

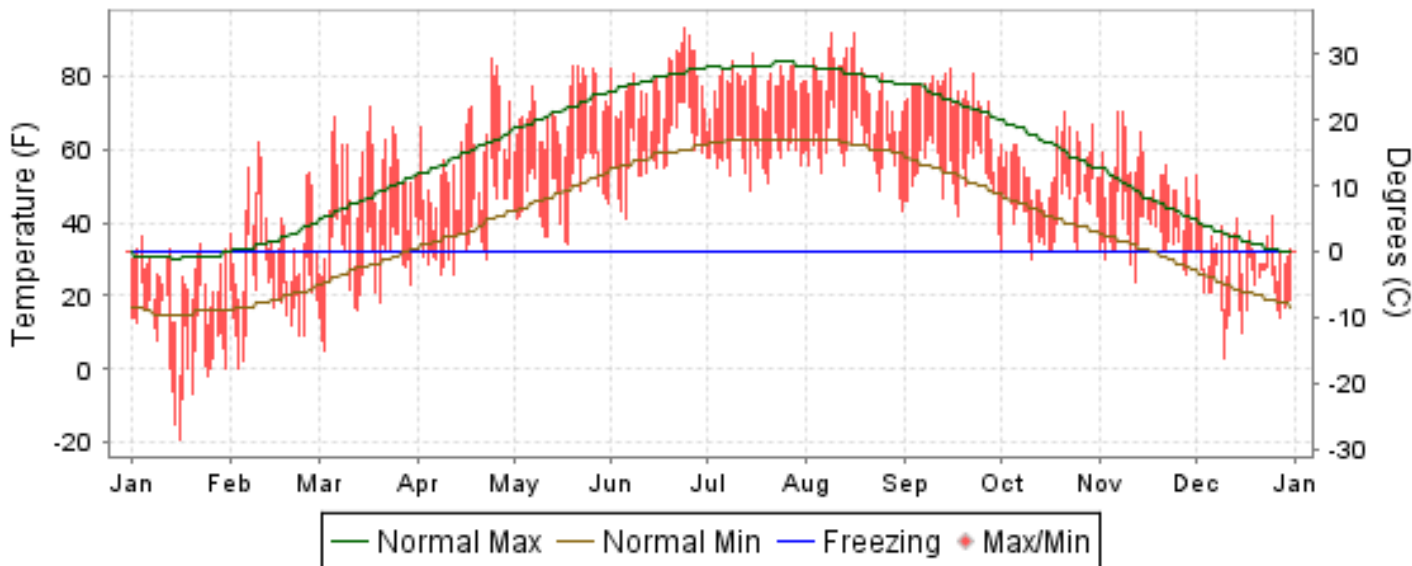


2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

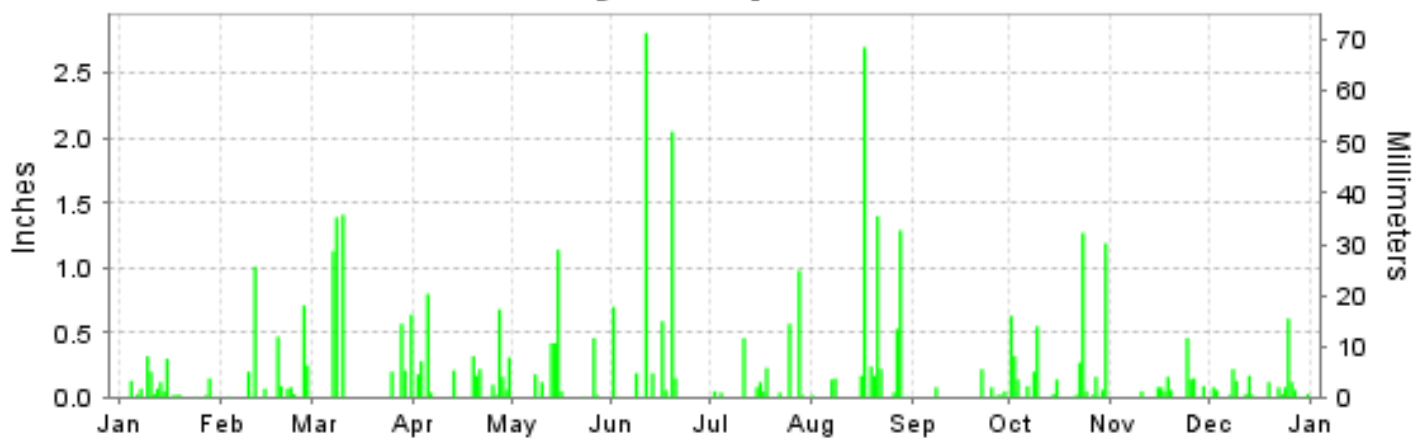
ISSN 0198-201X

SOUTH BEND, INDIANA (KSBN)

Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2009

SOUTH BEND (KSBN)

