

Appendix J

USACE ERDC, WES WIS SOUTH ATLANTIC REGION

**USACE ENGINEER RESEARCH AND DEVELOPMENT CENTER (ERDC),
WATER EXPERIMENT STATION (WES)
WAVE INFORMATION STUDY (WIS) SOUTH ATLANTIC REGION**

Army Corps of Engineers WES, Coastal Hydraulics Laboratory (CHL), WIS has produced a major archive of wave information near U.S. coastlines. WIS Atlantic data covers wave climate information for a 20 year period, 1976-1995 including hurricanes. Station locations in the region are seen in Figure 1. Stations 9-13 are close to the project sites. The summary of wave data belong to those stations are supplied from WES, CHL webpage and presented in this appendix.

NOTES:

1976-1995 Atlantic update hindcast includes hurricanes

0.25-deg computational grid

Station number

Latitude (degrees to hundredths)

Longitude (degrees to hundredths)

Water depth (meters)

Return period interval (years)

Significant wave height (meters)

EITHER Fisher-Tippet Type I or Fisher-Tippet Type II provided the "best fit" for the tropical/non-tropical events.

1976-1995 WIS ATLANTIC UPDATE -- WITH HURRICANES

	STATION 9 (26.00N, 80.00W) DEPTH: 220 Meters					
	RETURN PERIOD (Years)					
	2	5	10	20	25	50
TYPE I	5.31	5.98	6.44	6.89	7.04	7.48
TYPE II	5.37	6.14	6.75	7.41	7.63	8.36

	STATION 10 (26.25N, 80.00W) DEPTH: 183 Meters					
	RETURN PERIOD (Years)					
	2	5	10	20	25	50
TYPE I	5.21	5.87	6.32	6.77	6.91	7.34
TYPE II	5.25	6.02	6.63	7.28	7.50	8.22

	STATION 11 (26.50N, 80.00W) DEPTH: 90 Meters					
	RETURN PERIOD (Years)					
	2	5	10	20	25	50
TYPE I	5.06	5.62	6.00	6.38	6.50	6.87
TYPE II	5.13	5.81	6.34	6.91	7.10	7.72

	STATION 12 (26.75N, 80.00W) DEPTH: 45 Meters					
	RETURN PERIOD (Years)					
	2	5	10	20	25	50
TYPE I	5.00	5.44	5.75	6.05	6.14	6.44
TYPE II	5.03	5.55	5.95	6.36	6.50	6.95

	STATION 13 (27.00N, 80.00W) DEPTH: 45 Meters					
	RETURN PERIOD (Years)					
	2	5	10	20	25	50
TYPE I	5.27	5.77	6.12	6.46	6.57	6.90
TYPE II	5.29	5.94	6.46	7.01	7.19	7.79

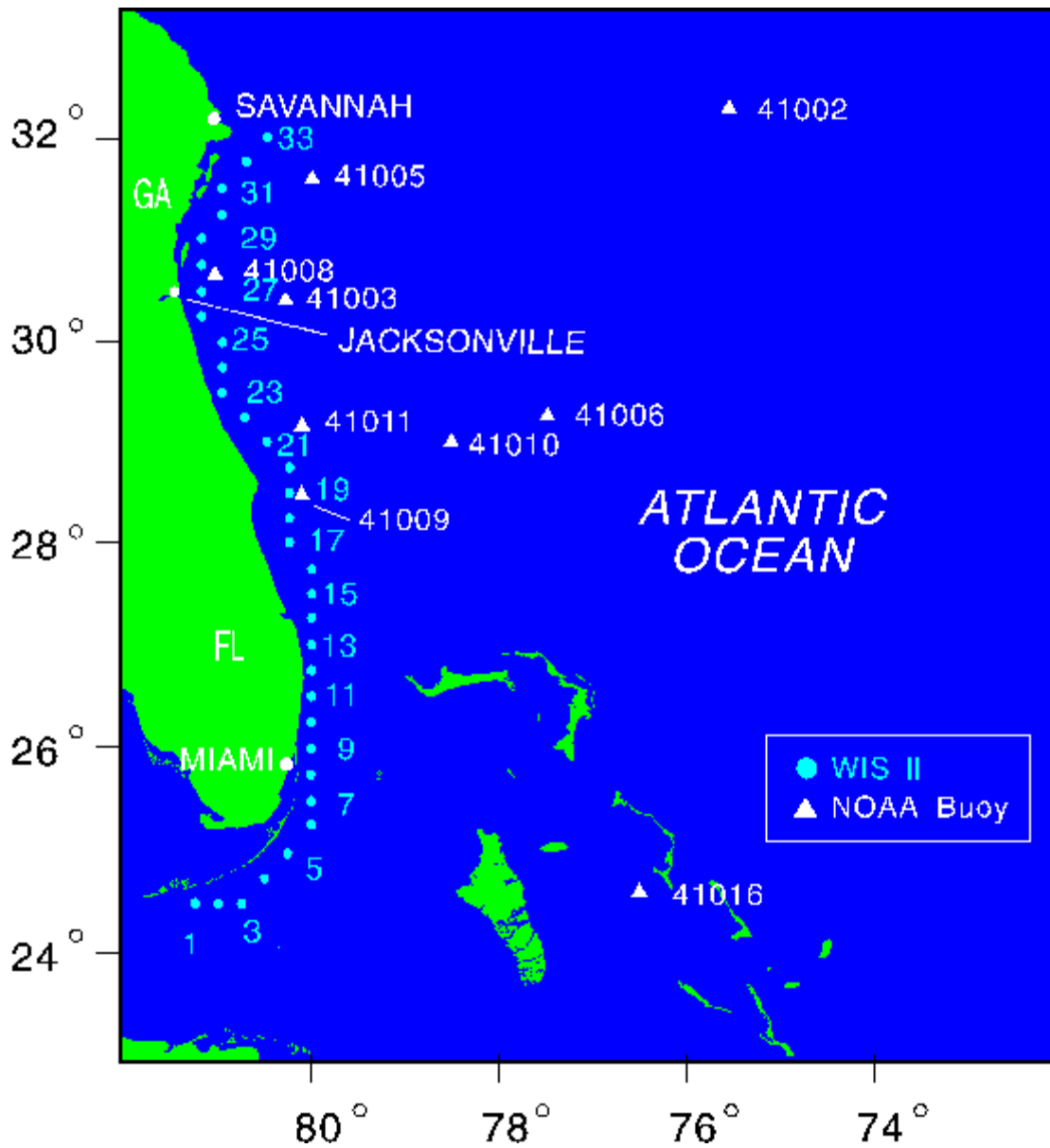


Figure 1. WIS, South Atlantic Region Stations (<http://bigfoot.wes.army.mil/c414.html>).

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995
 LAT: 26.00 N, LONG: 80.00 W, DEPTH: 220 M
 SUMMARY OF WAVE INFORMATION BY MONTH

STATION: 9

OCCURRENCES OF WAVE HEIGHT BY MONTH FOR ALL YEARS

Hmo (m)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 0.49	275	280	416	570	940	1699	2171	2030	990	593	233	289	10486
0.50 - 0.99	2043	1804	1945	2174	2475	2406	2413	2272	2658	1907	1717	2005	25819
1.00 - 1.49	1506	1327	1249	1276	1048	490	291	450	759	1305	1422	1356	12479
1.50 - 1.99	610	628	677	433	372	151	60	120	221	715	807	678	5472
2.00 - 2.49	298	258	372	204	86	33	15	48	74	287	347	332	2354
2.50 - 2.99	101	108	177	83	26	17	9	13	50	101	141	180	1006
3.00 - 3.49	62	66	75	30	10	4	.	4	30	41	76	63	461
3.50 - 3.99	24	31	28	24	3	.	1	5	8	11	23	30	188
4.00 - 4.49	17	13	14	6	.	.	.	8	3	.	20	16	97
4.50 - 4.99	9	4	4	.	.	.	.	7	1	.	5	8	38
5.00 - 5.49	8	1	2	.	.	.	.	1	3	.	4	3	22
5.50 - 5.99	4	.	1	.	.	.	.	.	2	.	3	.	10
6.00 - 6.49	2	.	.	.	.	.	.	.	.	.	.	.	2
6.50 - 6.99	1	.	.	.	.	.	.	2	1	.	2	.	6
7.00 - 7.49	.	.	.	.	.	.	.	.	.	.	.	.	0
7.50 - 7.99	.	.	.	.	.	.	.	.	.	.	.	.	0
8.00 - 8.49	.	.	.	.	.	.	.	.	.	.	.	.	0
8.50 - 8.99	.	.	.	.	.	.	.	.	.	.	.	.	0
9.00 - 9.49	.	.	.	.	.	.	.	.	.	.	.	.	0
9.50 - 9.99	.	.	.	.	.	.	.	.	.	.	.	.	0
10.00 - GREATER	.	.	.	.	.	.	.	.	.	.	.	.	0
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 9

OCCURRENCES OF PEAK PERIOD BY MONTH FOR ALL YEARS

Tp(sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
3.0 - 3.9	161	134	209	195	368	656	938	892	354	90	119	118	4234
4.0 - 4.9	694	556	601	600	807	894	1423	1052	556	384	449	616	8632
5.0 - 5.9	861	832	759	915	922	690	710	663	650	652	894	732	9280
6.0 - 6.9	820	758	772	726	763	826	533	530	607	855	981	842	9013
7.0 - 7.9	478	497	566	399	436	443	390	438	492	648	620	550	5957
8.0 - 8.9	327	332	446	318	331	326	293	400	484	473	378	441	4549
9.0 - 9.9	285	269	244	201	303	222	173	194	443	468	290	316	3408
10.0 - 10.9	189	228	217	173	200	201	130	162	281	292	222	203	2498
11.0 - 11.9	178	112	205	213	212	221	151	147	207	224	164	151	2185
12.0 - 12.9	209	99	189	315	301	135	131	198	216	216	178	176	2363
13.0 - 13.9	147	126	194	322	147	88	54	136	196	205	130	216	1961

14.0 - 14.9	137	114	223	192	76	55	17	61	137	193	150	191	1546
15.0 - 15.9	120	91	119	89	60	28	9	37	113	112	52	164	994
16.0 - 16.9	149	144	67	68	13	10	6	21	34	66	80	80	738
17.0 - 17.9	99	117	49	20	12	5	2	20	16	39	38	55	472
18.0 - 18.9	65	56	45	16	4	.	.	8	11	21	22	40	288
19.0 - 19.9	27	22	36	27	3	.	.	1	3	11	20	25	175
20.0 - LONGER	14	33	19	11	2	.	.	.	.	11	13	44	147

