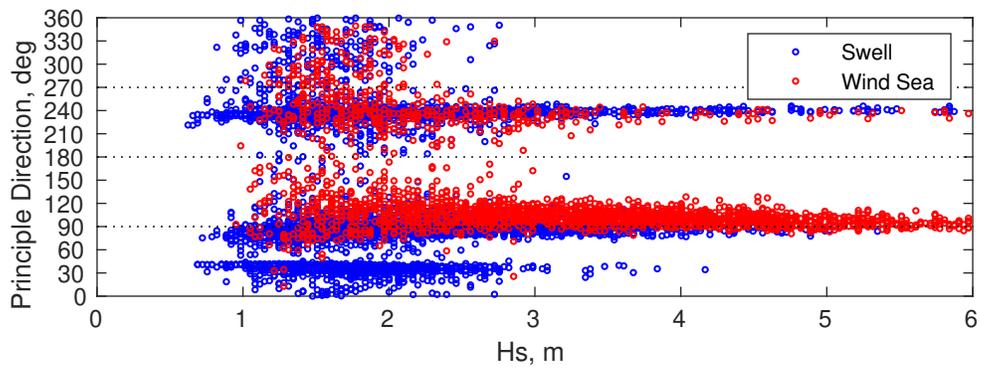
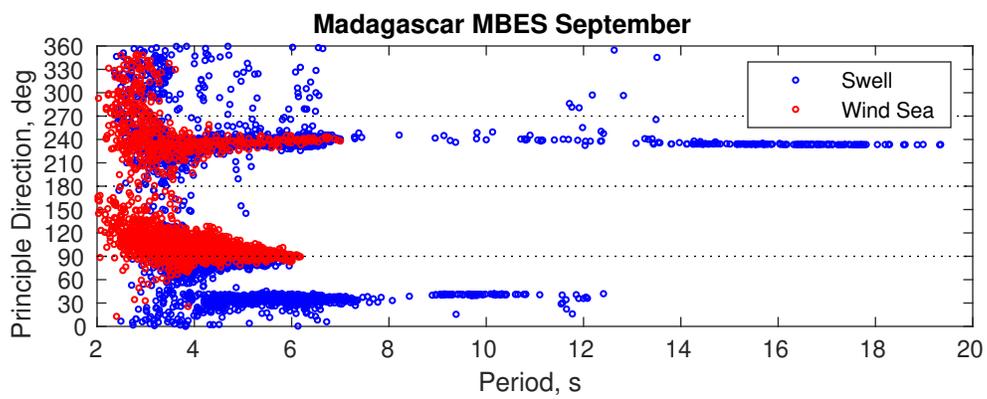
### Weather Days

Current Speed > 0.5 knots Mean: 15.7 days Range: 7.8 - 23.7 days p50:16 days p75:8 days p90:7 days  
Current Speed > 1.0 knots Mean: 4.4 days Range: 0.0 - 9.3 days p50:3 days p75:2 days p90:1 days  
Current Speed > 1.5 knots Mean: 0.2 days Range: 0.0 - 0.8 days p50:1 days p75:1 days p90:1 days

