



# DECEMBER 2011 LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

OAK RIDGE, TN  
OAK RIDGE (KOQT)  
Lat:36° 1'N Long: 84° 14'W Elev (Ground) 910 Feet  
Time Zone : EASTERN WBAN: 53868 ISSN#: 0198-487X



Date 1	Temperature °F						Deg Days BASE 65°		WEATHER 10	SNOW/ICE ON GND(IN)		PRECIPITATION ON GND(IN)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES								Date 24
	MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEP FROM NORMAL 5	AVERAGE DEW PT 6	AVERAGE WET BULB 7	HEATING 8	COOLING 9		LST 11	LST 12	LST 13	LST 14	AVERAGE STATION 15	AVERAGE SEA LEVEL 16	RESULTANT SPEED 17	RES DIR 18	AVERAGE SPEED 19	MAXIMUM					
																			3-SEC		2-MIN			
01	52	28	40	-3	29	34	25	0	BR			0.00	29.33	30.37	0.2	05	0.6	8	07	6	08	01		
02	57	28	43	0	32	36	22	0	FG+ FG FZFG BR			0.00	29.44	30.48			0.0	6	35	3	26	02		
03	61	33	47	5	34	39	18	0	FG+ BR			0.00	29.47	30.47	0.3	22	0.3	7	26	5	22	03		
04	64	35	50	8	38	43	15	0				0.00	29.36	30.34	0.9	23	1.1	10	25	7	24	04		
05	71*	43	57	15	48	52	8	0	RA BR			0.18	29.15	30.11	2.9	20	3.4	31*	17	18*	20	05		
06	60	50	55	14	54	55	10	0	RA BR			0.93	29.03	29.99	0.6	24	1.0	14	19	8	21	06		
07	50	36	43	2	37	40	22	0	RA BR			1.10	28.97	29.99	1.6	36	2.9	17	36	12	35	07		
08	47	28	38	-3	26	32	27	0	FZFG BR			0.00	29.31	30.33	0.4	08	0.8	12	09	8	06	08		
09	51	27	39	-2	30	34	26	0	FG+ FG FZFG BR			0.00	29.29	30.33	0.4	26	0.6	12	26	7	22	09		
10	45	30	38	-2	24	32	27	0				0.00	29.44	30.48	1.6	05	2.7	16	03	10	03	10		
11	50	27	39	-1	23	31	26	0				0.00	29.50	30.53	0.6	06	1.1	13	05	8	05	11		
12	52	31	42	2	33	38	23	0	RA			0.02	29.46	30.48	1.2	05	1.4	10	04	7	07	12		
13	53	44	49	9	44	46	16	0	BR			0.00	29.46	30.46	0.7	20	0.7	7	18	6	20	13		
14	64	43	54	14	46	48	11	0	FG+ FG BR			0.00	29.34	30.31	1.1	25	1.7	13	25	8	25	14		
15	63	47	55	16	50	53	10	0	RA BR			0.15	29.17	30.15	2.8	23	4.0	22	22	13	22	15		
16	57	38	48	9	45	47	17	0	RA BR			0.38	29.24	30.23	1.4	07	2.0	13	07	9	06	16		
17	46	33	40	1	29	35	25	0				0.00	29.32	30.34	0.6	09	1.7	10	15	8	19	17		
18	52	26*	39	0	28	34	26	0	FZFG BR			0.00	29.36	30.39	0.7	17	1.0	12	15	8	15	18		
19	55	29	42	3	30	36	23	0	BR			0.00	29.28	30.28	1.0	25	1.9	21	26	14	26	19		
20	57	38	48	10	39	45	17	0	RA			T	29.16	30.14			0.0	7	36	5	01	20		
21	63	50	57*	19	53	54	8	0	RA BR			0.23	28.97	29.94	1.9	23	2.3	17	25	10	20	21		
22	60	45	53	15	47	48	12	0	RA FG BR			0.84	29.01	30.01	1.0	07	1.4	16	08	13	09	22		
23	50	42	46	8	40	44	19	0				0.00	29.24	30.26	0.9	33	1.1	13	36	8	35	23		
24	48	33	41	3	33	37	24	0	BR			0.00	29.41	30.44	0.2	04	0.4	9	05	7	05	24		
25	52	33	43	5	35	38	22	0	BR			0.00	29.37	30.38	1.8	21	2.1	16	21	12	21	25		
26	48	28	38	1	30	35	27	0	RA FG+ FZFG BR			0.01	29.30	30.30	1.4	05	1.9	17	04	12	08	26		
27	49	39	44	7			21	0	RA BR			1.18										27		
28	46	30	38*	1			27	0				0.00					1.6			7	20	28		
29	53	28	41	4	30	35	24	0				0.00	29.05	30.05	1.6	23	2.5	17	18	14	21	29		
30	56	36	46	9	39	43	19	0				0.00	28.98	29.97	2.6	24	3.5	16	23	10	25	30		
31	58	37	48	11	37	43	17	0				0.00	29.07	30.08	1.6	21	2.5	16	20	10	21	31		

