Appendix B

- Climatological Data
- Meteorological Data
- Atmospheric Pressure Conversion
- Mean Surface Water Temperatures and Densities
- Table for Estimating Time of Transit
- Determination of Wind Speed by Sea Condition
- Distances Between Ports
- Distances of Visibility for Objects Having Various Elevations
- Conversion of Degrees to Points
- Standard Abbreviations Used in Broadcasts
- Conversion Factors
- Measurements and Equivalencies
- Tips for Boating Clean and Green

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

NORFOLK, VA (36°54'N, 76°12'W) 43 feet (13.1 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1019.6	1018.9	1017.0	1016.1	1016.3	1015.8	1016.7	1017.1	1018.3	1019.2	1019.3	1020.2	1017.9	49
TEMPERATURE (°F)														
Mean	40.5	42.2	49.1	58.3	66.8	74.9	79.4	77.8	72.4	61.9	52.6	44.0	60.1	50
Mean daily maximum	48.4	50.7	58.0	68.0	75.8	83.6	87.5	85.5	80.0	70.1	61.3	52.2	68.5	50
Mean daily minimum	32.1	33.2	39.7	48.1	57.3	65.7	70.8	69.6	64.2	53.2	43.4	35.4	51.2	50
Extreme (highest)	78	82	88	97	100	101	103	104	99	95	86	80	104	50
Extreme (lowest)	-3	8	18	28	36	45	54	49	45	27	20	7	-3	50
RELATIVE HUMIDITY														
Average percentage	70.6	64.1	45.0	35.8	37.6	33.3	41.6	46.3	58.2	66.8	68.3	76.5	53.7	50
CLOUD COVER														
Percent of time clear	26.4	27.5	26.6	26.3	20.9	18.2	16.3	16.9	21.9	29.6	29.8	28.7	24.1	48
Percent of time scattered	13.3	13.0	14.6	17.4	18.0	23.4	24.3	24.2	22.5	18.2	17.3	14.6	18.4	48
Percent of time broken	12.4	12.8	14.0	17.0	20.5	24.3	26.0	26.1	21.8	16.1	15.7	13.5	18.4	48
Percent of time overcast	44.6	43.3	41.3	35.4	35.5	28.7	27.1	27.2	28.6	32.1	33.2	39.2	34.7	48
PRECIPITATION (inches)														
Mean amount	3.6	3.2	3.8	3.0	3.6	3.5	5.2	5.2	3.8	3.3	3.0	3.1	44.8	50
Greatest amount	9.9	6.2	10.3	7.2	10.1	9.7	14.3	14.3	13.8	10.1	7.0	6.1	64.9	50
Least amount	1.0	0.8	0.7	0.4	0.6	0.3	0.3	0.7	0.2	0.5	0.4	0.6	26.4	50
Maximum amount (24 hours)	3.7	2.6	3.7	5.8	3.4	5.7	4.7	7.4	6.4	3.7	3.3	2.5	7.4	50
Mean number of days	15	14	15	14	14	13	14	14	11	11	12	13	160	50
SNOW														
Mean amount	2.9	3.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	8.0	48
Greatest amount	14.2	24.4	13.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	14.7	41.9	48
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	48
Maximum amount (24 hours)	9.0	13.6	8.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	10.4	13.6	48
Mean number of days	4.0	4.0	2.0	Miss	0.0	0.0	0.0	0.0	0.0	0.0	Miss	2.0	12.0	50
WIND														
Percentage with gales	0.01	0.05	0.02	0.02	0.01	0.00	0.00	0.02	0.04	0.07	0.02	0.01	0.02	50
Mean wind speed (knots)	9.9	10.3	10.7	10.2	9.1	8.4	7.8	7.6	8.3	8.9	9.2	9.5	9.1	50
Direction (percentage of observations)														
North	11.5	11.2	8.6	6.7	5.1	4.0	3.3	4.1	5.9	8.3	8.0	9.9	7.2	50
North Northeast	9.7	10.5	8.5	6.6	6.9	5.5	4.7	6.0	8.1	10.4	8.0	8.9	7.8	50
Northeast	7.5	8.3	9.1	8.3	10.0	9.2	7.8	10.5	13.9	12.5	8.6	7.3	9.4	50
East Northeast	3.0	3.7	4.9	5.6	6.8	6.6	5.4	7.5	8.7	6.8	3.7	3.0	5.5	50
East	1.8	2.7	3.8	3.5	4.6	4.8	4.2	4.8	5.6	4.1	2.8	2.0	3.7	50
East Southeast	1.5	2.3	3.7	4.0	4.4	4.7	3.9	4.0	4.0	2.6	2.3	1.5	3.2	50
Southeast	2.6	3.2	4.2	5.0	5.8	5.9	5.1	5.2	4.8	3.6	3.1	2.5	4.3	50
South Southeast	2.9	3.6	4.7	5.5	5.9	5.6	5.3	5.4	4.4	3.5	3.7	3.1	4.5	50
South	7.0	6.6	7.4	9.0	9.2	9.2	10.2	9.4	8.0	6.8	8.5	7.4	8.2	50
South Southwest	8.2	7.9	8.2	10.3	9.7	11.3	12.8	10.3	8.4	7.7	9.0	8.8	9.4	50
Southwest	9.6	8.7	8.7	10.8	11.0	12.8	15.8	12.4	9.0	8.8	10.4	10.7	10.7	50
West Southwest	6.2	6.2	5.4	5.8	5.7	6.1	7.3	5.4	3.9	4.5	6.1	6.6	5.8	50
West	6.2	5.2	4.7	4.7	3.8	4.1	3.9	3.2	2.6	3.0	5.1	5.9	4.4	50
West Northwest	5.8	5.4	5.3	4.4	3.1	2.6	2.4	1.9	2.1	3.1	5.0	5.7	3.9	50
Northwest	6.8	6.1	5.8	4.2	2.8	2.4	2.1	2.5	3.0	4.8	6.2	7.2	4.5	50
North Northwest	6.9	6.1	5.2	3.9	2.4	2.0	1.7	2.0	2.4	4.4	5.6	6.1	4.1	50
Calm	2.7	2.4	1.8	1.8	2.8	3.2	4.0	5.2	5.1	5.0	3.9	3.6	3.5	50
Direction (mean speed, knots)														
North	11.3	11.9	12.0	12.1	10.6	10.1	8.9	9.5	11.3	11.6	11.2	11.4	11.3	50
North Northeast	10.5	11.2	11.6	11.3	10.7	9.5	8.8	9.8	11.5	12.0	11.0	11.1	10.9	50
Northeast	9.8	10.1	10.5	10.5	10.6	9.9	9.1	9.7	11.1	11.3	10.1	9.4	10.3	50
East Northeast	7.9	9.0	9.8	9.9	9.3	9.5	8.6	8.8	9.7	9.5	8.5	7.9	9.2	50
East	7.0	7.5	8.2	8.2	7.6	7.5	7.0	6.8	7.0	7.6	7.5	7.0	7.4	50
East Southeast	6.5	7.8	8.2	8.2	7.3	7.3	6.6	6.6	6.5	6.9	7.8	7.0	7.2	50
Southeast	7.3	8.0	8.3	8.1	7.8	7.3	6.9	6.5	6.6	6.6	7.3	7.3	7.3	50
South Southeast	7.9	8.2	9.1	8.4	7.9	7.0	6.5	6.6	6.5	6.8	7.9	7.8	7.5	50
South	8.6	8.7	10.3	9.5	8.6	7.8	7.4	7.2	6.9	7.2	8.3	8.4	8.2	50
South Southwest	9.7	10.3	11.0	11.0	9.6	9.1	8.5	7.9	7.9	7.8	8.9	9.4	9.2	50
Southwest	10.8	10.7	11.8	11.2	10.1	9.5	9.0	8.3	8.1	8.3	9.0	9.8	9.6	50
West Southwest	10.9	11.5	11.7	10.9	9.7	9.0	8.4	7.8	8.1	8.3	9.4	10.1	9.7	50
West	10.8	11.2	11.5	10.6	9.0	8.0	7.4	6.9	7.1	7.8	9.5	9.8	9.5	50
West Northwest	10.8	12.0	12.2	11.1	9.1	8.7	7.2	7.2	7.5	8.8	9.9	10.6	10.2	50
Northwest	10.9	11.7	12.3	11.1	9.3	8.1	7.0	6.8	8.1	9.3	10.4	10.7	10.2	50
North Northwest	12.0	11.8	12.3	11.7	10.1	9.0	8.2	8.3	9.9	11.5	11.5	11.6	11.2	50
VISIBILITY														
Mean number of days with fog	13	12	12	11	13	12	13	16	14	14	13	12	155	50

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Se (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

CAPE HATTERAS, NC (35°16'N, 75°33'W) 23 feet (7 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1019.4	1018.1	1017.1	1016.4	1017.1	1016.1	1017.1	1016.9	1018.1	1018.4	1019.3	1020.2	1017.9	39
TEMPERATURE (°F)														
Mean	45.4	46.2	51.6	59.6	67.4	74.6	79.0	78.6	74.6	65.6	57.3	49.3	62.6	41
Mean daily maximum	52.8	53.8	59.3	67.5	74.6	81.1	85.1	84.7	80.8	72.3	64.6	56.7	69.6	41
Mean daily minimum	37.5	38.0	43.4	51.2	59.7	67.6	72.3	71.9	67.9	58.5	49.6	41.5	55.1	41
Extreme (highest)	75	76	81	89	91	95	96	94	92	89	81	78	96	41
Extreme (lowest)	6	14	19	26	39	44	54	56	45	32	22	12	6	41
RELATIVE HUMIDITY														
Average percentage	68.9	56.0	45.8	39.5	45.6	35.6	46.5	44.4	55.5	59.0	68.2	77.3	53.6	39
CLOUD COVER														
Percent of time clear	29.4	27.3	29.2	32.4	26.1	21.3	19.2	18.6	26.8	32.6	30.7	30.1	27.0	38
Percent of time scattered	11.1	11.7	13.3	16.3	18.7	20.7	21.2	22.4	23.0	17.6	15.6	14.1	17.2	38
Percent of time broken	12.2	11.2	12.2	14.6	18.0	21.0	23.0	21.7	17.6	14.9	15.1	12.8	16.2	38
Percent of time overcast	43.7	46.9	42.6	33.5	32.6	32.7	31.0	32.2	28.6	31.1	34.8	39.8	35.7	38
PRECIPITATION (inches)														
Mean amount	5.4	4.0	4.6	3.2	3.7	4.2	5.0	6.2	5.3	5.2	4.9	4.5	56.7	41
Greatest amount	12.4	8.4	11.2	9.5	11.4	10.8	9.9	16.1	20.0	15.0	16.2	9.6	90.8	41
Least amount	1.7	1.0	0.9	0.3	0.3	0.3	0.4	0.9	0.0	0.5	1.1	0.6	41.5	41
Maximum amount (24 hours)	5.9	2.8	4.5	5.1	3.2	6.1	5.2	7.5	5.4	8.3	7.6	3.5	8.30	41
Mean number of days	14	13	13	11	12	11	14	13	12	11	11	13	148	41
SNOW														
Mean amount	0.4	0.5	0.4	T	0.0	0.0	0.0	0.0	0.0	0.0	T	0.5	1.9	39
Greatest amount	3.5	4.4	8.5	T	0.0	0.0	0.0	0.0	0.0	0.0	T	13.5	13.8	39
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39
Maximum amount (24 hours)	3.5	4.4	7.0	T	0.0	0.0	0.0	0.0	0.0	0.0	T	8.2	8.2	39
Mean number of days	2.0	1.0	Miss	Miss	0.0	0.0	0.0	0.0	0.0	0.0	Miss	1.0	4.0	41
WIND														
Percentage with gales	0.00	0.07	0.02	0.02	0.00	0.01	0.00	0.07	0.10	0.05	0.03	0.01	0.06	39
Mean wind speed (knots)	10.5	10.6	10.4	10.2	9.5	9.2	8.6	8.3	9.2	9.8	9.7	10.1	9.7	39
Direction (percentage of observations)														
North	15.3	12.7	7.8	5.8	4.5	2.8	1.8	3.8	5.7	10.6	12.4	14.1	8.1	39
North Northeast	13.7	16.1	14.2	10.0	10.1	8.6	5.0	8.9	14.8	18.5	13.4	12.7	12.1	39
Northeast	6.8	8.9	11.5	10.5	13.6	11.9	8.2	12.3	19.4	15.9	8.9	7.0	11.3	39
East Northeast	2.3	2.8	5.3	5.5	5.8	6.7	5.3	7.1	8.3	6.1	4.1	2.3	5.1	39
East	1.1	1.2	2.1	2.8	3.4	3.1	3.2	3.4	3.2	2.9	1.9	1.0	2.4	39
East Southeast	1.0	1.2	1.9	2.3	2.5	3.0	2.5	2.7	3.3	2.5	1.8	1.0	2.2	39
Southeast	1.1	1.4	2.1	2.4	2.9	3.6	2.4	2.9	3.2	2.3	2.1	1.1	2.3	39
South Southeast	1.5	1.9	2.6	3.0	3.7	3.5	2.6	3.4	3.2	2.4	2.5	1.9	2.7	39
South	3.1	3.3	4.4	5.8	6.9	6.4	5.6	6.1	4.9	3.2	4.2	3.0	4.8	39
South Southwest	3.0	4.1	6.3	8.8	10.4	11.7	13.8	9.5	5.7	3.6	4.5	3.3	7.1	39
Southwest	6.3	8.8	10.5	15.8	16.4	18.2	23.2	16.2	8.7	5.5	6.5	6.8	11.9	39
West Southwest	9.2	9.4	9.1	9.9	8.9	10.4	14.4	10.9	6.0	5.4	7.4	8.6	9.1	39
West	7.6	6.2	5.6	4.7	3.2	3.3	4.7	3.6	3.4	4.2	6.5	8.3	5.1	39
West Northwest	8.3	6.3	5.2	3.7	2.4	1.8	2.2	2.3	2.6	4.2	7.1	8.5	4.5	39
Northwest	8.5	6.4	4.5	3.7	1.8	1.3	1.4	1.7	2.0	3.8	6.2	9.0	4.2	39
North Northwest	9.3	7.0	5.0	3.6	1.9	1.4	1.0	1.7	2.5	6.1	8.1	9.5	4.7	39
Calm	1.9	2.3	1.9	1.9	1.9	2.1	2.8	3.6	3.1	2.8	2.4	1.8	2.4	39
Direction (mean speed, knots)														
North	11.2	11.4	11.9	11.8	11.2	9.2	8.0	8.4	9.7	9.6	10.0	10.3	10.5	39
North Northeast	11.5	11.9	12.0	12.2	11.5	10.7	8.5	9.5	11.1	11.6	11.1	11.3	11.3	39
Northeast	10.2	10.2	10.1	10.5	10.4	9.8	9.0	9.5	10.5	11.1	9.9	10.7	10.2	39
East Northeast	8.3	7.7	8.2	8.5	8.4	8.5	8.1	7.9	9.4	9.3	8.6	9.4	8.6	39
East	8.3	6.8	7.3	7.3	7.4	8.0	7.2	7.1	8.2	9.2	7.7	8.8	7.7	39
East Southeast	10.0	8.3	7.5	7.2	7.4	7.6	7.2	7.1	8.7	9.8	9.3	8.6	8.1	39
Southeast	9.5	10.6	8.8	8.4	8.1	7.9	7.0	7.3	8.5	9.1	9.2	10.5	8.4	39
South Southeast	11.5	10.1	9.8	9.4	8.5	8.5	7.4	7.5	8.9	10.0	10.4	11.3	9.2	39
South	12.4	11.6	10.6	10.1	9.5	8.9	8.4	8.1	8.4	9.5	10.5	11.0	9.6	39
South Southwest	11.8	10.5	11.1	10.6	10.1	10.0	9.5	8.9	9.1	9.6	9.9	10.5	10.0	39
Southwest	12.0	11.5	11.4	11.2	10.2	10.2	10.1	9.8	9.5	10.4	10.8	11.2	10.5	39
West Southwest	11.1	11.0	10.1	10.8	9.3	9.6	9.3	8.9	8.7	9.8	10.5	10.7	10.0	39
West	10.0	10.2	9.9	9.3	7.7	8.1	7.6	7.2	7.3	8.2	9.1	9.2	8.9	39
West Northwest	9.4	10.3	10.7	9.3	7.5	7.9	6.7	6.4	6.7	7.6	8.7	8.9	8.8	39
Northwest	10.1	10.7	10.7	10.5	8.4	8.4	7.2	6.9	7.3	8.4	9.0	10.1	9.6	39
North Northwest	10.3	10.7	11.8	10.6	8.9	8.6	7.4	7.2	8.3	9.5	9.9	10.0	10.0	39
VISIBILITY														
Mean number of days with fog	13	11	12	8	10	9	9	9	8	10	10	11	120	41

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Se (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