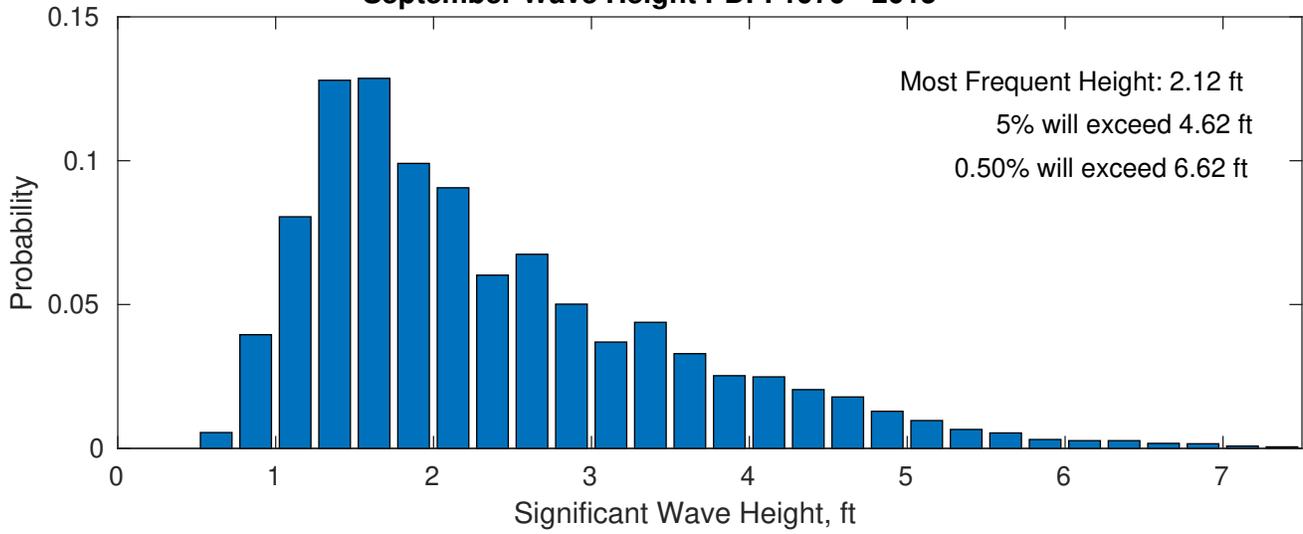
### Severe Storms

Severe storms with gale force winds and extreme waves are not expected during this month.

