

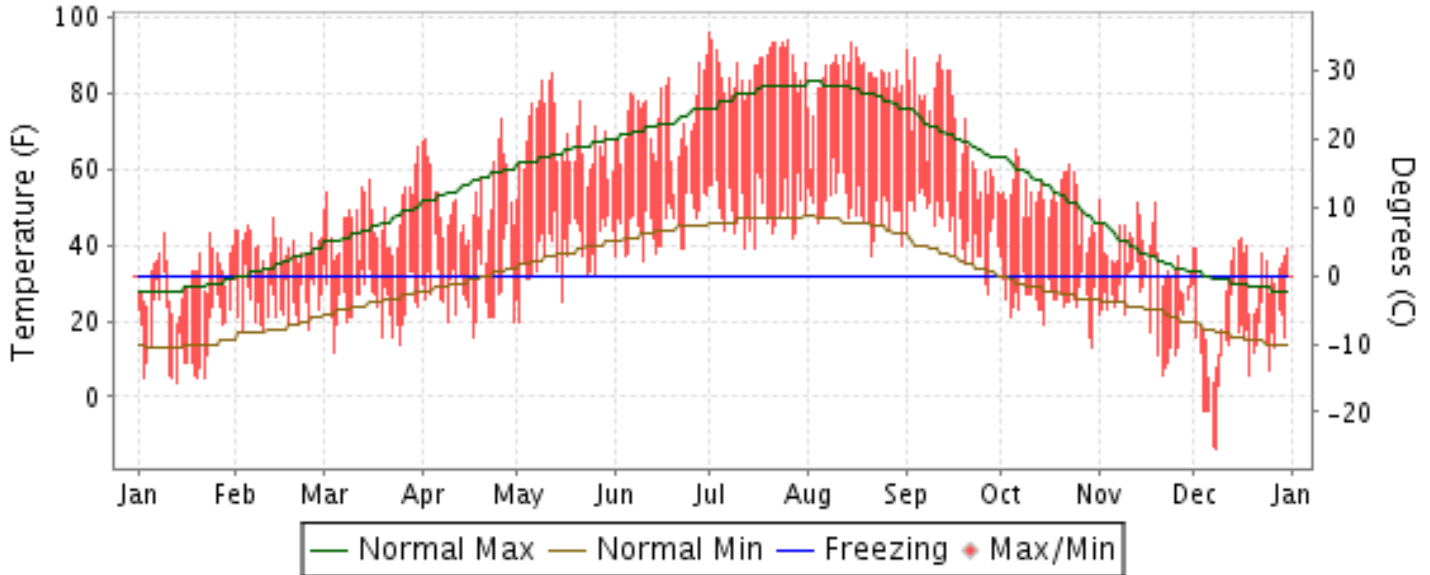


2013 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

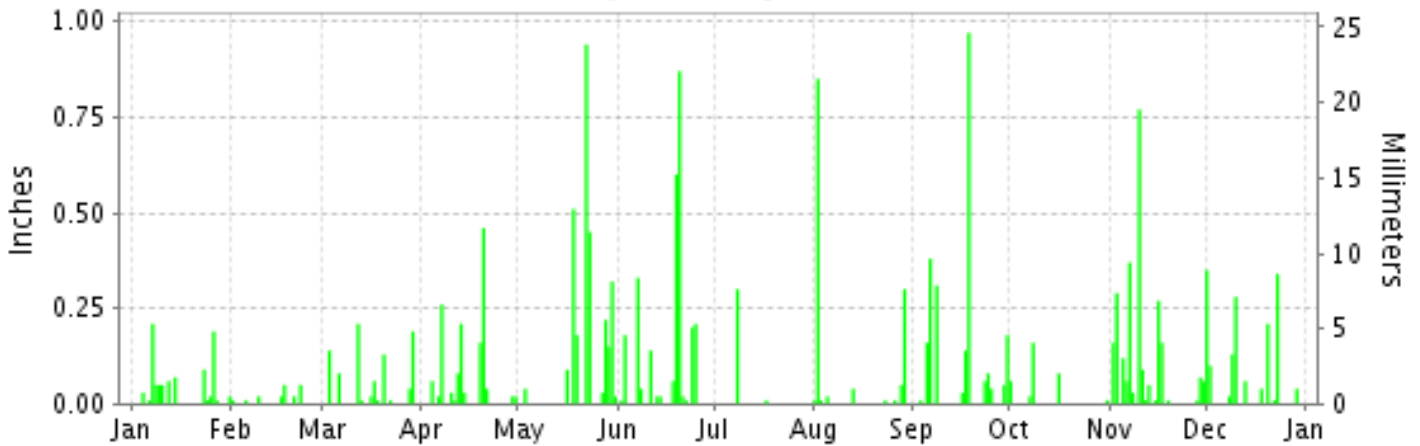
ISSN 0198-3040

KALISPELL, MONTANA (KGPI)

Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2013

KALISPELL (KGPI)

LATITUDE: 48° 18'N LONGITUDE: 114° 15'W ELEVATION (FT): GRND: 2957 BARO: 2981 TIME ZONE: MOUNTAIN (UTC -7) WBAN: 24146

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	31.7	39.7	47.3	52.6	68.0	73.0	87.3	84.2	71.5	52.5	38.4	28.2	56.2	
	HIGHEST DAILY MAXIMUM	43	47	66	73	85	90	96	93	91	65	52	42	96	
	DATE OF OCCURRENCE	24+	13	31	26	12	30	01	15	01	06	01	16	JUL 01	
	MEAN DAILY MINIMUM	16.4	24.6	24.6	28.5	38.2	45.3	49.0	49.9	44.5	25.9	23.7	13.2	32.0	
	LOWEST DAILY MINIMUM	4	18	12	16	20	36	39	37	27	13	6	-14	-14	
	DATE OF OCCURRENCE	13	24+	04	17	02	10	15+	21	27	30	21	08	DEC 08	
	AVERAGE DRY BULB	24.0	32.2	36.0	40.6	53.1	59.2	68.1	67.0	58.0	39.2	31.1	20.7	44.1	
	MEAN WET BULB	22.8	29.8	31.8	35.5	45.7	52.4	56.0	56.5	51.2	34.8	29.0	20.1	38.8	
	MEAN DEW POINT	19.8	25.8	25.8	27.5	38.0	46.5	45.6	48.6	46.1	30.1	25.6	16.2	33.0	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	1	12	4	2	0	0	0	19	
	MAXIMUM <= 32°	14	0	0	0	0	0	0	0	0	0	6	17	37	
	MINIMUM <= 32°	30	27	26	21	8	0	0	0	2	28	25	31	198	
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	5	5		
H/C	HEATING DEGREE DAYS	1263	914	893	725	362	186	19	21	232	793	1011	1362	7781	
	COOLING DEGREE DAYS	0	0	0	0	0	19	122	94	29	0	0	0	264	
RH	MEAN (PERCENT)	83	78	70	62	61	67	49	58	70	76	82	79	70	
	HOUR 05 LST	86	87	84	82	81	86	78	86	87	88	87	81	84	
	HOUR 11 LST	78	72	57	49	44	49	29	40	55	61	76	74	57	
	HOUR 17 LST	83	74	55	48	43	49	23	35	51	66	81	79	57	
	HOUR 23 LST	86	83	82	74	79	85	67	74	83	88	87	82	81	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	4	2	2	1	2	2	0	4	1	11	6	5	40	
	THUNDERSTORMS	0	0	0	0	1	2	1	2	2	0	0	0	8	