TOTAL 4960 4520 4960 4800 4960 4800 4960 4960 4800 4960 4800 4960 58440

STATION: 9

OCCURRENCES OF PEAK DIRECTION BY MONTH FOR ALL YEARS

Dp(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
348.75 - 11.24 (0.0)	535	347	272	197	74	45	11	45	52	115	289	394	2376
11.25 - 33.74 (22.5)	980	844	548	493	474	369	184	408	787	1064	974	1166	8291
33.75 - 56.24 (45.0)	1495	1255	1635	1738	1556	1199	828	1265	1973	2384	1541	1609	18478
56.25 - 78.74 (67.5)	311	355	377	365	488	400	257	383	573	645	631	400	5185
78.75 - 101.24 (90.0)	396	449	512	686	870	690	1156	1093	636	357	676	474	7995
101.25 - 123.74 (112.5)	225	307	369	375	573	726	1062	682	315	126	265	280	5305
123.75 - 146.24 (135.0)	218	243	384	408	459	620	1015	636	231	98	172	161	4645
146.25 - 168.74 (157.5)	205	198	301	194	247	437	316	281	127	63	69	112	2550
168.75 - 191.24 (180.0)	139	131	172	60	107	196	63	96	80	42	49	64	1199
191.25 - 213.74 (202.5)	43	34	27	16	16	46	34	21	10	9	11	25	292
213.75 - 236.24 (225.0)	26	11	35	9	8	18	19	28	5	8	13	17	197
236.25 - 258.74 (247.5)	19	18	28	20	13	34	12	3	2	4	5	10	168
258.75 - 281.24 (270.0)	20	31	52	27	33	15	2	4	.	5	11	16	216
281.25 - 303.74 (292.5)	83	60	76	52	21	2	1	2	.	4	7	23	331
303.75 - 326.24 (315.0)	101	113	81	81	12	1	.	5	.	10	27	92	523
326.25 - 348.74 (337.5)	164	124	91	79	9	2	.	8	9	26	60	117	689

TOTAL 4960 4520 4960 4800 4960 4800 4960 4960 4800 4960 4800 4960 58440

STATION: 9

OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR ALL DIRECTIONS

Hmo (m)	Tp(sec)										TOTAL
	3.0- 4.9	5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- LONGER	
0.00 - 0.99	11897	7419	5194	3795	3488	2612	1252	491	140	17	36305
1.00 - 1.99	969	10587	2438	1427	903	812	426	248	127	14	17951
2.00 - 2.99	.	287	2585	205	114	71	54	20	24	.	3360
3.00 - 3.99	.	.	278	343	16	11	.	1	.	.	649
4.00 - 4.99	.	.	11	118	6	.	.	.	.	.	135

5.00 - 5.99	.	.	.	15	17	.	.	.	.	.	.	32
6.00 - 6.99	.	.	.	3	4	1	.	.	.	.	.	8
7.00 - 7.99	.	.	.	.	.	.	.	.	.	.	.	0
8.00 - 8.99	.	.	.	.	.	.	.	.	.	.	.	0
9.00 - GREATER	.	.	.	.	.	.	.	.	.	.	.	0
TOTAL	12866	18293	10506	5906	4548	3507	1732	760	291	31		58440

STATION: 9

OCCURRENCES OF WIND SPEED BY MONTH FOR ALL YEARS

WS(m/sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 2.49	242	336	301	469	670	949	950	1087	902	768	226	291	7191
2.50 - 4.99	1170	938	1138	1300	1568	2134	2298	2141	1905	1282	1056	1190	18120
5.00 - 7.49	2107	1885	1982	1945	2003	1426	1574	1457	1534	1754	1984	1992	21643
7.50 - 9.99	877	766	835	731	572	233	107	187	291	780	953	844	7176
10.00 - 12.49	457	501	585	313	142	56	30	62	134	355	495	562	3692
12.50 - 14.99	76	82	96	41	5	2	1	11	22	18	63	62	479
15.00 - 17.49	28	11	20	1	.	.	.	11	7	1	19	18	116
17.50 - 19.99	2	1	3	.	.	.	.	1	3	1	2	1	14
20.00 - GREATER	1	.	.	.	.	.	.	3	2	1	2	.	9
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 9

OCCURRENCES OF WIND DIRECTION BY MONTH FOR ALL YEARS

WD(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
337.50 - 22.49 (0.0)	872	605	538	399	199	99	95	151	199	631	702	796	5286
22.50 - 67.49 (45.0)	998	783	746	686	629	440	246	370	902	1757	1412	1250	10219
67.50 - 112.49 (90.0)	1060	1079	1240	1493	1916	1587	2007	2225	2131	1413	1469	1317	18937
112.50 - 157.49 (135.0)	654	706	1004	959	1155	1307	1513	1232	865	468	569	554	10986
157.50 - 202.49 (180.0)	354	370	493	339	496	741	540	454	376	202	194	254	4813
202.50 - 247.49 (225.0)	234	209	265	230	247	388	307	275	139	150	105	147	2696
247.50 - 292.49 (270.0)	215	249	287	297	193	155	174	122	94	111	99	176	2172
292.50 - 337.49 (315.0)	573	519	387	397	125	83	78	131	94	228	250	466	3331
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995

LAT: 26.00 N, LONG: 80.00 W, DEPTH: 220 M

OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR 22.5-DEG DIRECTION BANDS

STATION: 9

SUMMARY OF MEAN Hmo(m) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1976	1.30	1.08	1.01	0.95	0.85	0.67	0.42	0.66	0.42	1.35	1.30	1.53	0.96
1977	1.15	1.02	1.10	1.50	0.95	0.42	0.53	0.94	0.61	0.92	1.38	1.21	0.98
1978	1.22	1.25	1.04	0.90	0.68	0.64	0.58	0.55	0.77	1.42	1.25	1.41	0.98
1979	1.70	1.28	1.34	1.35	0.94	0.78	0.64	0.48	1.34	0.90	1.59	1.34	1.14
1980	1.05	1.44	1.16	0.91	0.74	0.55	0.43	0.79	0.60	0.80	1.33	1.33	0.93
1981	1.03	1.70	1.43	1.09	0.69	0.66	0.47	0.81	0.79	1.06	1.17	0.99	0.98
1982	0.96	0.88	1.04	0.78	0.86	0.72	0.46	0.52	0.62	1.08	1.18	1.27	0.86
1983	0.91	1.41	1.17	1.11	0.89	0.57	0.53	0.47	0.93	1.12	0.98	1.37	0.95
1984	1.61	1.19	1.17	0.93	1.06	0.70	0.60	0.51	1.17	1.48	1.72	1.30	1.12
1985	0.98	1.40	1.08	1.07	0.55	0.52	0.53	0.69	1.33	1.03	1.33	1.25	0.97
1986	1.22	0.97	1.50	0.86	1.08	0.57	0.44	0.75	0.89	1.05	1.16	1.32	0.99
1987	1.21	1.10	1.67	0.88	0.87	0.65	0.63	0.55	0.47	1.31	1.37	0.98	0.97
1988	1.42	1.06	1.04	0.89	0.83	0.77	0.58	0.54	0.96	0.99	0.93	0.90	0.91
1989	0.90	0.97	1.04	0.74	0.63	0.55	0.45	0.44	0.75	0.93	0.74	0.85	0.75
1990	0.89	1.32	1.25	1.04	0.86	0.64	0.60	0.40	0.67	0.96	1.15	1.12	0.90
1991	0.88	0.98	1.02	1.00	0.94	0.56	0.40	0.48	0.60	1.07	1.14	1.03	0.84
1992	0.97	0.93	0.87	1.02	0.81	0.61	0.65	0.65	0.71	1.02	1.36	1.07	0.89
1993	1.31	1.14	1.23	1.09	0.96	0.73	0.41	0.55	0.72	0.78	1.25	1.08	0.94
1994	1.38	1.19	1.03	1.06	0.79	0.58	0.72	0.65	0.78	0.92	1.33	1.25	0.97
1995	1.02	0.94	1.29	0.91	0.74	0.74	0.63	0.91	0.84	1.26	1.14	1.10	0.96
MEAN	1.15	1.16	1.17	1.00	0.84	0.63	0.53	0.62	0.80	1.07	1.24	1.18	

STATION: 9

MAX Hmo(m)*10 WITH ASSOCIATED Tp(sec) AND Dp(deg/10) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX
1976	39 9 3	37 9 7	38 8 4	29 8 8	32 8 13	12 5 10	8 5 11	19 11 3	8 4 8	35 9 3	33 8 1	40 9 2	40 9 2
1977	24 7 1	24 7 36	33 9 4	41 9 7	30 8 6	12 5 16	11 5 10	25 7 8	21 6 13	27 7 0	43 9 1	31 8 4	43 9 1
1978	31 8 17	37 8 3	31 7 17	27 7 12	24 8 17	32 8 7	19 7 9	14 6 8	17 6 10	39 9 5	40 9 2	52 10 7	52 10 7
1979	57 10 1	28 8 9	43 9 8	42 10 14	27 7 4	29 8 8	29 7 11	14 5 7	66 10 2	27 8 9	41 10 4	38 10 4	66 10 2
1980	26 7 17	49 10 1	30 8 6	30 8 17	23 7 8	19 7 7	14 6 10	48 9 9	14 6 8	20 7 5	33 8 5	30 8 3	49 10 1
1981	36 9 0	51 10 5	29 8 12	35 9 5	18 6 14	17 6 5	15 6 13	44 10 17	17 6 7	32 8 5	34 8 5	29 7 1	51 10 5
1982	32 8 19	30 8 11	44 9 17	22 7 11	21 7 7	28 7 15	17 6 12	11 5 14	11 5 9	24 16 4	34 9 5	31 8 10	44 9 17
1983	24 7 7	42 9 14	50 9 19	32 8 0	22 7 9	12 5 11	19 7 9	24 7 35	29 8 5	39 9 6	34 9 4	52 11 1	52 11 1
1984	67 13 2	35 9 4	38 8 19	20 6 15	28 8 5	18 6 9	14 6 12	23 7 13	51 10 5	30 9 4	52 11 1	37 9 8	67 13 2
1985	30 7 0	39 8 7	41 10 5	40 9 8	12 8 3	20 7 12	36 8 17	23 7 8	36 9 4	24 7 6	66 11 8	35 9 2	66 11 8
1986	47 10 5	32 9 0	41 10 1	20 15 4	25 7 8	16 6 8	14 5 10	20 6 9	19 7 7	36 9 4	30 8 6	41 9 13	47 10 5
1987	45 10 3	28 8 18	56 10 8	23 7 0	37 9 15	27 9 16	16 5 8	15 5 9	8 15 4	37 9 18	37 9 9	34 8 9	56 10 8
1988	43 9 9	27 7 7	24 8 9	25 7 10	24 7 7	29 8 5	14 5 10	20 6 5	35 9 14	25 8 5	21 6 18	21 6 8	43 9 9
1989	21 11 3	22 7 8	37 8 1	14 8 3	17 6 11	11 5 14	10 5 10	18 6 9	21 7 36	23 6 35	16 6 9	19 15 4	37 8 1
1990	23 7 1	32 8 6	35 9 7	27 8 8	19 7 14	13 5 11	15 5 9	9 4 9	11 5 10	23 7 17	35 8 3	36 9 4	36 9 4
1991	28 7 9	20 7 7	34 8 18	27 8 5	36 8 11	16 9 3	10 5 11	12 11 3	16 6 7	28 8 5	22 7 8	41 10 4	41 10 4
1992	25 7 14	20 7 17	26 8 9	27 10 3	16 6 8	12 5 17	12 5 11	69 10 5	14 6 10	32 8 4	30 8 5	21 7 4	69 10 5
1993	35 9 36	25 7 5	50 9 18	25 8 14	20 6 9	19 7 8	10 5 12	14 6 11	21 7 3	28 8 19	23 7 4	35 9 5	50 9 18

1994 32 8 2 39 8 7 37 917 21 710 2610 3 12 513 15 713 15 611 16 6 8 28 7 4 5912 5 36 914 5912 5
 1995 32 914 17 7 7 28 8 1 19 710 13 614 20 717 26 7 5 25 8 6 13 9 3 27 816 19 7 0 25 7 1 32 914

MAX 6713 2 5110 5 5610 8 421014 37 915 32 8 7 36 817 6910 5 6610 2 39 9 6 6611 8 5211 1

MAX Hmo(m): 6.9 MAX Tp(sec): 10. MAX Dp(deg): 54. DATE(gmt): 1992082409

MAX WIND SPEED(m/sec): 29. MAX WIND DIRECTION(deg): 65. DATE(gmt): 1992082409

MEAN Hmo(m): 0.9 MEAN Tp(sec): 7.