LATITUDE: 41 ° 42'N LONGITUDE: -86 ° 19'W ELEVATION (FT): GRND: 776 BARO: 780 TIME ZONE: EASTERN (UTC -5) WBAN: 14848

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	24.2	37.3	51.5	58.7	70.4	78.5	77.9	78.5	74.1	56.2	52.8	33.2	57.8	
	HIGHEST DAILY MAXIMUM	36	62	72	85	83	93	86	92	82	70	70	53	93	
	DATE OF OCCURRENCE	04	10	17	24	21+	24	15	16+	15	21	08+	01	JUN 24	
	MEAN DAILY MINIMUM	7.0	20.0	28.7	38.1	48.0	59.6	58.6	60.0	53.8	41.4	35.6	21.9	39.4	
	LOWEST DAILY MINIMUM	-19	0	5	26	34	41	49	43	37	30	24	3	-19	
	DATE OF OCCURRENCE	16	04	03	12+	18	05	14	31	30	11	12	10	JAN 16	
	AVERAGE DRY BULB	15.6	28.7	40.1	48.4	59.2	69.1	68.3	69.3	64.0	48.8	44.2	27.6	48.6	
	MEAN WET BULB	15.1	26.8	34.7	42.6	52.3	62.2	61.5	63.3	58.6	45.1	40.6	25.9	44.1	
	MEAN DEW POINT	9.9	21.7	26.4	35.3	45.3	57.6	56.6	59.7	54.8	41.1	35.8	21.6	38.8	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	2	0	2	0	0	0	0	0	4
	MAXIMUM <= 32°	26	10	4	11	0	0	0	0	0	0	0	15	66	
MINIMUM <= 32°	31	25	18	11	0	0	0	0	0	2	12	31	130		
MINIMUM <= 0°	10	1	0	0	0	0	0	0	0	0	0	0	11		
H/C	HEATING DEGREE DAYS	1526	1010	763	500	205	33	12	33	74	495	614	1153	6418	
	COOLING DEGREE DAYS	0	0	0	11	32	162	123	173	48	0	0	0	549	
RH	MEAN (PERCENT)	73	74	61	64	62	70	69	75	75	77	74	78	71	
	HOUR 01 LST	77	78	70	71	76	80	84	87	88	83	80	80	80	
	HOUR 07 LST	78	82	74	72	68	76	76	83	86	84	83	83	79	
	HOUR 13 LST	68	66	48	53	46	55	51	58	55	64	61	72	58	
	HOUR 19 LST	72	74	58	62	58	65	63	72	78	80	74	77	69	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	1	5	0	0	0	0	4	1	2	1	1	1	16	
	THUNDERSTORMS	0	2	3	2	4	4	4	7	1	1	0	0	28	
CLOUDNESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
SATELLITE (> 12,000 FT.)															
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	29.19	29.23	29.28	29.13	29.18	29.00	29.13	29.19	29.27	29.15	29.25	29.19	29.18	
	MEAN SEA-LEVEL PRESS. (IN.)	30.07	30.08	30.13	29.96	30.00	29.80	29.95	30.01	30.10	29.99	30.10	30.05	30.02	
WINDS	RESULTANT SPEED (MPH)	4.6	4.0	0.9	1.1	2.1	1.2	2.7	2.8	0.9	2.7	1.7	4.6	1.9	
	RES. DIR. (TENS OF DEGS.)	24	26	16	31	23	32	28	24	02	22	19	21	25	
	MEAN SPEED (MPH)	9.5	10.4	9.7	10.5	8.0	6.4	6.2	7.2	5.5	8.6	7.8	10.6	8.4	
	PREVAIL.DIR.(TENS OF DEGS.)	23	19	12	34	20	31	32	21	10	22	08	24	24	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	29	37	43	36	35	36	26	29	32	36	25	38	43	
	DIR. (TENS OF DEGS.)	33	31	24	21	20	33	28	20	28	28	21	23	24	
	DATE OF OCCURRENCE	13	11	08	27	14	19	25	19	28	06	07	09	MAR 08	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	39	52	54	46	48	45	33	37	45	51	30	49	54	
DIR. (TENS OF DEGS.)	33	30	24	20	21	33	30	22	31	28	33	22	24		
DATE OF OCCURRENCE	13	11	08	27	14	19	25	19	28	06	26	09	MAR 08		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.57	3.00	5.55	3.57	2.82	6.76	2.64	7.08	0.48	5.16	1.32	1.88	41.83	
	GREATEST 24-HOUR (IN.)	1.53	1.01	2.19	0.84	1.19	2.81	1.00	2.83	0.22	1.53	0.56	0.61	2.83	
	DATE OF OCCURRENCE	06-07	11	07-08	05-06	15-16	11	28-29	16-17	22	22-23	24-25	25	AUG 16-17	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	17	12	7	16	9	10	11	13	7	18	10	18	148	
PRECIPITATION 0.10	6	5	7	10	6	7	5	10	1	10	4	6	77		
PRECIPITATION 1.00	0	1	3	0	1	2	0	3	0	2	0	0	12		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	29.4	12.0	0.1	2.0	0.0	0.0	0.0	0.0	0.0	T	0.0	11.5	55.0	
	GREATEST 24-HOUR (IN.)	6.5	2.8	0.1	1.0	0.0	0.0	0.0	0.0	0.0	T	0.0	3.2	6.5	
	DATE OF OCCURRENCE	15	22+	29	06+						15		26	JAN 15	
	MAXIMUM SNOW DEPTH (IN.)	15	8	0	2	0	0	0	0	0	0	0	4	15	
	DATE OF OCCURRENCE	15	01		06								27	JAN 15	
	NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0	10	5	0	2	0	0	0	0	0	0	0	5	22		