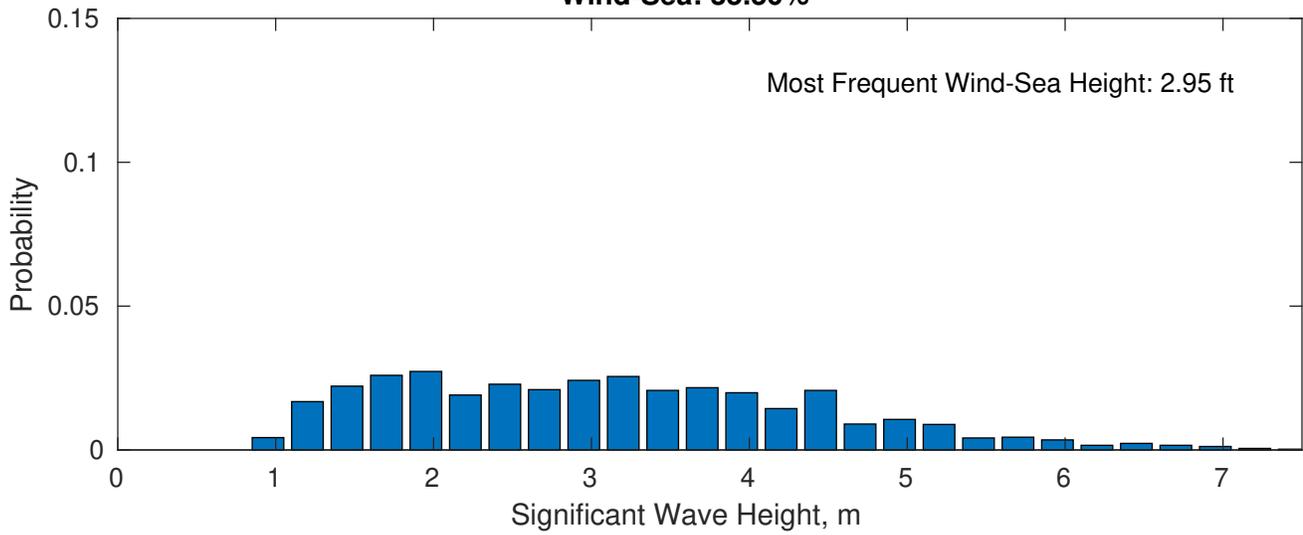




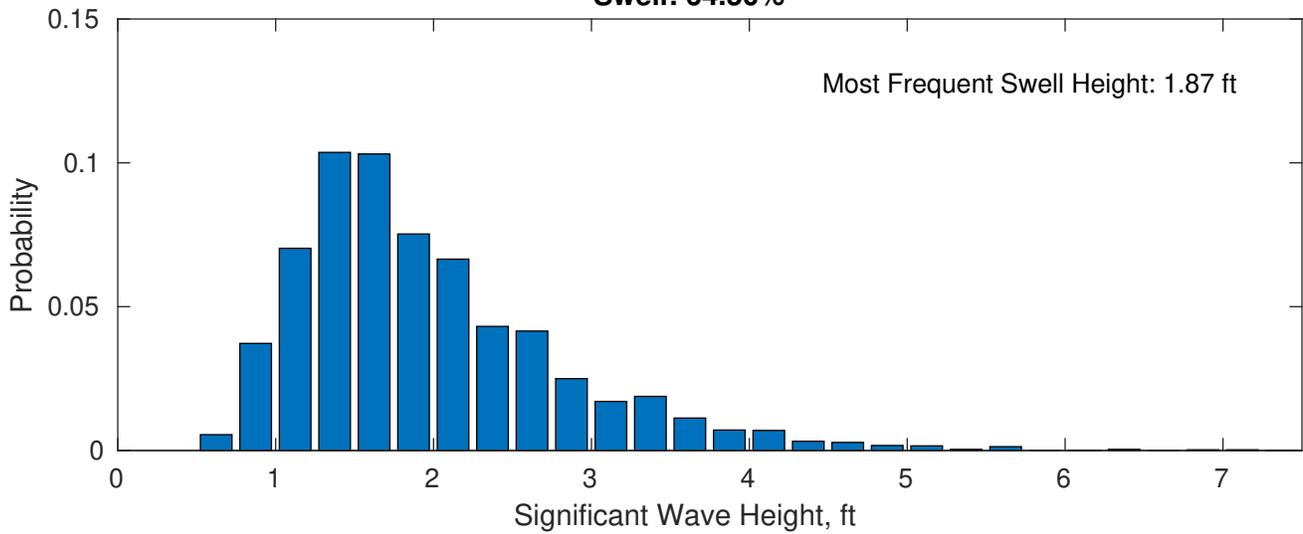
**September Wave Height PDF: 1979 - 2015**