STANDARD DEVIATION Hmo(m): 0.6 STANDARD DEVIATION Tp(sec): 3.5

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995
 LAT: 26.25 N, LONG: 80.00 W, DEPTH: 183 M
 SUMMARY OF WAVE INFORMATION BY MONTH

STATION: 10

OCCURRENCES OF WAVE HEIGHT BY MONTH FOR ALL YEARS

Hmo (m)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 0.49	263	259	377	471	870	1676	2226	1989	852	463	184	270	9900
0.50 - 0.99	1954	1718	1930	2167	2501	2418	2379	2299	2671	1887	1670	1942	25536
1.00 - 1.49	1557	1393	1260	1382	1107	501	281	461	844	1352	1467	1410	13015
1.50 - 1.99	644	635	720	444	355	157	50	118	245	782	851	700	5701
2.00 - 2.49	314	289	363	198	90	29	14	53	73	313	359	346	2441
2.50 - 2.99	100	114	187	83	27	16	7	14	68	107	143	173	1039
3.00 - 3.49	60	67	76	25	9	3	2	5	27	40	72	61	447
3.50 - 3.99	26	28	28	25	1	.	.	5	10	15	22	29	189
4.00 - 4.49	17	16	12	5	.	.	1	9	3	1	19	19	102
4.50 - 4.99	10	1	4	.	.	.	.	4	2	.	5	8	34
5.00 - 5.49	10	.	3	.	.	.	.	1	2	.	5	2	23
5.50 - 5.99	3	.	.	.	.	.	.	.	1	.	1	.	5
6.00 - 6.49	2	.	.	.	.	.	.	2	.	.	2	.	6
6.50 - 6.99	.	.	.	.	.	.	.	.	1	.	.	.	1
7.00 - 7.49	.	.	.	.	.	.	.	.	1	.	.	.	1
7.50 - 7.99	.	.	.	.	.	.	.	.	.	.	.	.	0
8.00 - 8.49	.	.	.	.	.	.	.	.	.	.	.	.	0
8.50 - 8.99	.	.	.	.	.	.	.	.	.	.	.	.	0
9.00 - 9.49	.	.	.	.	.	.	.	.	.	.	.	.	0
9.50 - 9.99	.	.	.	.	.	.	.	.	.	.	.	.	0
10.00 - GREATER	.	.	.	.	.	.	.	.	.	.	.	.	0
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 10

OCCURRENCES OF PEAK PERIOD BY MONTH FOR ALL YEARS

Tp(sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
3.0 - 3.9	159	128	170	162	346	548	904	815	296	59	79	98	3764
4.0 - 4.9	627	540	542	550	736	854	1391	999	468	290	407	563	7967
5.0 - 5.9	784	732	678	861	874	662	607	620	621	566	843	650	8498
6.0 - 6.9	765	730	715	680	686	747	457	527	594	806	893	793	8393
7.0 - 7.9	497	482	562	381	412	440	379	447	499	668	618	545	5930
8.0 - 8.9	326	348	469	354	344	362	323	435	541	524	392	432	4850
9.0 - 9.9	297	286	245	203	333	300	241	223	465	506	322	356	3777
10.0 - 10.9	205	239	246	187	253	250	162	202	328	319	263	213	2867
11.0 - 11.9	189	120	247	261	272	251	200	184	225	270	186	184	2589
12.0 - 12.9	249	117	231	366	352	177	186	219	234	252	214	201	2798
13.0 - 13.9	170	138	232	348	163	98	73	132	202	228	156	236	2176
14.0 - 14.9	156	135	253	207	83	63	20	70	151	204	168	219	1729
15.0 - 15.9	139	103	137	95	71	32	10	34	112	117	65	188	1103
16.0 - 16.9	169	163	73	65	14	10	3	23	36	68	87	99	810
17.0 - 17.9	108	121	53	24	11	6	3	21	13	38	41	61	500
18.0 - 18.9	71	71	45	17	5	.	1	7	10	21	27	47	322
19.0 - 19.9	31	27	35	25	2	.	.	2	5	11	22	23	183
20.0 - LONGER	18	40	27	14	3	.	.	.	.	13	17	52	184
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 10

OCCURRENCES OF PEAK DIRECTION BY MONTH FOR ALL YEARS

Dp(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
348.75 - 11.24 (0.0)	486	328	236	185	67	44	5	44	42	94	268	343	2142
11.25 - 33.74 (22.5)	874	720	486	439	426	340	164	386	710	835	880	1042	7302
33.75 - 56.24 (45.0)	1736	1522	1876	1944	1788	1436	1033	1386	2120	2653	1727	1889	21110
56.25 - 78.74 (67.5)	318	355	416	365	499	528	370	470	657	714	653	382	5727
78.75 - 101.24 (90.0)	330	380	424	580	709	563	908	906	550	311	634	442	6737
101.25 - 123.74 (112.5)	228	281	349	410	587	618	1098	689	313	107	241	254	5175
123.75 - 146.24 (135.0)	179	215	352	357	400	532	838	586	193	90	161	141	4044
146.25 - 168.74 (157.5)	204	191	289	200	251	416	363	324	112	57	73	112	2592
168.75 - 191.24 (180.0)	158	157	175	70	122	202	75	102	78	38	42	70	1289
191.25 - 213.74 (202.5)	37	27	21	15	15	51	47	17	12	9	14	25	290
213.75 - 236.24 (225.0)	27	13	36	11	10	18	29	27	4	11	8	20	214
236.25 - 258.74 (247.5)	19	13	26	20	14	33	21	4	2	.	4	9	165
258.75 - 281.24 (270.0)	24	31	44	14	38	16	8	6	.	5	10	18	214
281.25 - 303.74 (292.5)	88	62	75	48	17	.	1	3	.	3	8	24	329
303.75 - 326.24 (315.0)	93	109	65	74	9	1	.	3	.	12	23	79	468
326.25 - 348.74 (337.5)	159	116	90	68	8	2	.	7	7	21	54	110	642
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 10

OCCURRENCES OF WIND SPEED BY MONTH FOR ALL YEARS

WS(m/sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 2.49	252	352	316	479	690	956	984	1136	894	779	231	303	7372
2.50 - 4.99	1191	953	1153	1319	1620	2190	2377	2180	1968	1285	1091	1234	18561
5.00 - 7.49	2072	1873	1994	1948	1972	1375	1478	1383	1481	1747	1992	1974	21289
7.50 - 9.99	881	771	820	717	542	236	93	174	282	780	949	834	7079
10.00 - 12.49	457	483	561	297	132	43	25	60	144	341	457	534	3534
12.50 - 14.99	73	78	93	39	4	.	2	14	18	25	61	63	470
15.00 - 17.49	32	10	20	1	.	.	1	10	8	2	15	17	116
17.50 - 19.99	1	.	3	.	.	.	.	.	3	.	3	1	11
20.00 - GREATER	1	.	.	.	.	.	.	3	2	1	1	.	8
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 10

OCCURRENCES OF WIND DIRECTION BY MONTH FOR ALL YEARS

WD(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
337.50 - 22.49 (0.0)	865	590	532	397	192	98	94	158	198	621	704	783	5232
22.50 - 67.49 (45.0)	974	767	736	681	643	443	246	365	910	1728	1389	1230	10112
67.50 - 112.49 (90.0)	999	1054	1172	1433	1817	1465	1824	2099	2107	1400	1401	1236	18007
112.50 - 157.49 (135.0)	670	672	999	966	1184	1335	1585	1288	857	481	604	593	11234
157.50 - 202.49 (180.0)	372	413	530	361	512	785	606	508	382	215	203	266	5153
202.50 - 247.49 (225.0)	243	212	280	251	274	428	341	289	151	147	115	163	2894
247.50 - 292.49 (270.0)	244	272	302	305	204	159	188	121	103	120	109	198	2325
292.50 - 337.49 (315.0)	593	540	409	406	134	87	76	132	92	248	275	491	3483
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995

LAT: 26.25 N, LONG: 80.00 W, DEPTH: 183 M

OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR 22.5-DEG DIRECTION BANDS

STATION: 10

SUMMARY OF MEAN Hmo(m) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1976	1.31	1.09	1.02	0.98	0.86	0.67	0.42	0.69	0.46	1.41	1.30	1.55	0.98
1977	1.18	1.03	1.11	1.48	0.93	0.41	0.51	0.93	0.64	0.95	1.41	1.23	0.99
1978	1.23	1.32	1.06	0.90	0.69	0.64	0.57	0.55	0.82	1.50	1.28	1.45	1.00
1979	1.74	1.32	1.36	1.36	0.96	0.80	0.62	0.48	1.35	0.94	1.60	1.35	1.15