NORMALS, MEANS, AND EXTREMES SOUTH BEND (KSBN)

LATITUDE: 41° 42'N **LONGITUDE:** -86° 19'W **ELEVATION (FT):** GRND: 776 BARO: 780 **TIME ZONE:** EASTERN (UTC -5) **WBAN: 14848**

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	31.0	35.5	46.8	58.9	70.7	79.6	83.1	80.7	73.6	61.8	47.7	35.6	58.8
	MEAN DAILY MAXIMUM	113	31.7	32.6	45.3	57.9	70.1	78.6	83.9	82.0	73.9	63.0	47.0	35.3	58.4
	HIGHEST DAILY MAXIMUM	70	68	74	85	91	95	104	102	103	99	92	82	70	104
	YEAR OF OCCURRENCE		1950	2000	1981	1942	1942	1988	1999	1988	1953	1963	1950	2001	JUN 1988
	MEAN OF EXTREME MAXS.	114	51.4	54.0	70.7	79.9	86.2	92.5	93.6	91.9	88.8	80.6	68.4	55.7	76.1
	NORMAL DAILY MINIMUM	30	15.7	19.0	28.2	37.7	48.4	58.3	62.8	61.3	53.3	42.3	32.6	21.7	40.1
	MEAN DAILY MINIMUM	113	17.0	17.6	27.7	37.4	48.1	57.1	62.3	60.7	53.0	42.7	31.8	21.8	39.8
	LOWEST DAILY MINIMUM	70	-22	-17	-13	11	24	35	42	40	29	20	-7	-16	-22
	YEAR OF OCCURRENCE		1943	1951	1943	1972	1968	1972	2001	1965	1942	1988	1950	1960	JAN 1943
	MEAN OF EXTREME MINS.	114	-4.9	-0.9	9.8	23.0	33.3	43.8	50.8	49.3	38.5	29.1	17.3	1.5	24.2
	NORMAL DRY BULB	30	23.4	27.3	37.5	48.3	59.6	69.0	73.0	71.0	63.4	52.1	40.1	28.7	49.5
	MEAN DRY BULB	113	24.4	25.1	36.5	47.7	59.1	67.9	73.1	71.3	63.5	52.9	39.4	28.6	49.1
	MEAN WET BULB	26	22.9	25.1	32.6	42.3	52.1	61.3	65.3	64.7	57.6	46.6	36.7	26.7	44.5
	MEAN DEW POINT	26	20.1	21.8	28.4	37.5	48.1	57.8	62.6	62.3	54.7	43.2	33.6	24.1	41.2
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.0	0.6	3.2	5.7	2.9	0.9	0.0	0.0	0.0	13.3
	MAXIMUM <= 32	30	16.6	11.9	3.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.8	9.8	43.6
	MINIMUM <= 32	30	27.9	23.8	19.7	8.2	0.4	0.0	0.0	0.0	*	2.9	14.6	25.3	122.8
MINIMUM <= 0	30	3.7	2.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	7.7	
H/C	NORMAL HEATING DEG. DAYS	30	1274	1055	844	498	213	41	6	13	117	393	731	1109	6294
	NORMAL COOLING DEG. DAYS	30	0	0	1	10	53	172	268	214	85	9	0	0	812
RH	NORMAL (PERCENT)	30	78	75	70	66	66	68	71	75	74	72	75	79	72
	HOURLY 01 LST	30	80	79	76	74	76	79	83	86	84	80	79	82	80
	HOURLY 07 LST	30	82	82	80	79	80	81	84	89	89	85	82	83	83
	HOURLY 13 LST	30	73	68	60	56	55	55	57	60	59	59	68	75	62
	HOURLY 19 LST	30	77	73	65	59	57	57	60	66	68	68	74	79	67
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH: HEAVY FOG (VISIB <= 1/4 MI)	46	2.4	2.4	2.4	1.2	1.2	0.9	1.3	2.0	1.6	1.7	1.9	3.2	22.2
	THUNDERSTORMS	62	0.4	0.5	2.3	4.3	4.9	7.4	7.2	6.2	4.0	1.9	1.0	0.5	40.6
CLOUDNESS	MEAN: SUNRISE-SUNSET (OKTAS)	51	6.4	6.2	6.0	5.5	5.0	4.9	4.5	4.5	4.6	4.9	6.1	6.4	5.4
	MIDNIGHT-MIDNIGHT (OKTAS)	32	6.3	5.9	5.7	5.3	4.8	4.6	4.2	4.2	4.4	4.7	6.0	6.4	5.2
