CLIMATE ⚐1

AVERAGE HIGH & LOW TEMPERATURES[1]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
°F HIGH	76.0	77.0	79.0	82.0	86.0	88.0	90.0	90.0	89.0	86.0	81.0	77.0	83.3
°F LOW	59	60.0	63.0	66.0	71.0	74.0	75.0	76.0	75.0	72.0	67.0	62.0	67.8
°C HIGH	24.4	25.0	26.1	27.8	30.0	31.1	32.2	32.2	31.7	30.0	27.2	25.0	28.5
°C LOW	15.0	15.6	17.2	18.9	21.7	23.3	23.9	24.4	23.9	22.2	19.4	16.7	19.9

RECORD HIGH[1]	99° F	37.2° C	July 13, 1980	RECORD LOW[1]	28° F	-2.2° C	January 20, 1977

SUN ⚐2

			MAR 21	JUN 21	SEP 21	DEC 21
		DEGREES N or S of DUE EAST THE SUN RISES[2]	0°	26°N	0°	26°S
LATITUDE	26.1°	DEGREES N or S of DUE WEST THE SUN SETS[2]	0°	26°N	0°	26°S
		SOLAR-NOON ALTITUDE ANGLE (ABOVE HORIZON)[a,2,3]	64°	87°	64°	40°
ELEVATION	13 FT	SOLAR-NOON WINTER-SOLSTICE SHADOW RATIO[b]	1 : 1.17		...AND AZIMUTH[c]	0°
	4 m	9AM & 3PM WINTER-SOLSTICE SHADOW RATIO[b,2]	1 : 2.24		...AND AZIMUTH[c,2]	45°

WIND ⚐3

MAX SPEED[4] 140 225 MPH km/h

PREVAILING WIND DIRECTION (FROM WHERE) & AVERAGE SPEED[4]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
	ESE	SE	E	ESE	ESE	SE	ESE	SE	ESE	NE	ENE	ESE	ANNUAL
MPH	3	5	6	6	6	5	5	5	2	5	5	5	5
km/h	5	8	10	10	10	8	8	8	3	8	8	8	8

WATER ⚐4

AVERAGE RAINFALL (GAIN)[1]

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
INCHES	2.62	3.36	3.58	3.52	6.20	9.81	7.41	8.00	9.45	6.40	3.90	2.39	66.64
mm	66.5	85.3	90.9	89.4	157.5	249.2	188.2	203.2	240.0	162.6	99.1	60.7	1,692.7

AVERAGE EVAPOTRANSPIRATION (LOSS)[d,5] 1994-2002

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
INCHES	3.27	3.26	4.66	5.24	6.02	5.17	5.44	5.06	4.13	4.00	3.26	2.94	52.45
mm	83.1	82.8	118.4	133.1	152.9	131.3	138.2	128.5	104.9	101.6	82.8	74.7	1,332.2

WETTEST YEAR'S RAIN[6]	102.36 INCHES	2,600 mm	1947	DRIEST YEAR'S RAIN[6]	35.54 INCHES	903 mm	1961

LONGEST PERIOD WITH NO MEASURABLE PRECIPITATION[7]
59 DAYS: November 22, 1956 – January 20, 1957

RAINFALL INCOME[e] 583 GPCD / 2,208 lpcd

AREA[f,8]	31.7 SQ MILES	POPULATION[f,8]	172,389	UTILITY-WATER USE[9]	177 GPCD
	82.1 km²		2013		670 lpcd

HISTORICAL [ ] DEPTH TO GROUNDWATER[g,10] [ ] CURRENT

CURRENT GROUNDWATER EXTRACTION [ ] NATURAL GROUNDWATER RECHARGE[h,11]

WATERGY ⚐5

of AVG FL HOMES THAT COULD BE POWERED W/kWh USED TO MOVE & TREAT FT LAUDERDALE'S WATER[12]

TOTEM SPECIES ⚐6

PLANT: MAMMAL:

FISH: BIRD: REPTILE:

AMPHIBIAN: MEGAFAUNA:

FOR MORE INFORMATION & HOW TO APPLY IT

☞**1.** For more CLIMATE information, see the introduction, chapters 1, 2, & 4, and appendix 5 of *Rainwater Harvesting for Drylands and Beyond (RWHDB), Volume 1, 2nd Edition*

☞**2.** For more SUN information, see chapters 2 & 4 and appendices 5 & 7

☞**3.** For more WIND information, see chapters 2 & 4 and appendices 5 & 9

☞**4.** For more WATER information, see the introduction, chapters 1–4, and appendices 1–5

☞**5.** For more WATERGY information, see chapters 2 & 4 and appendix 9

☞**6.** For more TOTEM SPECIES information: the ethics, principles, and strategies throughout *RWHDB* help us shift from a negative to a positive impact on these species and their habitats and ecosystems, on which our quality of life also depends.

FORT LAUDERDALE PLACE-ASSESSMENT NOTES

a. The solar-noon altitude angle (a.k.a., solar-noon elevation angle) refers to the number of degrees the sun is located above the equator-facing horizon at solar noon on the given date. In the northern hemisphere, the equator-facing horizon is to the south. In the southern hemisphere, the equator-facing horizon is to the north.

b. The solar-noon winter-solstice shadow ratio is the object's height : length of object's shadow cast on December 21 at noon (the longest noontime shadow of the year). The ratio is 1 : x, where x = 1 ÷ tangent (90 - (latitude + 23.44)).

c. Azimuth is the angle formed between a reference direction (here, due south) to the point on the horizon directly below a given object. Solar noon is the time on any day when the sun's azimuth is 0°. The 9 am & 3 pm winter-solstice azimuth indicates the sun's deviation, in degrees, east/west of due south at those times (–/+ 3 hours from solar noon) on December 21.

d. Evapotranspiration refers to the process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants.

To convert the evaporation values from reference 5 from daily means to monthly means, the daily values were muliplied by the number of days in each month, and converted from millimeters to inches.

e. Calculated in situ w/ average rainfall, area, & population

f. City proper

g.

h.

i.

CREDITS: **Brad Lancaster,** Resource concept | **Toby Lawrence,** www.WATERWISEFL.com, Research | **Megan Hartman,** Resource creation, research

FORT LAUDERDALE PLACE-ASSESSMENT REFERENCES

1. www.intellicast.com/Local/History.aspx?location=USFL0149
2. Rainwater Harvesting for Drylands & Beyond, Vol 1, or esrl.noaa.gov/gmd/grad/solcalc
3. RWHDB Vol 1, or Mar 21 = 90–latitude, Jun 21 = 90–(latitude–23.44), Sep 21 = 90–latitude, Dec 21 = 90–(latitude+23.44)
4. www.windfinder.com/windstatistics/fort_lauderdale
5. my.sfwmd.gov/portal/page/portal/pg_grp_tech_pubs/PORTLET_tech_pubs/ema-407.pdf -- mm/d value in Table 2, p. 7
6. www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?fl3163, accessed by MH 12/26/2015
7. Michelle Breckner, Service Climatologist, WRCC, via email to MH 12/29/2015
8. www.city-data.com/city/Fort-Lauderdale-Florida.html
9. gyr.fortlauderdale.gov/home/showdocument?id=9892
10.
11.
12.