1980	1.09	1.48	1.18	0.94	0.75	0.55	0.42	0.79	0.61	0.86	1.39	1.34	0.95
1981	1.02	1.69	1.51	1.04	0.71	0.66	0.47	0.80	0.85	1.08	1.16	0.99	0.99
1982	0.95	0.88	1.05	0.80	0.85	0.73	0.44	0.52	0.65	1.14	1.21	1.25	0.87
1983	0.94	1.49	1.18	1.13	0.87	0.60	0.52	0.47	0.97	1.17	1.03	1.40	0.98
1984	1.66	1.19	1.18	0.96	1.07	0.70	0.60	0.49	1.23	1.50	1.76	1.27	1.13
1985	1.00	1.41	1.08	1.08	0.57	0.53	0.53	0.69	1.40	1.05	1.36	1.28	0.99
1986	1.25	1.01	1.51	0.89	1.11	0.57	0.44	0.76	0.92	1.09	1.17	1.35	1.01
1987	1.26	1.11	1.71	0.91	0.88	0.64	0.62	0.56	0.49	1.34	1.34	0.97	0.99
1988	1.43	1.05	1.03	0.92	0.84	0.77	0.58	0.53	0.95	1.02	0.94	0.90	0.91
1989	0.91	0.96	1.06	0.77	0.64	0.56	0.44	0.47	0.81	0.99	0.75	0.87	0.77
1990	0.88	1.31	1.24	1.06	0.85	0.63	0.59	0.41	0.70	0.99	1.14	1.14	0.91
1991	0.89	1.00	1.02	1.00	0.93	0.58	0.41	0.49	0.65	1.12	1.15	1.02	0.85
1992	0.98	0.94	0.86	1.03	0.83	0.60	0.61	0.63	0.72	1.05	1.38	1.11	0.89
1993	1.34	1.18	1.27	1.12	0.96	0.74	0.40	0.56	0.73	0.82	1.27	1.11	0.96
1994	1.39	1.22	1.04	1.07	0.81	0.58	0.69	0.65	0.78	0.97	1.33	1.30	0.98
1995	1.01	0.95	1.31	0.93	0.77	0.74	0.63	0.94	0.88	1.28	1.15	1.11	0.98
MEAN	1.17	1.18	1.19	1.02	0.84	0.63	0.53	0.62	0.83	1.11	1.26	1.20	

STATION: 10

MAX Hmo(m)*10 WITH ASSOCIATED Tp(sec) AND Dp(deg/10) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX
1976	39 9 3	36 9 7	37 8 5	27 736	31 813	12 512	8 511	2111 3	9 7 3	37 9 4	32 8 1	39 9 2	39 9 2
1977	25 7 1	23 736	34 9 5	41 9 7	29 8 6	12 516	11 511	25 7 8	21 7 8	25 7 0	42 9 1	32 9 4	42 9 1
1978	32 817	37 8 3	32 815	26 712	25 817	32 7 7	19 7 9	13 5 7	1711 4	4210 4	35 9 2	50 9 8	50 9 8
1979	5610 1	28 8 9	44 9 8	42 913	25 8 4	28 7 7	26 713	12 5 8	7311 5	28 7 9	4110 4	37 9 4	7311 5
1980	27 718	44 9 1	29 8 6	28 817	22 7 8	18 6 7	14 6 8	46 9 9	14 6 8	21 7 5	34 8 5	30 8 4	46 9 9
1981	34 9 1	48 9 4	3220 5	34 9 5	18 615	17 6 5	14 613	411017	16 6 7	30 8 5	32 8 5	26 7 3	48 9 4
1982	30 819	27 710	41 817	25 718	18 6 5	27 715	17 612	12 514	12 5 9	2716 5	32 9 5	31 811	41 817
1983	27 7 7	43 914	521018	32 836	21 710	12 511	19 710	27 8 1	29 8 5	36 9 6	33 9 5	5111 1	521018
1984	6412 2	34 9 5	40 819	21 713	29 8 4	18 6 9	13 612	23 713	5110 5	30 9 5	5111 1	34 9 9	6412 2
1985	30 8 1	4110 6	41 9 6	39 9 9	13 8 3	19 713	40 816	22 7 8	36 9 4	24 7 6	6210 9	38 9 2	6210 9
1986	4710 5	33 9 0	4010 1	2115 5	2514 5	15 6 6	13 510	21 6 9	19 7 7	36 9 4	31 9 5	41 912	4710 5
1987	47 9 1	28 818	5210 8	22 7 0	34 814	26 916	16 513	14 5 9	915 5	33 918	34 8 9	33 8 9	5210 8
1988	40 9 9	26 8 6	23 7 9	25 710	21 7 7	29 8 5	14 6 7	20 7 8	34 813	24 8 5	25 620	2116 5	40 9 9
1989	2311 3	20 6 6	37 8 1	14 8 3	18 612	11 514	9 511	18 6 9	22 736	24 9 3	16 6 9	2015 5	37 8 1
1990	22 7 1	31 9 6	34 8 8	26 8 8	19 714	12 5 6	14 5 9	9 410	11 510	24 817	34 8 4	35 9 4	35 9 4
1991	26 7 9	21 6 7	33 818	25 8 9	35 912	17 9 3	10 411	1310 3	17 6 7	28 8 6	22 7 8	4010 5	4010 5
1992	25 714	18 717	27 8 9	2711 3	16 6 8	13 516	11 512	6110 9	13 610	30 8 4	31 7 7	21 7 4	6110 9
1993	39 9 0	25 7 5	51 918	25 814	20 6 9	18 7 9	9 513	1613 5	21 7 2	28 819	23 7 4	35 9 5	51 918
1994	31 8 2	40 9 6	36 917	20 710	2710 3	12 513	14 612	15 611	16 6 9	2810 3	5712 5	36 913	5712 5
1995	31 814	18 7 7	28 815	19 710	13 8 3	19 717	26 8 6	25 8 6	14 9 3	27 815	19 636	25 7 1	31 814
MAX	6412 2	48 9 4	5210 8	42 913	35 912	32 7 7	40 816	6110 9	7311 5	4210 4	6210 9	5111 1	

MAX Hmo(m): 7.3 MAX Tp(sec): 11. MAX Dp(deg): 50. DATE(gmt): 1979090312

MAX WIND SPEED(m/sec): 25. MAX WIND DIRECTION(deg): 55. DATE(gmt): 1992082409

MEAN Hmo(m): 1.0 MEAN Tp(sec): 8.

STANDARD DEVIATION Hmo(m): 0.6 STANDARD DEVIATION Tp(sec): 3.6

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995
LAT: 26.50 N, LONG: 80.00 W, DEPTH: 90 M
SUMMARY OF WAVE INFORMATION BY MONTH

STATION: 11

OCCURRENCES OF WAVE HEIGHT BY MONTH FOR ALL YEARS

Hmo(m)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 0.49	228	241	356	397	808	1601	2335	1957	713	344	171	252	9403
0.50 - 0.99	1895	1641	1870	2108	2510	2487	2284	2325	2688	1829	1542	1831	25010
1.00 - 1.49	1585	1471	1289	1524	1192	521	274	466	929	1451	1566	1531	13799
1.50 - 1.99	686	619	708	444	309	146	40	118	263	790	905	656	5684
2.00 - 2.49	316	306	408	198	107	27	18	53	91	357	334	398	2613
2.50 - 2.99	119	137	191	83	28	15	5	12	67	128	157	161	1103
3.00 - 3.49	63	56	80	31	6	3	2	10	31	42	73	78	475
3.50 - 3.99	23	31	45	11	.	.	1	8	8	17	21	28	193
4.00 - 4.49	17	17	9	4	.	.	1	7	3	1	22	13	94
4.50 - 4.99	14	1	2	.	.	.	.	2	3	1	8	11	42
5.00 - 5.49	9	.	1	.	.	.	.	.	2	.	1	1	14
5.50 - 5.99	4	.	1	.	.	.	.	2	.	.	.	.	7
6.00 - 6.49	1	.	.	.	.	.	.	.	.	.	.	.	1
6.50 - 6.99	.	.	.	.	.	.	.	.	2	.	.	.	2
7.00 - 7.49	.	.	.	.	.	.	.	.	.	.	.	.	0
7.50 - 7.99	.	.	.	.	.	.	.	.	.	.	.	.	0
8.00 - 8.49	.	.	.	.	.	.	.	.	.	.	.	.	0
8.50 - 8.99	.	.	.	.	.	.	.	.	.	.	.	.	0
9.00 - 9.49	.	.	.	.	.	.	.	.	.	.	.	.	0
9.50 - 9.99	.	.	.	.	.	.	.	.	.	.	.	.	0
10.00 - GREATER	.	.	.	.	.	.	.	.	.	.	.	.	0
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 11

OCCURRENCES OF PEAK PERIOD BY MONTH FOR ALL YEARS

Tp(sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
3.0 - 3.9	148	98	139	136	300	446	850	708	212	32	42	87	3198
4.0 - 4.9	560	480	473	461	653	753	1267	921	387	210	359	449	6973
5.0 - 5.9	696	647	588	798	795	632	543	523	532	490	733	595	7572
6.0 - 6.9	701	737	751	672	669	675	429	539	590	747	876	789	8175
7.0 - 7.9	453	429	527	331	375	451	403	457	557	645	483	486	5597

8.0 - 8.9	343	344	420	342	362	419	351	511	558	574	432	424	5080
9.0 - 9.9	306	298	266	199	396	362	317	271	502	560	387	364	4228
10.0 - 10.9	210	244	256	222	305	326	200	254	353	380	303	248	3301
11.0 - 11.9	221	126	267	319	314	291	246	246	267	295	228	204	3024
12.0 - 12.9	272	158	284	416	374	196	213	230	249	279	244	222	3137
13.0 - 13.9	195	160	254	383	189	116	89	132	214	246	189	248	2415
14.0 - 14.9	190	155	296	232	95	72	31	70	171	202	190	274	1978
15.0 - 15.9	163	123	162	124	84	38	9	37	117	123	80	232	1292
16.0 - 16.9	192	172	84	70	25	17	6	23	45	80	92	114	920
17.0 - 17.9	131	152	52	32	10	5	3	18	25	47	74	74	623
18.0 - 18.9	91	93	55	17	8	1	3	12	14	22	36	57	409
19.0 - 19.9	53	48	42	23	2	.	.	3	7	11	32	32	253
20.0 - LONGER	35	56	44	23	4	.	.	5	.	17	20	61	265
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 11

OCCURRENCES OF PEAK DIRECTION BY MONTH FOR ALL YEARS

Dp(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
348.75 - 11.24 (0.0)	401	309	200	158	56	39	3	42	27	81	247	310	1873
11.25 - 33.74 (22.5)	706	586	424	364	360	292	146	349	567	586	714	819	5913
33.75 - 56.24 (45.0)	1603	1427	1767	1838	1871	1542	1202	1449	2132	2606	1637	1913	20987
56.25 - 78.74 (67.5)	865	830	878	852	787	831	562	734	1071	1162	1181	822	10575
78.75 - 101.24 (90.0)	238	260	306	408	506	389	589	683	364	218	416	291	4668
101.25 - 123.74 (112.5)	205	218	287	386	539	498	1022	600	254	78	201	231	4519
123.75 - 146.24 (135.0)	156	208	316	313	374	480	850	573	181	88	171	107	3817
146.25 - 168.74 (157.5)	198	187	300	196	232	381	366	354	106	53	79	127	2579
168.75 - 191.24 (180.0)	173	173	181	76	132	221	79	103	76	35	41	68	1358
191.25 - 213.74 (202.5)	27	25	14	11	11	55	59	22	13	7	12	22	278
213.75 - 236.24 (225.0)	27	11	31	13	11	26	34	22	4	9	6	24	218
236.25 - 258.74 (247.5)	17	11	27	14	12	27	31	8	2	1	2	7	159
258.75 - 281.24 (270.0)	24	27	32	17	38	14	15	6	.	5	8	15	201
281.25 - 303.74 (292.5)	88	61	60	37	17	.	1	4	.	4	5	22	299
303.75 - 326.24 (315.0)	88	90	60	60	9	1	1	3	.	9	25	78	424
326.25 - 348.74 (337.5)	144	97	77	57	5	4	.	8	3	18	55	104	572
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 11

OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR ALL DIRECTIONS

Hmo (m)	Tp(sec)										TOTAL	
	3.0- 4.9	5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- LONGER		

0.00 - 0.99	9291	5862	5506	4525	4313	2813	1313	579	172	39	34413
1.00 - 1.99	880	9138	3027	2148	1589	1360	762	358	197	24	19483
2.00 - 2.99	.	747	1846	447	198	193	129	91	52	13	3716
3.00 - 3.99	.	.	280	306	34	19	8	4	17	.	668
4.00 - 4.99	.	.	18	94	13	7	.	.	4	.	136
5.00 - 5.99	.	.	.	8	13	.	.	.	.	.	21
6.00 - 6.99	.	.	.	1	1	1	.	.	.	.	3
7.00 - 7.99	.	.	.	.	.	.	.	.	.	.	0
8.00 - 8.99	.	.	.	.	.	.	.	.	.	.	0
9.00 - GREATER	.	.	.	.	.	.	.	.	.	.	0
TOTAL	10171	15747	10677	7529	6161	4393	2212	1032	442	76	58440

STATION: 11

OCCURRENCES OF WIND SPEED BY MONTH FOR ALL YEARS

WS(m/sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 2.49	269	358	339	490	706	996	1046	1207	930	762	260	328	7691
2.50 - 4.99	1201	1001	1166	1350	1686	2207	2440	2209	1996	1314	1095	1284	18949
5.00 - 7.49	2040	1815	1983	1944	1952	1336	1362	1295	1423	1763	2012	1963	20888
7.50 - 9.99	898	783	831	688	484	214	83	166	265	780	922	788	6902
10.00 - 12.49	445	487	523	288	130	47	25	55	155	305	438	502	3400
12.50 - 14.99	70	67	94	38	2	.	2	18	17	33	59	77	477
15.00 - 17.49	35	9	21	2	.	.	2	7	10	2	11	17	116
17.50 - 19.99	2	.	3	.	.	.	.	1	1	1	3	1	12
20.00 - GREATER	.	.	.	.	.	.	.	2	3	.	.	.	5
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 11

OCCURRENCES OF WIND DIRECTION BY MONTH FOR ALL YEARS

WD(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
337.50 - 22.49 (0.0)	869	600	533	424	196	121	94	172	202	624	709	773	5317
22.50 - 67.49 (45.0)	929	748	727	635	666	434	245	341	942	1697	1361	1207	9932
67.50 - 112.49 (90.0)	938	981	1093	1355	1710	1311	1585	1965	2027	1390	1355	1175	16885
112.50 - 157.49 (135.0)	668	673	979	980	1199	1351	1650	1307	825	475	623	590	11320
157.50 - 202.49 (180.0)	404	451	587	392	521	833	706	588	422	217	213	308	5642
202.50 - 247.49 (225.0)	252	227	283	278	307	496	409	321	169	157	126	173	3198
247.50 - 292.49 (270.0)	275	299	320	320	218	167	197	123	118	123	127	206	2493
292.50 - 337.49 (315.0)	625	541	438	416	143	87	74	143	95	277	286	528	3653
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995
 LAT: 26.50 N, LONG: 80.00 W, DEPTH: 90 M
 OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR 22.5-DEG DIRECTION BANDS

STATION: 11

SUMMARY OF MEAN Hmo(m) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1976	1.34	1.10	1.03	1.02	0.86	0.67	0.41	0.72	0.53	1.48	1.30	1.57	1.00
1977	1.24	1.03	1.14	1.45	0.90	0.41	0.50	0.91	0.67	0.99	1.45	1.27	1.00
1978	1.24	1.43	1.09	0.89	0.70	0.65	0.56	0.54	0.87	1.59	1.31	1.49	1.03
1979	1.79	1.37	1.37	1.38	0.99	0.80	0.61	0.48	1.35	0.98	1.59	1.38	1.17
1980	1.15	1.54	1.23	0.98	0.77	0.56	0.42	0.78	0.64	0.93	1.49	1.37	0.99
1981	1.02	1.70	1.65	1.00	0.74	0.66	0.47	0.78	0.92	1.11	1.16	1.00	1.01
1982	0.96	0.87	1.06	0.81	0.84	0.76	0.41	0.53	0.69	1.23	1.24	1.22	0.88
1983	0.97	1.57	1.20	1.17	0.85	0.63	0.51	0.48	1.01	1.24	1.08	1.45	1.01
1984	1.72	1.18	1.22	1.00	1.06	0.69	0.59	0.48	1.27	1.52	1.80	1.26	1.15
1985	1.02	1.43	1.09	1.10	0.59	0.54	0.53	0.69	1.48	1.06	1.39	1.31	1.01
1986	1.28	1.04	1.52	0.93	1.13	0.56	0.42	0.77	0.96	1.13	1.18	1.39	1.03
1987	1.34	1.11	1.76	0.96	0.89	0.62	0.61	0.57	0.54	1.39	1.31	0.96	1.01
1988	1.42	1.05	1.01	0.97	0.85	0.77	0.57	0.53	0.94	1.07	0.95	0.90	0.92
1989	0.92	0.95	1.09	0.79	0.66	0.57	0.44	0.49	0.88	1.08	0.76	0.91	0.79
1990	0.87	1.32	1.23	1.09	0.84	0.62	0.59	0.44	0.74	1.01	1.13	1.16	0.92
1991	0.90	1.01	1.03	0.99	0.91	0.62	0.41	0.49	0.71	1.18	1.15	1.03	0.87
1992	0.98	0.96	0.86	1.03	0.85	0.60	0.58	0.62	0.72	1.10	1.39	1.16	0.90
1993	1.37	1.21	1.32	1.15	0.96	0.73	0.40	0.57	0.72	0.86	1.29	1.15	0.98
1994	1.36	1.22	1.03	1.03	0.82	0.56	0.65	0.63	0.76	1.00	1.30	1.34	0.97
1995	1.01	0.95	1.30	0.94	0.80	0.73	0.60	0.95	0.90	1.27	1.16	1.12	0.98
MEAN	1.20	1.20	1.21	1.03	0.85	0.64	0.51	0.62	0.87	1.16	1.27	1.22	

STATION: 11

MAX Hmo(m)*10 WITH ASSOCIATED Tp(sec) AND Dp(deg/10) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX
1976	39 9 3	36 9 7	36 9 4	28 8 1	31 813	12 512	8 512	2211 4	1013 6	39 9 4	32 7 2	39 9 2	39 9 2
1977	25 7 1	24 8 4	35 9 5	3910 5	29 8 5	13 516	11 511	23 7 8	20 6 8	24 7 0	41 9 1	34 9 4	41 9 1
1978	32 817	37 8 3	33 815	25 713	26 817	32 9 7	18 6 9	12 5 8	1811 4	4510 4	31 8 2	4610 7	4610 7
1979	5510 1	29 7 4	36 7 8	44 913	25 8 4	28 7 4	26 713	11 5 8	6810 4	27 7 9	4110 4	37 9 4	6810 4
1980	28 718	41 9 1	27 8 7	27 817	20 6 7	17 6 6	15 6 8	43 813	14 5 8	21 7 4	36 8 5	3011 4	43 813
1981	34 9 1	47 9 5	4120 6	33 9 6	18 615	17 6 5	13 613	401017	15 5 6	29 8 5	31 7 5	24 7 4	47 9 5
1982	29 819	24 611	38 817	27 719	18 5 6	27 716	17 612	12 514	12 5 9	3116 5	30 8 5	30 712	38 817
1983	30 8 5	43 914	551018	32 836	20 610	13 517	18 610	30 8 0	30 8 5	34 9 6	33 9 5	5011 2	551018
1984	6213 3	33 9 5	41 918	22 616	29 8 4	19 610	13 514	24 713	5110 6	30 9 5	4910 1	30 8 1	6213 3
1985	30 8 1	4010 7	4110 6	33 7 8	15 8 3	19 613	43 917	22 619	3810 4	24 7 6	49 8 9	40 9 3	49 8 9
1986	4710 5	33 9 0	3910 1	2215 5	2514 5	16 6 6	12 511	21 6 9	21 6 8	3810 5	32 9 5	42 913	4710 5
1987	49 9 1	28 818	41 8 9	22 7 0	31 916	26 916	16 513	14 5 9	1016 5	29 818	31 8 4	30 7 3	49 9 1
1988	33 7 9	27 8 7	21 610	23 711	21 6 5	29 8 5	16 5 7	21 6 6	32 813	23 7 5	30 718	2216 5	33 7 9
1989	2511 4	2010 3	38 8 1	15 8 3	19 612	12 516	9 510	18 6 9	24 735	26 9 3	16 6 7	2115 5	38 8 1

1990 23 6 0 30 8 7 30 7 8 24 7 7 19 613 13 5 5 13 5 9 9 410 11 510 25 716 34 8 4 35 8 5 35 8 5
 1991 25 7 9 21 7 7 32 818 24 7 9 34 912 18 9 3 10 517 1410 4 18 7 6 30 7 1 20 6 8 39 9 5 39 9 5
 1992 25 714 1810 4 25 7 9 2811 4 15 9 4 13 517 11 513 5910 8 12 9 4 29 8 5 28 8 4 21 7 4 5910 8
 1993 45 936 26 9 4 50 917 26 614 19 6 9 18 6 8 8 513 1813 5 21 7 2 29 819 2310 3 35 9 5 50 917
 1994 3110 5 43 9 6 37 817 18 711 28 9 3 10 514 13 613 13 612 1713 4 2911 4 5111 6 3410 3 5111 6
 1995 31 814 16 7 7 28 716 1810 3 14 8 3 18 717 27 8 6 26 9 7 15 9 3 25 816 19 636 24 7 0 31 814

MAX 6213 3 47 9 5 551018 44 913 34 912 32 9 7 43 917 5910 8 6810 4 4510 4 5111 6 5011 2

MAX Hmo(m): 6.8 MAX Tp(sec): 10. MAX Dp(deg): 40. DATE(gmt): 1979090312

MAX WIND SPEED(m/sec): 23. MAX WIND DIRECTION(deg): 15. DATE(gmt): 1992082406

MEAN Hmo(m): 1.0 MEAN Tp(sec): 8.