PR	MEAN STATION PRESS. (IN.)	27.01	26.93	26.94	26.90	26.93	26.88	26.89	26.91	26.84	27.02	26.99	27.03	26.94	
	MEAN SEA-LEVEL PRESS. (IN.)	30.22	30.10	30.09	30.03	30.03	29.95	29.93	29.96	29.90	30.18	30.16	30.25	30.07	
WINDS	RESULTANT SPEED (MPH)	1.3	3.1	2.1	1.1	0.5	1.5	0.4	0.7	1.1	0.7	2.1	0.6	0.9	
	RES. DIR. (TENS OF DEGS.)	17	19	20	16	16	19	36	28	22	05	19	04	19	
	MEAN SPEED (MPH)	3.2	4.4	4.7	8.2	5.0	4.5	5.1	4.0	4.4	3.4	3.3	4.4	4.6	
	PREVAIL.DIR.(TENS OF DEGS.)	16	17	17	16	17	17	02	17	16	17	17	03	16	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	26	22	31	28	36	33	29	41	28	38	25	38	41	
	DIR. (TENS OF DEGS.)	02	23	28	24	28	24	02	26	22	03	22	03	26	
	DATE OF OCCURRENCE	10	25	20	29	13	11	15	29	30	27	19	18	AUG 29	
	MAXIMUM 3-SECOND WIND:														
SPEED (MPH)	32	28	43	39	64	41	38	55	37	48	33	45	64		
DIR. (TENS OF DEGS.)	02	21	29	29	20	25	02	25	23	03	22	03	20		
DATE OF OCCURRENCE	10	01	20	29	21	11	15	29	30	27	19	18	MAY 21		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.87	0.18	0.90	1.40	2.95	2.71	0.31	1.30	2.41	0.33	2.54	1.58	17.48	
	GREATEST 24-HOUR (IN.)	0.22	0.07	0.22	0.49	1.37	1.46	0.30	0.85	1.11	0.16	0.79	0.39	1.46	
	DATE OF OCCURRENCE	07-08	16-17	28-29	20-21	22-23	19-20	08	02	17-18	08	10-11	09-10	JUN 19-20	
	NUMBER OF DAYS WITH:														
PRECIPITATION 0.01	14	7	11	13	11	14	2	9	12	5	17	11	126		
PRECIPITATION 0.10	2	0	4	4	7	7	1	2	6	1	7	6	47		
PRECIPITATION 1.00	0	0	0	0	0	0	0	0	0	0	0	0	0		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	6.0	1.5	0.8	0.9	0.9	0.0	0.0	0.0	0.0	T	11.3	22.2	43.6	
	GREATEST 24-HOUR (IN.)	1.2	0.8	0.5	0.6	0.9	0.0	0.0	0.0	0.0	T	3.0	7.0	7.0	
	DATE OF OCCURRENCE	14	20	03	21	23					31	17	10	DEC 10	
	MAXIMUM SNOW DEPTH (IN.)	3	T	T	0	1	0	0	0	0	0	4	10	10	
	DATE OF OCCURRENCE	24+	28+	04		23						17	11	DEC 11	
	NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0	2	0	0	0	0	0	0	0	0	0	4	8	14		