NEW BERN, NC (35°04'N, 77°03'W) 16 feet (4.9 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1021.6	1019.0	1016.7	1016.1	1014.6	1015.3	1017.1	1016.1	1017.1	1018.3	1018.4	1020.4	1017.6	6
TEMPERATURE (°F)														
Mean	45.0	46.6	53.6	62.0	69.6	76.5	80.1	79.0	74.0	64.3	54.9	46.9	62.8	38
Mean daily maximum	55.0	57.3	64.7	73.6	80.0	86.0	88.8	87.4	83.1	74.8	66.2	57.5	72.9	38
Mean daily minimum	34.4	35.5	42.0	49.8	58.7	66.5	70.9	70.0	64.4	53.3	43.2	35.9	52.1	38
Extreme (highest)	81	83	90	95	100	105	106	103	101	97	87	83	106	38
Extreme (lowest)	1	6	17	29	32	44	55	50	43	26	17	-4	-4	38
RELATIVE HUMIDITY														
Average percentage	90.6	65.2	42.5	35.7	21.4	28.3	45.9	36.4	46.0	57.6	59.4	79.2	50.7	6
CLOUD COVER														
Percent of time clear	28.3	32.7	32.4	35.6	30.0	20.5	21.8	21.5	24.3	36.0	43.1	36.7	30.2	6
Percent of time scattered	15.3	14.4	15.2	18.3	20.1	24.2	23.7	23.7	21.7	16.5	15.4	12.8	18.5	6
Percent of time broken	16.6	16.1	15.4	17.7	22.0	29.2	29.8	29.0	22.7	16.8	13.6	13.0	20.2	6
Percent of time overcast	35.5	34.4	34.4	25.4	23.9	21.1	19.2	20.6	25.6	26.3	25.5	34.2	27.1	6
PRECIPITATION (inches)														
Mean amount	4.2	3.8	3.9	2.9	4.3	4.8	6.7	6.5	5.0	2.8	3.2	3.7	52.3	38
Greatest amount	8.0	9.3	9.1	5.5	8.0	8.6	16.0	13.0	13.9	9.8	7.6	9.7	70.8	38
Least amount	0.7	0.6	0.6	0.7	0.9	1.2	0.2	1.7	0.9	0.4	0.2	0.3	36.0	38
Maximum amount (24 hours)	3.8	2.7	3.2	2.2	4.5	3.1	7.3	8.8	7.4	2.9	3.3	4.7	8.8	38
Mean number of days	14	12	13	11	13	12	16	15	11	9	10	12	148	36
SNOW														
Mean amount	0.9	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.4	2.3	38
Greatest amount	16.5	13.0	11.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	T	8.8	19.1	38
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38
Maximum amount (24 hours)	12.5	11.0	9.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	T	6.2	12.5	38
Mean number of days	2.0	1.0	1.0	Miss	0.0	0.0	0.0	0.0	0.0	0.0	Miss	1.0	5.0	36
WIND														
Percentage with gales	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07	0.00	0.00	1.39	6
Mean wind speed (knots)	7.8	8.1	8.4	8.5	7.0	6.7	6.5	6.1	6.1	6.2	6.4	6.8	7.0	6
Direction (percentage of observations)														
North	4.2	8.4	6.1	4.1	5.4	4.2	2.4	5.9	8.6	9.4	5.1	6.6	5.9	6
North Northeast	6.2	7.0	4.4	2.9	6.7	6.0	5.2	9.4	14.4	15.9	6.5	7.5	7.7	6
Northeast	6.1	6.7	6.6	6.4	6.2	7.7	6.1	8.5	11.7	12.4	6.5	6.0	7.6	6
East Northeast	3.7	3.9	6.1	4.3	4.7	4.3	3.0	3.2	5.1	5.5	5.1	2.8	4.3	6
East	1.9	4.7	3.6	2.0	2.8	3.4	2.7	3.1	2.3	2.6	1.7	1.3	2.7	6
East Southeast	3.0	3.0	3.8	2.9	2.1	4.0	1.7	3.4	3.1	2.2	1.7	1.6	2.7	6
Southeast	2.4	3.6	3.3	2.7	4.6	3.7	3.0	3.2	3.1	3.2	2.6	2.3	3.1	6
South Southeast	3.8	3.3	3.6	3.8	4.7	5.8	5.3	5.5	4.0	2.1	3.5	3.5	4.1	6
South	5.9	4.5	5.0	9.8	8.2	9.4	11.6	11.4	5.9	3.0	5.1	4.1	7.0	6
South Southwest	14.1	9.3	9.7	15.8	10.3	12.6	14.2	10.1	6.4	4.1	7.4	6.5	10.0	6
Southwest	12.0	9.8	8.6	12.4	11.7	12.2	16.0	11.6	8.5	5.9	10.4	9.2	10.7	6
West Southwest	8.5	6.4	6.0	7.5	6.3	6.0	8.9	4.7	3.9	2.8	5.5	6.6	6.1	6
West	6.3	5.0	5.5	5.2	4.5	3.2	3.8	3.3	2.4	2.3	5.0	6.6	4.4	6
West Northwest	5.7	5.5	7.7	6.1	3.8	3.4	2.0	2.9	2.3	2.8	6.5	6.4	4.6	6
Northwest	5.8	7.6	7.3	4.5	4.2	3.2	2.8	2.8	3.6	4.8	7.5	7.3	5.1	6
North Northwest	4.0	5.5	6.3	3.8	4.8	2.7	1.6	2.1	2.8	5.9	4.3	6.3	4.2	6
Calm	6.6	6.0	6.3	5.8	9.0	8.0	9.7	9.0	11.7	15.1	15.8	15.5	9.9	6
Direction (mean speed, knots)														
North	8.0	8.6	8.7	9.2	7.3	7.7	6.4	7.3	7.6	9.1	8.7	9.2	8.3	6
North Northeast	9.5	9.0	8.4	8.6	8.0	8.3	8.0	7.6	8.7	8.9	7.7	9.1	8.5	6
Northeast	7.6	7.2	6.7	7.4	6.6	7.0	7.1	5.9	6.9	6.2	6.2	6.2	6.7	6
East Northeast	5.8	6.5	6.6	7.0	5.8	6.5	6.9	6.3	6.1	6.2	5.6	5.3	6.2	6
East	4.8	5.3	5.4	5.6	5.0	5.7	4.9	4.7	4.7	4.8	3.7	3.9	5.0	6
East Southeast	5.9	6.2	5.8	6.1	6.5	6.5	5.6	6.0	5.0	5.9	5.2	5.1	5.9	6
Southeast	4.8	5.0	6.4	6.5	5.7	5.5	6.0	4.9	4.8	5.0	4.8	4.3	5.3	6
South Southeast	6.6	7.3	9.0	7.3	6.4	6.5	6.4	7.0	6.0	5.3	6.8	8.2	6.9	6
South	8.0	9.0	9.4	8.9	7.6	7.5	7.7	6.8	6.5	6.8	7.4	7.0	7.7	6
South Southwest	9.7	10.9	11.7	10.7	9.5	8.2	7.7	7.8	7.6	7.6	9.3	9.1	9.3	6
Southwest	8.5	8.3	9.4	9.1	8.4	7.2	7.6	6.5	6.7	6.2	7.4	7.9	7.8	6
West Southwest	8.7	9.7	9.7	10.2	8.5	8.2	8.0	6.9	6.4	7.1	8.1	8.3	8.5	6
West	8.4	8.8	9.0	9.9	7.8	7.8	6.7	6.2	6.3	6.3	7.6	7.9	8.0	6
West Northwest	9.0	10.8	11.5	10.1	8.6	8.1	6.1	7.3	6.7	7.4	9.7	9.6	9.3	6
Northwest	8.8	9.6	9.5	9.4	7.7	6.8	5.7	6.5	5.6	7.0	7.7	7.9	8.0	6
North Northwest	9.5	10.4	10.2	10.3	8.4	7.2	5.7	8.3	6.5	9.0	9.3	9.0	9.0	6
VISIBILITY														
Mean number of days with fog	15	13	15	13	18	19	21	22	22	20	17	15	210	36

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Service (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

WILMINGTON, NC (34°16'N, 77°54'W) 33 feet (10.1 m)														
WEATHER ELEMENTS	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**YEAR**	**YEARS OF RECORD**
SEA LEVEL PRESSURE*														
Mean (millibars)	1020.2	1019.3	1017.6	1016.6	1016.5	1016.2	1017.2	1017.0	1017.7	1018.6	1019.6	1020.8	1018.1	45
TEMPERATURE (°F)														
Mean	46.1	48.5	54.7	62.9	70.6	77.1	80.9	79.7	74.9	65.0	56.1	48.6	63.8	50
Mean daily maximum	56.2	59.0	65.4	74.0	80.7	86.4	89.5	88.2	83.7	75.4	67.2	59.2	73.8	50
Mean daily minimum	35.6	37.5	43.5	51.4	60.0	67.4	71.8	70.7	65.5	54.2	44.5	37.5	53.4	50
Extreme (highest)	82	85	89	95	98	104	102	102	98	95	87	81	104	50
Extreme (lowest)	5	11	9	30	35	48	55	55	44	27	16	0	0	50
RELATIVE HUMIDITY														
Average percentage	77.1	68.2	50.6	40.7	40.1	36.7	47.4	45.3	52.0	60.8	70.7	82.6	56.0	50
CLOUD COVER														
Percent of time clear	29.8	28.4	29.9	32.7	24.1	18.5	15.1	17.5	22.6	34.7	36.0	31.9	26.7	48
Percent of time scattered	12.6	13.2	14.5	18.1	20.9	23.5	23.5	23.8	21.4	17.5	15.2	14.2	18.2	48
Percent of time broken	12.2	12.7	14.3	16.4	21.0	25.2	28.7	25.6	20.1	14.9	13.5	13.9	18.3	48
Percent of time overcast	41.7	42.0	37.3	28.2	28.8	26.9	25.8	27.2	30.5	28.4	31.3	36.3	32.0	48
PRECIPITATION (inches)														
Mean amount	3.8	3.5	4.2	2.9	4.2	5.4	7.9	6.9	5.8	3.3	3.2	3.5	55.0	50
Greatest amount	10.2	8.7	8.2	8.2	9.1	12.8	18.0	14.0	18.9	9.8	7.8	7.0	66.6	50
Least amount	0.6	0.6	0.9	0.1	0.9	0.8	1.6	1.6	0.7	0.1	0.4	0.4	36.9	50
Maximum amount (24 hours)	2.5	2.6	4.3	3.5	4.3	4.7	6.4	4.8	7.4	5.5	4.0	3.8	7.4	50
Mean number of days	13	12	13	11	13	13	17	15	13	10	11	12	153	50
SNOW														
Mean amount	0.4	0.5	0.4	T	0.0	0.0	0.0	0.0	0.0	0.0	T	0.5	1.8	50
Greatest amount	5.4	12.5	6.6	T	0.0	0.0	0.0	0.0	0.0	0.0	T	15.3	16.1	50
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50
Maximum amount (24 hours)	5.0	6.8	5.2	T	0.0	0.0	0.0	0.0	0.0	0.0	T	9.6	9.6	50
Mean number of days	1.0	1.0	1.0	Miss	0.0	0.0	0.0	0.0	0.0	0.0	Miss	1.0	4.0	50
WIND														
Percentage with gales	0.01	0.04	0.08	0.04	0.00	0.00	0.02	0.07	0.09	0.01	0.00	0.00	0.08	49
Mean wind speed (knots)	7.7	8.2	8.6	8.6	7.7	7.2	6.8	6.2	6.5	6.8	6.9	7.2	7.3	49
Direction (percentage of observations)														
North	8.8	8.4	6.6	4.8	5.1	4.7	3.5	6.2	10.0	12.2	10.0	10.2	7.5	49
North Northeast	7.6	7.4	5.1	4.0	4.9	5.4	4.2	7.1	12.0	12.4	8.2	8.1	7.2	49
Northeast	6.5	6.6	5.1	3.9	5.2	5.7	3.9	6.7	11.1	11.1	6.1	6.1	6.5	49
East Northeast	3.9	4.3	4.7	3.8	4.5	4.2	3.4	4.0	5.4	5.0	4.2	3.3	4.2	49
East	2.8	3.4	5.0	4.5	5.2	5.1	3.7	4.6	5.5	3.9	3.1	2.4	4.1	49
East Southeast	2.3	2.9	4.1	4.2	5.1	5.4	3.5	4.4	4.2	3.1	2.7	1.8	3.6	49
Southeast	2.1	3.1	3.8	5.4	5.4	5.6	4.7	5.4	4.2	3.0	3.1	2.2	4.0	49
South Southeast	2.3	2.6	3.7	5.3	5.7	5.6	5.4	5.5	3.4	2.5	2.8	2.1	3.9	49
South	3.3	4.0	5.8	7.6	7.8	8.0	8.3	6.6	4.4	3.1	3.6	3.4	5.5	49
South Southwest	5.6	6.4	8.3	10.4	9.8	9.6	12.2	7.9	4.7	3.6	4.8	5.4	7.4	49
Southwest	8.8	9.4	10.0	12.6	11.3	12.0	17.0	10.5	5.1	4.5	7.1	8.6	9.8	49
West Southwest	8.4	6.9	6.6	7.5	7.0	7.0	9.7	6.7	4.3	3.9	6.3	7.4	6.8	49
West	6.6	5.6	5.8	5.3	4.1	4.2	4.7	4.0	3.0	3.3	5.4	5.8	4.8	49
West Northwest	6.2	5.9	5.6	4.7	3.5	3.0	2.5	2.4	2.1	2.9	4.9	5.8	4.1	49
Northwest	7.6	6.7	6.0	4.6	3.2	2.3	1.8	2.1	2.5	4.5	6.3	7.4	4.6	49
North Northwest	7.2	7.0	5.4	4.2	3.5	2.5	2.0	3.0	4.1	5.9	6.9	7.0	4.9	49
Calm	10.2	9.4	8.4	7.3	8.7	9.7	9.6	12.8	14.0	15.0	14.6	13.2	11.1	49
Direction (mean speed, knots)														
North	8.4	8.8	8.7	8.7	8.3	8.0	6.7	7.2	8.2	8.9	8.7	8.1	8.3	49
North Northeast	8.3	8.8	8.9	8.5	8.5	7.6	7.1	7.3	8.0	8.6	8.0	8.4	8.2	49
Northeast	7.7	7.9	8.0	7.7	7.3	7.1	6.4	6.7	7.7	7.9	7.0	7.6	7.5	49
East Northeast	7.1	7.9	8.2	8.1	7.9	7.7	7.2	6.9	7.8	7.7	6.8	6.8	7.5	49
East	6.8	7.8	8.4	8.3	8.6	8.3	7.3	7.4	8.1	7.6	7.0	6.7	7.8	49
East Southeast	6.3	7.3	8.1	8.3	7.8	8.1	7.0	7.0	7.6	7.4	6.6	6.4	7.5	49
Southeast	7.5	8.2	8.5	8.7	8.7	8.2	7.4	7.2	7.7	7.7	7.8	7.5	8.0	49
South Southeast	8.9	9.3	9.3	8.9	8.3	7.8	7.3	7.1	7.3	7.7	8.4	8.0	8.1	49
South	9.1	9.7	9.4	9.9	8.9	8.3	7.8	7.2	7.1	7.5	8.5	8.6	8.5	49
South Southwest	9.3	10.2	11.2	11.2	10.0	9.0	8.8	7.9	7.8	8.0	8.7	9.2	9.4	49
Southwest	9.0	9.4	9.9	9.6	8.8	8.2	8.0	7.4	7.0	7.6	8.1	8.5	8.5	49
West Southwest	8.8	9.0	9.2	8.7	7.8	7.5	7.2	6.8	6.7	7.6	8.2	8.3	8.0	49
West	8.8	9.5	9.6	9.2	7.6	7.4	7.0	6.5	6.8	7.1	8.2	8.3	8.2	49
West Northwest	9.4	10.4	10.4	9.8	7.7	7.2	6.3	6.3	6.5	7.0	8.4	8.6	8.6	49
Northwest	9.4	9.4	9.9	9.7	7.7	7.0	5.7	6.4	6.8	7.9	8.8	9.0	8.7	49
North Northwest	9.1	9.2	9.7	9.2	8.0	7.2	6.1	6.5	7.7	8.5	8.4	8.8	8.5	49
VISIBILITY														
Mean number of days with fog	15	13	14	12	15	16	14	18	17	16	15	14	179	50

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Ser (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

CHARLESTON, SC (32°54'N, 80°02'W) 46 feet (14 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1020.7	1019.5	1017.7	1017.2	1016.5	1016.2	1017.4	1017.0	1017.5	1018.5	1019.7	1021.0	1018.2	52
TEMPERATURE (°F)														
Mean	48.7	51.1	57.5	64.8	72.6	78.3	81.4	80.5	76.0	66.6	57.7	50.6	65.6	52
Mean daily maximum	59.2	62.0	68.4	76.1	82.9	87.5	90.0	88.9	84.6	76.8	68.9	61.3	75.7	52
Mean daily minimum	37.8	39.8	46.2	53.0	61.7	68.6	72.3	71.5	67.0	55.8	46.0	39.4	55.0	52
Extreme (highest)	83	87	90	94	98	101	104	102	97	94	88	83	104	52
Extreme (lowest)	6	12	15	30	36	50	58	56	42	27	15	8	6	52
RELATIVE HUMIDITY														
Average percentage	81.5	70.5	51.6	47.0	40.1	37.5	49.4	45.1	49.8	60.4	72.2	85.4	57.5	53
CLOUD COVER														
Percent of time clear	26.7	27.6	27.4	30.5	21.5	16.0	12.5	14.5	20.8	33.6	34.0	28.8	24.4	50
Percent of time scattered	13.6	13.5	15.2	18.6	21.4	23.0	22.4	23.2	22.1	18.2	16.5	14.7	18.6	50
Percent of time broken	13.6	15.0	15.8	17.9	23.3	27.4	30.5	28.9	23.4	16.8	15.0	15.4	20.3	50
Percent of time overcast	41.9	39.5	37.3	28.2	28.4	27.1	26.7	26.0	27.8	26.9	30.0	36.5	31.3	50
PRECIPITATION (inches)														
Mean amount	3.4	3.0	4.3	2.8	3.9	6.1	7.2	6.7	5.7	3.1	2.4	3.0	52.2	52
Greatest amount	8.9	6.3	11.1	9.5	9.2	27.2	18.4	16.9	17.3	12.1	7.3	7.0	72.9	52
Least amount	0.6	0.3	0.7	0.0	0.7	0.9	1.7	0.7	0.1	0.1	0.4	0.6	30.3	52
Maximum amount (24 hours)	3.9	2.2	4.4	4.1	6.2	9.4	5.3	4.6	6.1	4.4	5.2	3.4	9.4	52
Mean number of days	14	12	13	10	13	15	17	17	14	10	11	12	158	52
SNOW														
Mean amount	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.2	0.6	51
Greatest amount	1.0	7.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	8.0	8.9	51
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51
Maximum amount (24 hours)	0.8	5.4	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	6.0	6.0	51
Mean number of days	1.0	1.0	Miss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Miss	Miss	2.0	52
WIND														
Percentage with gales	0.02	0.03	0.04	0.02	0.01	0.01	0.00	0.01	0.02	0.02	0.01	0.01	0.08	53
Mean wind speed (knots)	7.8	8.4	8.6	8.3	7.3	7.1	6.7	6.3	6.6	6.8	7.0	7.3	7.3	53
Direction (percentage of observations)														
North	7.8	6.8	5.0	4.4	4.9	4.8	3.6	6.2	9.5	11.8	9.5	9.0	6.9	53
North Northeast	9.2	8.2	5.7	4.5	5.5	6.2	4.6	8.3	15.4	16.4	10.6	10.1	8.7	53
Northeast	7.3	7.5	5.9	4.4	5.6	6.4	4.5	7.8	12.2	12.0	8.2	7.6	7.4	53
East Northeast	3.8	4.7	4.6	4.0	4.3	4.0	3.1	4.2	5.6	5.5	4.6	3.6	4.3	53
East	2.6	3.1	3.9	3.8	3.9	3.7	3.1	4.0	4.8	3.7	3.2	2.2	3.5	53
East Southeast	2.9	2.9	4.4	4.7	4.8	4.6	3.6	3.9	4.3	3.5	3.3	2.4	3.8	53
Southeast	2.3	3.0	4.2	5.7	5.4	5.7	4.5	4.8	4.1	2.7	2.6	2.7	4.0	53
South Southeast	2.7	3.5	5.2	6.7	7.0	7.3	6.4	6.3	4.4	2.6	2.8	2.7	4.8	53
South	4.6	5.6	8.1	9.9	11.4	11.1	12.3	9.7	5.9	3.8	4.8	4.4	7.6	53
South Southwest	7.4	9.1	10.6	11.2	11.1	10.8	14.1	9.0	5.1	3.6	6.0	6.9	8.7	53
Southwest	7.7	7.7	7.4	8.4	8.2	8.9	12.3	8.3	4.2	3.7	6.0	6.9	7.5	53
West Southwest	7.8	6.9	6.9	7.1	6.1	6.6	8.7	6.4	3.7	4.1	6.2	7.6	6.5	53
West	7.9	7.4	7.0	6.0	4.7	4.5	5.1	3.8	2.8	3.8	6.5	7.4	5.6	53
West Northwest	7.8	7.1	6.4	5.6	3.6	3.2	3.0	2.8	2.6	3.7	6.1	6.8	4.9	53
Northwest	5.7	5.0	4.6	3.4	3.3	2.6	2.0	2.5	2.5	3.9	4.9	5.5	3.8	53
North Northwest	6.3	5.6	4.8	4.0	3.6	3.3	2.6	3.6	4.6	6.8	6.6	6.7	4.9	53
Calm	6.2	5.9	5.3	6.2	6.6	6.3	6.5	8.5	8.2	8.4	8.1	7.6	7.0	53
Direction (mean speed, knots)														
North	7.7	8.1	8.0	7.9	7.4	6.8	5.8	6.2	6.7	7.4	7.4	7.5	7.3	53
North Northeast	7.8	8.0	8.0	7.7	7.4	7.0	6.1	6.5	7.7	8.0	7.6	7.9	7.6	53
Northeast	7.3	7.8	7.6	7.2	7.3	7.1	6.5	6.7	7.7	7.6	7.0	7.3	7.3	53
East Northeast	7.0	7.7	8.2	8.3	7.4	7.8	6.8	6.9	7.5	7.4	6.6	6.7	7.4	53
East	6.4	7.6	7.9	8.2	8.0	8.2	7.2	7.1	7.7	7.3	6.7	6.4	7.5	53
East Southeast	6.5	7.5	8.0	8.2	8.0	8.2	7.3	7.1	7.7	7.2	6.5	6.6	7.5	53
Southeast	6.9	7.8	8.0	8.4	7.8	7.7	6.8	7.4	7.3	6.9	6.9	6.4	7.5	53
South Southeast	6.7	7.7	8.3	8.3	7.6	7.2	7.1	7.0	6.8	6.9	7.2	6.8	7.4	53
South	7.8	8.9	9.3	8.8	8.1	7.6	7.4	7.1	6.7	6.6	7.6	7.8	7.8	53
South Southwest	9.0	9.9	10.0	9.7	8.2	7.8	7.6	7.0	6.8	7.3	8.5	9.0	8.5	53
Southwest	8.7	9.0	9.3	9.1	8.0	7.8	7.6	7.0	6.8	7.1	7.8	8.5	8.1	53
West Southwest	9.1	9.7	10.0	9.4	8.3	8.1	7.6	7.2	6.9	7.7	8.0	8.5	8.5	53
West	9.9	10.7	10.7	10.1	8.7	7.8	7.3	6.9	6.9	7.6	8.9	9.3	9.1	53
West Northwest	10.1	11.0	10.7	10.3	8.1	7.3	7.1	6.8	6.9	7.5	8.6	9.1	9.1	53
Northwest	8.7	9.3	9.4	8.9	7.3	6.8	6.2	6.1	6.4	7.1	7.3	7.8	7.9	53
North Northwest	7.9	8.3	8.6	8.3	7.2	6.7	5.7	6.2	6.2	7.0	7.1	7.4	7.3	53
VISIBILITY														
Mean number of days with fog	14	11	13	12	14	14	11	14	16	14	14	14	161	52