	MEAN NO. DAYS WITH: CLEAR	57	3.4	3.7	4.7	5.8	6.9	7.2	8.2	8.6	8.8	8.7	3.6	3.0	72.6
	PARTLY CLOUDY	57	5.9	5.6	7.3	7.6	9.6	10.4	12.7	12.1	9.0	8.0	6.0	5.6	99.8
	CLOUDY	57	21.7	18.9	19.1	16.6	14.5	12.4	10.1	10.3	12.2	14.4	20.4	22.5	193.1
PR	MEAN STATION PRESSURE (IN)	26	29.22	29.23	29.21	29.14	29.15	29.14	29.18	29.21	29.23	29.23	29.22	29.23	29.20
	MEAN SEA-LEVEL PRES. (IN)	26	30.08	30.09	30.05	29.97	29.97	29.96	29.99	30.03	30.06	30.06	30.06	30.09	30.03
WINDS	MEAN SPEED (MPH)	26	11.0	10.5	10.7	10.6	9.3	8.0	7.4	6.9	7.4	8.6	10.0	10.4	9.2
	PREVAIL. DIR. (TENS OF DEGS)	35	24	23	22	34	22	22	23	23	20	22	24	24	24
	MAXIMUM 2-MINUTE: SPEED (MPH)	13	38	45	43	44	44	41	45	39	36	56	41	43	56
	DIR. (TENS OF DEGS)		27	20	24	23	31	28	31	31	25	25	23	21	25
	YEAR OF OCCURRENCE		2008	1999	2009	2008	1997	2004	2004	1997	1997	2001	1998	2007	OCT 2001
	MAXIMUM 3-SECOND SPEED (MPH)	13	48	56	56	61	55	52	55	51	45	90	52	62	90
	DIR. (TENS OF DEGS)		27	20	23	24	32	29	27	32	31	26	24	21	26
YEAR OF OCCURRENCE		2008	1999	2004	2008	2007	2004	2003	1997	2009	2001	1998	2007	OCT 2001	
PRECIPITATION	NORMAL (IN)	30	2.27	1.98	2.89	3.62	3.50	4.19	3.73	3.98	3.79	3.27	3.39	3.09	39.70
	MAXIMUM MONTHLY (IN)	70	5.34	5.23	7.96	9.20	8.09	10.86	8.66	8.88	13.92	9.75	6.72	5.50	13.92
	YEAR OF OCCURRENCE		2008	1976	1976	1947	1996	1993	2006	2007	2008	1954	1985	1965	SEP 2008
	MINIMUM MONTHLY (IN)	70	0.44	0.54	0.54	0.50	0.80	0.48	0.02	0.32	0.01	0.42	1.24	0.60	0.01
	YEAR OF OCCURRENCE		1945	1969	1958	1971	1994	1988	1946	1950	1979	1950	1998	1943	SEP 1979
	MAXIMUM IN 24 HOURS (IN)	70	3.15	2.64	2.33	3.14	2.99	4.70	3.64	4.88	6.88	3.49	3.95	3.33	6.88
	YEAR OF OCCURRENCE		2008	1954	1972	1947	1976	1968	1989	1995	2008	1988	1990	1965	SEP 2008
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	16.4	12.2	13.7	13.5	11.7	10.4	9.4	10.5	9.7	11.0	13.7	15.6	147.8
PRECIPITATION >= 1.00	30	0.3	0.2	0.3	0.7	0.5	1.1	0.9	1.1	0.9	0.8	0.6	0.5	7.9	
SNOWFALL	NORMAL (IN)	30	23.2	15.5	8.7	1.7	0.*	0.0	0.0	0.0	0.*	0.5	7.7	19.2	76.5
	MAXIMUM MONTHLY (IN)	70	86.1	35.1	33.9	14.0	0.6	T	T	T	1.2	8.8	30.3	44.6	86.1
	YEAR OF OCCURRENCE		1978	1958	1960	1982	1966	2008	2006	1996	1942	1989	1977	2000	JAN 1978
	MAXIMUM IN 24 HOURS (IN)	70	16.7	14.4	14.8	8.7	0.6	T	T	T	1.0	8.8	17.5	13.7	17.5
	YEAR OF OCCURRENCE		1978	1993	1960	1982	1966	1992	1994	1989	1994	1989	1977	1981	NOV 1977
	MAXIMUM SNOW DEPTH (IN)	61	41	35	21	6	0	0	0	0	0	6	20	23	41
	YEAR OF OCCURRENCE		1978	1978	1960	1982						1989	1977	1962	JAN 1978
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	5.4	4.7	2.6	0.5	0.0	0.0	0.0	0.0	0.0	0.1	2.4	5.5	21.2	