NORMALS, MEANS, AND EXTREMES KALISPELL (KGPI)

LATITUDE: 48° 18'N **LONGITUDE:** 114° 15'W **ELEVATION (FT):** GRND: 2957 BARO: 2981 **TIME ZONE:** MOUNTAIN (UTC -7) **WBAN: 24146**

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	31.2	36.0	45.6	56.1	65.1	72.0	81.4	81.4	69.9	54.9	39.6	29.7	55.2
	MEAN DAILY MAXIMUM	116	28.8	32.9	43.3	54.2	64.2	70.0	80.9	79.4	67.2	54.8	38.7	30.8	53.8
	HIGHEST DAILY MAXIMUM	64	53	64	73	84	94	96	104	105	99	78	69	57	105
	YEAR OF OCCURRENCE		1953	1995	2004	1977	1986	1955	1960	1961	1967	2010	1999	1979	AUG 1961
	MEAN OF EXTREME MAXS.	116	44.7	48.2	59.3	72.3	81.6	87.7	93.8	93.5	85.6	72.1	54.7	45.7	69.9
	NORMAL DAILY MINIMUM	30	16.4	18.2	25.1	31.2	38.5	44.5	48.0	46.5	38.4	29.4	24.0	15.8	31.3
	MEAN DAILY MINIMUM	116	14.5	16.9	24.2	31.5	39.4	44.8	49.5	47.8	39.4	31.6	24.3	17.9	31.8
	LOWEST DAILY MINIMUM	64	-38	-36	-29	10	19	26	30	30	16	-38	-28	-35	-38
	YEAR OF OCCURRENCE		1950	1950	1960	1951	1954	1999	1999	2000	1970	1950	1959	1990	OCT 1950
	MEAN OF EXTREME MINS.	116	-11.7	-3.7	5.3	19.7	26.2	33.1	37.2	36.0	27.0	16.9	4.8	-6.2	15.4
	NORMAL DRY BULB	30	23.8	27.1	35.4	43.6	51.8	58.3	64.7	63.9	54.2	42.1	31.8	22.7	43.3
	MEAN DRY BULB	116	21.7	25.0	33.8	42.9	51.8	57.5	65.2	63.6	53.3	43.2	31.5	24.4	42.8
	MEAN WET BULB	30	21.6	23.6	29.4	35.5	42.7	49.4	53.1	51.3	45.0	36.2	28.4	21.4	36.5
	MEAN DEW POINT	30	20.3	21.3	26.8	31.9	39.5	46.5	49.8	47.8	42.2	33.9	27.0	20.2	33.9
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.0	0.2	0.4	5.0	5.1	0.5	0.0	0.0	0.0	11.2
	MAXIMUM <= 32	30	14.0	6.8	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	5.2	17.0	45.4
MINIMUM <= 32	30	28.9	26.0	26.1	17.3	5.5	0.5	0.1	0.1	4.7	19.5	24.6	29.8	183.1	
MINIMUM <= 0	30	3.8	2.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	3.3	10.5	
H/C	NORMAL HEATING DEG. DAYS	30	1277	1061	919	640	412	216	77	93	330	708	996	1310	8039
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	3	13	67	60	4	0	0	0	147
RH	NORMAL (PERCENT)	30	80	77	71	62	63	65	61	59	66	73	80	82	70
	HOURLY 05 LST	30	82	82	81	79	81	85	84	82	85	86	84	84	83
	HOURLY 11 LST	30	79	74	64	52	52	53	47	46	54	64	77	80	62
	HOURLY 17 LST	30	75	66	54	43	44	46	38	35	42	52	72	78	54
	HOURLY 23 LST	30	81	80	78	70	72	74	71	69	77	81	82	83	77
S	PERCENT POSSIBLE SUNSHINE														
	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	49 54	5.3 0.0	4.4 0.1	2.6 0.3	0.9 0.9	1.2 2.8	1.2 5.4	1.0 5.8	1.0 5.1	2.1 1.9	4.4 0.5	4.6 0.0	5.1 0.0	33.8 22.8