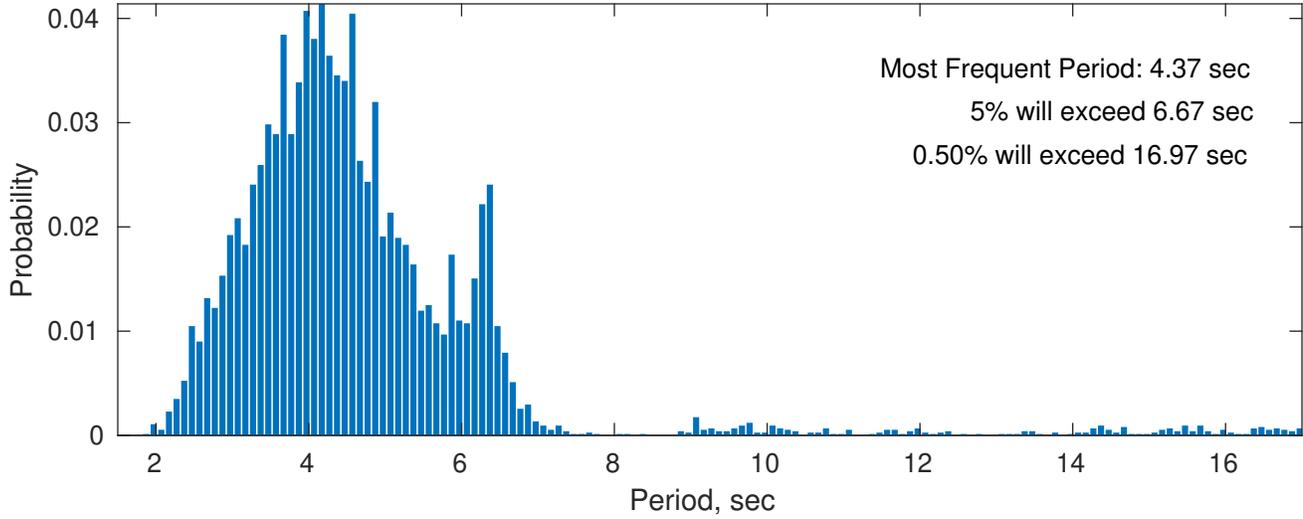
**Wind-Sea: 35.50%**



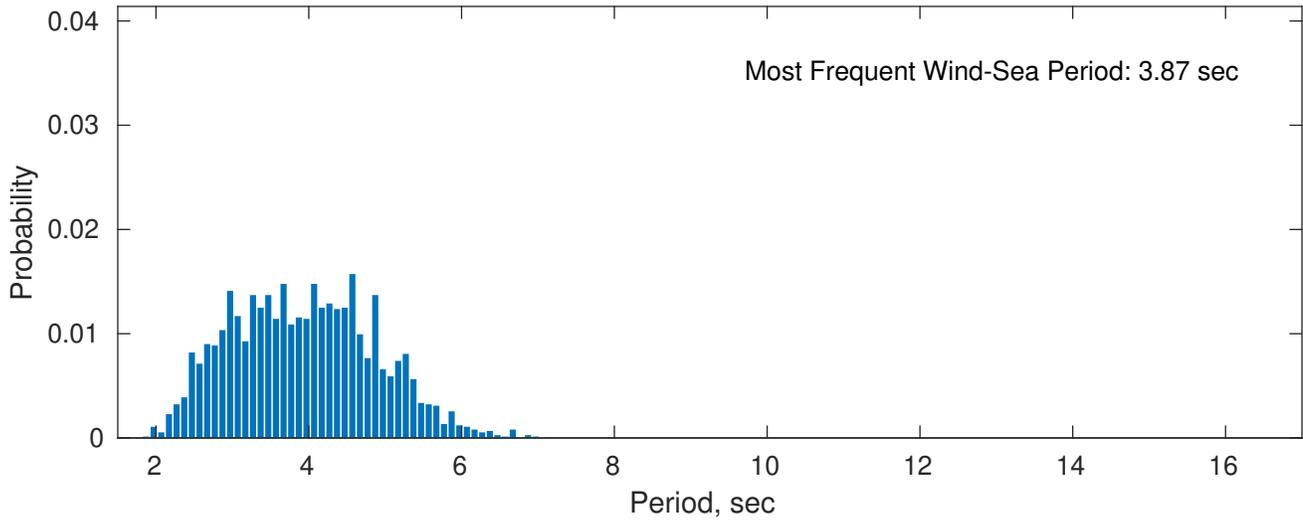
**Swell: 64.50%**



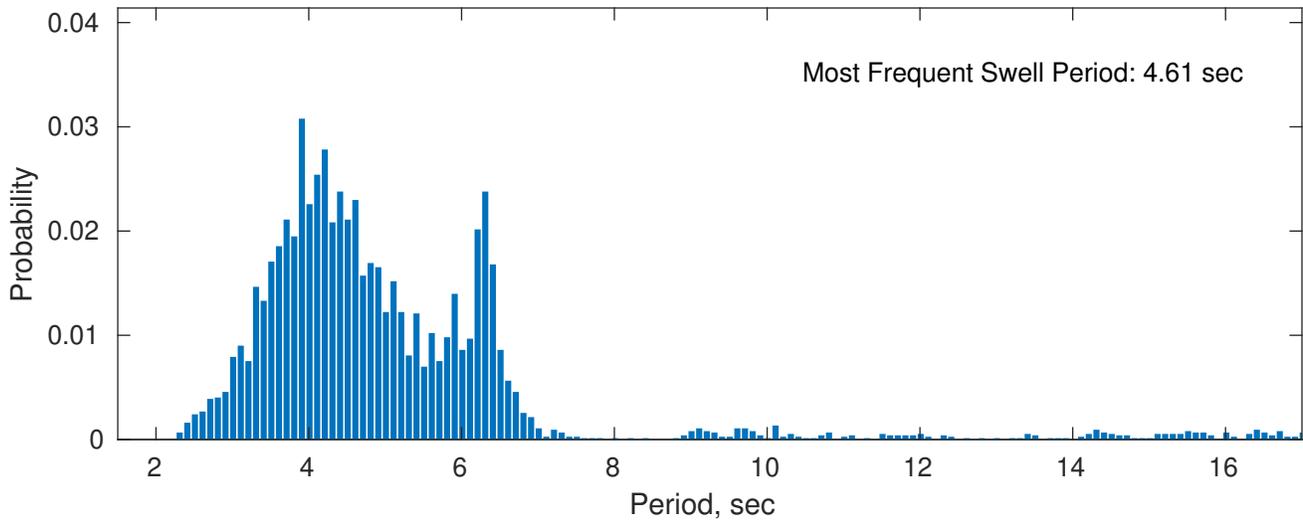
### September Peak Wave Period PDF: 1979 - 2015