PRECIPITATION (inches) 2009 SOUTH BEND (KSBN)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	1.52	1.51	3.74	3.44	1.65	5.97	3.29	7.84	5.64	3.35	1.47	3.91	43.33
1981	0.68	1.92	0.88	5.28	6.79	6.97	3.71	2.30	3.81	1.23	2.23	1.81	37.61
1982	2.95	1.17	4.54	1.46	5.51	3.12	7.47	2.84	2.51	0.91	4.52	3.40	40.40
1983	0.77	0.79	2.46	5.36	4.83	2.04	2.45	1.28	2.81	1.66	2.60	3.23	30.28
1984	0.86	1.45	2.10	4.22	4.02	3.43	1.76	1.47	4.02	4.38	2.73	4.42	34.86
1985	2.58	4.32	3.86	1.93	1.50	2.88	3.80	3.82	1.88	3.36	6.72	2.51	39.16
1986	1.24	2.46	2.09	1.87	3.42	5.06	6.15	1.90	4.27	3.81	2.90	1.67	36.84
1987	2.31	1.32	1.18	2.67	3.50	3.57	3.61	3.34	3.64	3.20	2.11	4.12	34.57
1988	2.21	1.98	3.03	2.91	1.40	0.48	1.28	5.63	4.42	6.68	5.72	2.91	38.65
1989	1.58	1.05	2.27	2.83	2.72	3.49	5.90	5.65	3.78	1.45	3.55	1.83	36.10
1990	2.36	3.66	2.79	2.91	6.86	4.40	5.45	4.60	3.76	7.09	6.69	5.04	55.61
1991	1.64	1.79	2.79	4.58	4.01	0.62	1.32	3.68	2.71	8.75	2.75	1.67	36.31
1992	1.64	1.73	2.93	2.19	1.17	1.74	5.24	2.07	8.84	1.60	5.54	3.99	38.68
1993	3.35	1.20	2.62	3.64	2.34	10.86	1.51	4.38	7.76	4.09	2.39	1.50	45.64
1994	2.46	1.45	0.80	2.80	0.80	5.10	4.97	4.19	4.68	3.49	4.36	2.50	37.60
1995	2.46	2.00	1.84	4.56	3.67	2.36	6.50	8.29	0.89	3.22	4.40	1.89	42.08
1996	1.66	2.09	1.24	3.60	8.09	7.20	6.69	1.75	3.30	3.27	3.70	2.90	45.49
1997	2.63	3.86	2.02	1.36	3.77	3.16	1.98	5.05	2.86	2.16	2.45	2.14	33.44
1998	3.76	1.69	4.03	3.78	2.49	3.98	2.27	5.84	1.54	2.50	1.24	2.04	35.16
1999	3.06	1.58	1.18	7.48	1.64	2.60	2.39	4.12	1.25	1.37	1.32	2.66	30.65
2000	2.57	1.63	1.81	3.69	4.60	7.75	2.88	1.49	3.22	2.28	3.07	2.29	37.28
2001	0.83	3.47	1.11	3.65	4.31	4.25	2.97	3.75	3.65	7.06	2.66	2.25	39.96
2002	2.48	2.10	2.77	3.40	5.75	1.26	2.47	2.31	1.16	1.43	1.91	1.80	28.84
2003	1.21	0.91	1.52	3.30	6.34	1.16	6.22	1.74	3.69	2.68	4.15	1.70	34.62
2004	1.56	0.76	3.37	0.83	5.67	5.09	4.12	5.62	0.92	1.97	4.56	2.21	36.68
2005	5.10	1.92	2.05	1.14	1.06	2.07	3.46	2.20	3.07	1.24	2.21	1.79	27.31
2006	2.87	0.95	3.08	2.41	5.45	2.00	8.66	4.66	3.53	4.51	3.33	3.55	45.00
2007	3.50	1.38	2.44	4.48	1.70	1.80	5.40	8.88	1.48	4.02	2.18	3.03	40.29
2008	5.34	3.39	2.50	2.51	2.64	2.84	2.38	1.90	13.92	3.13	2.02	3.79	46.36
2009	1.57	3.00	5.55	3.57	2.82	6.76	2.64	7.08	0.48	5.16	1.32	1.88	41.83
POR= 114 YRS	2.32	1.84	2.79	3.39	3.58	3.64	3.44	3.57	3.40	3.09	2.87	2.63	36.56