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS) MIDNIGHT-MIDNIGHT (OKTAS)														
	MEAN NO. DAYS WITH: CLEAR PARTLY CLOUDY CLOUDY														
PR	MEAN STATION PRESSURE(IN)	30	26.95	26.93	26.88	26.88	26.87	26.88	26.91	26.91	26.93	26.95	26.93	26.96	26.92
	MEAN SEA-LEVEL PRES. (IN)	30	30.15	30.12	30.03	29.99	29.96	29.94	29.96	29.97	30.02	30.08	30.10	30.17	30.04
WINDS	MEAN SPEED (MPH)	30	4.5	4.8	6.0	7.1	6.7	6.1	5.5	5.3	5.0	4.6	4.7	4.1	5.4
	PREVAIL.DIR.(TENS OF DEGS)	8	16	17	17	16	16	16	16	17	17	17	17	02	16
	MAXIMUM 2-MINUTE: SPEED (MPH)	19	40	38	36	43	37	38	38	41	34	38	39	38	43
	DIR. (TENS OF DEGS)		02	02	01	23	26	26	24	26	15	03	22	03	23
	YEAR OF OCCURRENCE		2011	2003	2002	2000	1997	2001	2012	2013	1997	2013	2003	2013	APR 2000
	MAXIMUM 3-SECOND SPEED (MPH)	19	48	46	49	53	64	61	49	55	45	75	48	57	75
	DIR. (TENS OF DEGS)		02	02	25	21	20	20	24	25	15	03	03	23	03
YEAR OF OCCURRENCE		2011	2003	2012	2000	2013	2012	2012	2013	1997	2009	2010	1995	OCT 2009	
PRECIPITATION	NORMAL (IN)	30	1.33	0.97	1.09	1.24	1.98	2.56	1.45	0.99	1.38	1.01	1.43	1.56	16.99
	MAXIMUM MONTHLY (IN)	64	3.11	2.00	2.96	2.37	4.75	6.20	6.02	3.78	3.97	3.11	4.44	4.38	6.20
	YEAR OF OCCURRENCE		1970	1996	1987	1978	1990	2012	1993	1976	1985	1970	1959	1990	JUN 2012
	MINIMUM MONTHLY (IN)	64	0.20	.03	0.08	0.26	0.23	0.43	0.02	T	0.01	0.20	0.26	0.32	0.01
	YEAR OF OCCURRENCE		1985	2005	1994	1968	2001	1977	1953	1955	1990	1985	1969	1954	SEP 1990
	MAXIMUM IN 24 HOURS (IN)	64	1.09	0.97	0.82	1.74	1.57	2.71	2.09	1.76	1.25	1.09	1.72	1.35	2.71
	YEAR OF OCCURRENCE		1982	1997	1987	1951	1998	1982	1987	1976	1959	1982	1989	1964	JUN 1982
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01 PRECIPITATION >= 1.00	30 30	13.7 0.0	10.8 0.0	11.8 0.0	10.7 0.0	12.4 0.1	12.5 0.3	7.7 0.1	7.3 0.0	8.2 0.1	9.3 0.0	13.0 0.0	14.4 0.0	131.8 0.6
SNOWFALL	NORMAL (IN)	30	12.7	7.9	5.7	2.2	0.2	0.3	0.0	0.0	0.0	1.1	9.3	16.3	55.7
	MAXIMUM MONTHLY (IN)	59	34.8	21.2	21.3	8.1	8.9	5.5	T	T	3.1	34.8	48.6	52.1	52.1
	YEAR OF OCCURRENCE		1970	1975	1996	1961	1964	1995	1992	1992	1968	1970	1996	1990	DEC 1990
	MAXIMUM IN 24 HOURS (IN)	59	18.0	13.3	7.7	10.0	7.5	5.5	T	T	3.0	11.8	20.1	15.4	20.1
	YEAR OF OCCURRENCE		2009	1997	1987	1951	1964	1995	1992	1992	1968	1982	1996	1951	NOV 1996
	MAXIMUM SNOW DEPTH (IN)	57	52	46	50	4	4	0	0	0	T	52	35	61	61
	YEAR OF OCCURRENCE		1997	1997	1997	1964	1951				1965	1997	1996	1996	DEC 1996
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	4.5	2.9	2.2	0.8	0.0	0.1	0.0	0.0	0.0	0.5	3.0	5.0	19.0	