STANDARD DEVIATION Hmo(m): 0.6 STANDARD DEVIATION Tp(sec): 3.7

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995
 LAT: 26.75 N, LONG: 80.00 W, DEPTH: 45 M
 SUMMARY OF WAVE INFORMATION BY MONTH

STATION: 12

OCCURRENCES OF WAVE HEIGHT BY MONTH FOR ALL YEARS

Hmo(m)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 0.49	203	203	295	333	697	1508	2355	1906	576	244	150	217	8687
0.50 - 0.99	1742	1529	1739	1901	2478	2519	2265	2333	2545	1611	1370	1659	23691
1.00 - 1.49	1613	1526	1365	1683	1305	567	270	465	1125	1577	1625	1608	14729
1.50 - 1.99	780	644	748	547	326	162	45	163	314	893	946	721	6289
2.00 - 2.49	331	339	474	210	112	27	15	56	114	402	404	423	2907
2.50 - 2.99	154	137	188	86	38	15	6	12	73	147	184	184	1224
3.00 - 3.49	61	87	86	25	4	2	.	13	31	60	54	90	513
3.50 - 3.99	29	32	42	10	.	.	3	6	11	22	37	30	222
4.00 - 4.49	17	20	11	5	.	.	1	3	5	3	24	13	102
4.50 - 4.99	16	2	4	.	.	.	.	1	1	1	6	12	43
5.00 - 5.49	12	1	8	.	.	.	.	.	3	.	.	3	27
5.50 - 5.99	2	.	.	.	.	.	.	2	.	.	.	.	4
6.00 - 6.49	.	.	.	.	.	.	.	.	2	.	.	.	2
6.50 - 6.99	.	.	.	.	.	.	.	.	.	.	.	.	0
7.00 - 7.49	.	.	.	.	.	.	.	.	.	.	.	.	0
7.50 - 7.99	.	.	.	.	.	.	.	.	.	.	.	.	0
8.00 - 8.49	.	.	.	.	.	.	.	.	.	.	.	.	0
8.50 - 8.99	.	.	.	.	.	.	.	.	.	.	.	.	0
9.00 - 9.49	.	.	.	.	.	.	.	.	.	.	.	.	0
9.50 - 9.99	.	.	.	.	.	.	.	.	.	.	.	.	0
10.00 - GREATER	.	.	.	.	.	.	.	.	.	.	.	.	0
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 12

OCCURRENCES OF PEAK PERIOD BY MONTH FOR ALL YEARS

TP(sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
3.0 - 3.9	137	68	107	94	257	400	821	603	151	22	21	74	2755
4.0 - 4.9	493	402	380	356	510	630	1151	808	307	143	257	347	5784
5.0 - 5.9	600	593	528	708	769	614	509	518	497	419	614	547	6916
6.0 - 6.9	638	657	651	531	490	631	383	493	539	631	711	705	7060
7.0 - 7.9	441	388	540	299	403	460	430	515	546	617	481	443	5563
8.0 - 8.9	329	335	409	387	393	431	357	551	578	619	520	453	5362
9.0 - 9.9	297	303	269	226	462	385	362	315	548	592	431	361	4551
10.0 - 10.9	229	271	240	261	344	360	240	273	380	426	346	252	3622
11.0 - 11.9	220	134	294	388	372	345	285	276	304	332	251	211	3412
12.0 - 12.9	329	179	333	453	410	241	229	255	252	331	259	258	3529
13.0 - 13.9	235	194	319	461	229	132	127	152	247	266	233	286	2881
14.0 - 14.9	234	186	326	274	133	86	42	96	192	215	231	326	2341
15.0 - 15.9	190	150	210	167	112	53	11	36	128	147	114	292	1610
16.0 - 16.9	218	208	115	89	41	22	6	24	64	87	125	134	1133
17.0 - 17.9	159	183	70	38	16	8	3	20	35	53	92	99	776
18.0 - 18.9	108	122	68	18	10	2	3	14	22	29	58	65	519
19.0 - 19.9	58	71	53	25	5	.	1	5	10	13	35	45	321
20.0 - LONGER	45	76	48	25	4	.	.	6	.	18	21	62	305
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 12

OCCURRENCES OF PEAK DIRECTION BY MONTH FOR ALL YEARS

Dp(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
348.75 - 11.24 (0.0)	339	273	173	127	46	33	2	38	19	70	205	262	1587
11.25 - 33.74 (22.5)	522	444	327	270	289	220	115	297	408	358	551	663	4464
33.75 - 56.24 (45.0)	1521	1294	1725	1709	1928	1694	1313	1559	2152	2554	1592	1838	20879
56.25 - 78.74 (67.5)	1357	1363	1299	1422	1152	1108	778	973	1415	1576	1713	1283	15439
78.75 - 101.24 (90.0)	186	192	259	286	393	348	547	592	277	152	263	222	3717
101.25 - 123.74 (112.5)	161	141	202	298	402	320	782	485	175	50	135	164	3315
123.75 - 146.24 (135.0)	132	169	278	237	316	413	785	467	158	67	147	103	3272
146.25 - 168.74 (157.5)	164	180	278	196	201	283	358	371	98	51	60	112	2352
168.75 - 191.24 (180.0)	179	160	143	77	134	239	110	97	78	33	37	79	1366
191.25 - 213.74 (202.5)	27	28	19	16	12	64	61	25	14	5	9	16	296
213.75 - 236.24 (225.0)	26	17	28	11	7	36	46	26	3	7	7	23	237
236.25 - 258.74 (247.5)	22	14	27	11	11	25	40	8	2	3	4	6	173
258.75 - 281.24 (270.0)	31	27	31	11	39	12	21	7	.	4	2	11	196
281.25 - 303.74 (292.5)	77	58	55	34	17	.	1	3	.	4	4	27	280
303.75 - 326.24 (315.0)	99	78	50	55	6	1	1	7	.	11	19	72	399
326.25 - 348.74 (337.5)	117	82	66	40	7	4	.	5	1	15	52	79	468

TOTAL 4960 4520 4960 4800 4960 4800 4960 4960 4800 4960 4800 4960 58440

STATION: 12

OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR ALL DIRECTIONS

Hmo (m)	Tp (sec)										TOTAL
	3.0- 4.9	5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- LONGER	
0.00 - 0.99	7652	5234	5303	4463	4506	2985	1385	618	192	40	32378
1.00 - 1.99	887	7973	3654	2701	2065	1874	1105	514	219	26	21018
2.00 - 2.99	.	768	1715	591	283	316	221	136	79	22	4131
3.00 - 3.99	.	1	241	326	57	22	32	24	31	1	735
4.00 - 4.99	.	.	12	79	18	22	.	3	11	.	145
5.00 - 5.99	.	.	.	12	11	3	.	.	5	.	31
6.00 - 6.99	.	.	.	1	1	.	.	.	.	.	2
7.00 - 7.99	.	.	.	.	.	.	.	.	.	.	0
8.00 - 8.99	.	.	.	.	.	.	.	.	.	.	0
9.00 - GREATER	.	.	.	.	.	.	.	.	.	.	0
TOTAL	8539	13976	10925	8173	6941	5222	2743	1295	537	89	58440

STATION: 12

OCCURRENCES OF WIND SPEED BY MONTH FOR ALL YEARS

WS (m/sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 2.49	306	369	386	504	737	1055	1134	1264	949	763	304	376	8147
2.50 - 4.99	1181	1009	1112	1323	1691	2161	2410	2189	1981	1327	1091	1277	18752
5.00 - 7.49	1991	1747	2008	1951	1957	1320	1299	1251	1413	1728	2024	1935	20624
7.50 - 9.99	903	821	805	697	442	218	87	171	263	801	876	768	6852
10.00 - 12.49	465	490	531	281	131	46	26	58	163	303	433	504	3431
12.50 - 14.99	74	71	90	41	2	.	2	20	15	35	59	82	491
15.00 - 17.49	38	13	25	3	.	.	2	4	10	2	12	17	126
17.50 - 19.99	2	.	3	.	.	.	.	1	3	1	1	1	12
20.00 - GREATER	.	.	.	.	.	.	.	2	3	.	.	.	5
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 12

OCCURRENCES OF WIND DIRECTION BY MONTH FOR ALL YEARS

WD(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
337.50 - 22.49 (0.0)	849	593	551	425	194	123	96	149	199	633	728	750	5290
22.50 - 67.49 (45.0)	902	745	698	612	676	431	230	336	951	1678	1304	1177	9740
67.50 - 112.49 (90.0)	879	922	1053	1297	1643	1221	1386	1841	1962	1358	1314	1113	15989
112.50 - 157.49 (135.0)	636	649	928	955	1162	1277	1612	1283	806	467	651	594	11020

157.50 - 202.49 (180.0)	456	482	640	427	578	886	833	654	432	226	228	332	6174
202.50 - 247.49 (225.0)	274	246	310	311	322	587	511	396	211	168	143	200	3679
247.50 - 292.49 (270.0)	305	333	336	338	237	180	214	142	128	149	131	241	2734
292.50 - 337.49 (315.0)	659	550	444	435	148	95	78	159	111	281	301	553	3814

TOTAL 4960 4520 4960 4800 4960 4800 4960 4960 4800 4960 4800 4960 58440

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995
 LAT: 26.75 N, LONG: 80.00 W, DEPTH: 45 M
 OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR 22.5-DEG DIRECTION BANDS

STATION: 12

SUMMARY OF MEAN Hmo(m) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1976	1.39	1.13	1.05	1.09	0.86	0.69	0.39	0.78	0.62	1.58	1.32	1.61	1.04
1977	1.32	1.07	1.18	1.45	0.89	0.41	0.48	0.90	0.71	1.04	1.53	1.34	1.03
1978	1.28	1.56	1.15	0.92	0.72	0.66	0.55	0.55	0.95	1.72	1.38	1.56	1.08
1979	1.84	1.47	1.42	1.41	1.04	0.83	0.61	0.49	1.37	1.06	1.62	1.44	1.21
1980	1.25	1.63	1.32	1.04	0.81	0.58	0.42	0.78	0.69	1.03	1.63	1.44	1.05
1981	1.04	1.77	1.86	0.98	0.78	0.68	0.49	0.76	1.02	1.18	1.22	1.02	1.06
1982	1.01	0.89	1.07	0.85	0.87	0.78	0.40	0.54	0.75	1.35	1.32	1.23	0.92
1983	1.02	1.69	1.21	1.21	0.87	0.67	0.50	0.49	1.07	1.36	1.16	1.51	1.06
1984	1.79	1.19	1.27	1.06	1.08	0.69	0.58	0.47	1.34	1.57	1.87	1.28	1.18
1985	1.07	1.47	1.10	1.15	0.62	0.56	0.53	0.70	1.58	1.10	1.46	1.36	1.05
1986	1.32	1.11	1.54	0.99	1.20	0.55	0.42	0.79	1.04	1.19	1.23	1.44	1.07
1987	1.46	1.12	1.85	1.04	0.93	0.62	0.61	0.60	0.59	1.46	1.33	0.97	1.05
1988	1.46	1.07	1.02	1.03	0.88	0.79	0.58	0.53	0.94	1.14	0.99	0.93	0.95
1989	0.96	0.95	1.13	0.83	0.69	0.58	0.44	0.53	0.98	1.19	0.81	0.98	0.84
1990	0.87	1.34	1.25	1.18	0.84	0.61	0.60	0.48	0.82	1.07	1.14	1.22	0.95
1991	0.93	1.06	1.04	1.02	0.90	0.67	0.42	0.51	0.79	1.27	1.20	1.05	0.90
1992	1.01	0.99	0.88	1.07	0.90	0.59	0.56	0.60	0.75	1.15	1.43	1.24	0.93
1993	1.42	1.26	1.40	1.20	0.98	0.74	0.40	0.60	0.75	0.94	1.35	1.20	1.02
1994	1.43	1.30	1.09	1.07	0.85	0.57	0.62	0.63	0.77	1.09	1.32	1.45	1.02
1995	1.04	1.00	1.37	1.01	0.85	0.76	0.63	1.00	0.97	1.31	1.19	1.15	1.02
MEAN	1.25	1.25	1.26	1.08	0.88	0.65	0.51	0.64	0.92	1.24	1.33	1.27	