54.5			35.3			44.9			☼	36.7			40.9			19.8			0.0			< MONTHLY AVERAGES   TOTALS >				5.02				29.26				30.26				0.4				22				1.6				< MONTHLY AVERAGES			
5.5			5.5			5.5				<-----DEPARTURE FROM NORMAL----->																-0.40				SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3																							
<b>DEGREE DAYS</b>										GREATEST 24-HR PRECIPITATION : 1.45 DATE : 06-07										SEA LEVEL PRESSURE										DATE TIME																							
MONTHLY					SEASON TO DATE					GREATEST 24-HR SNOWFALL :					DATE :					MAXIMUM :					30.60					11					0953																		
TOTAL DEPARTURE					TOTAL DEPARTURE					GREATEST SNOW DEPTH :					DATE :					MINIMUM :					29.68					27					0853																		
HEATING :		614		-173		1258		-307		NUMBER OF -> DAYS WITH		MAXIMUM TEMP >= 90 :		0		MINIMUM TEMP <= 32 :		12		PRECIPITATION >= 0.01 INCH :		10		PRECIPITATION >= 0.10 INCH :		8		SNOWFALL >= 1.0 INCH :																									
COOLING :		0		0		1782		481		THUNDERSTORMS :		0		HEAVY FOG :		5																																					

DECEMBER 2011  
OAK RIDGE, TN

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

OAK RIDGE, TN (KOQT)  
DECEMBER 2011

WBAN # 53868

Date	FOR HOUR (LST) ENDING AT												Date	FOR HOUR (LST) ENDING AT												Date	Sum of Hourly Data	2400 LST Water Equiv.		
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24					
01													01												01	0.00	0.00			
02													02												02	0.00	0.00			
03													03												03	0.00	0.00			
04													04												04	0.00	0.00			
05													05					T	0.01	0.02	T	0.10	0.05	T	05	0.18	0.18			
06	0.02	0.01	T	0.21	0.01		T	0.10	0.06	0.09	0.13	0.02	06	T									0.04	0.09	0.03	0.12	06	0.93	0.93	
07	0.12	0.09	0.12	0.12	0.10	0.11	0.08	0.09	0.10	0.03	0.01	0.02	07		0.03	0.05	0.03	T	T	T								07	1.10	1.10
08													08															08	0.00	0.00
09													09															09	0.00	0.00
10													10															10	0.00	0.00
11													11															11	0.00	0.00
12													12			T	0.01	T	0.01								12	0.02	0.02	
13													13															13	0.00	0.00
14													14															14	0.00	0.00
15													15		T				T	T	0.10	0.04	T	0.01	15	0.15	0.15			
16	T	T					0.05	0.06	T	0.09	0.04	0.01	16	0.01	0.09	0.01		0.01	0.01								16	0.38	0.38	
17													17															17	0.00	0.00
18													18															18	0.00	0.00
19													19															19	0.00	0.00
20													20															20	T	T
21			T	T	T	T	0.01	0.01	T	0.04	0.05	0.04	21	0.01	0.07												21	0.23	0.23	
22													22			T	0.19	0.28	0.18	0.15	0.01	0.03	T			22	0.84	0.84		
23													23															23	0.00	0.00
24													24															24	0.00	0.00
25													25															25	0.00	0.00
26													26												0.01	26	0.01	0.01		
27	0.08		0.02	0.14	0.08	0.24	0.14	0.14	0.01	0.15			27														27	1.00*	1.18	
28													28															28	0.00	0.00
29													29															29	0.00	0.00
30													30															30	0.00	0.00
31													31															31	0.00	0.00

\* Indicates sum of Hourly and Daily disagree.

### MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)												
Ending Date												
Ending Time (Hr/Min)												

Note : The hourly and daily precipitation totals are printed in the last 2 columns and hi-lighted in red when they disagree. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

Date and time are not entered for TRACE amounts.

# REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

\* = Extreme for the month (last occurrence if more than one).

T = Trace precipitation amount.

+ = also occurs on earlier date.

FG+ = Heavy fog, visibility .25 miles or less.

BLANK entries denote missing or unreported data.

Resultant wind is the vector sum of the wind speeds and directions divided by the number of observations.

Wind direction is recorded in tens of degrees (2 digits) clockwise from true north. '00' = calm, 'VR' = variable.

Precipitation is for the 24-hour period ending at the time indicated in the column heading.

Water Equivalent of snow on the ground is reported only when the depth is 2 or more inches.

NORMALS ARE FOR THE YEARS 1971-2000

## WEATHER NOTATIONS

QUALIFIER	WEATHER PHENOMENA		
DESCRIPTOR	PRECIPITATION	OBSCURATION	OTHER
BC Patches	DZ Drizzle	BR Mist	DS Duststorm
BL Blowing	GR Hail	DU Widespread Dust	FC Funnel Cloud
DR Low Drifting	GS Small Hail and/or Snow Pellets	FG Fog	+FC Tornado Waterspout
FZ Freezing	IC Ice Crystals	FU Smoke	PO Well-Developed Dust/Sand Whirls
MI Shallow	PL Ice Pellets	HZ Haze	
PR Partial	RA Rain	PY Spray	SQ Squalls
SH Shower(s)	SG Snow Grains	SA Sand	SS Sandstorm
TS Thunderstorm	SN Snow	VA Volcanic Ash	GL Glaze
VC In the Vicinity	UP Unkown Precipitation		

Intensity (as indicated on pages 4 to 6):  
'+' = Heavy    '' = Moderate    '-' = Light

# OAK RIDGE, TN DECEMBER 2011

Ceilometer (30-second) data are used to derive cloudiness at or below 12,000 feet. This cloudiness is the mean cloud cover detected during sunrise to sunset (SR-SS), or midnight to midnight (MN-MN).

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0-2 oktas, Partly Cloudy = 3-6 oktas, Cloudy = 7-8 oktas.

A Heating (Cooling) Degree Day is the difference between the average daily temperature and 65 degrees F. The HDD season begins July 1, the CDD season begins January 1.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity. Wet Bulb is the temperature the air would have if cooled to saturation at constant pressure by evaporation of water into it.

Snow Depth, Snowfall, and Sunshine data may come from nearby sites that the National Weather Service deems Climatologically representative of this site.

### ADDITIONAL NOTES:

Station Augmentation-OAK RIDGE ATDD COOP  
Lat/Lon:36.00278/-84.24861 Elevation:905FT  
Distance:1.5 MI Dir:SW  
Augmented Elements:Temp,Precip,Snow  
Equipment:Pcpn-Model TRP525M, Temp Vaisala HMP35C,  
Snow Board, Snow Stick

Date	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			Sky Cover	Satellite	Sky Cover	Satellite			
01							6.00	10.00	
02							0.00	10.00	
03							1.00	10.00	
04							10.00	10.00	
05							3.00	10.00	
06							1.00	10.00	
07							1.75	10.00	
08							7.00	10.00	
09							0.00	10.00	
10							8.00	10.00	
11							10.00	10.00	
12							9.00	10.00	
13							6.00	10.00	
14							0.00	10.00	
15							2.00	10.00	
16							0.75	10.00	
17							10.00	10.00	
18							0.50	10.00	
19							2.50	10.00	
20							10.00	10.00	
21							2.50	10.00	
22							2.50	10.00	
23							10.00	10.00	
24							6.00	10.00	
25							1.00	10.00	
26							0.25	10.00	
27							1.75	10.00	
28							10.00	10.00	
29							10.00	10.00	
30							10.00	10.00	
31							10.00	10.00	
MONTHLY AVGS							4.92	10.00	
<b>SUNSHINE (Minutes)</b>									
Total : 0					Possible :				
Percent Possible :									
<b>NUMBER OF DAYS WITH :</b>									
SKY CONDITION									
Clear		Partly CLDY		Cloudy		Missing			
<b>MINIMUM VISIBILITY (MILES)</b>									
<= .25		<= 3.0				>= 7.0			
4		16				12			