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Service (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

BEAUFORT, SC (32°29'N, 80°43'W) 33 feet (10.1 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1020.4	1018.8	1017.5	1016.9	1016.5	1015.9	1017.1	1016.7	1017.3	1018.1	1019.5	1020.9	1018.0	37
TEMPERATURE (°F)														
Mean	48.6	51.4	58.3	66.0	73.4	79.3	82.4	81.4	77.1	67.6	59.0	51.4	66.5	39
Mean daily maximum	58.1	61.4	68.4	76.0	82.7	87.7	90.5	89.1	84.9	77.0	69.2	61.2	75.7	39
Mean daily minimum	38.5	41.0	47.8	55.5	63.7	70.4	73.9	73.2	68.8	57.7	48.3	41.0	56.8	39
Extreme (highest)	83	85	91	94	97	106	106	102	98	94	88	82	106	39
Extreme (lowest)	5	16	21	32	41	51	62	57	45	31	19	11	5	39
RELATIVE HUMIDITY														
Average percentage	79.2	62.9	50.1	44.2	40.5	34.3	46.1	42.0	48.1	55.9	70.1	83.6	55.0	38
CLOUD COVER														
Percent of time clear	22.6	22.1	21.9	24.0	16.8	11.5	6.4	8.5	14.3	26.2	26.5	25.3	18.9	38
Percent of time scattered	19.8	19.0	22.2	26.3	25.3	27.1	24.2	25.5	31.8	25.2	24.4	22.0	24.4	38
Percent of time broken	16.0	14.7	19.3	19.2	26.9	28.5	34.9	32.1	24.3	15.3	18.3	13.9	21.9	38
Percent of time overcast	37.0	35.5	30.5	22.8	20.7	20.0	18.5	19.0	20.6	23.2	23.2	29.6	25.1	38
PRECIPITATION (inches)														
Mean amount	3.8	3.2	3.9	2.8	3.6	5.5	6.3	7.2	4.9	3.1	2.4	3.0	50.0	39
Greatest amount	8.8	6.6	8.9	7.1	10.5	13.5	19.1	18.0	13.4	20.4	7.7	6.3	67.6	39
Least amount	0.7	0.2	0.5	0.1	0.4	0.9	1.4	1.1	0.5	0.0	0.3	0.1	33.3	39
Maximum amount (24 hours)	3.4	2.4	2.7	4.8	4.4	5.4	4.7	6.1	5.8	7.9	6.8	3.0	7.9	39
Mean number of days	14	12	13	9	12	14	17	15	13	9	10	12	150	30
SNOW														
Mean amount	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	39
Greatest amount	2.0	6.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	6.5	39
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39
Maximum amount (24 hours)	1.0	6.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	6.4	39
Mean number of days	1.0	1.0	Miss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Miss	2.0	30
WIND														
Percentage with gales	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.24	38
Mean wind speed (knots)	5.4	6.0	6.2	6.1	5.4	5.1	4.7	4.2	4.4	4.7	4.8	5.1	5.2	38
Direction (percentage of observations)														
North	6.0	5.2	3.4	3.1	3.7	3.6	2.1	4.3	7.0	8.6	7.1	6.9	5.1	38
North Northeast	8.3	6.5	4.5	3.3	4.8	5.4	3.2	6.2	12.6	13.9	9.2	8.9	7.3	38
Northeast	6.2	6.3	4.8	3.3	3.8	5.4	3.2	5.7	9.9	10.6	7.1	6.0	6.0	38
East Northeast	3.1	4.7	4.4	3.2	3.9	4.1	2.7	4.0	6.8	5.8	4.4	3.3	4.2	38
East	2.3	3.0	4.5	4.7	5.0	4.7	3.6	4.6	5.6	4.5	2.9	2.1	4.0	38
East Southeast	2.3	2.6	3.8	4.6	4.9	5.1	3.5	4.1	4.6	3.3	2.5	1.6	3.6	38
Southeast	1.8	2.0	3.9	4.7	5.0	4.6	3.7	3.8	3.5	1.8	2.3	1.8	3.2	38
South Southeast	2.5	4.0	6.0	7.3	7.6	6.4	6.3	5.6	3.6	2.4	2.9	2.5	4.7	38
South	4.5	6.8	9.2	10.8	10.5	9.8	10.9	8.4	4.8	3.4	4.6	4.8	7.4	38
South Southwest	5.0	6.3	7.5	8.5	8.7	8.5	11.2	7.7	3.9	2.9	4.6	5.7	6.7	38
Southwest	5.3	5.5	5.5	6.7	6.5	7.7	11.2	7.8	3.3	2.9	3.7	5.2	5.9	38
West Southwest	7.3	6.5	5.8	7.3	6.5	7.8	10.4	7.2	3.3	3.6	4.4	5.8	6.3	38
West	9.4	8.6	7.6	7.2	5.4	5.6	6.7	4.8	2.8	4.0	6.5	7.8	6.4	38
West Northwest	7.9	8.1	7.0	6.1	4.2	3.3	3.3	2.4	2.3	3.7	6.2	7.4	5.2	38
Northwest	5.5	5.6	5.3	3.3	2.7	2.1	1.6	2.1	2.3	3.4	4.4	6.4	3.7	38
North Northwest	4.8	4.5	3.6	3.0	3.1	2.5	1.6	2.4	3.3	5.0	5.3	4.8	3.7	38
Calm	17.6	14.0	13.2	12.8	13.7	13.3	14.7	18.9	20.3	20.1	21.8	19.0	16.7	38
Direction (mean speed, knots)														
North	6.2	6.6	6.5	6.9	6.0	4.9	4.2	4.4	5.3	5.8	5.9	5.9	5.8	38
North Northeast	6.5	7.1	6.8	6.4	6.4	5.4	4.9	5.1	6.2	6.7	6.5	6.5	6.3	38
Northeast	6.6	7.0	6.8	6.1	6.3	6.1	5.1	5.5	6.5	6.7	6.2	6.3	6.3	38
East Northeast	5.9	6.7	6.9	6.5	6.3	6.0	5.6	5.6	5.9	6.2	5.6	6.1	6.1	38
East	5.1	5.8	6.3	6.6	6.7	6.4	5.3	5.6	5.8	5.4	5.3	4.9	5.9	38
East Southeast	4.8	5.3	6.2	7.0	6.7	6.7	6.0	5.6	5.9	5.8	5.2	4.8	6.0	38
Southeast	4.7	5.4	6.5	6.6	6.4	6.1	5.9	5.3	5.5	5.1	5.2	4.5	5.8	38
South Southeast	5.8	6.1	6.9	6.9	6.7	6.6	6.1	5.6	5.4	5.5	5.2	5.2	6.2	38
South	6.1	6.6	7.2	7.2	6.5	6.1	5.9	5.5	4.9	5.4	5.9	6.0	6.2	38
South Southwest	6.3	6.9	7.3	7.3	6.3	5.9	5.7	5.5	4.9	5.3	6.6	6.4	6.3	38
Southwest	6.1	6.2	6.5	6.3	6.0	5.8	5.4	5.0	5.0	5.1	5.8	6.0	5.8	38
West Southwest	6.8	7.2	7.1	7.1	5.9	5.9	5.4	4.8	4.6	5.0	5.8	5.7	6.0	38
West	7.5	8.2	8.2	7.8	6.1	5.6	5.4	4.6	4.4	5.9	7.2	7.1	6.8	38
West Northwest	7.9	8.4	8.5	8.1	6.5	5.3	4.9	4.7	4.6	5.8	7.2	7.4	7.1	38
Northwest	6.8	7.3	7.4	7.0	5.3	4.8	4.6	4.4	4.8	5.2	6.4	6.8	6.3	38
North Northwest	5.8	6.6	6.7	6.3	5.6	4.9	4.1	4.4	4.5	5.3	5.3	5.7	5.6	38
VISIBILITY														
Mean number of days with fog	19	16	20	18	21	21	21	24	24	20	20	18	242	30

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Service (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

SAVANNAH, GA (32°08'N, 81°12'W) 49 feet (14.9 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1020.7	1019.5	1017.7	1016.9	1016.5	1016.1	1017.3	1016.8	1017.1	1018.2	1019.9	1021.2	1018.2	46
TEMPERATURE (°F)														
Mean	49.5	52.7	59.2	66.2	73.6	79.3	82.2	81.3	77.0	67.6	58.4	51.6	66.6	47
Mean daily maximum	60.1	63.7	70.4	77.7	84.3	89.1	91.6	90.2	85.8	78.0	69.7	62.4	76.9	47
Mean daily minimum	38.4	41.2	47.6	54.1	62.4	69.1	72.2	71.8	67.7	56.8	46.7	40.2	55.7	47
Extreme (highest)	84	86	91	95	100	104	105	104	98	97	89	83	105	47
Extreme (lowest)	3	14	20	32	39	51	61	57	43	28	15	9	3	47
RELATIVE HUMIDITY														
Average percentage	81.5	69.6	52.4	44.1	40.3	35.7	47.9	42.8	45.6	57.0	74.3	87.1	56.6	47
CLOUD COVER														
Percent of time clear	29.4	28.6	28.6	32.7	25.0	18.4	14.6	17.6	21.6	36.8	35.3	30.0	26.6	46
Percent of time scattered	13.1	13.8	15.2	19.0	22.9	23.7	25.0	26.2	21.5	16.5	15.4	14.1	18.8	46
Percent of time broken	12.5	13.0	14.6	15.9	20.6	25.7	27.9	26.6	21.9	14.9	13.8	14.0	18.4	46
Percent of time overcast	41.0	39.9	36.8	27.9	26.0	25.8	24.7	23.0	28.7	27.6	30.8	37.7	30.8	46
PRECIPITATION (inches)														
Mean amount	3.5	3.0	3.8	3.1	4.1	5.5	6.8	7.1	5.0	3.0	2.2	2.7	50.1	47
Greatest amount	8.9	7.9	9.5	10.5	10.0	14.3	20.1	17.0	13.4	19.8	5.2	5.8	73.1	47
Least amount	0.4	0.2	0.1	0.3	0.5	0.8	1.3	1.0	0.3	0.0	0.1	0.1	32.8	47
Maximum amount (24 hours)	3.2	3.4	3.5	5.6	4.2	3.8	3.7	7.0	6.7	7.1	3.6	3.3	7.1	47
Mean number of days	13	12	12	9	12	14	17	16	14	10	10	12	151	47
SNOW														
Mean amount	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.1	0.4	45
Greatest amount	2.0	3.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	3.6	4.6	45
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45
Maximum amount (24 hours)	1.3	3.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	3.2	3.6	45
Mean number of days	1.0	Miss	Miss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Miss	Miss	1.0	47
WIND														
Percentage with gales	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.10	47
Mean wind speed (knots)	7.4	7.9	8.0	7.4	6.6	6.4	6.1	5.7	6.2	6.5	6.5	6.9	6.8	47
Direction (percentage of observations)														
North	5.1	4.0	2.9	2.6	3.5	3.6	2.5	4.6	6.9	7.9	6.2	5.5	4.6	47
North Northeast	5.4	4.7	3.1	2.5	3.9	4.9	3.1	6.5	11.0	12.4	7.9	6.3	6.0	47
Northeast	7.6	7.4	5.2	3.6	4.6	6.1	4.4	6.8	13.9	14.1	8.6	8.7	7.6	47
East Northeast	5.2	5.7	5.0	4.1	4.8	5.1	3.9	5.1	8.4	7.8	5.8	4.8	5.5	47
East	3.3	3.9	5.0	5.0	5.5	5.1	3.7	4.4	5.8	5.0	4.1	3.3	4.5	47
East Southeast	3.4	3.7	5.0	5.7	5.4	5.3	3.9	4.1	5.1	3.5	3.6	3.1	4.3	47
Southeast	2.5	3.3	4.6	6.3	6.1	6.4	5.1	5.7	4.7	3.1	3.1	2.4	4.4	47
South Southeast	2.8	3.9	6.1	8.2	8.6	7.1	6.9	6.8	4.3	2.6	3.4	3.3	5.3	47
South	4.9	6.3	8.2	8.4	8.1	7.3	9.0	7.2	4.1	2.9	4.5	5.0	6.3	47
South Southwest	4.8	4.9	5.8	6.4	7.0	7.3	10.7	7.3	3.8	2.5	4.0	4.5	5.7	47
Southwest	6.5	7.1	6.8	7.9	8.0	9.3	12.6	9.4	4.0	3.5	5.1	5.7	7.2	47
West Southwest	7.7	7.7	7.9	8.4	6.9	8.1	10.0	6.8	3.8	4.2	5.9	7.6	7.1	47
West	9.2	8.7	8.5	7.0	6.1	6.2	6.7	4.9	3.1	4.3	6.9	8.6	6.7	47
West Northwest	11.0	9.8	9.3	7.4	5.7	4.3	4.4	3.6	3.2	4.9	8.0	9.3	6.7	47
Northwest	8.0	7.7	6.4	4.8	3.8	3.4	2.6	3.0	3.1	5.1	6.6	7.1	5.1	47
North Northwest	5.0	4.4	3.5	3.1	3.1	2.6	2.1	3.3	3.8	5.5	5.4	5.2	3.9	47
Calm	7.7	6.9	6.7	8.6	8.8	8.2	8.5	10.5	11.1	10.8	10.7	9.5	9.0	47
Direction (mean speed, knots)														
North	7.0	7.3	7.4	7.2	6.7	6.1	5.7	5.6	5.8	6.8	6.5	6.8	6.5	47
North Northeast	7.3	7.9	7.9	7.2	7.3	6.8	6.1	6.6	7.4	8.1	7.6	7.5	7.4	47
Northeast	8.0	8.6	8.1	7.8	7.8	7.1	6.8	7.3	8.3	8.3	7.8	8.0	7.9	47
East Northeast	7.6	8.5	8.5	7.9	7.8	7.7	7.3	7.0	7.8	7.9	7.6	7.2	7.7	47
East	6.8	7.8	8.1	8.2	8.1	8.1	7.7	7.2	7.6	7.3	6.7	6.6	7.6	47
East Southeast	6.5	7.6	8.1	8.2	8.1	7.8	7.4	7.5	7.6	7.3	6.5	6.3	7.5	47
Southeast	6.4	7.0	7.7	7.9	7.5	7.3	7.1	6.6	6.7	6.5	6.5	6.0	7.1	47
South Southeast	7.0	8.1	8.7	8.4	7.7	7.2	7.2	6.9	6.6	6.5	6.9	7.0	7.5	47
South	7.6	8.3	8.6	8.1	7.2	6.7	6.6	6.1	6.1	6.5	7.2	7.8	7.3	47
South Southwest	7.5	7.4	7.7	7.5	6.6	6.3	6.3	5.7	5.8	6.1	6.9	7.2	6.7	47
Southwest	7.7	7.7	8.0	7.4	6.5	6.4	6.2	5.8	5.8	6.0	6.8	6.9	6.7	47
West Southwest	8.1	8.7	8.6	8.1	7.0	6.9	6.5	6.0	5.8	6.3	7.3	7.5	7.3	47
West	9.0	9.5	9.8	9.0	7.6	7.3	7.0	6.2	6.2	7.0	8.1	8.2	8.2	47
West Northwest	10.3	10.3	10.4	9.5	7.5	7.5	6.8	6.2	6.5	7.4	8.7	9.2	8.9	47
Northwest	8.5	9.1	9.2	8.2	6.8	6.1	6.1	5.8	5.9	6.7	7.6	8.1	7.7	47
North Northwest	7.2	7.6	7.7	7.3	6.4	5.5	5.6	5.3	5.4	6.3	6.2	6.9	6.5	47
VISIBILITY														
Mean number of days with fog	14	12	14	12	15	15	14	18	19	15	14	14	176	47

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Service (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

JACKSONVILLE, FL (32°19'N, 90°05'W) 295 feet (90 m)														
WEATHER ELEMENTS	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**YEAR**	**YEARS OF RECORD**
SEA LEVEL PRESSURE*														
Mean (millibars)	1021.0	1019.8	1018.1	1017.5	1016.7	1016.4	1017.8	1017.0	1016.5	1017.7	1019.6	1021.1	1018.3	49
TEMPERATURE (°F)														
Mean	54.1	56.8	62.4	68.4	75.1	80.3	82.7	82.0	78.9	70.6	62.1	55.8	69.2	50
Mean daily maximum	64.9	67.9	73.7	79.9	85.9	89.8	92.1	90.9	87.3	80.1	72.8	66.6	79.4	50
Mean daily minimum	42.7	45.3	50.6	56.4	63.9	70.2	72.9	72.7	70.1	60.7	50.8	44.5	58.5	50
Extreme (highest)	84.0	88.0	91.0	95.0	100.0	103.0	103.0	102.0	98.0	96.0	88.0	84.0	103.0	50
Extreme (lowest)	7	19	23	34	45	47	61	63	48	36	21	11	7	50
RELATIVE HUMIDITY														
Average percentage	84.9	73.4	55.6	50.0	41.5	39.4	52.9	44.9	40.1	51.6	71.1	85.8	57.6	50
CLOUD COVER														
Percent of time clear	27.0	28.4	27.1	30.6	23.1	14.0	11.4	12.7	14.8	27.9	30.3	26.7	22.8	48
Percent of time scattered	15.8	15.8	17.6	20.9	24.7	24.4	26.0	26.1	24.3	20.1	17.3	15.9	20.7	48
Percent of time broken	16.4	16.3	19.0	20.1	26.3	31.0	33.6	32.1	27.6	20.1	18.3	16.8	23.1	48
Percent of time overcast	35.8	33.7	31.0	22.7	19.9	22.3	20.7	20.8	25.3	26.4	27.9	35.1	26.8	48
PRECIPITATION (inches)														
Mean amount	3.2	3.4	3.8	3.0	3.5	5.7	6.4	7.3	7.6	4.2	2.0	2.6	53.2	50
Greatest amount	10.2	8.8	10.1	11.6	10.4	13.9	16.2	16.2	19.3	13.4	5.0	9.7	79.6	50
Least amount	0.0	0.5	0.7	0.1	0.1	1.5	1.9	2.1	1.0	0.2	T	0.0	31.2	50
Maximum amount (24 hours)	2.9	4.9	7.1	7.3	5.4	5.9	7.2	7.8	10.1	7.8	2.7	2.8	10.1	50
Mean number of days	12	11	12	9	12	16	18	18	16	12	10	12	158	50
SNOW														
Mean amount	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	50
Greatest amount	T	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.5	50
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50
Maximum amount (24 hours)	T	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.5	50
Mean number of days	Miss	Miss	Miss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Miss	1.0	50
WIND														
Percentage with gales	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.05	0.02	0.00	0.00	0.10	50
Mean wind speed (knots)	7.0	7.7	7.8	7.4	6.9	6.6	6.0	5.8	6.4	6.9	6.7	6.7	6.8	50
Direction (percentage of observations)														
North	7.4	5.3	3.9	3.1	3.1	3.0	2.0	3.7	6.7	10.5	8.7	8.1	5.4	50
North Northeast	6.4	6.0	3.4	2.3	2.7	2.7	1.5	2.9	5.9	9.9	7.7	6.9	4.9	50
Northeast	7.5	7.9	6.5	5.1	5.5	5.3	2.9	5.1	10.8	12.9	8.8	7.7	7.2	50
East Northeast	4.3	4.8	4.9	4.8	5.5	5.9	3.4	6.2	9.3	7.0	4.9	3.9	5.4	50
East	3.0	3.2	4.2	5.0	5.8	6.0	4.0	5.9	7.3	5.0	3.3	2.7	4.6	50
East Southeast	2.6	3.5	4.9	7.3	7.5	6.5	5.2	6.1	6.2	3.8	2.9	2.4	4.9	50
Southeast	3.5	4.2	7.0	8.7	9.6	7.5	8.4	8.0	6.3	3.5	4.0	3.7	6.2	50
South Southeast	3.0	3.3	4.5	5.1	5.8	4.8	5.4	4.5	3.4	1.8	2.4	2.9	3.9	50
South	4.5	5.1	5.8	5.6	5.7	6.4	8.3	6.4	3.8	2.2	3.8	4.5	5.2	50
South Southwest	4.4	4.8	5.2	4.4	4.9	5.9	8.2	5.7	3.0	1.8	3.2	3.9	4.6	50
Southwest	6.2	7.3	7.5	8.4	7.5	10.6	12.7	9.6	4.7	2.9	4.7	5.4	7.3	50
West Southwest	6.0	7.6	8.3	8.1	8.0	8.8	10.3	6.8	3.8	3.2	4.7	5.4	6.7	50
West	7.2	7.0	6.9	6.5	6.1	6.5	7.4	5.4	3.4	4.1	5.9	6.1	6.0	50
West Northwest	8.9	8.0	6.8	6.2	4.7	4.2	4.0	4.2	3.2	4.9	6.6	7.8	5.8	50
Northwest	9.8	8.6	7.5	6.4	4.7	3.9	4.0	4.4	4.8	7.6	9.6	10.2	6.8	50
North Northwest	6.8	5.6	4.4	3.6	3.3	2.5	2.1	3.1	5.2	8.2	7.8	7.9	5.0	50
Calm	8.6	7.7	8.4	9.6	9.8	9.4	10.0	12.0	12.3	10.6	10.9	10.4	10.0	50
Direction (mean speed, knots)														
North	6.8	7.1	6.8	6.4	6.1	5.5	5.3	5.3	6.4	7.0	7.0	6.9	6.6	50
North Northeast	8.4	9.2	8.4	7.3	7.2	6.8	5.8	5.9	8.2	8.9	8.6	8.9	8.3	50
Northeast	8.8	9.9	9.6	9.6	9.2	9.1	8.2	8.0	9.3	10.2	9.4	8.8	9.3	50
East Northeast	7.1	8.1	8.4	8.8	9.4	9.4	8.1	8.4	9.2	9.3	8.2	7.2	8.6	50
East	6.7	7.4	8.3	8.6	9.1	9.4	8.4	8.6	8.8	8.8	7.3	6.3	8.4	50
East Southeast	6.3	7.8	8.6	9.5	9.2	9.3	8.8	8.3	8.5	8.6	7.6	6.5	8.6	50
Southeast	6.5	7.8	8.6	8.7	8.5	8.2	7.8	7.5	7.1	7.0	7.0	6.7	7.8	50
South Southeast	6.9	8.0	8.3	7.5	7.2	6.6	6.4	6.2	6.2	6.4	6.8	6.7	7.0	50
South	7.3	8.1	8.3	7.5	6.7	6.3	6.0	5.8	6.1	6.8	7.3	7.7	6.9	50
South Southwest	7.8	8.6	8.5	7.9	6.6	6.3	6.0	5.9	6.0	6.5	7.4	7.9	7.0	50
Southwest	7.5	8.1	8.6	8.0	6.8	6.5	6.3	6.2	5.7	6.2	7.2	7.4	7.0	50
West Southwest	7.7	8.5	8.8	7.9	7.0	6.8	6.4	6.1	5.8	6.2	7.0	7.2	7.2	50
West	7.7	8.4	8.6	7.5	6.8	6.7	6.5	5.6	5.4	6.1	7.2	7.0	7.1	50
West Northwest	8.7	9.2	9.4	8.3	6.7	6.6	6.1	5.4	5.4	6.2	7.4	7.9	7.6	50
Northwest	8.0	8.4	8.5	7.8	6.4	6.2	5.8	5.6	5.4	6.0	6.9	7.4	7.1	50
North Northwest	7.2	7.1	7.3	7.0	6.3	5.5	5.3	5.5	5.7	6.3	6.8	7.0	6.6	50
VISIBILITY														
Mean number of days with fog	17	14	15	13	14	13	11	15	16	17	16	17	178	50