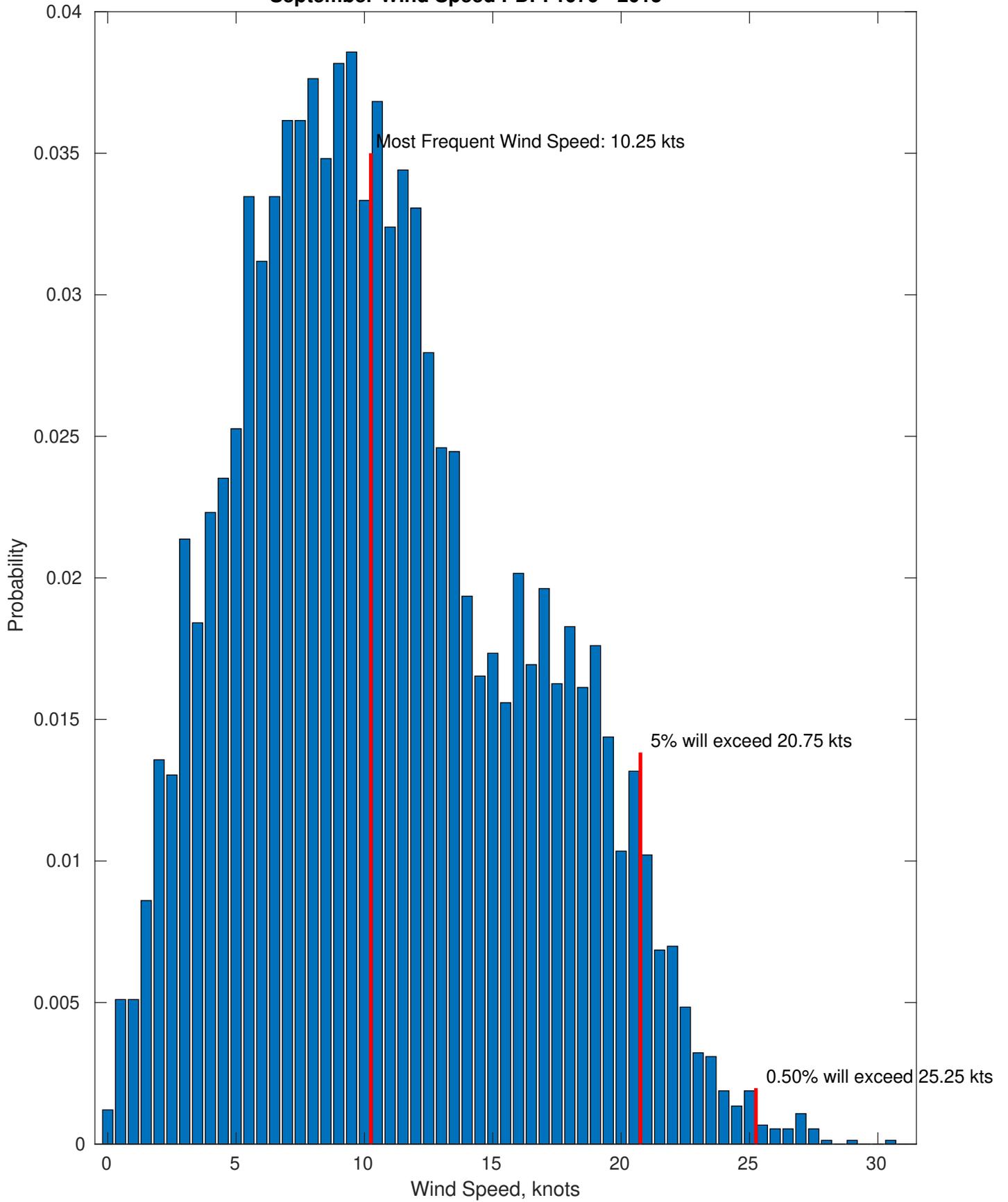
### Wind-Sea: 35.50%



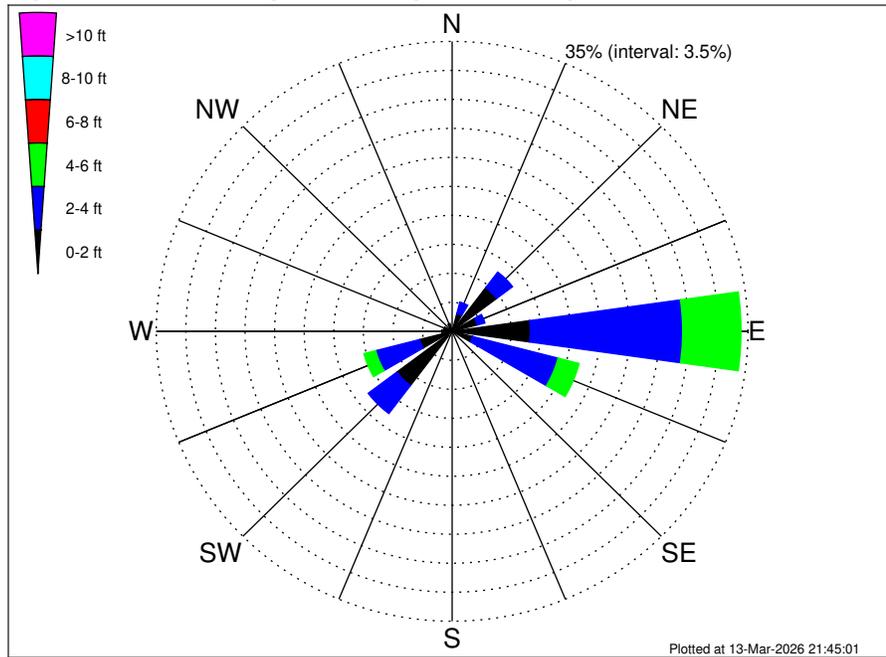
### Swell: 64.50%



September Wind Speed PDF: 1979 - 2015



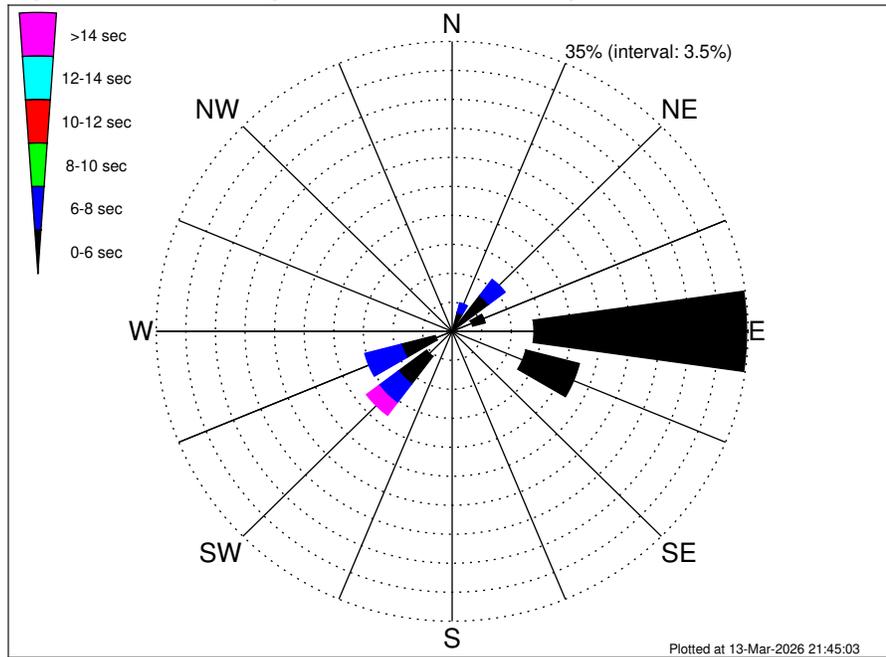
Madagascar MBES Climatological WaveHeight Rose for September: 1979 - 2015



Joint Frequency Distribution Table

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
calm	0.01	0.03	0.43	0.17	0.26	0.04	•	•	•	0.01	0.63	0.15	0.07	•	0.05	0.01	1.87