WBAN : 14848

AVERAGE TEMPERATURE (°F) 2009 SOUTH BEND (KSBN)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	27.1	23.6	35.5	49.0	62.1	67.8	76.6	75.0	66.3	50.4	41.6	31.1	50.5
1981	23.4	32.1	40.7	52.5	56.6	69.2	71.4	70.6	62.8	50.0	41.5	27.6	49.9
1982	15.6	22.7	35.1	44.7	66.0	64.5	73.3	68.9	63.3	54.0	42.5	39.0	49.1
1983	29.3	33.2	40.2	45.5	55.3	72.0	78.7	78.3	66.5	53.8	43.8	18.4	51.3
1984	18.5	35.9	30.0	48.2	56.1	72.3	71.7	74.4	63.8	57.1	41.0	34.4	50.3
1985	19.6	23.7	41.3	55.2	63.1	66.8	73.1	69.8	65.6	54.6	41.6	20.1	49.5
1986	25.8	24.8	40.4	51.3	59.9	67.7	74.8	67.6	65.9	53.0	36.1	31.2	49.9
1987	25.3	30.8	40.0	50.4	64.7	72.8	75.8	71.7	64.6	46.8	43.7	32.8	51.6
1988	21.3	22.7	37.3	48.4	62.2	72.0	76.4	75.9	64.5	45.9	42.5	28.8	49.8
1989	33.4	22.2	37.0	47.3	57.2	68.0	73.9	70.6	61.8	52.9	38.8	17.7	48.4
1990	34.0	31.3	40.9	48.7	56.7	68.8	71.2	69.9	65.0	52.3	45.9	31.8	51.4
1991	24.2	32.3	41.5	52.6	67.5	74.0	75.7	73.2	63.2	54.9	36.6	32.1	52.3
1992	29.1	33.2	37.4	46.1	58.4	65.1	70.0	67.4	62.3	51.4	40.0	30.9	49.3
1993	28.3	24.4	35.0	46.9	60.7	67.7	74.5	73.6	58.9	50.5	39.4	29.7	49.1
1994	16.3	22.5	36.6	51.0	57.4	71.4	72.9	67.9	65.0	54.0	44.6	35.1	49.6
1995	25.3	25.3	40.3	46.5	57.9	71.3	74.9	77.2	62.2	54.3	34.8	26.0	49.7
1996	24.1	27.8	32.3	46.0	57.3	68.9	68.5	71.1	62.6	52.4	33.8	29.4	47.9
1997	20.6	29.6	37.6	43.7	52.5	68.3	72.2	67.9	62.4	51.6	36.2	30.7	47.8
1998	31.6	37.0	38.6	49.5	65.0	68.3	72.5	73.0	67.4	53.8	43.6	34.6	52.9
1999	22.7	33.0	33.5	51.0	62.7	71.3	78.0	70.1	64.9	52.6	45.9	31.9	51.5
2000	25.5	35.0	44.1	46.7	61.4	67.4	70.0	70.9	63.1	55.7	37.4	17.1	49.5
2001	24.7	28.1	34.1	53.7	61.2	67.3	72.4	72.9	61.8	52.7	48.6	35.1	51.1
2002	32.7	33.0	34.2	49.8	54.3	71.2	76.8	72.8	68.1	49.8	38.1	28.7	50.8
2003	20.3	23.1	37.9	50.4	56.0	66.1	71.1	72.9	62.4	51.1	43.3	32.1	48.9
2004	21.1	27.0	41.5	50.9	61.8	67.1	71.3	67.4	66.1	52.3	42.4	29.3	49.9
2005	23.9	30.9	33.0	52.2	57.2	73.9	74.5	73.3	67.7	53.4	42.5	24.1	50.6
2006	35.9	28.8	37.7	52.2	57.7	67.7	74.6	71.4	61.4	48.8	42.7	35.6	51.2
2007	29.0	17.8	42.4	47.0	64.6	71.3	72.2	73.0	67.5	59.0	39.8	29.5	51.1
2008	24.7	23.9	34.3	50.6	56.0	70.3	73.0	70.5	65.9	51.7	38.3	26.0	48.8
2009	15.6	28.7	40.1	48.4	59.2	69.1	68.3	69.3	64.0	48.8	44.2	27.6	48.6
POR= 113 YRS	24.4	25.1	36.5	47.7	59.1	67.9	73.1	71.3	63.5	52.9	39.4	28.6	49.1