# OBSERVATIONS AT 3-HOURLY INTERVALS

# OAK RIDGE, TN

DECEMBER 2011 KOQT

WBAN # 53868

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)			
			Observation Time (LST)	Eff Cld Amt Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL
<b>SUNRISE: 0745      DEC 25      SUNSET: 1729</b>														
01	CLR	NC				34	31	33	89	0	00	29.43	30.44	
04	SCT	001			BR	33	31	32	92	0	00	29.41	30.42	
07	OVC	095			BR	35	33	34	92	0	00	29.40	30.41	
10	OVC	090				39	35	37	86	0	00	29.41	30.43	
13	OVC	090				44	36	40	74	5	20	29.36	30.37	
16	CLR	NC				52	38	45	59	11	20	29.28	30.28	
19	CLR	NC				42	37	40	83	0	00	29.32	30.33	
22	CLR	NC				39	37	38	93	5	25	29.35	30.36	
<b>SUNRISE: 0746      DEC 26      SUNSET: 1729</b>														
01	CLR	NC			BR	34	32	33	92	0	00	29.35	30.36	
04	VV	001			FZFG	30	29	30	96	0	00	29.36	30.37	
07	CLR	NC				28	26	27	92	0	00	29.40	30.42	
10	CLR	NC				34	32	33	92	0	00	29.43	30.44	
13	CLR	NC				47	30	40	52	7	05	29.31	30.32	
16	CLR	NC				47	29	39	50	5	06	29.23	30.24	
19	CLR	NC				44	30	38	58	0	00	29.20	30.22	
22	CLR	NC				41	34	38	76	0	00	29.10	30.11	
<b>SUNRISE: 0746      DEC 27      SUNSET: 1730</b>														
01	OVC	050			-RA	40	37	39	89	0	00	29.01	30.00	
04	OVC	048			-RA BR	39	38	39	96	0	00	28.90	29.88	
07	OVC	019			RA BR	40	39	40	96	0	00	28.77	29.75	
10	OVC	025			-RA BR	42	40	41	93	3	VR	28.71	29.70	
13														
16														
19														
22														
<b>SUNRISE: 0746      DEC 28      SUNSET: 1731</b>														
01														
04														
07														
10														
13														
16						46	26	38	46	7	20	29.10		
19	CLR	NC				39	30	35	70	0	00	29.13		
22	CLR	NC				33	28	31	82	0	00	29.13		
<b>SUNRISE: 0747      DEC 29      SUNSET: 1731</b>														
01	CLR	NC				29	26	28	89	0	00	29.10		
04	CLR	NC				28	26	27	92	0	00	29.09	30.09	
07	CLR	NC				29	27	28	92	0	00	29.10	30.11	
10	CLR	NC				38	31	35	76	0	00	29.10	30.12	
13	CLR	NC				49	33	42	54	3	VR	29.03	30.03	
16	CLR	NC				52	30	42	43	7	23	28.99	29.98	
19	CLR	NC				46	32	40	58	5	22	29.00	30.00	
22	CLR	NC				41	33	38	73	3	25	29.04	30.04	
<b>SUNRISE: 0747      DEC 30      SUNSET: 1732</b>														
01	CLR	NC				39	33	36	79	0	00	29.03	30.03	
04	CLR	NC				38	32	36	79	0	00	29.06	30.05	
07	OVC	036				38	33	36	82	3	19	29.05	30.04	
10	OVC	047				45	36	41	71	0	00	29.05	30.03	
13	OVC	055				50	39	45	66	5	VR	28.94	29.93	
16	OVC	032				54	45	49	72	7	26	28.88	29.86	
19	OVC	060				55	48	51	77	5	22	28.91	29.90	
22	CLR	NC				53	47	50	80	3	VR	28.95	29.93	