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Se (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

DAYTONA BEACH, FL (29°11'N, 81°04'W) 62 feet (19 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1020.7	1019.5	1018.0	1017.3	1016.7	1016.4	1018.1	1016.8	1016.0	1016.8	1018.9	1020.6	1018.0	49
TEMPERATURE (°F)														
Mean	58.3	60.1	64.5	69.4	75.2	79.6	81.4	81.2	79.6	73.7	65.9	60.2	70.8	50
Mean daily maximum	68.7	70.4	74.8	79.6	84.8	88.2	90.0	89.3	87.0	81.5	75.4	70.2	80.0	50
Mean daily minimum	47.4	49.3	53.7	58.7	65.0	70.5	72.3	72.7	71.8	65.3	56.0	49.6	61.1	50
Extreme (highest)	87.0	89.0	92.0	96.0	100.0	101.0	102.0	100.0	96.0	95.0	89.0	88.0	102.0	50
Extreme (lowest)	15	24	26	35	44	52	60	65	52	41	27	19	15	50
RELATIVE HUMIDITY														
Average percentage	82.3	70.1	55.3	48.2	42.5	38.8	56.5	42.9	34.9	43.1	64.1	81.4	55.0	50
CLOUD COVER														
Percent of time clear	29.1	28.5	29.2	32.1	26.1	16.0	16.8	14.7	13.8	22.9	29.4	27.6	23.9	47
Percent of time scattered	17.6	17.9	19.0	21.0	27.0	25.5	27.4	27.1	27.4	25.1	22.0	18.4	23.0	47
Percent of time broken	15.9	16.6	17.6	19.4	22.2	25.9	27.7	29.2	24.9	21.2	17.6	18.1	21.4	47
Percent of time overcast	31.7	31.6	29.0	21.9	18.4	24.2	20.6	20.9	26.3	24.8	25.5	30.0	25.4	47
PRECIPITATION (inches)														
Mean amount	2.6	2.8	3.4	2.5	3.1	6.0	5.5	6.3	6.6	4.9	2.6	2.4	49.2	50
Greatest amount	7.1	9.1	12.1	7.1	12.3	15.1	14.4	19.8	15.2	13	12.9	11.9	79.2	50
Least amount	0.1	0.4	0.2	T	0.0	1.0	0.1	2.0	0.4	0.1	T	0.0	31.3	50
Maximum amount (24 hours)	5.6	3.5	4.9	4	4.0	6.0	3.3	4.4	6.1	9.1	8.9	3.6	9.1	50
Mean number of days	12	11	12	9	12	17	18	18	17	15	11	12	164	50
SNOW														
Mean amount	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	48
Greatest amount	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	48
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48
Maximum amount (24 hours)	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	50
Mean number of days	Miss	Miss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Miss	Miss	50
WIND														
Percentage with gales	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.02	0.03	0.01	0.00	0.02	0.11	50
Mean wind speed (knots)	7.7	8.3	8.5	8.2	7.7	6.9	6.3	6.0	6.9	7.8	7.4	7.3	7.4	50
Direction (percentage of observations)														
North	8.7	8.2	5.3	3.2	2.7	1.8	1.1	2.0	3.7	6.9	7.6	7.6	4.9	50
North Northeast	5.2	6.2	5.3	4.7	4.1	3.1	1.4	2.8	5.6	8.6	6.3	5.3	4.9	50
Northeast	3.4	4.0	4.4	4.9	5.7	4.8	2.7	4.9	9.1	11.1	5.5	3.7	5.4	50
East Northeast	3.4	4.2	5.0	6.7	8.7	8.5	5.6	7.9	13.6	12.1	6.7	4.3	7.2	50
East	3.6	4.4	5.9	9.0	11.0	10.7	9.6	9.7	11.5	8.3	5.6	4.4	7.8	50
East Southeast	3.9	4.7	7.1	10.0	11.2	8.2	9.3	8.9	8.0	4.7	4.7	3.7	7.0	50
Southeast	3.9	4.6	6.9	8.0	7.5	6.0	7.7	6.2	4.6	2.9	3.7	3.4	5.4	50
South Southeast	3.3	3.5	4.2	3.9	4.3	4.5	5.3	4.0	3.0	1.9	2.6	2.9	3.6	50
South	4.7	5.2	6.0	5.3	5.7	7.3	9.0	7.1	4.1	2.5	3.9	4.7	5.5	50
South Southwest	4.7	5.5	5.7	5.0	5.4	7.5	9.0	7.2	3.6	1.9	3.4	4.5	5.3	50
Southwest	5.3	5.8	6.6	6.1	6.7	8.8	10.0	7.6	4.1	3.1	4.0	4.7	6.1	50
West Southwest	7.2	7.7	8.4	8.7	6.3	8.4	8.0	5.8	4.0	4.0	4.9	5.6	6.6	50
West	7.2	7.3	6.5	5.3	4.3	4.4	4.3	4.0	3.1	4.0	5.4	6.2	5.2	50
West Northwest	8.5	6.6	5.5	4.3	3.1	3.0	2.7	3.0	3.3	5.5	7.1	9.0	5.1	50
Northwest	10.4	7.8	6.0	4.2	2.6	2.2	1.7	2.7	3.2	7.4	10.5	11.1	5.8	50
North Northwest	8.0	7.0	3.9	2.6	1.7	1.6	1.1	1.6	2.2	5.1	7.2	8.3	4.2	50
Calm	8.7	7.4	7.1	8.1	9.0	9.3	11.3	14.7	13.4	9.9	11.0	10.6	10.0	50
Direction (mean speed, knots)														
North	9.8	10.2	10.6	10.6	10.1	8.0	6.9	7.1	9.1	10.5	10.7	9.9	10.0	50
North Northeast	9.4	9.6	10.2	10.8	10.6	9.9	8.8	9.0	9.9	10.8	10.3	9.2	10.0	50
Northeast	8.0	8.5	8.8	9.6	9.9	9.4	8.5	8.9	9.9	10.6	9.2	8.1	9.4	50
East Northeast	8.1	8.7	8.9	9.3	9.8	9.3	8.6	8.8	9.6	10.2	9.3	8.4	9.3	50
East	8.1	9.0	9.3	10.0	10.1	9.4	9.2	8.8	9.0	9.2	8.7	8.2	9.2	50
East Southeast	8.2	8.7	9.6	10.4	9.6	9.2	8.8	8.2	8.4	8.2	8.3	8.0	8.9	50
Southeast	7.6	8.0	8.7	8.5	7.9	7.1	6.9	6.6	6.5	7.2	7.2	7.6	7.5	50
South Southeast	7.6	8.7	8.4	7.2	6.3	5.9	5.8	5.9	6.2	6.7	7.1	7.5	6.8	50
South	7.8	8.4	8.5	7.4	6.4	5.8	5.7	5.5	6.1	6.5	7.0	7.7	6.8	50
South Southwest	8.8	9.1	9.2	8.3	6.9	6.1	6.0	6.1	6.4	6.8	8.1	8.5	7.4	50
Southwest	8.2	8.7	8.9	8.1	6.8	6.4	6.2	6.1	6.1	6.1	7.2	7.8	7.2	50
West Southwest	8.4	9.1	9.6	8.5	7.3	7.0	6.5	6.1	5.9	6.4	7.1	7.6	7.7	50
West	8.6	9.5	9.7	8.7	7.6	7.2	6.9	6.3	6.0	6.9	7.3	7.9	8.0	50
West Northwest	8.3	8.7	8.6	8.0	6.8	6.4	6.7	5.8	5.4	6.4	7.4	7.5	7.4	50
Northwest	7.6	7.7	7.9	7.2	6.2	5.5	5.6	5.1	5.5	6.4	7.2	7.4	7.0	50
North Northwest	8.9	9.4	9.1	8.2	8.2	6.7	5.9	5.4	7.4	8.5	8.9	8.6	8.5	50
VISIBILITY														
Mean number of days with fog	15	12	12	10	11	10	9	10	9	10	12	15	135	50

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Service (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

WEST PALM BEACH, FL (26°41'N, 80°07'W) 23 feet (7 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1019.9	1019.0	1017.7	1016.8	1016.2	1016.2	1018.0	1016.4	1015.1	1015.3	1017.6	1019.5	1017.3	48
TEMPERATURE (°F)														
Mean	66.2	67.3	70.6	74.1	78.2	81.1	82.8	82.9	81.9	78.1	72.5	67.9	75.3	50
Mean daily maximum	74.9	76.3	79.3	82.4	85.9	88.6	90.3	90.5	88.7	84.9	80.0	76.2	83.2	50
Mean daily minimum	56.9	57.9	61.4	65.4	70.0	73.1	74.7	74.9	74.5	70.8	64.5	59.0	67.0	50
Extreme (highest)	87	90	94	99	96	98	99	98	96	95	91	88	99	50
Extreme (lowest)	27	32	30	43	51	61	68	65	67	46	36	28	27	50
RELATIVE HUMIDITY														
Average percentage	74.5	64.7	51.9	42.9	37.2	37.4	55.4	39.4	25.9	27.7	51.3	70.2	48.3	49
CLOUD COVER														
Percent of time clear	22.7	22.3	22.3	20.6	17.4	10.2	10.6	9.5	6.0	12.7	17.5	20.4	16.1	44
Percent of time scattered	25.4	25.9	25.9	27.9	29.7	24.8	29.9	28.5	28.5	30.2	28.0	25.5	27.5	44
Percent of time broken	23.3	23.4	24.5	26.3	25.6	30.0	32.7	34.3	33.5	30.3	27.2	24.7	28.0	44
Percent of time overcast	22.0	21.2	20.7	19.1	20.7	26.1	17.8	19.0	22.7	20.3	20.1	22.6	21.0	44
PRECIPITATION (inches)														
Mean amount	3.0	2.5	3.4	3.5	5.4	7.7	5.9	6.6	8.8	6.9	4.0	2.7	60.9	50
Greatest amount	11.0	8.7	16.7	12.6	15.2	17.9	13.2	20.1	24.8	18.7	14.6	11.6	85.8	50
Least amount	0.2	0.2	0.3	0.0	0.3	1.0	1.2	1.7	1.7	0.5	0.2	0.0	37.3	50
Maximum amount (24 hours)	6.7	2.9	5.5	6.4	7.0	4.8	5.2	8.0	5.7	7.1	7.4	6.4	8.0	50
Mean number of days	12	11	12	10	15	18	18	21	21	17	13	12	180	50
SNOW														
Mean amount	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	49
Greatest amount	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	49
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49
Maximum amount (24 hours)	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	50
Mean number of days	Miss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Miss	50
WIND														
Percentage with gales	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.05	0.04	0.02	0.01	0.00	0.13	49
Mean wind speed (knots)	8.8	9.2	9.6	9.6	8.8	7.3	6.8	6.8	7.4	8.9	9.2	8.8	8.4	49
Direction (percentage of observations)														
North	4.6	4.4	3.4	3.0	2.2	2.0	1.6	2.0	3.2	4.5	4.9	4.7	3.4	49
North Northeast	2.0	2.1	2.4	2.5	1.9	1.4	1.2	1.5	2.8	4.8	3.4	2.2	2.4	49
Northeast	2.9	3.3	3.8	4.7	5.0	3.5	1.7	3.1	6.5	11.2	6.6	4.1	4.7	49
East Northeast	5.8	5.9	5.9	8.5	10.4	6.6	4.4	6.4	12.1	16.4	13.0	8.1	8.6	49
East	9.0	7.5	7.9	12.0	12.5	9.3	10.3	11.9	14.3	12.0	12.8	10.4	10.9	49
East Southeast	6.5	6.8	8.9	12.3	15.7	13.3	16.4	15.2	12.6	6.8	6.5	7.1	10.7	49
Southeast	7.8	8.8	12.4	12.5	13.3	12.2	14.7	11.3	7.7	4.8	5.6	6.6	9.8	49
South Southeast	6.5	7.9	9.5	7.3	6.2	7.1	7.1	6.2	3.9	2.8	3.5	5.1	6.1	49
South	5.0	5.7	5.7	4.5	4.4	7.1	6.2	5.2	4.1	3.0	2.9	4.1	4.8	49
South Southwest	3.6	3.8	4.1	3.1	3.8	5.5	4.9	4.3	3.4	2.2	2.5	3.1	3.7	49
Southwest	3.5	4.3	4.2	4.1	4.2	6.4	5.1	4.9	3.4	2.3	2.5	3.0	4.0	49
West Southwest	4.0	4.5	4.5	4.3	4.1	4.8	4.0	3.8	3.0	2.7	2.6	2.9	3.8	49
West	4.6	5.0	4.8	4.0	3.2	3.6	3.6	3.5	3.0	2.8	3.1	3.6	3.7	49
West Northwest	7.1	7.2	5.2	4.2	3.0	3.0	3.1	3.2	3.2	4.0	4.4	6.1	4.5	49
Northwest	11.6	10.1	6.7	4.7	2.8	2.4	2.6	3.0	3.5	6.7	10.3	12.2	6.4	49
North Northwest	9.8	8.0	6.1	3.8	2.4	2.3	1.8	2.6	3.2	6.0	9.7	10.9	5.5	49
Calm	5.7	4.7	4.4	4.5	5.1	9.5	11.4	11.8	10.0	6.9	5.8	5.9	7.2	49
Direction (mean speed, knots)														
North	9.0	9.2	9.3	9.0	7.7	5.6	5.1	5.3	6.6	8.4	9.2	8.8	8.2	49
North Northeast	9.8	9.9	10.3	10.8	10.0	7.7	6.6	7.4	8.8	10.6	11.2	9.8	9.8	49
Northeast	10.4	10.6	11.2	11.2	11.0	10.0	8.0	8.7	10.0	11.9	11.7	10.8	10.8	49
East Northeast	11.6	12.0	11.9	12.0	11.3	10.3	9.0	9.8	10.0	12.0	12.4	12.1	11.4	49
East	11.4	11.5	11.9	11.6	10.8	9.8	9.4	9.4	9.6	10.9	11.9	11.6	10.8	49
East Southeast	9.8	10.3	10.5	11.0	10.2	9.3	9.2	8.8	9.0	9.0	10.0	10.1	9.7	49
Southeast	9.9	10.8	10.8	10.6	9.8	8.9	8.7	8.4	8.4	8.7	9.5	9.6	9.6	49
South Southeast	9.8	10.8	11.2	10.7	9.0	8.3	7.7	7.7	7.9	8.6	9.4	9.6	9.4	49
South	8.1	8.4	8.7	7.9	6.7	6.7	5.9	6.2	6.7	6.9	7.5	7.5	7.2	49
South Southwest	8.1	8.6	8.2	7.7	6.4	6.7	5.9	5.8	6.8	7.2	7.2	7.9	7.1	49
Southwest	7.9	8.3	8.6	8.2	6.8	6.7	5.8	5.8	6.4	6.5	7.3	7.4	7.1	49
West Southwest	7.7	8.0	8.8	8.3	7.3	7.1	6.1	6.0	6.3	6.7	6.9	7.0	7.3	49
West	7.8	8.8	8.8	8.0	6.8	6.2	6.0	6.0	5.7	6.2	6.4	7.3	7.2	49
West Northwest	8.9	9.1	9.5	8.2	6.8	5.8	5.8	5.5	5.4	7.0	7.3	8.1	7.7	49
Northwest	9.0	9.0	9.3	8.0	6.6	5.2	5.1	5.3	5.4	7.6	8.6	8.8	8.1	49
North Northwest	8.6	8.6	8.7	8.3	6.6	5.5	5.1	5.1	5.5	7.7	8.4	8.7	7.9	49
VISIBILITY														
Mean number of days with fog	7	6	6	5	3	4	2	3	3	4	5	7	55	50

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Service (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

MIAMI, FL (25°48'N, 80°18'W) 10 feet (3 m)