HEATING DEGREE DAYS (base 65°F) 2009 SOUTH BEND (KSBN)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0	1	62	449	694	1047	1282	915	749	374	271	6	5850
1981-82	4	8	132	460	700	1154	1523	1178	922	604	64	72	6821
1982-83	2	30	114	353	668	798	1100	886	760	581	298	30	5620
1983-84	6	0	94	352	628	1440	1431	838	1080	503	290	4	6666
1984-85	7	0	128	244	714	940	1401	1153	727	339	116	47	5816
1985-86	0	4	121	319	694	1381	1208	1117	760	425	192	46	6267
1986-87	3	48	81	369	858	1038	1224	950	766	436	139	16	5928
1987-88	5	25	78	558	638	993	1347	1220	851	498	158	37	6408
1988-89	1	11	72	581	670	1116	972	1190	865	528	271	40	6317
1989-90	0	12	147	381	779	1462	954	936	751	521	257	46	6246
1990-91	6	14	110	408	565	1021	1260	910	722	378	106	2	5502
1991-92	0	1	167	318	844	1012	1104	915	850	561	247	75	6094
1992-93	6	25	139	417	742	1049	1130	1130	925	536	157	55	6311
1993-94	0	7	198	450	765	1087	1505	1186	875	441	273	28	6815
1994-95	0	30	92	336	606	921	1224	1105	759	548	221	20	5862
1995-96	7	0	135	337	896	1202	1258	1072	1005	566	276	23	6777
1996-97	22	1	140	384	928	1098	1368	983	844	631	383	39	6821
1997-98	12	20	120	437	858	1057	1026	775	824	458	74	80	5741
1998-99	0	0	52	346	632	936	1304	893	968	412	134	41	5718
1999-00	0	3	92	377	566	1020	1218	863	646	540	167	59	5551
2000-01	7	6	153	291	820	1476	1242	1026	951	342	168	87	6569
2001-02	22	0	139	381	489	923	993	891	948	487	347	25	5645
2002-03	0	2	41	487	800	1116	1376	1167	832	441	279	62	6603
2003-04	0	2	136	427	643	1012	1356	1096	719	441	177	44	6053
2004-05	1	43	56	387	670	1101	1267	948	984	384	250	17	6108
2005-06	2	3	50	385	666	1260	894	1007	840	377	282	26	5792
2006-07	1	1	127	498	663	906	1107	1318	702	537	97	22	5979
2007-08	0	7	63	235	751	1091	1240	1185	944	429	285	19	6249
2008-09	0	4	45	417	796	1201	1526	1010	763	500	205	33	6500
2009-	12	33	74	495	614	1153							

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COOLING DEGREE DAYS (base 65°F) 2009 SOUTH BEND (KSBN)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	0	0	0	9	65	145	367	319	107	6	0	0	1018
1981	0	0	2	6	15	137	211	191	72	0	0	0	634
1982	0	0	0	3	105	65	266	159	71	17	0	0	686
1983	0	0	0	1	3	247	440	417	146	13	0	0	1267
1984	0	0	0	5	19	228	226	298	98	7	0	0	881
1985	0	0	0	52	64	109	260	159	147	3	0	0	794
1986	0	0	4	22	41	135	312	136	113	2	0	0	765
1987	0	0	0	3	136	256	345	240	71	0	3	0	1054
1988	0	0	0	3	77	254	362	357	65	0	0	0	1118
1989	0	0	1	6	37	137	283	194	55	11	0	0	724
1990	0	0	9	37	8	167	203	171	117	21	0	0	733
1991	0	0	0	13	189	281	338	264	121	11	0	0	1217
1992	0	0	0	2	50	90	168	103	66	2	0	0	481
1993	0	0	0	0	29	144	302	284	18	9	0	0	786
1994	0	0	0	26	45	226	255	124	98	2	0	0	776
1995	0	0	0	0	9	216	320	382	57	10	0	0	994
1996	0	0	0	1	44	147	136	201	74	0	0	0	603
1997	0	0	0	0	0	146	241	117	48	29	0	0	581
1998	0	0	9	0	82	185	238	253	131	8	0	0	906
1999	0	0	0	0	67	236	410	166	96	3	0	0	978
2000	0	0	4	0	62	138	171	197	102	9	0	0	683
2001	0	0	0	11	56	164	259	253	53	6	0	0	802
2002	0	0	0	40	24	218	372	252	144	21	0	0	1071
2003	0	0	0	10	7	103	197	255	63	2	0	0	637
2004	0	0	0	27	85	117	204	123	96	3	0	0	655
2005	0	0	0	7	16	288	303	266	138	33	0	0	1051
2006	0	0	0	3	60	117	304	202	26	3	0	0	715
2007	0	0	9	3	90	217	232	261	145	57	0	0	1014
2008	0	0	0	6	13	184	256	179	81	10	0	0	729
2009	0	0	0	11	32	162	123	173	48	0	0	0	549