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)			
			Observation Time (LST)	Eff Cld Amt Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL
<b>SUNRISE: 0747      DEC 31      SUNSET: 1733</b>														
01	CLR	NC				51	43	47	74	0	00	28.95	29.93	
04	CLR	NC				42	39	41	89	5	21	28.99	29.98	
07	CLR	NC				41	38	40	89	5	25	29.07	30.05	
10	CLR	NC				49	39	44	69	3	VR	29.15	30.14	
13	CLR	NC				55	37	46	51	6	23	29.13	30.11	
16	CLR	NC				57	35	47	44	3	16	29.10	30.09	
19	CLR	NC				48	36	43	63	0	00	29.15	30.15	
22	CLR	NC				40	35	38	82	0	00	29.14	30.14	

## 3-HOURLY OBSERVATION NOTES

Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8

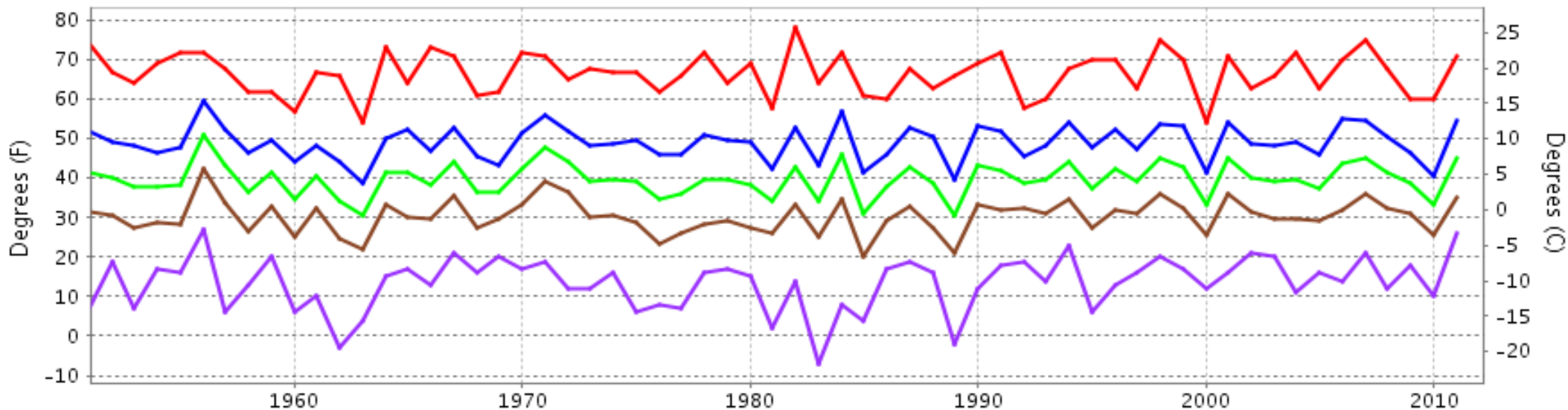
Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet. NC = No Ceiling detected.

& = Original observation contained additional weather elements. See page 3 for additional notes.

## SUMMARY BY HOUR

HOUR (LST)	AVERAGES										RESULTANT WIND (MPH)	
	CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (Inches, HG)		VISIBILITY (Miles)	WIND SPEED (MPH)	SPEED	DIRECTION
							STATION	SEA LEVEL				
01			40	36	38	85	29.26	30.26	8.77	1	2	22
02			40	36	38	86	29.25	30.25	8.54	0	XX	XX
03			39	36	38	87	29.26	30.26	7.78	1	2	20
04			39	36	38	88	29.26	30.25	7.53	1	2	22
05			39	36	38	88	29.25	30.25	7.92	1	1	23
06			38	35	37	88	29.26	30.26	7.81	1	1	13
07			38	35	37	89	29.27	30.28	7.46	0	XX	XX
08			38	35	37	89	29.28	30.28	7.53	1	1	15
09			40	37	39	88	29.28	30.29	7.37	1	XX	XX
10			43	38	41	81	29.29	30.29	8.08	2	2	11
11			46	38	42	74	29.31	30.31	8.98	2	2	13
12			49	37	44	65	29.28	30.28	9.76	4	1	19
13			51	37	45	60	29.26	30.25	9.83	4	3	26
14			52	37	45	58	29.23	30.23	9.67	4	1	25
15			53	37	46	57	29.22	30.21	9.83	3	2	25
16			53	36	45	56	29.22	30.21	9.70	4	3	26
17			52	37	45	58	29.23	30.23	9.52	3	2	25
18			49	38	44	67	29.23	30.23	9.63	1	2	22
19			47	38	43	72	29.24	30.25	9.90	1	2	23
20			45	38	42	77	29.25	30.26	9.62	1	1	21
21			44	38	41	80	29.26	30.26	9.37	1	1	22
22			43	37	40	81	29.26	30.26	9.40	1	2	23
23			42	37	40	82	29.26	30.26	9.53	1	2	22
24			41	36	39	83	29.26	30.26	9.28	1	3	24