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (millibars)	1019.7	1019.0	1017.6	1017.0	1015.9	1016.3	1017.9	1016.5	1014.9	1015.1	1017.4	1019.3	1017.2	49
TEMPERATURE (°F)														
Mean	67.8	69.0	72.1	75.5	79.0	81.7	83.1	83.3	82.2	78.7	73.7	69.3	76.3	50
Mean daily maximum	75.6	76.8	79.6	82.6	85.7	88.1	89.4	89.7	88.2	84.8	80.4	76.8	83.2	50
Mean daily minimum	59.5	60.7	64.1	67.8	71.9	74.8	76.3	76.5	75.7	72.0	66.4	61.4	69.0	50
Extreme (highest)	88	89	92	96	96	98	98	98	97	95	89	87	98	50
Extreme (lowest)	30	35	32	42	55	60	69	68	68	53	39	30	30	50
RELATIVE HUMIDITY														
Average percentage	72.2	64.5	51.1	44.6	33.6	37.7	53.9	39.8	24.0	25.6	48.7	68.1	46.9	50
CLOUD COVER														
Percent of time clear	21.2	22.1	19.5	17.9	12.8	6.6	5.3	5.1	4.1	11.2	15.3	19.3	13.4	49
Percent of time scattered	32.7	31.3	34.0	35.7	34.9	30.3	33.8	33.3	31.9	36.0	34.8	33.0	33.5	49
Percent of time broken	23.3	24.4	26.5	28.3	30.0	33.8	38.4	39.4	37.1	30.0	27.9	25.0	30.4	49
Percent of time overcast	15.6	15.3	13.3	11.5	14.0	17.9	12.5	11.9	16.1	14.9	14.3	15.0	14.3	49
PRECIPITATION (inches)														
Mean amount	2.0	2.0	2.4	3.2	6.0	8.9	6.0	7.6	8.5	6.9	3.0	1.8	58.8	50
Greatest amount	6.6	8.0	10.5	11.7	18.5	22.3	11.2	16.6	24.4	21.6	13.8	6.3	89.3	50
Least amount	0.0	0.0	0.0	0.0	0.4	2.0	1.7	1.6	2.6	1.2	0.0	0.1	37.0	50
Maximum amount (24 hours)	2.4	4.5	7.0	9.3	11.5	6.6	4.5	6.5	6.0	9.9	7.5	4.3	11.5	50
Mean number of days	12	10	10	10	15	20	21	22	22	18	14	11	185	50
SNOW														
Mean amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50
Greatest amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50
Least amount	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50
Maximum amount (24 hours)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50
Mean number of days	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50
WIND														
Percentage with gales	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.15	0.01	0.00	0.00	0.14	50
Mean wind speed (knots)	8.2	8.7	9.1	9.1	8.2	7.1	6.9	6.8	7.1	8.0	8.4	8.1	8.0	50
Direction (percentage of observations)														
North	9.5	7.6	5.7	4.3	3.3	4.1	4.2	5.4	5.9	9.1	11.0	11.2	6.8	50
North Northeast	4.0	3.7	3.2	2.7	2.4	2.8	2.7	3.6	4.9	6.7	6.2	4.8	4.0	50
Northeast	4.2	4.0	3.7	4.5	4.6	3.9	2.9	3.9	6.7	11.5	8.5	5.6	5.4	50
East Northeast	6.1	5.9	6.2	8.5	10.1	6.5	5.9	7.9	11.1	14.1	11.8	8.0	8.5	50
East	8.7	7.7	9.1	12.9	14.3	11.9	13.3	12.6	14.2	10.6	11.0	10.2	11.4	50
East Southeast	11.0	10.9	12.5	15.0	16.3	14.3	18.1	14.4	12.9	7.9	9.3	10.2	12.7	50
Southeast	8.5	10.5	12.7	12.3	12.5	13.2	14.7	12.3	8.8	5.6	5.8	7.4	10.3	50
South Southeast	5.8	7.4	9.8	7.7	7.3	8.4	7.5	6.8	5.5	3.9	3.7	4.7	6.5	50
South	4.0	4.7	5.3	4.1	4.3	6.2	5.4	4.9	4.1	2.7	2.5	3.0	4.3	50
South Southwest	2.6	2.8	3.0	2.7	3.0	4.7	3.6	3.8	3.3	1.8	1.7	2.1	2.9	50
Southwest	2.4	2.8	3.0	2.9	3.7	4.9	3.6	3.8	2.6	1.9	1.9	2.0	3.0	50
West Southwest	2.6	3.1	3.3	3.6	3.5	3.7	2.8	2.8	2.4	2.2	1.8	2.0	2.8	50
West	2.6	3.1	3.3	3.2	2.8	2.8	2.2	2.4	2.1	2.0	1.7	2.0	2.5	50
West Northwest	3.9	5.0	4.0	3.7	2.7	2.2	2.2	2.4	2.2	2.9	2.8	3.5	3.1	50
Northwest	8.3	8.2	5.5	4.6	3.0	2.7	3.0	3.4	3.5	5.1	6.2	7.1	5.0	50
North Northwest	12.5	9.8	7.3	5.1	3.1	3.3	3.2	4.0	4.8	8.6	11.4	13.2	7.2	50
Calm	3.2	2.9	2.4	2.0	3.0	4.5	4.7	5.7	5.0	3.4	2.6	3.3	3.6	50
Direction (mean speed, knots)														
North	7.5	7.6	7.8	7.1	5.9	4.9	4.7	4.9	5.1	6.5	7.6	7.7	6.7	50
North Northeast	7.1	7.4	7.8	7.7	7.1	5.3	4.5	5.2	5.9	8.0	7.7	7.2	6.9	50
Northeast	9.2	8.8	10.0	10.6	9.1	7.6	5.7	6.5	7.9	10.5	10.2	9.5	9.1	50
East Northeast	9.8	10.0	10.6	11.0	10.0	8.8	8.0	8.4	8.9	10.2	10.8	9.9	9.8	50
East	9.0	9.4	10.0	10.3	9.7	8.4	8.2	8.3	8.5	9.0	9.6	9.6	9.1	50
East Southeast	9.5	9.9	10.1	10.2	9.4	8.6	8.5	8.4	8.4	8.5	9.2	9.2	9.1	50
Southeast	9.0	9.8	10.0	9.9	9.1	8.5	8.4	8.3	8.1	7.9	8.5	8.2	8.9	50
South Southeast	8.6	9.5	10.2	9.8	8.6	7.8	7.8	8.0	7.9	7.8	8.3	8.1	8.7	50
South	7.9	9.0	9.2	8.6	7.3	7.0	6.6	6.7	7.0	7.2	7.2	7.4	7.6	50
South Southwest	8.5	8.6	8.6	7.8	6.3	6.8	5.8	6.3	6.8	7.1	6.7	7.6	7.2	50
Southwest	7.8	8.5	8.2	7.7	6.6	6.4	5.7	5.8	6.4	6.6	6.9	7.0	6.9	50
West Southwest	8.5	8.7	8.9	8.6	7.2	6.8	5.9	6.2	6.7	7.1	7.2	7.1	7.5	50
West	7.8	8.0	8.6	8.2	6.9	5.7	5.7	5.7	5.7	6.1	6.3	6.5	6.9	50
West Northwest	8.3	8.8	8.7	7.6	6.2	5.5	5.3	5.6	5.5	6.8	7.1	7.5	7.2	50
Northwest	8.4	8.6	8.8	7.5	5.8	5.1	4.7	4.8	5.2	6.6	7.2	7.9	7.2	50
North Northwest	7.9	8.2	8.0	7.4	5.7	4.9	4.8	5.1	5.1	6.7	7.8	7.8	7.2	50
VISIBILITY														
Mean number of days with fog	7	5	4	4	3	2	1	1	2	4	5	6	44	50

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Se (ES IS) OAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) amount of precipitation
Miss or blank is a missing value

KEY WEST, FL (24°33'N, 88°39'W) 20 feet (6 m)														
WEATHER ELEMENTS	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**YEAR**	**YEARS OF RECORD**
SEA LEVEL PRESSURE*														
Mean (millibars)	1019.5	1018.6	1017.2	1016.3	1015.6	1015.8	1017.5	1016.1	1014.4	1014.7	1016.8	1018.9	1016.8	44
TEMPERATURE (°F)														
Mean	70.2	71.0	74.1	77.2	80.7	83.4	84.7	84.6	83.5	80.3	75.9	71.6	78.1	46
Mean daily maximum	74.9	75.8	78.8	81.8	85.2	87.9	89.4	89.5	88.2	84.6	80.0	76.1	82.7	46
Mean daily minimum	64.9	65.7	68.9	72.1	75.7	78.3	79.4	79.2	78.3	75.5	71.3	66.6	73.0	46
Extreme (highest)	86	85	88	90	91	94	95	95	94	93	89	88	95	46
Extreme (lowest)	41	45	47	48	64	68	69	68	69	60	49	44	41	46
RELATIVE HUMIDITY														
Average percentage	70.0	60.6	47.5	37.6	31.0	33.3	49.7	35.8	19.5	21.7	43.3	64.0	42.7	46
CLOUD COVER														
Percent of time clear	21.7	25.0	21.0	19.1	13.3	4.4	2.4	2.0	2.1	11.2	17.6	20.7	13.3	44
Percent of time scattered	32.2	33.6	36.1	39.0	39.5	32.9	31.1	30.5	28.3	36.9	35.3	31.7	33.9	44
Percent of time broken	23.2	23.0	23.4	24.5	27.7	33.4	40.4	41.6	40.9	28.5	25.1	24.2	29.7	44
Percent of time overcast	16.5	13.1	13.6	12.0	12.9	20.1	15.9	15.3	18.6	15.5	14.9	16.1	15.4	44
PRECIPITATION (inches)														
Mean amount	2.2	1.5	1.7	1.9	3.2	4.8	3.6	5.0	6.4	4.8	2.4	2.0	39.9	46
Greatest amount	17.6	4.4	9.6	10.6	12.9	14.4	11.6	10.4	18.4	21.5	27.6	11.1	62.9	46
Least amount	T	0.0	T	0.0	0.3	0.3	0.4	2.2	1.7	0.7	T	0.0	19.9	46
Maximum amount (24 hours)	6.4	2.5	5.2	6.1	7.2	5.1	3.0	3.2	6.0	6.4	22.7	6.6	22.7	46
Mean number of days	11	9	9	8	11	16	17	19	21	16	11	12	160	46
WIND														
Percentage with gales	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.18	0.09	0.03	0.01	0.18	45
Mean wind speed (knots)	10.4	10.5	10.6	10.6	9.3	8.4	8.2	8.0	8.5	9.6	10.5	10.3	9.5	45
Direction (percentage of observations)														
North	9.5	10.4	8.0	7.0	4.9	2.6	1.6	2.4	2.8	6.6	8.1	9.2	6.1	45
North Northeast	11.2	9.6	6.5	4.8	3.4	1.9	1.4	2.1	2.7	8.7	11.8	12.9	6.4	45
Northeast	15.7	12.0	7.5	6.0	4.4	3.2	3.0	4.5	6.7	17.3	20.2	18.6	9.9	45
East Northeast	12.0	9.2	7.1	7.8	6.5	5.0	5.6	7.6	10.8	18.7	17.3	14.3	10.2	45
East	9.1	8.6	9.7	12.1	12.5	10.3	11.6	11.8	12.8	11.2	9.5	9.0	10.7	45
East Southeast	10.0	11.1	14.8	18.8	20.5	18.6	23.8	19.8	18.4	10.0	9.2	9.4	15.4	45
Southeast	7.8	10.1	14.7	15.1	17.0	18.8	21.2	18.9	13.9	6.8	6.6	7.4	13.2	45
South Southeast	4.0	5.1	7.2	5.9	7.3	9.4	9.0	8.7	6.6	3.3	2.5	2.9	6.0	45
South	3.6	4.1	5.4	3.8	4.7	7.9	6.3	5.8	5.5	2.7	2.1	2.8	4.6	45
South Southwest	2.3	2.3	2.6	2.1	2.5	4.8	2.9	3.1	3.4	1.8	1.2	1.3	2.5	45
Southwest	2.0	1.9	2.1	2.0	2.1	4.3	2.8	3.0	2.9	1.8	1.5	1.4	2.3	45
West Southwest	1.2	1.5	1.4	1.3	1.5	2.3	1.4	1.6	2.0	1.1	0.8	1.1	1.4	45
West	1.0	1.1	1.2	0.9	1.1	1.5	0.9	1.1	1.4	0.8	0.7	0.8	1.0	45
West Northwest	1.4	1.5	1.6	1.6	1.6	1.4	1.0	1.1	1.3	1.0	0.9	1.1	1.3	45
Northwest	2.4	3.4	3.0	3.3	3.1	2.0	1.4	1.8	2.0	1.9	2.1	2.1	2.4	45
North Northwest	4.9	6.0	5.1	5.5	3.8	2.0	1.2	1.8	1.8	3.1	3.2	3.5	3.5	45
Calm	2.0	2.0	2.1	1.9	3.0	3.9	4.9	4.8	5.1	3.2	2.2	2.2	3.1	45
Direction (mean speed, knots)														
North	12.3	12.0	11.5	10.4	7.9	7.2	7.0	7.1	7.3	9.7	11.8	11.9	10.7	45
North Northeast	11.0	10.9	10.5	9.9	8.3	7.2	6.6	7.2	7.7	10.1	11.2	11.1	10.3	45
Northeast	10.2	10.2	10.3	9.7	8.8	7.2	6.4	7.1	8.0	10.5	10.9	10.4	9.9	45
East Northeast	9.8	10.0	10.5	10.8	9.7	8.4	7.3	7.6	8.3	10.5	10.5	10.2	9.7	45
East	10.6	10.5	11.1	12.0	11.2	9.8	9.2	8.9	9.4	10.0	10.6	10.3	10.3	45
East Southeast	10.9	10.8	11.6	12.0	11.0	9.8	9.9	9.6	9.9	9.8	10.8	10.7	10.5	45
Southeast	10.2	10.4	11.2	11.2	10.0	9.2	9.2	9.0	9.5	9.2	10.8	10.7	9.9	45
South Southeast	9.1	9.6	10.2	10.0	8.6	8.2	7.9	7.8	8.6	9.1	9.4	9.1	8.8	45
South	9.5	9.6	9.3	9.1	7.9	8.6	7.5	7.6	9.0	9.9	8.6	8.9	8.6	45
South Southwest	9.1	9.6	9.3	9.2	7.4	8.7	7.4	7.1	9.3	10.1	9.7	8.4	8.7	45
Southwest	8.3	8.9	8.6	8.3	7.3	7.7	7.3	7.2	8.4	9.1	8.7	8.3	8.1	45
West Southwest	7.8	8.5	9.8	8.3	7.7	7.1	6.9	7.7	7.7	8.1	7.6	7.9	7.9	45
West	8.2	8.6	9.2	8.9	7.5	6.5	5.8	6.8	9.3	7.1	7.1	7.9	7.8	45
West Northwest	10.3	11.5	10.3	10.0	7.9	6.2	6.3	6.5	6.8	6.8	8.7	8.7	8.5	45
Northwest	12.3	12.4	12.2	10.1	7.7	6.1	6.7	7.0	7.6	8.1	10.3	11.9	9.7	45
North Northwest	13.4	12.9	12.5	10.8	8.1	6.8	7.6	7.1	7.6	9.7	11.9	12.6	10.9	45
VISIBILITY														
Mean number of days with fog	3	2	1	Miss	Miss	1	Miss	1	1	1	1	2	13	46

Sea level pressure is station pressure re uce to sea level

T ese tables ere prepare b t e ational Climatic ata Center (C C) ational Environmental Satellite ata Information Service (ES IS) OAA

METEOROLOGICAL TABLES

COASTAL AREA OFF JACKSONVILLE, FL
Between 29°N to 32°N and 78°W to 82°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Wind > 33 knots [1]	2.4	3.4	2.1	1.0	0.5	0.5	0.1	0.5	1.4	2.2	1.8	2.1	1.5
Wave Height > 9 feet [1]	5.9	7.1	4.6	2.6	2.1	1.4	0.6	1.2	3.8	6.1	4.5	4.5	3.7
Visibility < 2 nautical miles [1]	1.1	0.9	0.8	0.4	0.4	0.6	0.3	0.5	0.5	0.6	0.6	0.8	0.6
Precipitation [1]	5.2	5.4	4.1	3.1	3.3	3.9	3.3	4.3	5.5	4.8	4.0	4.6	4.3
Temperature > 69° F	23.9	24.7	38.6	64.3	93.0	99.6	99.9	99.9	99.5	89.4	62.0	34.8	69.3
Mean Temperature (°F)	63.7	64.6	67.5	71.7	76.2	80.1	82.5	82.4	80.9	76.3	71.0	66.4	73.6
Temperature < 33° F [1]	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	73	73	73	73	75	79	79	79	78	73	71	72	75
Overcast or Obscured [1]	26.3	24.9	20.6	15.4	12.9	15.5	11.2	13.0	17.2	17.8	16.9	22.6	17.9
Mean Cloud Cover (8^{ths})	4.9	4.7	4.4	3.9	3.9	4.4	4.1	4.3	4.6	4.5	4.4	4.7	4.4
Mean SLP (mbs)	1020	1019	1018	1018	1017	1016	1018	1017	1016	1016	1018	1020	1018
Ext. Max. SLP (mbs)	1040	1045	1040	1036	1037	1031	1035	1034	1033	1040	1046	1045	1046
Ext. Min. SLP (mbs)	985	990	983	992	996	995	998	997	995	978	994	995	978
Prevailing Wind Direction	NW	NW	S	S	S	SW	SW	E	NE	NE	N	N	NE
Thunder and Lightning [1]	0.9	1.1	1.5	1.2	2.7	3.2	4.4	4.5	3.5	2.1	1.1	0.8	2.3

COASTAL AREA OFF MIAMI, FL
Between 2 °N to 29°N and 78°W to 82°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Wind > 33 knots [1]	1.1	1.5	1.0	0.4	0.1	0.2	0.1	0.2	0.7	1.3	0.8	1.1	0.7
Wave Height > 9 feet [1]	3.5	4.4	3.2	1.8	1.2	0.9	0.5	0.7	1.8	4.3	3.6	3.7	2.4
Visibility < 2 nautical miles [1]	0.4	0.4	0.3	0.5	0.4	0.5	0.4	0.4	0.5	0.5	0.4	0.4	0.4
Precipitation [1]	3.3	3.2	2.5	2.1	3.1	4.2	3.0	3.8	4.9	4.7	3.2	3.2	3.5
Temperature > 69° F	54.1	54.1	67.5	86.6	98.6	99.8	99.9	100.0	99.9	97.9	86.4	64.6	84.6
Mean Temperature (°F)	69.7	70.0	72.0	74.8	78.1	81.2	83.1	83.4	82.3	79.2	75.1	71.5	76.8
Temperature < 33° F [1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	75	75	75	74	77	79	78	78	79	76	74	74	76
Overcast or Obscured [1]	15.4	14.7	14.2	10.5	11.3	13.8	9.0	9.3	13.1	14.1	11.6	13.7	12.5
Mean Cloud Cover (8^{ths})	4.3	4.2	4.1	3.8	3.9	4.3	4.1	4.2	4.5	4.4	4.2	4.2	4.2
Mean SLP (mbs)	1020	1019	1018	1017	1016	1017	1018	1017	1015	1015	1018	1019	1017
Ext. Max. SLP (mbs)	1040	1040	1042	1040	1038	1033	1033	1034	1030	1037	1032	1044	1044
Ext. Min. SLP (mbs)	994	989	994	998	999	999	1003	1000	987	996	993	996	987
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	NE	E	E	E
Thunder and Lightning [1]	0.5	0.9	1.0	1.4	2.2	3.5	4.4	4.7	4.5	2.6	1.0	0.7	2.4

COASTAL AREA OFF KEY WEST, FL
Between 23°N to 2 °N and 79°W to 83°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Wind > 33 knots [1]	0.5	0.5	0.3	0.2	0.1	0.3	0.1	0.2	0.5	0.6	0.5	0.5	0.3
Wave Height > 9 feet [1]	2.0	2.0	1.9	1.7	1.1	0.8	0.4	0.7	0.7	2.4	2.5	1.9	1.5
Visibility < 2 nautical miles [1]	0.4	0.4	0.3	0.2	0.3	0.5	0.2	0.4	0.4	0.7	0.3	0.4	0.4
Precipitation [1]	2.8	2.6	1.8	1.4	2.5	3.7	2.3	2.9	3.9	4.6	2.9	2.6	2.8
Temperature > 69° F	70.1	69.7	81.9	95.2	99.7	99.9	99.9	100.0	99.9	99.3	93.3	77.1	90.9
Mean Temperature (°F)	72.2	72.4	74.3	76.8	79.7	82.2	83.7	84.0	83.2	80.5	76.9	73.5	78.5
Temperature < 33° F [1]	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean RH (%)	78	78	78	77	78	79	77	77	79	78	77	77	78
Overcast or Obscured [1]	12.8	11.7	9.8	7.2	9.4	12.9	6.8	7.1	10.1	12.4	10.4	12.3	10.2
Mean Cloud Cover (8^{ths})	3.8	3.7	3.5	3.4	3.7	4.2	4.0	4.0	4.3	4.3	4.0	4.0	3.9
Mean SLP (mbs)	1019	1018	1017	1017	1015	1016	1017	1016	1014	1014	1017	1019	1017
Ext. Max. SLP (mbs)	1038	1036	1035	1035	1031	1032	1030	1029	1030	1031	1034	1037	1038
Ext. Min. SLP (mbs)	997	1000	997	998	1000	997	1004	1002	996	991	1000	1000	991
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning [1]	0.5	0.7	0.5	0.6	2.0	3.0	4.8	5.0	5.9	3.2	1.2	0.6	2.4

[1] Percentage Frequency

These data are based upon observations made by ships in transit. These ships tend to avoid bad weather when possible thus biasing the data toward good weather samples.