SNOWFALL (inches) 2009 SOUTH BEND (KSBN)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0.0	0.0	0.0	1.1	8.8	24.3	23.8	20.7	6.3	T	0.0	0.0	85.0
1981-82	0.0	0.0	0.0	0.1	9.1	41.3	41.3	19.2	10.2	14.0	0.0	0.0	135.2
1982-83	0.0	0.0	0.0	0.0	2.1	2.5	8.0	9.6	12.0	1.1	0.0	0.0	35.3
1983-84	0.0	0.0	0.0	0.0	1.4	35.6	16.7	15.9	11.1	0.4	0.0	0.0	81.1
1984-85	0.0	0.0	0.0	0.0	0.6	14.1	40.0	28.9	1.6	3.1	0.0	0.0	88.3
1985-86	0.0	0.0	0.0	0.0	2.2	40.4	26.3	11.3	3.6	0.2	0.0	0.0	84.0
1986-87	0.0	0.0	0.0	0.0	9.7	4.8	31.4	5.9	2.0	1.5	0.0	0.0	55.3
1987-88	0.0	0.0	T	T	1.6	13.1	11.4	22.9	12.1	T	0.0	0.0	61.1
1988-89	0.0	0.0	0.0	0.3	7.8	14.8	3.1	16.3	2.5	1.7	T	T	46.5
1989-90	T	T	0.0	8.8	15.2	29.4	1.2	13.9	3.4	1.1	0.0	0.0	73.0
1990-91	0.0	0.0	0.0	T	T	17.5	15.7	23.4	2.4	T	T	0.0	59.0
1991-92	0.0	0.0	0.0	T	7.6	11.7	19.9	10.9	16.7	0.9	0.0	T	67.7
1992-93	0.0	0.0	0.0	1.2	7.7	12.6	8.1	32.2	19.0	1.4	0.0	0.0	82.2
1993-94	0.0	0.0	0.1	T	2.2	11.3	21.5	20.0	0.1	0.8	T	0.0	56.0
1994-95	T	0.0	1.0	0.0	T	2.4	17.3	25.8	2.8	0.6	0.0	0.0	49.9
1995-96	0.0	0.0	0.0	T	6.2	22.1	12.2	7.9	8.3	0.9	T	0.0	57.6
1996-97	T	T	0.0	0.0	15.3	10.5	36.4	10.2	3.3	0.4	T	0.0	76.1
1997-98	0.0	0.0	0.0	0.2	5.6	18.1	7.8	T	20.8	0.0	0.0	T	52.5
1998-99	T	0.0	0.0	0.0	T	17.1	37.0	10.4	14.2	T	T	0.0	78.7
1999-00	0.0	0.0	0.0	0.0	1.9	7.4	37.1	11.4	T	1.1	0.0	0.0	58.9
2000-01	T	0.0	0.0	T	10.4	44.6	2.9	5.4	10.6	2.7	T	0.0	76.6
2001-02	T	0.0	0.0	T	0.0	19.5	10.4	18.4	14.2	0.3	0.0	0.0	62.8
2002-03	0.0	0.0	0.0	T	4.6	9.0	27.2	14.5	3.8	1.0	0.0	0.0	60.1
2003-04	T	0.0	0.0	0.0	0.2	10.5	27.6	5.3	0.7	T	0.0	0.0	44.3
2004-05	T	0.0	0.0	0.0	5.0	20.1	28.8	8.0	15.4	1.1	T	0.0	78.4
2005-06	0.0	0.0	0.0	0.0	6.0	19.1	3.4	5.9	3.6	0.0	0.0	T	38.0
2006-07	T	0.0	0.0	1.8	0.2	4.0	25.3	17.6	9.5	6.1	0.0	0.0	64.5
2007-08	0.0	0.0	0.0	T	2.6	18.4	25.3	26.7	2.9	T	0.0	T	75.9
2008-09	0.0	0.0	0.0	0.7	16.2	16.8	29.4	12.0	0.1	2.0	0.0	0.0	77.2
2009-	0.0	0.0	0.0	T	0.0	11.5							
POR= 75 YRS	T	T	T	1.2	6.6	14.7	16.5	12.1	8.2	2.1	0.2	T	61.6

WBAN : 14848

REFERENCE NOTES :

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1971 - 2000). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD. CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED.</p>	<p>GENERAL CONTINUED: WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY. ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED HISTORY GO TO "MULTI-NETWORK MEDADATA SYSTEM", URL IS: https://mi3.ncdc.noaa.gov/mi3qry/login.cfm</p> <p>NOTE: The "Period of Record:(POR) for all "averages" is based on the "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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2009

SOUTH BEND

INDIANA (KSBN)

South Bend is located on the Saint Joseph River in the northern portion of Saint Joseph County, situated on mostly level to gently rolling terrain and some former marshland. Drainage for the area is through the Saint Joseph River and Kankakee River.

South Bend is under the climatic influence of Lake Michigan with its nearest shore 20 miles to the northwest. The lake has a moderating effect on the temperature. Temperatures of 100 degrees or higher are rare and cold waves are less severe than at many locations at the same latitude. This results in favorable conditions for orchard and vegetable growth.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is October 18 and the average last occurrence in the spring is May 1.

Precipitation is fairly evenly distributed throughout the year with the greatest amounts during the growing season. The predominant snow season is from November through March, although there are also generally lighter amounts in October and April.

Winter is marked by considerable cloudiness and rather high humidity along with frequent periods of snow. Heavy snowfalls, resulting from a cold northwest wind passing over Lake Michigan are not uncommon.

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