STATION: 12

MAX Hmo(m)*10 WITH ASSOCIATED Tp(sec) AND Dp(deg/10) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX
1976	38 9 3	3610 7	34 9 5	29 7 0	30 713	13 512	812 5	2412 5	1313 7	4011 4	33 8 2	39 9 2	4011 4
1977	27 7 1	25 8 4	35 9 5	4310 7	28 8 5	13 516	11 511	23 6 8	20 6 8	24 8 5	39 9 1	34 9 4	4310 7
1978	33 817	37 8 3	33 814	23 713	27 818	30 9 7	17 6 9	12 5 8	1911 4	4610 5	30 7 3	5114 5	5114 5
1979	5210 2	30 7 4	3610 6	43 913	24 8 4	28 8 5	26 713	12 5 9	6411 5	27 8 7	3910 4	36 9 5	6411 5
1980	3118 6	37 9 2	2914 5	27 814	19 6 7	17 8 3	15 6 8	40 914	1415 6	2212 4	4019 6	3211 4	4019 6
1981	35 9 1	4413 5	5220 6	32 9 6	1710 4	18 7 5	13 7 4	36 816	1812 5	28 8 5	31 7 5	23 633	5220 6

1982	27 819	22 714	33 818	31 816	18 9 4	26 715	16 612	14 612	13 5 8	3616 6	29 8 4	28 712	3616 6
1983	33 8 6	46 914	541019	32 836	20 6 9	14 617	17 610	32 9 3	31 9 5	31 8 7	33 9 5	4811 2	541019
1984	5712 3	32 9 5	42 918	22 716	28 8 5	19 7 1	13 514	23 714	50 9 6	30 9 5	4710 1	29 7 7	5712 3
1985	30 8 0	38 9 7	40 9 6	33 7 8	16 8 4	18 714	40 814	24 719	3910 4	2410 4	4411 7	41 9 3	4411 7
1986	46 9 5	32 936	39 9 1	2616 6	2715 5	16 6 6	11 512	20 6 8	22 6 8	3910 5	34 8 5	46 914	46 914
1987	5010 2	28 818	39 7 9	22 636	26 814	23 915	15 513	1615 5	1116 6	25 7 4	30 8 4	30 8 3	5010 2
1988	2916 7	26 8 7	20 610	22 612	21 6 5	28 8 5	17 8 4	24 7 7	30 813	22 7 5	35 818	2817 6	35 818
1989	2711 4	2110 3	39 8 1	16 8 3	20 612	13 517	9 411	17 6 9	2613 6	29 9 4	16 6 7	2315 5	39 8 1
1990	23 636	30 8 6	31 8 7	24 6 8	19 713	13 5 5	13 7 4	1012 5	1310 5	28 716	32 8 4	33 8 5	33 8 5
1991	24 611	22 7 7	30 817	25 6 9	33 913	20 9 4	10 517	1510 4	20 7 6	29 7 5	2415 5	37 9 5	37 9 5
1992	24 714	2110 5	24 610	2911 4	1712 5	13 616	11 513	5810 8	13 9 5	28 8 5	28 7 7	2414 5	5810 8
1993	47 935	27 9 4	50 918	26 814	17 6 9	18 613	8 513	2213 5	2213 5	30 818	2512 4	34 9 5	50 918
1994	3410 6	51 9 7	36 817	18 6 9	30 9 3	10 514	12 512	12 512	1813 4	3112 4	4911 6	40 9 3	51 9 7
1995	32 914	17 7 6	28 8 2	1910 3	15 8 3	18 618	25 8 6	24 8 6	16 9 3	26 716	19 736	24 7 0	32 914

MAX 5712 3 51 9 7 541019 43 913 33 913 30 9 7 40 814 5810 8 6411 5 4610 5 4911 6 5114 5

MAX Hmo(m): 6.4 MAX Tp(sec): 11. MAX Dp(deg): 54. DATE(gmt): 1979090315

MAX WIND SPEED(m/sec): 23. MAX WIND DIRECTION(deg): 60. DATE(gmt): 1992082409

MEAN Hmo(m): 1.0 MEAN Tp(sec): 8.

STANDARD DEVIATION Hmo(m): 0.6 STANDARD DEVIATION Tp(sec): 3.8

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995
 LAT: 27.00 N, LONG: 80.00 W, DEPTH: 45 M
 SUMMARY OF WAVE INFORMATION BY MONTH

STATION: 13

OCCURRENCES OF WAVE HEIGHT BY MONTH FOR ALL YEARS

Hmo (m)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 0.49	163	177	246	250	563	1312	2185	1764	433	161	99	175	7528
0.50 - 0.99	1556	1371	1561	1709	2344	2594	2404	2333	2247	1330	1189	1474	22112
1.00 - 1.49	1651	1545	1442	1721	1477	645	292	548	1396	1644	1602	1641	15604
1.50 - 1.99	873	708	783	742	398	189	54	197	407	1035	1009	810	7205
2.00 - 2.49	370	377	499	216	117	41	14	65	166	485	528	419	3297
2.50 - 2.99	162	161	255	103	54	18	7	26	82	186	228	249	1531
3.00 - 3.49	94	101	78	35	7	1	.	8	41	77	64	114	620
3.50 - 3.99	41	43	57	19	.	.	1	16	9	27	35	36	284
4.00 - 4.49	19	29	21	5	.	.	2	.	11	14	21	25	147
4.50 - 4.99	17	6	4	.	.	.	1	.	3	1	21	11	64
5.00 - 5.49	13	2	6	.	.	.	.	3	2	.	3	3	32
5.50 - 5.99	1	.	6	.	.	.	.	.	1	.	1	3	12
6.00 - 6.49	.	.	2	.	.	.	.	.	1	.	.	.	3
6.50 - 6.99	.	.	.	.	.	.	.	.	.	.	.	.	0
7.00 - 7.49	.	.	.	.	.	.	.	.	.	.	.	.	0
7.50 - 7.99	.	.	.	.	.	.	.	.	1	.	.	.	1
8.00 - 8.49	.	.	.	.	.	.	.	.	.	.	.	.	0
8.50 - 8.99	.	.	.	.	.	.	.	.	.	.	.	.	0

9.00 - 9.49	.	.	.	.	.	.	.	.	.	.	.	.	.	0
9.50 - 9.99	.	.	.	.	.	.	.	.	.	.	.	.	.	0
10.00 - GREATER	0

TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440
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STATION: 13

OCCURRENCES OF PEAK PERIOD BY MONTH FOR ALL YEARS

TP(sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
3.0 - 3.9	117	50	67	69	192	331	773	535	116	14	11	51	2326
4.0 - 4.9	412	310	286	257	435	511	913	725	200	100	173	270	4592
5.0 - 5.9	514	502	403	536	596	538	446	441	405	329	454	432	5596
6.0 - 6.9	598	630	576	490	512	710	530	496	566	586	640	619	6953
7.0 - 7.9	482	417	611	325	459	514	497	536	612	644	507	533	6137
8.0 - 8.9	320	370	430	450	399	452	343	584	570	637	593	458	5606
9.0 - 9.9	308	313	279	254	501	418	405	381	598	621	478	369	4925
10.0 - 10.9	274	282	261	324	399	394	279	317	415	458	398	290	4091
11.0 - 11.9	220	164	328	411	442	361	307	296	333	361	282	240	3745
12.0 - 12.9	376	200	377	490	432	250	246	275	261	378	289	288	3862
13.0 - 13.9	268	203	368	507	233	142	143	174	248	261	253	319	3119
14.0 - 14.9	247	214	345	288	150	89	48	95	199	208	246	336	2465
15.0 - 15.9	211	168	240	183	121	55	14	38	133	153	130	312	1758
16.0 - 16.9	224	226	124	102	49	24	8	19	72	95	133	158	1234
17.0 - 17.9	173	185	90	44	21	9	4	23	41	56	90	103	839
18.0 - 18.9	108	136	70	21	9	2	3	12	20	28	64	68	541
19.0 - 19.9	61	66	53	25	5	.	1	7	9	13	36	47	323
20.0 - LONGER	47	84	52	24	5	.	.	6	2	18	23	67	328

TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440
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STATION: 13

OCCURRENCES OF PEAK DIRECTION BY MONTH FOR ALL YEARS

Dp(deg) DIRECTION BAND & CENTER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
348.75 - 11.24 (0.0)	288	233	146	126	38	28	2	36	13	63	189	237	1399
11.25 - 33.74 (22.5)	426	390	253	196	230	176	109	251	291	248	444	525	3539
33.75 - 56.24 (45.0)	1501	1282	1683	1613	1877	1659	1296	1566	2035	2330	1510	1788	20140
56.25 - 78.74 (67.5)	1633	1586	1622	1789	1442	1285	947	1181	1748	1959	2016	1590	18798
78.75 - 101.24 (90.0)	191	203	285	298	397	488	801	630	284	156	272	250	4255
101.25 - 123.74 (112.5)	112	100	130	187	360	274	588	401	144	40	94	122	2552
123.75 - 146.24 (135.0)	104	138	218	202	233	293	551	337	126	50	114	68	2434
146.25 - 168.74 (157.5)	142	153	237	169	162	217	332	369	69	50	54	105	2059
168.75 - 191.24 (180.0)	187	164	158	77	122	218	136	105	73	25	27	76	1368
191.25 - 213.74 (202.5)	33	34	21	15	16	72	67	28	10	5	5	16	322
213.75 - 236.24 (225.0)	25	14	20	9	6	42	56	28	5	4	4	22	235

236.25 - 258.74 (247.5)	18	13	24	7	8	29	46	8	1	5	2	4	165
258.75 - 281.24 (270.0)	33	27	19	11	36	16	25	5	.	2	1	9	184
281.25 - 303.74 (292.5)	71	50	47	30	16	.	.	7	.	5	6	22	254
303.75 - 326.24 (315.0)	100	61	44	42	7	1	3	4	.	6	17	58	343
326.25 - 348.74 (337.5)	96	72	53	29	10	2	1	4	1	12	45	68	393