METEOROLOGICAL TABLES

COASTAL AREA OFF NORFOLK, VA
Between 36°N to 38°N and 73°W to 77°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Wind > 33 knots [1]	4.0	4.3	3.7	1.8	0.5	0.4	0.2	0.4	1.1	2.0	3.1	4.1	2.1
Wave Height > 9 feet [1]	7.7	7.8	6.5	3.5	1.6	1.2	0.8	1.2	2.3	4.8	5.4	8.3	4.1
Visibility < 2 nautical miles [1]	3.8	5.1	5.3	5.4	5.7	3.6	1.7	1.5	1.7	2.2	2.7	3.3	3.5
Precipitation [1]	8.8	8.2	6.8	5.6	4.8	4.1	4.2	4.3	5.1	5.4	6.1	7.7	5.8
Temperature > 69° F	0.8	0.7	1.1	3.8	15.6	62.3	96.2	96.4	75.2	22.9	5.0	1.1	32.9
Mean Temperature (°F)	46.2	46.4	49.7	55.8	63.3	72.2	77.7	77.8	73.8	65.6	57.6	49.9	61.7
Temperature < 33° F [1]	8.1	6.9	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.0	1.6
Mean RH (%)	76	75	76	77	80	82	82	81	79	76	74	74	78
Overcast or Obscured [1]	36.3	35.1	32.6	27.3	25.3	21.6	21.1	19.7	20.9	22.3	25.6	32.6	26.5
Mean Cloud Cover (8^{ths})	5.0	4.8	4.6	4.2	4.3	4.3	4.4	4.3	4.2	4.1	4.4	4.9	4.4
Mean SLP (mbs)	1019	1018	1017	1016	1016	1016	1017	1017	1018	1018	1018	1019	1017
Ext. Max. SLP (mbs)	1047	1047	1044	1040	1038	1036	1038	1041	1036	1044	1047	1045	1047
Ext. Min. SLP (mbs)	968	964	967	975	982	989	991	992	986	977	971	975	964
Prevailing Wind Direction	N	N	N	SW	SW	SW	SW	SW	NE	N	N	N	N
Thunder and Lightning [1]	0.5	0.5	0.7	0.8	1.5	1.5	2.5	2.4	1.2	0.8	0.6	0.4	1.1

COASTAL AREA OFF CAPE HATTERAS, NC
Between 3 °N to 36°N and 73°W to 77°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Wind > 33 knots [1]	6.3	6.8	5.5	3.5	1.1	0.7	0.4	0.7	1.6	3.5	3.7	5.5	3.2
Wave Height > 9 feet [1]	11.9	13.2	11.4	7.6	4.2	2.4	1.6	1.7	4.4	9.0	8.7	11.3	7.1
Visibility < 2 nautical miles [1]	2.8	2.8	2.3	1.4	1.5	1.0	0.9	1.0	0.9	0.9	1.2	1.7	1.5
Precipitation [1]	8.6	8.3	6.7	5.1	5.5	5.3	5.9	5.8	5.4	6.0	6.3	7.7	6.4
Temperature > 69° F	5.6	5.0	9.1	23.9	58.6	91.1	99.4	99.4	93.7	58.6	26.2	10.4	49.3
Mean Temperature (°F)	55.4	55.6	58.6	64.3	70.9	76.5	80.3	80.4	77.5	71.0	64.5	58.6	68.0
Temperature < 33° F [1]	1.5	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2
Mean RH (%)	75	74	74	74	77	80	81	80	77	74	73	74	76
Overcast or Obscured [1]	36.0	35.7	32.1	23.8	22.6	21.4	19.7	19.6	20.5	23.4	24.5	31.8	25.8
Mean Cloud Cover (8^{ths})	5.4	5.2	5.0	4.3	4.5	4.6	4.7	4.6	4.6	4.7	4.7	5.2	4.8
Mean SLP (mbs)	1018	1018	1016	1017	1016	1016	1017	1017	1018	1017	1018	1019	1017
Ext. Max. SLP (mbs)	1047	1047	1046	1039	1038	1036	1036	1040	1036	1043	1045	1044	1047
Ext. Min. SLP (mbs)	974	977	973	981	990	988	997	992	990	985	984	987	973
Prevailing Wind Direction	N	N	N	SW	SW	SW	SW	SW	NE	N	N	N	N
Thunder and Lightning [1]	0.8	1.0	1.5	1.8	2.8	3.0	4.2	3.7	2.1	1.5	1.3	0.9	2.1

COASTAL AREA OFF CHARLESTON, SC
Between 3 °N to 3 °N and 7 °W to 8 °W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Wind > 33 knots [1]	4.3	4.8	4.1	2.0	0.9	0.5	0.3	0.6	1.3	3.1	3.1	4.0	2.4
Wave Height > 9 feet [1]	8.9	9.6	8.7	4.7	3.0	2.3	1.1	1.7	4.3	7.6	7.3	7.9	5.5
Visibility < 2 nautical miles [1]	1.4	1.5	1.1	0.6	0.8	0.6	0.8	0.9	0.8	0.8	0.8	1.0	0.9
Precipitation [1]	7.0	6.5	6.1	3.6	4.7	5.0	5.1	6.0	5.5	5.8	5.1	6.1	5.5
Temperature > 69° F	11.5	11.7	18.4	40.9	79.9	98.0	99.8	99.7	98.5	77.1	42.5	18.7	59.1
Mean Temperature (°F)	59.9	60.5	63.4	68.4	73.8	78.4	81.5	81.5	79.3	73.8	67.8	62.4	71.1
Temperature < 33° F [1]	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Mean RH (%)	74	74	73	73	76	80	80	80	77	74	72	72	76
Overcast or Obscured [1]	32.1	31.8	28.0	18.9	19.4	19.5	17.3	18.5	20.2	21.5	21.6	28.2	23.0
Mean Cloud Cover (8^{ths})	5.2	5.1	4.8	4.0	4.3	4.5	4.6	4.7	4.7	4.6	4.6	5.0	4.7
Mean SLP (mbs)	1019	1018	1017	1017	1017	1016	1018	1017	1017	1017	1018	1019	1018
Ext. Max. SLP (mbs)	1045	1045	1044	1040	1039	1036	1037	1038	1036	1042	1044	1044	1045
Ext. Min. SLP (mbs)	980	977	980	985	991	995	998	996	995	988	987	983	977
Prevailing Wind Direction	N	N	N	SW	SW	SW	SW	SW	NE	NE	N	N	SW
Thunder and Lightning [1]	1.0	1.3	1.7	1.6	2.9	3.1	3.9	4.3	2.7	1.9	1.3	0.9	2.2

[1] Percentage Frequency

These data are based upon observations made by ships in transit. These ships tend to avoid bad weather when possible thus biasing the data toward good weather samples.

Atmospheric Pressure Conversion Table

nches	Millibars
28.44	963
28.53	966
28.62	969
28.70	972
28.79	975
28.88	978
28.97	981
29.06	984
28.15	987
28.24	990

nches	Millibars
29.32	993
29.41	996
29.50	999
29.59	1002
29.68	1005
29.77	1008
29.86	1011
29.94	1014
30.03	1017
30.12	1020

nches	Millibars
30.21	1023
30.30	1026
30.39	1029
30.48	1032
30.56	1035
30.65	1038
30.74	1041
30.83	1044
30.92	1047
31.01	1050

Mean Surface Water Temperatures and Densities

		Virginia Beach 36°50'N., 75°58'W.	Diamond Shoal Light, NC 35°09'N., 75°18'W.	Beaufort, NC 34°43'N., 76°40'W.	Southport, NC 33°55'N., 78°01'W.	Myrtle Beach, SC 33°00'N., 78°53'W.	Charleston, SC 32°47'N., 79°55'W.	Fort Pulaski, GA 32°02'N., 80°54'W.	Brunswick, GA 31°08'N., 81°29'W.	Fernandina Beach, FL 30°40'N., 81°28'W.	Mayport, FL 30°24'N., 81°26'W.	Jacksonville, FL 30°21'N., 81°37'W.	Daytona Beach, FL (ocean) 29°14'N., 81°00'W.	Daytona Beach, FL (Halifax River) 29°13'N., 81°01'W.	Cape Canaveral, FL 28°15'N., 80°36'W.	Eau Gallie Beach, FL 28°08'N., 80°35'W.	Miami Beach, FL 25°46'N., 80°08'W.	Marathon Shores, FL 24°43'N., 81°02'W.	Key West, FL 24°33'N., 81°48'W.
Years of Record		8	5	4	9	17	27	29	8	25	25	13	20	2	2	16	26	3	38
Jan	Temp (°C)	5.5	16.6	9.1	10.9	9.1	10.6	10.8	12.7	13.5	14.0	14.3	16.4	18.1	17.3	18.4	21.7	22.1	21.8
	Density	20.4	26.2	21.2	15.1	25.2	12.0	11.0	16.1	21.6	17.0	6.1	25.6	16.6	26.5	26.5	26.6	26.4	26.8
Feb	Temp (°C)	4.5	15.6	8.8	10.9	9.6	11.0	11.7	13.0	14.1	14.5	15.7	16.3	14.8	17.8	18.7	22.1	21.7	22.3
	Density	19.8	26.2	20.8	13.8	25.0	10.4	10.2	14.3	21.1	17.0	6.4	25.7	17.8	26.7	26.7	26.8	26.8	26.9
Mar	Temp (°C)	6.4	14.8	11.3	13.1	12.6	13.9	14.7	16.1	16.7	16.8	19.1	17.8	20.1	18.9	20.1	23.3	22.8	23.8
	Density	19.4	25.6	21.6	12.5	24.4	9.1	8.3	12.9	20.5	16.6	6.8	26.2	10.0	26.0	26.8	27.0	27.5	27.1
Apr	Temp (°C)	10.7	16.7	17.2	17.8	17.3	18.6	19.2	20.9	20.7	20.4	23.1	21.2	25.4	21.7	22.3	25.1	25.4	25.8
	Density	19.0	25.8	22.9	13.9	24.4	9.5	8.3	14.5	21.5	19.0	7.1	26.5	9.8	27.0	27.1	27.1	28.2	27.3
May	Temp (°C)	15.8	21.1	21.4	22.7	22.1	23.2	23.7	24.6	24.6	24.1	26.8	24.2	27.6	25.0	24.7	27.1	27.8	27.9
	Density	18.5	26.4	24.6	16.0	24.9	10.7	10.1	16.9	23.0	21.0	10.1	26.9	13.6	27.2	27.2	27.2	28.0	27.5
Jun	Temp (°C)	20.4	24.4	25.2	26.3	26.0	26.9	27.2	27.5	27.4	26.9	29.1	25.9	29.2	25.2	26.2	28.8	28.9	29.6
	Density	18.4	26.5	23.9	18.8	25.3	11.1	12.0	17.6	23.6	21.2	9.0	27.0	15.0	27.2	27.1	27.0	26.9	27.2
Jul	Temp (°C)	22.8	26.2	27.4	27.9	27.9	28.6	28.8	28.8	28.4	28.0	30.6	25.7	30.1	16.1	26.0	30.1	30.4	30.4
	Density	19.6	26.4	24.5	17.4	25.8	12.2	13.0	17.5	23.4	18.7	6.3	27.0	8.8	27.3	27.1	26.9	27.1	27.3
Aug	Temp (°C)	23.8	26.9	27.7	27.9	27.7	28.6	28.9	29.2	28.4	27.8	30.4	25.3	30.8	26.8	26.7	30.3	30.4	30.6
	Density	20.0	26.5	24.8	18.7	26.4	13.1	13.8	17.8	23.1	18.0	5.7	26.9	6.1	27.2	27.0	26.8	27.7	27.3
Sep	Temp (°C)	22.4	25.7	24.8	25.6	25.8	26.6	26.7	26.9	27.4	27.4	28.5	27.3	29.1	28.0	27.9	29.3	30.3	29.7
	Density	20.0	25.7	24.1	19.0	25.9	13.8	13.6	17.6	21.6	17.0	7.3	26.5	6.7	27.0	26.9	26.3	27.0	26.9
Oct	Temp (°C)	18.6	23.2	20.2	21.2	21.3	22.0	22.4	23.0	23.5	23.8	24.6	24.7	25.7	25.6	25.7	26.9	27.7	27.5
	Density	20.2	26.0	23.8	19.4	25.6	14.8	14.2	17.8	20.6	15.1	5.9	25.4	7.6	26.3	26.4	25.9	26.6	26.7
Nov	Temp (°C)	13.8	19.3	15.4	16.3	15.7	16.8	17.3	18.2	18.9	19.4	20.2	21.5	23.0	23.1	22.9	24.4	23.7	24.4
	Density	20.6	25.8	22.0	18.1	25.6	14.2	14.0	18.7	21.8	15.3	5.3	25.6	10.5	26.3	26.3	26.3	27.0	27.0
Dec	Temp (°C)	8.4	18.0	11.4	11.7	10.7	11.9	12.3	14.2	14.5	15.3	15.8	18.1	19.1	19.2	19.9	22.6	21.8	22.3
	Density	20.5	25.9	23.6	16.6	25.5	13.0	12.8	18.6	22.4	17.1	6.2	25.5	15.0	25.8	26.7	26.5	26.0	26.9
Mean	Temp (°C)	14.4	20.7	18.3	19.4	18.8	19.9	20.3	21.3	21.5	21.5	23.2	22.0	24.4	22.9	23.3	26.0	26.1	26.3
	Density	19.7	26.1	23.2	16.6	25.3	12.0	11.8	16.7	22.0	17.8	6.8	26.2	11.5	26.7	26.8	26.7	27.1	27.1

F (Fahrenheit) = 1.8C (Celsius) + 32

Density as used in this table is the specific gravity of the sea water or the ratio between the weight of a sea-water sample and the weight of an equal volume of distilled water at 15°C (59°F).

Table for Estimating Time of Transit

Distance (nauticalmiles)	Speed (knots)																		
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	30
	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours	days/ hours
10	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	-	-	-	-	-	-
20	0/3	0/2	0/2	0/2	0/2	0/2	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
30	0/4	0/3	0/3	0/3	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/1	0/1	0/1	0/1	0/1	0/1
40	0/5	0/4	0/4	0/4	0/3	0/3	0/3	0/3	0/3	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/1
50	0/6	0/6	0/5	0/5	0/4	0/4	0/4	0/3	0/3	0/3	0/3	0/3	0/3	0/2	0/2	0/2	0/2	0/2	0/2
60	0/8	0/7	0/6	0/5	0/5	0/5	0/4	0/4	0/4	0/4	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/2	0/2
70	0/9	0/8	0/7	0/6	0/6	0/5	0/5	0/5	0/4	0/4	0/4	0/4	0/4	0/3	0/3	0/3	0/3	0/3	0/2
80	0/10	0/9	0/8	0/7	0/7	0/6	0/6	0/5	0/5	0/5	0/4	0/4	0/4	0/4	0/4	0/3	0/3	0/3	0/3
90	0/11	0/10	0/9	0/8	0/8	0/7	0/6	0/6	0/6	0/5	0/5	0/5	0/5	0/4	0/4	0/4	0/4	0/4	0/3
100	0/13	0/11	0/10	0/9	0/8	0/8	0/7	0/7	0/6	0/6	0/6	0/5	0/5	0/5	0/5	0/4	0/4	0/4	0/3
200	1/1	0/22	0/20	0/18	0/17	0/15	0/14	0/13	0/13	0/12	0/11	0/11	0/10	0/10	0/9	0/9	0/8	0/8	0/7
300	1/14	1/9	1/6	1/3	1/1	0/23	0/21	0/20	0/19	0/18	0/17	0/16	0/15	0/14	0/14	0/13	0/13	0/12	0/10
400	2/2	1/20	1/16	1/12	1/9	1/7	1/5	1/3	1/1	1/0	0/22	0/21	0/20	0/19	0/18	0/17	0/17	0/16	0/13
500	2/15	2/8	2/2	1/21	1/18	1/14	1/12	1/9	1/7	1/5	1/4	1/2	1/1	1/0	0/23	0/22	0/21	0/20	0/17
600	3/3	2/19	2/12	2/7	2/2	1/22	1/19	1/16	1/14	1/11	1/9	1/8	1/6	1/5	1/3	1/2	1/1	1/0	0/20
700	3/16	3/6	2/22	2/16	2/10	2/6	2/2	1/23	1/20	1/17	1/15	1/13	1/11	1/9	1/8	1/6	1/5	1/4	0/23
800	4/4	3/17	3/8	3/1	2/19	2/14	2/9	2/5	2/2	1/23	1/20	1/18	1/16	1/14	1/12	1/11	1/9	1/8	1/3
900	4/17	4/4	3/18	3/10	3/3	2/21	2/16	2/12	2/8	2/5	2/2	1/23	1/21	1/19	1/17	1/15	1/14	1/12	1/6
1000	5/5	4/15	4/4	3/19	3/11	3/5	2/23	2/19	2/15	2/11	2/8	2/5	2/2	2/0	1/21	1/19	1/18	1/16	1/9
2000	10/10	9/6	8/8	7/14	6/23	6/10	5/23	5/13	5/5	4/22	4/15	4/9	4/4	3/23	3/19	3/15	3/11	3/8	2/19
3000	15/15	13/21	12/12	11/9	10/10	9/15	8/22	8/8	7/20	7/8	6/23	6/14	6/6	5/23	5/16	5/10	5/5	5/0	4/4
4000	20/20	18/21	16/16	15/4	13/21	12/20	11/22	11/3	10/10	9/19	9/6	8/19	8/8	7/22	7/14	7/6	6/23	6/16	5/13
5000	26/1	23/4	20/20	18/23	17/9	16/1	14/21	13/21	13/1	12/6	11/14	10/23	10/10	9/22	9/11	9/1	8/16	8/8	6/23
6000	31/6	27/19	25/0	22/17	20/20	19/6	17/21	16/16	15/15	14/17	13/21	13/4	12/12	11/22	11/9	10/21	10/10	10/0	8/8

Determination of Wind Speed by Sea Condition

Miles per hour	Knots	Descriptive	Sea Conditions	Wind Force (Beaufort)	Probable Wave Height (feet)
0-1	0-1	Calm	Sea smooth and mirror like	0	-
1-3	1-3	Light Air	Scale-like ripples without foam crests	1	¼
4-7	4-6	Light Breeze	Small, short wavelets; crests have a glassy appearance and do not break.	2	½
8-12	7-10	Gentle Breeze	Large wavelets; some crests begin to break; foam has glassy appearance. Occasional white foam crests.	3	2
13-18	11-16	Moderate Breeze	Small waves, become longer; fairly frequent white foam crests.	4	4
19-24	17-21	Fresh Breeze	Moderate waves, taking a more pronounced long form; many white foam crests; there may be some spray.	5	6
25-31	22-27	Strong Breeze	Large waves begin to form; white foam crests are more extensive everywhere; there may be some spray.	6	10
32-38	28-33	Near Gale	Sea heaps up and white foam from breaking waves begin to be blown in streaks along the direction of the wind; spindrift begins.	7	14
39-46	34-40	Gale	Moderately high waves of greater length; edges of crests break into spindrift; foam is blown in well-marked streaks along the direction of the wind.	8	18
47-54	41-47	Strong Gale	High waves; dense streaks of foam along the direction of the wind; crests of waves begin to topple, tumble and roll over; spray may reduce visibility.	9	23
55-63	48-55	Storm	Very high waves with long overhanging crests. The resulting foam in great patches is blown in dense white streaks along the direction of the wind. On the whole, the surface of the sea is white in appearance. The tumbling of the sea becomes heavy and shock-like. Visibility is reduced.	10	29
64-72	56-63	Violent Storm	Exceptionally high waves that may obscure small and medium-sized ships. The sea is completely covered with long white patches of foam lying along the direction of the wind. Everywhere the edges of the wave crests are blown into froth. Visibility is reduced.	11	37
73+	64+	Hurricane	The air is filled with foam and spray. Sea completely white with driving spray; visibility is very much reduced.	12	45