1 - 2 ft	0.52	2.19	6.17	2.90	8.99	2.46	0.77	0.52	0.24	0.66	7.55	3.83	1.16	1.03	0.86	0.95	40.82
2 - 4 ft	0.15	1.42	2.35	0.93	18.02	10.44	0.69	0.16	0.09	0.44	4.25	5.36	0.17	0.07	0.19	0.13	44.88
4 - 6 ft	•	•	0.01	0.04	6.90	2.57	0.05	•	•	•	0.24	1.44	•	•	•	•	11.25
6 - 8 ft	•	•	•	•	0.77	0.04	•	•	•	•	0.01	0.35	•	•	•	•	1.17
8 - 10 ft	•	•	•	•	•	•	•	•	•	•	•	0.01	•	•	•	•	0.01
10 - 12 ft	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
12 - 14 ft	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
14 - 16 ft	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
16 - 18 ft	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
> 18 ft	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Total	0.69	3.64	8.97	4.05	34.93	15.55	1.51	0.69	0.34	1.12	12.69	11.14	1.40	1.10	1.10	1.10	100.00

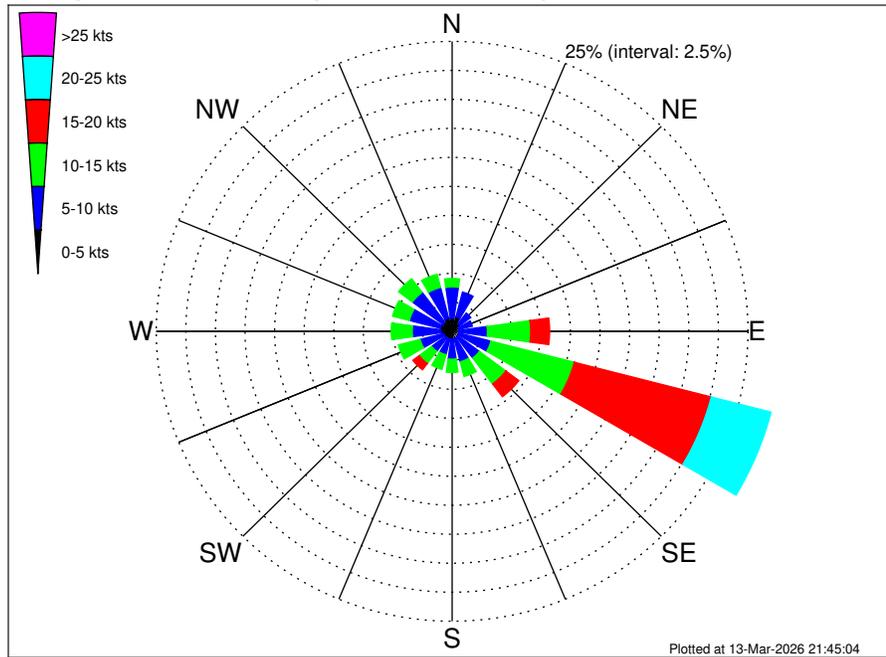
Madagascar MBES Climatological WavePeriod Rose for September: 1979 - 2015