TOTAL 4960 4520 4960 4800 4960 4800 4960 4960 4800 4960 4800 4960 58440

STATION: 13

OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR ALL DIRECTIONS

Hmo(m)	Tp(sec)										TOTAL
	3.0- 4.9	5.0- 6.9	7.0- 8.9	9.0- 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- LONGER	
0.00 - 0.99	6107	4890	4851	4469	4406	2828	1287	589	175	38	29640
1.00 - 1.99	811	7367	4372	3216	2647	2253	1332	554	226	31	22809
2.00 - 2.99	.	292	2227	855	433	421	301	183	99	17	4828
3.00 - 3.99	.	.	277	358	72	51	66	47	25	8	904
4.00 - 4.99	.	.	16	102	32	27	6	7	21	.	211
5.00 - 5.99	.	.	.	15	16	4	.	.	9	.	44
6.00 - 6.99	.	.	.	1	.	.	.	.	2	.	3
7.00 - 7.99	.	.	.	.	1	.	.	.	.	.	1
8.00 - 8.99	.	.	.	.	.	.	.	.	.	.	0
9.00 - GREATER	.	.	.	.	.	.	.	.	.	.	0
TOTAL	6918	12549	11743	9016	7607	5584	2992	1380	557	94	58440

STATION: 13

OCCURRENCES OF WIND SPEED BY MONTH FOR ALL YEARS

WS(m/sec)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0.00 - 2.49	362	380	427	570	782	1126	1243	1322	969	796	343	430	8750
2.50 - 4.99	1176	1018	1106	1272	1685	2101	2302	2171	1985	1308	1089	1304	18517
5.00 - 7.49	1917	1720	1988	1943	1942	1319	1302	1217	1380	1680	2023	1869	20300
7.50 - 9.99	890	819	791	701	416	202	85	157	242	827	837	750	6717
10.00 - 12.49	493	494	524	267	133	52	24	66	183	305	432	497	3470
12.50 - 14.99	78	73	90	44	2	.	.	19	24	42	59	83	514
15.00 - 17.49	43	16	31	3	.	.	3	5	12	2	15	26	156
17.50 - 19.99	1	.	3	.	.	.	1	2	2	.	2	1	12
20.00 - GREATER	.	.	.	.	.	.	.	1	3	.	.	.	4
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

STATION: 13

OCCURRENCES OF WIND DIRECTION BY MONTH FOR ALL YEARS

WD(deg)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
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DIRECTION BAND & CENTER

337.50 - 22.49 (0.0)	827	597	535	419	195	121	88	142	190	627	738	738	5217
22.50 - 67.49 (45.0)	874	727	690	607	682	433	239	345	986	1641	1269	1145	9638
67.50 - 112.49 (90.0)	838	883	987	1230	1558	1118	1230	1740	1883	1329	1281	1067	15144
112.50 - 157.49 (135.0)	623	636	915	929	1158	1250	1570	1218	811	480	634	577	10801
157.50 - 202.49 (180.0)	492	517	665	472	614	911	942	735	430	236	249	366	6629
202.50 - 247.49 (225.0)	283	259	357	329	349	672	578	462	239	178	166	221	4093
247.50 - 292.49 (270.0)	331	371	354	376	263	197	236	166	150	163	141	276	3024
292.50 - 337.49 (315.0)	692	530	457	438	141	98	77	152	111	306	322	570	3894
TOTAL	4960	4520	4960	4800	4960	4800	4960	4960	4800	4960	4800	4960	58440

WIS ATLANTIC UPDATE -- WITH HURRICANES 1976 - 1995
 LAT: 27.00 N, LONG: 80.00 W, DEPTH: 45 M
 OCCURRENCES OF WAVE HEIGHT AND PEAK PERIOD FOR 22.5-DEG DIRECTION BANDS

STATION: 13
 SUMMARY OF MEAN H_{m0}(m) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1976	1.45	1.19	1.10	1.18	0.89	0.72	0.40	0.87	0.74	1.70	1.35	1.66	1.10
1977	1.40	1.09	1.22	1.49	0.92	0.41	0.48	0.94	0.77	1.11	1.65	1.42	1.08
1978	1.34	1.69	1.21	0.96	0.75	0.69	0.56	0.58	1.04	1.86	1.47	1.65	1.15
1979	1.93	1.57	1.55	1.51	1.11	0.88	0.62	0.51	1.42	1.16	1.71	1.53	1.29
1980	1.35	1.73	1.41	1.14	0.86	0.62	0.45	0.82	0.75	1.15	1.78	1.54	1.13
1981	1.07	1.88	2.02	1.02	0.84	0.70	0.53	0.77	1.14	1.28	1.30	1.05	1.13
1982	1.06	0.93	1.12	0.91	0.92	0.80	0.40	0.56	0.81	1.49	1.45	1.28	0.98
1983	1.09	1.82	1.25	1.27	0.92	0.74	0.51	0.51	1.14	1.48	1.27	1.59	1.13
1984	1.90	1.23	1.36	1.13	1.11	0.70	0.60	0.47	1.44	1.65	1.97	1.34	1.24
1985	1.11	1.54	1.14	1.23	0.66	0.60	0.54	0.72	1.71	1.17	1.61	1.43	1.12
1986	1.39	1.18	1.59	1.06	1.28	0.56	0.43	0.83	1.15	1.27	1.32	1.53	1.13
1987	1.60	1.17	1.98	1.13	1.01	0.64	0.62	0.64	0.66	1.55	1.41	1.02	1.12
1988	1.58	1.14	1.09	1.11	0.98	0.89	0.72	0.57	1.03	1.26	1.07	1.04	1.04
1989	1.00	0.97	1.18	0.87	0.74	0.62	0.44	0.59	1.11	1.32	0.88	1.03	0.90
1990	0.94	1.41	1.34	1.32	0.91	0.69	0.66	0.54	0.98	1.16	1.21	1.37	1.04
1991	0.97	1.12	1.06	1.06	0.91	0.73	0.43	0.54	0.88	1.41	1.25	1.10	0.95
1992	1.08	1.05	0.94	1.15	0.98	0.65	0.66	0.65	0.80	1.25	1.52	1.37	1.01
1993	1.50	1.31	1.50	1.27	1.02	0.77	0.40	0.64	0.79	1.03	1.45	1.28	1.08
1994	1.50	1.40	1.14	1.15	0.89	0.61	0.63	0.65	0.79	1.19	1.40	1.57	1.08
1995	1.08	1.06	1.45	1.07	0.92	0.80	0.67	1.06	1.04	1.40	1.26	1.20	1.08
MEAN	1.32	1.32	1.33	1.15	0.93	0.69	0.54	0.67	1.01	1.34	1.42	1.35	

STATION: 13
 MAX H_{m0}(m)*10 WITH ASSOCIATED T_p(sec) AND D_p(deg/10) BY MONTH AND YEAR

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAX
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1976	3810 3	3610 7	33 9 5	30 7 0	30 713	14 612	812 5	2713 6	1714 7	4211 4	35 8 2	40 8 3	4211 4
1977	29 7 2	27 8 4	36 9 5	4310 7	27 8 6	14 517	11 512	25 8 8	21 7 8	25 9 5	39 9 1	36 9 4	4310 7
1978	34 817	39 9 4	34 814	23 711	28 818	30 8 7	18 6 9	12 5 9	2112 5	4910 5	32 7 3	5614 6	5614 6
1979	5111 4	32 7 5	4410 7	44 913	25 8 4	29 8 7	27 713	12 5 9	7611 7	30 8 8	3910 5	36 9 5	7611 7
1980	3518 6	4118 6	3114 5	29 814	18 6 7	18 8 3	16 6 8	39 813	1515 6	2412 4	4619 6	3411 4	4619 6
1981	35 9 2	4613 5	6020 6	31 9 6	17 612	18 7 5	14 7 4	37 917	2112 5	29 7 1	32 7 5	23 632	6020 6
1982	26 818	22 714	32 817	34 818	19 9 4	25 715	16 612	15 612	13 5 8	4116 6	2814 7	27 712	4116 6
1983	35 8 6	4917 6	551019	33 836	20 7 9	15 618	18 7 9	35 9 3	33 9 5	29 8 7	33 9 5	4810 2	551019
1984	5612 3	31 817	43 918	24 717	28 8 5	20 7 9	13 515	23 714	5210 7	30 9 5	4710 2	30 8 7	5612 3
1985	31 7 1	37 9 7	40 9 6	39 8 8	17 8 4	18 714	47 912	27 719	4416 7	2710 4	5511 9	43 9 3	5511 9
1986	4810 5	32 936	39 9 1	2816 6	3015 5	17 6 7	11 512	22 6 8	24 7 8	4210 5	36 8 5	46 914	4810 5
1987	5210 3	29 818	4710 8	2312 5	25 7 7	22 915	15 513	1714 5	1216 6	26 8 9	30 8 4	30 8 3	5210 3
1988	3416 7	27 8 7	20 710	24 612	20 6 5	29 8 5	19 6 7	27 7 8	29 813	22 7 5	42 818	3217 6	42 818
1989	3011 4	23 9 3	43 8 1	17 8 3	19 612	13 516	9 5 9	18 6 9	3013 6	3215 5	1713 7	2415 5	43 8 1
1990	22 636	29 8 6	32 8 8	2510 6	19 613	1310 4	14 9 6	1112 5	1512 7	29 816	32 8 4	32 8 5	32 8 5
1991	26 7 8	2310 7	30 718	26 8 8	30 711	21 9 4	11 517	1710 5	21 7 7	2812 6	2715 5	36 9 5	36 9 5
1992	24 714	2410 5	27 8 8	3011 4	18 9 5	14 617	11 513	5410 8	15 9 5	28 8 7	31 8 7	2714 5	5410 8
1993	50 935	27 9 4	51 918	26 814	18 6 9	19 613	7 7 5	2513 5	2513 5	31 818	2812 4	35 9 5	51 918
1994	3610 6	5311 7	37 916	19 6 9	3210 3	9 514	12 516	12 511	1913 4	3312 5	5011 6	42 9 3	5311 7
1995	33 914	19 7 7	29 8 1	20 9 3	15 8 3	20 717	26 8 6	27 9 6	17 9 4	26 716	19 6 0	24 7 0	33 914

MAX 5612 3 5311 7 6020 6 44 913 3210 3 30 8 7 47 912 5410 8 7611 7 4910 5 5511 9 5614 6

MAX Hmo(m): 7.6 MAX Tp(sec): 11. MAX Dp(deg): 72. DATE(gmt): 1979090315

MAX WIND SPEED(m/sec): 30. MAX WIND DIRECTION(deg): 45. DATE(gmt): 1979090315

MEAN Hmo(m): 1.1 MEAN Tp(sec): 9.

STANDARD DEVIATION Hmo(m): 0.7 STANDARD DEVIATION Tp(sec): 3.8