Atlantic Ocean Distances – Montreal, Canada to the Panama Canal (nautical miles)

	Panama Canal (Pacific)	Panama Canal (Atlantic)	Yucatan Channel	San Juan, PR	Corpus Christi, TX	Galveston, TX	Port Arthur, TX	New Orleans, LA (via SW Pass)	Mobile, AL	Pensacola, FL	Tampa, FL	Straits of Florida	Key West, FL	Jacksonville, FL	Savannah, GA	Charleston, SC	Wilmington, NC	Diamond Shoals	Norfolk, VA	Chesapeake Bay (entrance)	Baltimore, MD	Philadelphia, PA	New York, NY	Nantucket Shoals	Boston, MA	Portland, ME	Gut of Canso (Lock)	Cabot Strait
Montreal, Quebec* (St. Lambert Lock)	3249	3203	2730	2445	3347	3242	3240	3080	3011	2977	2772	2540	2479	2172	2088	2014	1948	1729	1716	1689	1838	1682	1534	1311	1318	1276	717	681
Cabot Strait 45°07.0'N., 60°17.0'W.	2568	2522	2049	1764	2666	2561	2559	2399	2330	2296	2091	1859	1798	1491	1407	1333	1267	1048	1035	1008	1157	1001	853	630	637	595	120	-
Gut of Canso (Lock) 45°39.0'N., 61°25.0'W.	2465	2419	1937	1669	2558	2453	2451	2291	2222	2188	1983	1751	1690	1379	1295	1221	1155	936	923	896	1046	890	742	519	526	484	-	
Portland, ME 43°39.4'N., 70°14.7'W.	2235	2189	1629	1531	2255	2150	2148	1988	1919	1885	1680	1448	1387	1071	987	913	847	628	611	584	734	575	426	203	100	-		
Boston, MA 42°22.0'N., 71°03.0'W.	2195	2149	1589	1486	2215	2110	2108	1948	1879	1845	1640	1408	1347	1031	947	873	807	588	571	544	694	535	386	163	-			
Nantucket Shoals 40°30.0'N., 69°25.0'W.	2032	1986	1426	1334	2052	1947	1945	1785	1716	1682	1477	1245	1184	868	784	710	644	425	408	381	531	372	223	-				
New York, NY 40°42.0'N., 74°01.0'W.	2018	1972	1346	1399	1977	1872	1870	1710	1641	1607	1402	1170	1109	788	704	630	564	345	294	267	417	240	-					
Philadelphia, PA 39°56.8'N., 75°08.3'W.	2001	1955	1323	1395	1954	1849	1847	1687	1618	1584	1379	1147	1086	765	681	607	541	322	269	242	392	-						
Baltimore, MD 39°16.0'N., 76°34.5'W.	1950	1904	1268	1375	1899	1794	1792	1632	1563	1529	1324	1092	1031	710	626	552	486	267	173	150	-							
Chesapeake Bay (entrance) 36°56.3'N., 75°58.6'W.	1800	1754	1118	1225	1749	1644	1642	1482	1413	1379	1174	942	881	560	476	402	336	117	27	-								
Norfolk, VA 36°50.9'N., 76°17.9'W.	1827	1781	1145	1252	1776	1671	1669	1509	1440	1406	1201	969	908	587	503	429	363	144	-									
Diamond Shoals 35°08.0'N., 75°15.0'W.	1683	1637	1001	1114	1632	1527	1525	1365	1296	1262	1057	825	764	443	359	285	219	-										
Wilmington, NC 34°14.0'N., 77°57.0'W.	1655	1609	904	1153	1535	1430	1428	1268	1199	1165	960	728	667	315	227	151												
Charleston, SC 32°47.2'N., 79°55.2'W.	1609	1563	809	1138	1440	1335	1333	1173	1104	1070	865	633	572	197	102	-												
Savannah, GA 32°05.0'N., 81°05.7'W.	1610	1564	780	1156	1411	1306	1304	1144	1075	1041	836	604	543	145	-													
Jacksonville, FL 30°19.2'N., 81°39.0'W.	1559	1513	699	1121	1330	1225	1223	1063	994	960	755	523	462	-														
Key West, FL 24°33.7'N., 81°48.5'W.	1106	1060	251	966	880	775	773	613	544	510	305	73	-															
Straits of Florida 24°25.0'N., 83°00.0'W.	1047	1001	192	1017	807	702	700	540	471	437	232	-																
Tampa, FL 27°56.5'N., 82°26.7'W.	1259	1213	404	1249	810	703	697	502	389	347	-																	
Pensacola, FL 30°24.0'N., 87°13.0'W.	1388	1342	533	1448	618	509	504	288	89	-																		
Mobile, AL 30°42.5'N., 88°02.5'W.	1417	1371	562	1448	605	496	491	269	-																			
New Orleans, LA (via SW Pass) 29°57.0'N., 90°03.7'W.	1442	1396	587	1557	555	446	441	-																				
Port Arthur, TX 29°49.5'N., 93°57.6'W.	1533	1487	691	1717	249	89	-																					
Galveston, TX 29°19.0'N., 94°47.0'W.	1539	1493	696	1719	207	-																						
Corpus Christi, TX 27°48.8'N., 97°24.0'W.	1595	1549	769	1824	-																							
San Juan, PR 18°27.8'N., 66°06.7'W.	1036	990	1111	-																								
Yucatan Channel 21°50.0'N., 85°03.0'W.	855	809	-																									
Panama Canal (Atlantic) 9°23.5'N., 79°55.3'W.	46	-																										
Panama Canal (Pacific) 8°53.0'N., 79°31.0'W.	-																											

All tabular distances are by outside routes which can be used by the deepest-draft vessel that the listed ports can accommodate.
Lighter-draft vessels can save considerable mileage by transiting Canso Lock (Canada), the Cape Cod Canal (Massachusetts), and the Chesapeake and Delaware Canal (Delaware-Maryland); see the detailed tables. Gulf of Mexico distances are through the Shipping Safety Fairways.

*For Quebec City, Canada – subtract 139 miles

Coastwise Distances – Norfolk, Virginia to Key West, Florida
(nautical miles)

	Straits of Florida	Key West, FL	Miami, FL	Port Everglades, FL	Port of Palm Beach, FL	Stuart, FL	Fort Pierce, FL	Cape Canaveral, FL	St. Augustine, FL	Jacksonville, FL	Fernandina Beach, FL	Brunswick, GA	Savannah, GA	Port Royal, SC	Charleston, SC	Georgetown, SC	Wilmington, NC	Southport, NC	Morehead City, NC	Diamond Shoals, NC	Norfolk, VA	Chesapeake Bay Entrance
Chesapeake Bay Entrance 36°56.3'N., 75°58.6'W.	942	881	743	720	678	666	647	612	557	560	533	527	476	465	402	365	336	315	222	117	27	-
Norfolk, VA 46°50.9'N., 76°17.9'W.	969	908	770	747	705	693	674	639	584	587	560	554	503	492	429	392	363	342	249	144	-	
Diamond Shoals, NC 35°08.0'N., 75°15.0'W.	825	764	626	603	561	549	530	495	440	443	416	410	359	348	285	248	219	198	105	-		
Morehead City, NC 34°42.8'N., 76°41.8'W.	772	711	573	550	509	497	476	438	377	379	352	346	295	284	220	184	154	133	-			
Southport, NC 33°54.8'N., 78°01.0'W.	707	646	508	485	443	423	407	367	296	294	265	260	206	191	130	87	21	-				
Wilmington, NC 34°14.0'N., 77°57.0'W.	728	667	529	506	464	444	428	388	317	315	286	281	227	212	151	108	-					
Georgetown, SC 33°21.4'N., 79°16.9'W.	671	610	472	449	407	391	368	324	246	247	216	210	154	141	79	-						
Charleston, SC 32°47.2'N., 79°55.2'W.	633	572	434	411	369	353	329	283	199	197	166	156	102	90	-							
Port Royal, SC 32°22.3'N., 80°41.6'W.	605	544	406	383	341	324	298	251	157	152	120	110	51	-								
Savannah,GA 32°05.0'N., 81°05.7'W.	604	543	405	382	340	324	298	251	152	145	115	104	-									
Brunswick,GA 31°08.0'N., 81°29.7'W.	549	488	350	327	285	268	242	195	90	82	50	-										
Fernandina Beach, FL 30°40.3'N., 81°28.0'W.	526	465	327	304	262	242	216	169	61	53	-											
Jacksonville, FL 30°19.2'N., 81°39.0'W.	523	462	324	301	256	240	214	167	56	-												
St. Augustine, FL 29°53.6'N., 81°18.5'W.	475	414	276	253	211	192	167	120	-													
Cape Canaveral, FL 28°24.6'N., 80°36.5'W.	374	313	175	152	110	91	69	-														
Fort Pierce, FL 27°27.5'N., 80°19.3'W.	316	255	117	94	52	32	-															
Stuart, FL 27°12.2'N., 80°15.6'W.	300	239	101	78	36	-																
Port of Palm Beach, FL 26°46.1'N., 80°03.0'W.	267	207	68	46	-																	
Port Everglades, FL 26°05.6'N., 80°07.0'W.	226	165	27	-																		
Miami, FL 25°47.0'N., 80°11.0'W.	211	151	-																			
Key West, FL 24°33.7'N., 81°48.5'W.	73	-																				
Straits of Florida 24°25.0'N., 83°00.0'W.	-																					

Inside Route Distances - Norfolk, Virgina to Fernandina Beach, Florida
(nautical and statute miles)

	Fernandina Beach, FL	Brunswick, GA	Thunderbolt, GA	Savannah, GA	Beaufort, SC	Charleston, SC	McClellanville, SC	Georgetown, SC	Bucksport, SC	Little River, SC	Southport, NC	Wilmington, NC	Wrightsville, NC	Jacksonville, NC	Swansboro, NC	Morehead City, NC	Beaufort, NC	New Bern, NC	Oriental, NC	Ocracoke, NC	Washington, NC	Belhaven, NC	Manteo, NC	Plymouth, NC	Edenton, NC	Columbia, NC	Hertford, NC	Elizabeth City, NC	Norfolk, VA
Norfolk, VA	623	595	507	508	466	406	374	352	328	299	268	273	248	231	20	178	177	180	160	131	156	120	80	105	98	89	89	77*	•
Elizabeth City, NC	581	553	465	466	424	364	332	311	286	257	226	231	204	189	158	136	134	139	118	91	114	79	39	56	48	39	39	•	89
Hertford, NC	582	554	466	467	425	366	333	311	287	259	227	232	205	190	160	137	137	139	119	97	115	79	46	42	35	26	•	45	102
Columbia, NC	581	553	465	466	424	364	332	310	286	257	226	231	204	189	158	136	136	138	118	96	114	78	45	33	25	•	30	45	102
Edenton, NC	589	562	474	475	432	373	340	318	294	266	235	240	213	197	166	145	144	146	126	104	123	87	54	14	•	29	40	55	113
Plymouth, NC	596	570	482	483	441	381	349	327	303	274	243	248	221	206	175	152	152	155	134	113	130	95	61	•	16	38	48	64	121
Manteo, NC	555	527	439	440	397	337	306	283	260	232	201	205	178	162	132	110	110	110	91	61	105	70	•	70	62	52	53	45	92
Belhaven, NC	506	479	391	392	349	290	257	235	211	183	152	157	130	114	83	61	61	63	43	43	39	•	81	109	100	90	91	91	138
Washington, NC	519	491	403	404	362	302	270	248	224	195	164	169	142	127	96	74	74	76	56	60	•	45	121	150	142	131	132	131	180
Ocracoke, NC	504	477	389	390	347	288	255	233	209	181	150	155	128	112	81	59	59	62	41	•	69	49	70	130	120	110	112	105	151
Oriental, NC	467	440	352	353	310	251	218	196	172	144	113	118	91	75	44	22	22	23	•	47	64	49	105	154	145	136	137	136	184
New Bern, NC	484	456	368	369	327	267	235	213	188	160	129	134	107	91	60	38	38	•	26	71	87	72	127	178	168	159	160	160	207
Beaufort, NC	447	420	332	333	290	231	199	177	152	124	93	97	70	55	24	3	•	44	25	68	85	70	127	175	166	157	158	154	204
Morehead City, NC	445	418	330	331	288	229	196	174	150	122	91	96	69	53	22	•	3	44	25	68	85	70	127	175	167	157	158	157	205
Swansboro, NC	423	396	307	309	266	207	174	152	128	100	69	73	46	31	•	25	28	69	51	93	110	96	152	201	191	182	184	182	230
Jacksonville, NC	425	397	309	310	268	208	176	154	129	101	70	75	48	•	36	61	63	105	86	129	146	131	186	237	227	217	219	217	266
Wrightsville, NC	377	349	261	262	220	160	128	106	82	53	22	27	•	55	53	79	81	123	105	147	163	150	205	254	245	235	236	235	283
Wilmington, NC	376	349	260	261	219	159	127	105	81	52	21	•	31	86	84	110	112	154	136	178	194	181	236	285	276	266	267	266	314
Southport, NC	355	327	239	240	198	138	106	84	60	31	•	24	25	81	79	105	107	148	130	173	189	175	231	280	270	260	261	260	308
Little River, SC	324	296	208	209	167	107	75	53	28	•	36	60	61	116	115	140	143	184	166	208	224	211	267	315	306	296	298	296	344
Bucksport, SC	295	268	179	181	138	79	46	24	•	32	69	93	94	148	147	173	175	216	198	241	258	243	299	349	338	329	330	329	377
Georgetown, SC	273	246	157	159	116	56	24	•	28	61	97	121	122	177	175	200	203	245	226	268	285	270	326	376	366	357	358	358	405
McClellanville, SC	249	222	133	135	92	32	•	28	53	86	122	146	147	203	200	226	229	270	251	293	311	296	352	402	391	382	383	382	430
Charleston, SC	218	191	103	104	60	•	37	64	91	123	159	183	184	239	238	264	266	307	289	331	348	334	388	438	429	419	421	419	467
Beaufort, SC	157	130	41	43	•	69	106	133	159	192	228	252	253	308	306	331	334	376	357	399	417	402	457	508	497	488	489	488	536
Savannah, GA	130	102	14	•	49	120	155	183	208	241	276	300	302	357	356	381	383	425	406	449	465	451	506	556	547	536	537	536	585
Thunderbolt, GA	116	88	•	16	47	119	153	181	206	239	275	299	300	356	353	380	382	423	405	448	464	450	505	555	545	535	536	535	583
Brunswick, GA	35	•	101	117	150	220	255	283	308	341	376	402	402	457	456	481	483	525	506	549	565	551	606	656	647	636	638	636	685
Fernandina Beach, FL	•	40	133	150	181	251	287	314	339	373	409	433	434	489	487	512	514	557	537	580	597	582	639	688	678	669	670	669	717

*51 statute miles/44 nautical miles via the Dismal Swamp Canal

Inside Route Distances - Fernandina Beach, Florida to Key West, Florida
(nautical and statute miles)

	Key West	Flamingo	Marathon	Matecumbe Harbor	Tavernier	Miami	Port Everglades	Fort Lauderdale	Port of Palm Beach	Jupiter	Fort Myers	Moore Haven	Clewiston	Port Mayaca	Stuart	Salerno	Fort Pierce	Vero Beach	Melbourne	Eau Gallie	Cocoa	Titusville	New Smyrna Beach	Daytona Beach	Marineland	St. Augustine	Jacksonville	Fernandina Beach	Norfolk, VA
Norfolk, VA	1061	1050	1045	1017	999	947	927	925	885	873	975	926	915	892	865	860	839	827	798	795	780	764	735	722	692	676	659	623	•
Fernandina Beach	458	427	422	394	378	324	304	303	262	251	353	303	292	269	242	237	216	204	175	172	157	141	113	99	69	53	36	•	717
Jacksonville	454	423	418	390	374	320	300	299	258	247	349	299	288	265	238	233	212	200	171	168	153	137	108	95	65	49	•	41	758
St. Augustine	405	374	369	341	324	271	251	249	209	197	299	250	239	216	189	184	163	151	122	119	104	88	59	46	16	•	56	60	778
Marineland	389	358	353	325	309	255	235	234	193	182	284	235	223	200	173	169	148	136	106	103	89	72	44	30	•	18	75	79	796
Daytona Beach	359	328	323	295	279	225	205	204	163	152	254	204	193	170	143	138	117	105	76	73	58	42	14	•	35	53	109	114	831
New Smyrna Beach	345	315	309	282	265	211	191	190	150	18	240	191	180	157	130	125	104	92	63	59	45	28	•	16	51	68	124	130	846
Titusville	317	286	281	253	237	183	163	162	121	110	212	163	151	128	101	97	76	64	34	31	17	•	32	48	83	101	158	162	879
Cocoa	301	270	264	237	220	166	146	145	105	93	195	146	135	112	85	80	59	47	18	14	•	20	52	67	102	120	176	181	898
Eau Gallie	286	255	250	223	206	152	132	131	90	79	181	132	120	97	70	66	45	33	3	•	16	36	68	84	119	137	193	198	915
Melbourne	283	252	247	219	203	149	129	128	87	76	178	128	117	94	67	62	41	29	•	14	21	39	72	87	122	140	197	201	918
Vero Beach	254	223	217	190	173	119	99	98	58	46	148	99	88	65	38	33	12	•	34	38	54	74	106	121	157	174	230	235	952
Fort Pierce	242	211	205	178	161	107	87	86	46	34	136	87	76	53	26	21	•	14	47	52	68	87	120	135	170	188	244	249	966
Salerno	224	193	188	161	144	90	70	69	28	17	119	70	58	35	8	•	24	38	71	76	92	112	144	159	194	212	268	273	990
Stuart	229	198	193	165	149	95	75	74	33	22	111	61	50	27	•	9	30	44	77	81	98	116	150	165	199	217	274	278	995
Port Mayaca	256	225	220	192	176	122	102	101	60	49	83	34	23	•	31	40	61	75	108	112	129	147	181	196	230	248	305	310	1026
Clewiston	279	248	243	215	199	145	125	124	83	72	61	11	•	26	58	67	87	101	135	138	155	174	207	222	257	275	331	336	1053
Moore Haven	290	259	254	227	210	156	136	135	94	83	49	•	13	40	70	81	100	114	148	152	168	188	220	235	270	288	344	349	1066
Fort Myers	339	309	303	276	259	205	185	184	144	132	•	56	70	96	128	137	157	170	205	208	224	244	276	292	327	344	402	406	1122
Jupiter	207	177	171	144	127	73	53	52	12	•	152	96	83	56	25	20	39	53	87	91	107	127	159	175	209	227	284	289	1005
Port of Palm Beach	196	165	160	132	116	62	42	41	•	14	166	108	96	69	38	32	53	67	100	104	121	139	173	188	222	241	297	302	1018
Fort Lauderdale	155	125	119	92	75	21	1	•	47	60	212	155	143	116	85	79	99	113	147	151	167	186	219	235	269	287	344	348	1064
Port Everglades	154	123	118	91	74	20	•	1	48	61	213	156	144	117	86	80	100	114	148	152	168	188	220	236	270	289	345	350	1067
Miami	134	104	98	71	54	•	23	24	71	84	236	180	167	141	109	104	123	137	171	175	191	211	243	259	293	312	368	373	1090
Tavernier	83	52	47	19	•	62	85	86	133	146	298	242	229	203	171	166	185	199	234	237	253	273	305	321	356	373	430	435	1150
Matecumbe Harbor	65	35	29	•	22	82	105	106	152	166	318	261	247	221	190	185	205	219	252	257	273	291	323	339	374	392	449	453	1170
Marathon	42	34	•	33	54	113	136	137	184	197	349	292	280	253	222	216	236	250	284	288	304	323	356	372	407	425	481	486	1203
Flamingo	73	•	39	40	60	120	142	144	190	204	356	296	285	259	228	222	243	257	290	293	311	329	362	377	412	430	486	491	1208
Key West	•	84	48	75	96	154	177	178	226	239	390	334	321	295	264	258	278	292	326	329	346	365	397	413	448	466	522	527	1244

Distances on St. Johns River, Florida
(nautical and statute miles)