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	•	•	•	•	•	•	•	•	•	0.01	•	•	•	•	•	•	0.01
2 - 4 sec	0.50	0.43	0.46	2.50	9.68	9.01	1.42	0.67	0.32	1.03	3.78	2.07	1.17	0.90	0.91	0.93	35.78
4 - 6 sec	0.09	1.94	4.96	1.55	25.15	6.55	0.08	0.01	0.01	0.07	4.18	4.14	0.15	0.08	0.15	0.12	49.22
6 - 8 sec	0.08	1.20	2.43	•	0.11	•	•	•	•	•	2.78	4.46	0.05	0.07	0.04	0.04	11.26
8 - 10 sec	•	0.03	0.69	•	•	•	•	•	•	•	•	0.11	•	•	•	•	0.82
10 - 12 sec	•	0.05	0.39	•	•	•	•	•	•	•	•	0.20	0.01	0.03	•	•	0.69
12 - 14 sec	0.01	•	0.04	•	•	•	•	•	•	•	0.12	0.12	0.01	0.03	•	0.01	0.35
14 - 16 sec	•	•	•	•	•	•	•	•	•	•	0.85	0.04	•	•	•	•	0.89
18 - 20 sec	•	•	•	•	•	•	•	•	•	•	0.83	•	•	•	•	•	0.83
22 - 24 sec	•	•	•	•	•	•	•	•	•	•	0.15	•	•	•	•	•	0.15
Total	0.69	3.64	8.97	4.05	34.93	15.55	1.51	0.69	0.34	1.12	12.69	11.14	1.40	1.10	1.10	1.10	100.00

Madagascar MBES Climatological Wind Rose for September: 1979 - 2015



Joint Frequency Distribution Table

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
calm	0.05	0.05	0.03	0.03	0.01	0.05	0.05	0.04	0.04	0.04	•	0.04	0.04	0.07	0.01	0.07	0.63
0 - 5 kts	1.09	1.24	0.79	0.60	0.58	0.52	0.55	0.59	0.67	0.65	0.71	0.69	0.89	0.95	0.97	1.10	12.59
5 - 10 kts	2.69	2.20	1.16	1.13	2.39	2.81	2.28	2.08	1.69	1.40	1.45	2.07	2.45	2.72	3.23	2.74	34.49
10 - 15 kts	0.73	0.35	0.13	0.52	3.66	7.27	2.80	1.30	1.14	1.30	1.32	1.90	1.77	1.47	1.47	1.17	28.29
15 - 20 kts	0.03	•	•	0.08	1.60	11.96	1.37	0.11	0.13	0.58	0.67	0.58	0.04	0.01	0.04	0.03	17.23
20 - 25 kts	•	•	•	•	0.46	5.22	0.24	•	•	0.13	0.09	0.05	•	•	•	•	6.20
25 - 30 kts	•	•	•	•	0.01	0.52	0.01	•	•	•	•	•	•	•	•	•	0.55
30 - 35 kts	•	•	•	•	•	0.01	•	•	•	•	•	•	•	•	•	•	0.01
35 - 40 kts	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
40 - 45 kts	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
45 - 50 kts	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Total	4.58	3.84	2.11	2.37	8.71	28.37	7.31	4.13	3.68	4.10	4.25	5.32	5.19	5.22	5.71	5.11	100.00