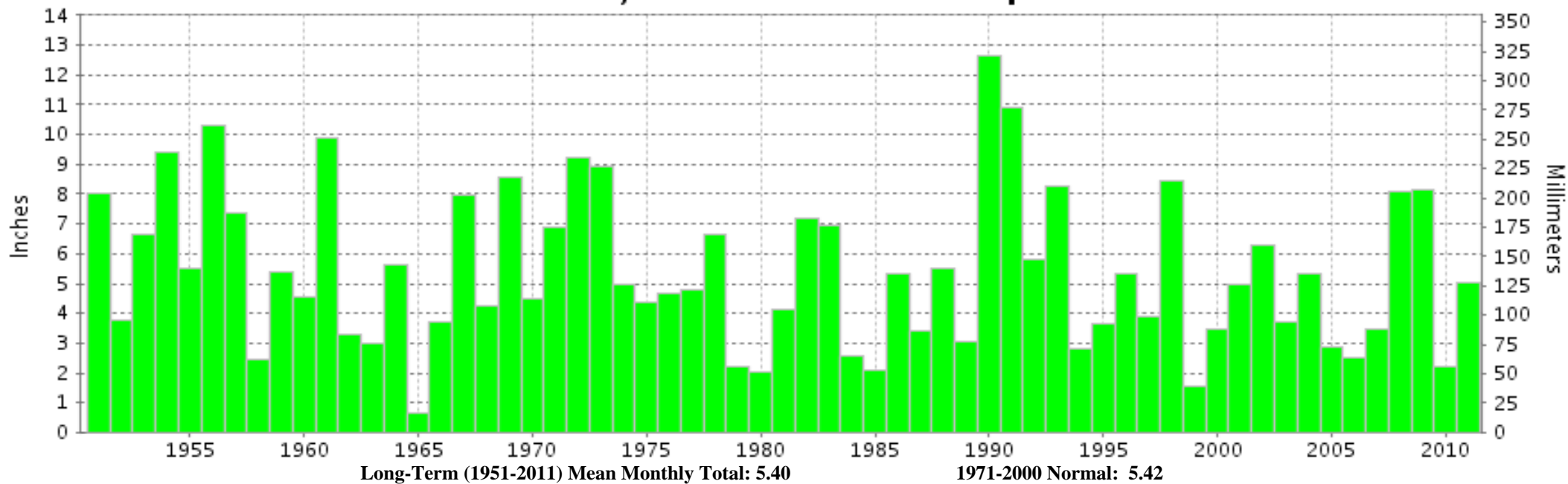
## OAK RIDGE, TN DECEMBER Temperatures



— Extreme Max — Mean Max — Mean — Mean Min — Extreme Min

Long-Term (1951-2011) Mean: 39.7  
1971-2000 Normal: 39.4

## OAK RIDGE, TN DECEMBER Precipitation



Long-Term (1951-2011) Mean Monthly Total: 5.40

1971-2000 Normal: 5.42



DECEMBER 2011  
OAK RIDGE, TN

# LOCAL CLIMATOLOGICAL DATA

## NOAA, National Climatic Data Center

*I certify that this is an official publication of the National Oceanic and Atmospheric Administration (NOAA). It is compiled using information from weather observing sites operated by NOAA-National Weather Service / Department Of Transportation-Federal Aviation Administration and received at the National Climatic Data Center (NCDC), Asheville, North Carolina 28801.*



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