	Lake Harney	Sanford	Astor-Volusia	Georgetown	Leesburg	Moss Bluff Lock	Silver Springs	Welaka	Crescent City	Palatka	Doctors Lake Inlet	Jacksonville	Broward River (mouth)	Intracoastal Waterway	Mayport	St. Johns River (mouth)
St. Johns River (mouth)	161	143	109	95	162	145	136	86	89	68	32	20	12	4	2	•
Mayport	159	141	107	93	160	143	134	84	87	66	30	18	10	2	•	2
Intracoastal Waterway	157	139	105	91	158	141	132	82	85	64	28	16	8	•	2	5
Broward River (mouth)	149	131	97	83	150	133	124	74	77	56	20	8	•	9	12	14
Jacksonville	141	123	89	75	142	125	116	66	69	48	12	•	9	18	21	23
Doctors Lake Inlet	129	111	77	62	129	112	104	54	56	36	•	14	23	32	35	37
Palatka	93	75	41	26	94	76	68	18	20	•	41	55	64	74	76	78
Crescent City	101	83	49	35	102	85	76	26	•	23	64	79	89	98	100	102
Welaka	75	57	23	8	75	58	50	•	30	21	62	76	85	94	97	99
Silver Springs	123	105	71	56	31	14	•	58	87	78	120	134	143	152	154	157
Moss Bluff Lock	131	113	79	65	17	•	16	67	98	87	129	144	153	162	165	167
Leesburg	148	131	96	82	•	20	36	86	117	108	148	163	173	182	184	186
Georgetown	66	49	14	•	94	75	64	9	40	30	71	86	96	105	107	109
Astor-Volusia	52	34	•	16	110	91	82	26	56	47	89	102	112	121	123	125
Sanford	18	•	39	56	151	130	121	66	96	86	128	142	151	160	162	165
Lake Harney	•	21	60	76	170	151	142	86	116	107	148	162	171	181	183	185

Distance of Visibility for Objects Having Various Elevations

Height (feet)	Distance (nautical miles)	Distance (statute miles)	Height (meters)
1	1.2	1.3	0.3
2	1.7	1.9	0.6
3	2.0	2.3	0.9
4	2.3	2.7	1.2
5	2.6	3.0	1.5
6	2.9	3.3	1.8
7	3.1	3.6	2.1
8	3.3	3.8	2.4
9	3.5	4.0	2.7
10	3.7	4.3	3.1
11	3.9	4.5	3.4
12	4.1	4.7	3.7
13	4.2	4.9	4.0
14	4.4	5.0	4.3
15	4.5	5.2	4.6
16	4.7	5.4	4.9
17	4.8	5.6	5.2
18	5.0	5.7	5.5
19	5.1	5.9	5.8
20	5.2	6.0	6.1
21	5.4	6.2	6.4
22	5.5	6.3	6.7
23	5.6	6.5	7.0
24	5.7	6.6	7.3
25	5.9	6.7	7.6
26	6.0	6.9	7.9
27	6.1	7.0	8.2
28	6.2	7.1	8.5
29	6.3	7.3	8.8
30	6.4	7.4	9.1
31	6.5	7.5	9.5
32	6.6	7.6	9.8
33	6.7	7.7	10.1
34	6.8	7.9	10.4
35	6.9	8.0	10.7
36	7.0	8.1	11.0
37	7.1	8.2	11.3
38	7.2	8.3	11.6
39	7.3	8.4	11.9
40	7.4	8.5	12.2
41	7.5	8.6	12.5
42	7.6	8.7	12.8
43	7.7	8.8	13.1
44	7.8	8.9	13.4
45	7.8	9.0	13.7
46	7.9	9.1	14.0
47	8.0	9.2	14.3
48	8.1	9.3	14.6
49	8.2	9.4	14.9
50	8.3	9.5	15.2
55	8.7	10.0	16.8
60	9.1	10.4	18.3
65	9.4	10.9	19.8
70	9.8	11.3	21.3
75	10.1	11.7	22.9
80	10.5	12.0	24.4
85	10.8	12.4	25.9
90	11.1	12.8	27.4
95	11.4	13.1	29.0
100	11.7	13.5	30.5
105	12.0	13.8	32.0
110	12.3	14.1	33.5
115	12.5	14.4	33.1

Height (feet)	Distance (nautical miles)	Distance (statute miles)	Height (meters)
120	12.8	14.7	36.6
125	13.1	15.1	38.1
130	13.3	15.4	39.6
135	13.6	15.6	41.2
140	13.8	15.9	42.7
145	14.1	16.2	44.2
150	14.3	16.5	45.7
160	14.8	17.0	48.8
170	15.3	17.6	51.8
180	15.7	18.1	54.9
190	16.1	18.6	57.9
200	16.5	19.0	61.0
210	17.0	19.5	64.0
220	17.4	20.0	67.1
230	17.7	20.4	70.1
240	18.1	20.9	73.2
250	18.5	21.3	76.2
260	18.9	21.7	79.3
270	19.2	22.1	82.3
280	19.6	22.5	85.3
290	19.9	22.9	88.4
300	20.3	23.3	91.4
310	20.6	23.7	94.5
320	20.9	24.1	97.5
330	21.3	24.5	100.6
340	21.6	24.8	103.6
350	21.9	25.2	106.7
360	22.2	25.5	109.7
370	22.5	25.9	112.8
380	22.8	26.2	115.8
390	23.1	26.6	118.9
400	23.4	26.9	121.9
410	23.7	27.3	125.0
420	24.0	27.6	128.0
430	24.3	27.9	131.1
440	24.5	28.2	134.1
450	24.8	28.6	137.2
460	25.1	28.9	140.2
470	25.4	29.2	143.3
480	25.6	29.5	146.3
490	25.9	29.8	149.4
500	26.2	30.1	152.4
510	26.4	30.4	155.5
520	26.7	30.7	158.5
530	26.9	31.0	161.5
540	27.2	31.3	164.6
550	27.4	31.6	167.6
560	27.7	31.9	170.7
570	27.9	32.1	173.7
580	28.2	32.4	176.8
590	28.4	32.7	179.8
600	28.7	33.0	182.9
620	29.1	33.5	189.0
640	29.5	34.1	195.1
660	30.1	34.6	201.2
680	30.5	35.1	207.3
700	31.0	35.6	213.4
720	31.4	36.1	219.5
740	31.8	36.6	225.6
760	32.3	37.1	231.7
780	32.7	37.6	237.7
800	33.1	38.1	243.8
820	33.5	38.6	249.9

This table gives the approximate geographic range of visibility for an object which may be seen by an observer. It is necessary to add to the distance for the height of any object the distance corresponding to the height of the observer's eye above sea level.

Conversion of Degrees to Points and Points to Degrees

Deg °	Min '	Points
000	00	N
002	49	
005	38	N ½ E
008	26	
011	15	N x E
014	04	
016	53	N x E ½ E
019	41	
022	30	NNE
025	19	
028	08	NNE ½ E
030	56	
033	45	NE x N
036	34	
039	23	NE ½ N
042	11	
045	00	NE
047	49	
050	38	NE ½ E
053	26	
056	15	NE x E
059	04	
061	53	NE x E ½ E
064	41	
067	30	ENE
070	19	
073	08	ENE ½ E
075	56	
078	45	E x N
081	34	
084	23	E ½ N
087	11	
090	00	E
092	49	
095	38	E ½ S
098	26	
101	15	E x S
104	04	
106	53	ESE ½ E
109	41	
112	30	ESE
115	19	
118	08	SE x E ½ E
120	56	
123	45	SE x E
126	34	
129	23	SE ½ E
132	11	
135	00	SE
137	49	
140	38	SE ½ S
143	26	
146	15	SE x S
149	04	
151	53	SSE ½ E
154	41	
157	30	SSE
160	19	
163	08	S x E ½ E
165	56	
168	45	S x E
171	34	
174	23	S ½ E
177	11	

Deg °	Min '	Points
180	00	S
182	49	
185	38	S ½ W
188	26	
191	15	S x W
194	04	
196	53	S x W ½ W
199	41	
202	30	SSW
205	19	
208	08	SSW ½ W
210	56	
213	45	SW x W
216	34	
219	23	SW ½ S
222	11	
225	00	SW
227	49	
230	38	SW ½ W
233	26	
236	15	SW x W
239	04	
241	53	SW x W ½ W
244	41	
247	30	WSW
250	19	
253	08	WSW ½ W
255	56	
258	45	W x S
261	34	
264	23	W ½ S
267	11	
270	00	W
272	49	
275	38	W ½ N
278	26	
281	15	W x N
284	04	
286	53	WNW ½ W
289	41	
292	30	WNW
295	19	
298	08	NW x W ½ W
300	56	
303	45	NW x W
306	34	
309	23	NW ½ W
312	11	
315	00	NW
317	49	
320	38	NW ½ N
323	26	
326	15	NW x N
329	04	
331	53	NNW ½ W
334	41	
337	30	NNW
340	19	
343	08	N x W ½ W
345	56	
348	45	N x W
351	34	
354	23	N ½ W
357	11	

Standard Abbreviations Used In Broadcasts

Aids to Navigation	
Aeronautical Radiobeacon	AERO RBN
Articulated Daybeacon	ART DBN
Articulated Light	ART LT
Destroyed	DESTR
Discontinued	DISCONTD
Established	ESTAB
Exposed Location Buoy	ELB
Fog Signal Station	FOG SIG
Large Navigation Buoy	LNB
Light	LT
Light List Number	LLNR
Lighted Bell Buoy	LBB
Lighted Buoy	LB
Lighted Gong Buoy	LGB
Lighted Horn Buoy	LHB
Lighted Whistle Buoy	LWB
Ocean Data Acquisition System	ODAS
Privately Maintained	PRIV MAINTD
Radar Beacon	RACON
Radar Reflector	RA REF
Temporarily Replaced by Unlighted Buoy	TRUB
Temporarily Replaced by Lighted Buoy	TRLB
Whistle	WHIS

Light Characteristics	
Alternating	AL
Characteristic	CHAR
Composite Group-Flashing	FL(2+1)
Composite Group-Occulting	OC(2+1)
Continuous Quick-Flashing	Q
Fixed and Flashing	FFL
Fixed	F
Group-Flashing	FL(3)
Group-Occulting	OC(2)
Interrupted Quick-Flashing	IQ
Isophase	ISO
Morse Code	MO(A)
Occulting	OC
Single-Flashing	FL

Colors[1]	
Black	B
Blue	BU
Green	G
Orange	OR
Red	R
White	W
Yellow	Y

Organizations	
Commander, Coast Guard District (#)	CCGD(#)
Coast Guard	CG
Corps of Engineers	COE
National Geospatial-Intelligence Agency	NGA
National Ocean Service	NOS
National Weather Service	NWS

Vessels	
Aircraft	A/C
Fishing Vessel	F/V
Liquefied Natural Gas Carrier	LNG
Motor Vessel[2]	M/V
Pleasure Craft	P/C
Research Vessel	R/V
Sailing Vessel	S/V

Compass Directions	
North	N
South	S
East	E
West	W
Northeast	NE
Northwest	NW
Southeast	SE
Southwest	SW

Months	
January	JAN
February	FEB
March	MAR
April	APR
May	MAY
June	JUN
July	JUL
August	AUG
September	SEP
October	OCT
November	NOV
December	DEC

Days of the Week	
Monday	MON
Tuesday	TUE
Wednesday	WED
Thursday	THU
Friday	FRI
Saturday	SAT
Sunday	SUN

[1] Color refers to light characteristics of Aids to Navigation only
[2] M/V includes: Steam Ship, Container Vessel, Cargo Vessel, etc.

Standard Abbreviations Used In Broadcasts (continued)

Countries and States	
Alabama	AL
Alaska	AK
American Samoa	AS
Arizona	AZ
Arkansas	AR
California	CA
Canada	CN
Colorado	CO
Connecticut	CT
Delaware	DE
District of Columbia	DC
Florida	FL
Georgia	GA
Guam	GU
Hawaii	HI
Idaho	ID
Illinois	IL
Indiana	IN
Iowa	IA
Kansas	KS
Kentucky	KY
Louisiana	LA
Maine	ME
Maryland	MD
Marshall Islands	MH
Massachusetts	MA
Mexico	MX
Michigan	MI
Minnesota	MN
Mississippi	MS
Missouri	MO
Montana	MT
Nebraska	NE
Nevada	NV
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
New York	NY
North Carolina	NC
North Dakota	ND
Northern Mariana Islands	MP
Ohio	OH
Oklahoma	OK
Oregon	OR
Pennsylvania	PA
Puerto Rico	PR
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX
United States	US
Utah	UT
Vermont	VT
Virgin Islands	VI
Virginia	VA
Washington	WA
West Virginia	WV
Wisconsin	WI
Wyoming	WY

Various	
Anchorage	ANCH
Anchorage Prohibited	ANCH PROHIB
Approximate	APPROX
Atlantic	ATLC
Authorized	AUTH
Average	AVG
Bearing	BRG
Breakwater	BKW
Broadcast Notice to Mariners	BNM
Channel	CHAN
Code of Federal Regulations	CFR
Continue	CONT
Degrees (temp; geo pos)	DEG
Diameter	DIA
Edition	ED
Effect/Effective	EFF
Entrance	ENTR
Explosive Anchorage	EXPLOS ANCH
Fathom(s)	FM(S)
Foot/Feet	FT
Harbor	HBR
Height	HT
Hertz	HZ
Horizontal Clearance	HOR CL
Hour	HR
International Regulations for Preventing Collisions at Sea	COLREGS
Kilohertz	KHZ
Kilometer	KM
Knot(s)	KT(S)
Latitude	LAT
Local Notice to Mariners	LNM
Longitude	LONG
Maintained	MAINTD
Maximum	MAX
Megahertz	MHZ
Millibar	MB

Standard Abbreviations Used In Broadcasts (continued)

Various (continued)	
Millimeter	MM
Minute (time; geographic position)	MIN
Moderate	MOD
Mountain, Mount	MT
Nautical Mile(s)	NM
Notice to Mariners	NTM
Obstruction	OBSTR
Occasion/Occasionally	OCCASION
Operating Area	OPAREA
Pacific	PAC
Point(s)	PT(S)
Position	POS
Position Approximate	PA
Pressure	PRES
Private/Privately	PRIV
Prohibited	PROHIB
Publication	PUB
Range	RGE
Reported	REP
Restricted	RESTR

Rock	RK
Saint	ST
Second (time; geographic position)	SEC
Signal Station	SIG STA
Station	STA
Statute Mile(s)	SM
Storm Signal Station	S SIG STA
Temporary	TEMP
Thunderstorm	TSTORM
Through	THRU
True	T
Uncovers; Dries	UNCOV
Universal Coordinate Time	UTC
Urgent Marine Information Broadcast	UMIB
Velocity	VEL
Vertical Clearance	VERT CL
Visibility	VIS
Yard(s)	YD
Warning	WARN
Weather	WX
Wreck	WK

Conversion Factors

	Known Value	Multiply By	Unknown Value
Linear	inches	25.40	millimeters
		2.540	centimeters
	centimeters	0.032808	feet
	feet	30.48	centimeters
		0.3048	meters
		0.00016458	nautical miles
	yard	0.9144	meters
	meters	3.2808	feet
		1.094	yards
		0.0005399	nautical miles
	statute miles	0.86897	nautical miles
		1.6093	kilometers
		1,609.3	meters
	nautical miles	1.151	statute miles
Area	square feet	0.0929	square meters
		0.00002296	acres
	square meters	10.764	square feet
		0.0002471	acres
	acres	4,046.9	square meters
		43,560	square feet
		0.404685	hectare
	hectare	2.471054	acres
		10,000	square meters
		1.07639×10^5	square feet
Depths	fathoms	1.8288	meters
	meters	0.54681	fathoms
		3.2808	feet
	feet	0.3048	meters
Rate	feet per second	0.5925	knots
		0.6818	miles per hour
		30.48	centimeters per second
	statute miles per hour	0.8689	knots
		1.467	feet per second
		0.447	meters per second
	knots	1.151	miles per hour
		0.5144	meters per second
		1.6878	feet per second
	centimeters per second	0.01944	knots
		0.02237	miles per hour
		0.032808	feet per second
Mass	grams	0.035275	ounces
		0.002205	pounds
	ounces	28.349	grams
	pounds	0.45359	kilograms
	short tons	2,000	pounds
		0.89286	long tons
		0.9072	metric tons
Mass	long tons	2,240	pounds
		1.12	short tons
		1.016	metric tons
	metric tons	1,000	kilograms
		0.9842	long tons
		1.1023	short tons
		2,204.6	pounds
Volume	barrels (petroleum)	42	gallons (US)
		158.99	liters
	barrels (liquid, US)	31.5	gallons (US)
		26.229	gallons (British)
		119.24	liters
	gallons (US)	0.02381	barrels (petroleum)
		3.7854	liters
	liters	0.26417	gallons (US)

Measurements and Equivalencies

Unit	Equivalency
nautical mile	1,852 meters 6,076.12 feet
statute mile	5,280 feet 1,609.3 meters 1.6093 kilometers
cable	0.1 nautical mile (CN) 720 feet (US)
fathom	6 feet 1.8288 meters
foot	0.3048 meter
inch	2.54 centimeters
meter	39.37 inches 3.281 feet 1.0936 yards
kilometer	1,000 meters
knot	1.6877 feet per second 0.5144 meters per second
miles per hour (statute)	1.466 feet per second 0.44704 meters per second
acre	43,560 square feet 4,046.82 square meters
pound (avoirdupois)	453.59 gram
gram	0.0022046 pound (avoirdupois) 0.035274 ounce
short ton	2,000 pounds
long ton	2,240 pounds
metric ton	2,204.6 pounds
kilogram	2.2 pounds
liter	1.0567 quarts
barrel (petroleum)	42 gallons (US)

Tips for Boating Clean and Green

• Practice Preventive Engine Maintenance. Keep your engine well tuned and practice preventative engine maintenance by regularly checking hoses and lines for chaffing or deterioration.

• Use Oil Absorbents. Place and secure an oil absorbent under the engine and in the bilge. Avoid using bilge cleaners as they may get discharged overboard. It is illegal to use soap to disperse fuel and oil spills. Report oil and chemical spills by calling the EPA National Response Center at 800–424–8802.

• Spill-Proof Your Fueling Practices. Use a spill proof system like a portable oil change pump to change your oil. Use oil absorbents when fueling and changing the oil. Do not top-off your fuel tank; leave it 10 percent empty to allow fuel to expand as it warms.

• Reduce Greywater Discharges. Use shore-side facilities for laundry, showers and dish washing whenever possible. Use only phosphate-free and biodegradable soaps. The legality of discharging greywater into a marina or within three miles off the coast varies from place to place. In some areas, there are local ordinances and codes that allow harbor patrol to issue citations for any discharge that is not "clean and clear". To avoid any potential fines and to protect the aquatic environment, do not discharge greywater overboard.

• Dispose of Hazardous Waste Properly: Recycle and properly dispose of absorbents, used oil, oil filters, paint, and batteries at your local household hazardous waste collection site.

• Minimize boat cleaning and maintenance conducted on the water. Use more elbow grease. Use products that are water-based, biodegradable, phosphate-free, and labeled as less toxic. Check out less toxic cleaning alternatives for all types of uses by visiting: http://www.coastal.ca.gov/ccbn/lesstoxic.html. Buy only the amount that you need and use products for spot cleaning only. Properly handle and store materials. Dispose of hazardous waste legally and safely.

• Reduce Discharges from Bottom Paints. Consider alternative, non-biocide hull coatings. Clean the bottom with a soft, non-abrasive sponge. Use hull cleaning companies who use green management practices such as monitoring their divers and using non-abrasive scrubbing agents that do not release paint into the water. For more information visit: http://www.ucanr.org/sites/coast.

• Stow it, Don't Throw it. Keep your trash on-board. Recycle plastic, glass, metal, and paper. Avoid excess packaging.

• Dump at the Pump! It is illegal to discharge untreated sewage anywhere within the three-mile territorial limit including lakes, rivers, reservoirs or coastal waters. Never discharge treated sewage into "restricted waters" such as a marina, swimming/wading areas, a sanctuary, poorly flushed areas, lakes, reservoirs, or freshwater impoundments and federal No Discharge Zones. Use sewage pumpouts, dump stations, or mobile-pumpout services.

• Prevent the Spread of Aquatic Invasive Species. Before leaving any body of water, examine your boat and equipment and remove any visible mud, plants, or animals before transporting equipment. Never release plants or animals into a body of water or storm drains unless they came out of that body of water. Clean and dry anything that came in contact with the water. For cleaning procedures visit: http://www.protectyourwaters.net/

For hazardous waste recycling or collection centers call 800–CLEAN–UP or visit http://www.earth911.org