PRECIPITATION (inches) 2013 KALISPELL (KGPI)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	0.78	0.66	1.34	1.53	1.56	1.77	0.51	0.88	1.88	1.85	1.77	1.22	15.75
1985	0.20	1.39	0.71	0.58	1.60	1.56	0.23	1.12	3.97	0.92	1.63	0.72	14.63
1986	2.22	1.87	0.32	0.83	2.45	2.17	1.42	0.68	2.78	0.51	1.84	0.52	17.61
1987	0.66	0.61	2.96	1.19	0.88	1.20	3.98	1.35	0.60	0.05	0.48	1.58	15.54
1988	0.97	0.84	0.80	0.94	2.83	1.49	0.87	0.29	2.10	0.46	1.03	2.32	14.94
1989	1.36	1.32	1.45	1.25	2.68	1.47	1.23	3.49	1.55	0.90	3.26	2.24	22.20
1990	1.79	0.95	1.12	1.48	4.75	1.16	2.37	2.27	0.01	2.07	1.58	4.38	23.93
1991	1.74	0.45	0.81	0.85	2.26	3.58	0.42	0.72	0.67	0.84	2.16	0.65	15.15
1992	1.17	0.79	0.94	1.02	1.18	3.65	2.37	0.71	1.02	0.71	1.59	1.99	17.14
1993	1.67	0.61	0.62	2.20	1.93	3.46	6.02	1.49	1.61	1.01	1.20	1.58	23.40
1994	1.09	1.41	0.08	1.47	1.50	2.01	0.24	0.05	0.45	2.37	1.07	0.97	12.71
1995	1.70	0.80	1.45	1.22	0.98	5.30	1.36	1.26	1.19	2.51	2.78	2.19	22.74
1996	2.59	2.00	1.77	2.34	4.34	1.56	0.70	0.79	1.71	1.48	3.23	3.27	25.78
1997	1.34	1.70	1.87	1.32	2.21	3.44	1.02	1.15	1.50	1.02	0.42	0.57	17.56
1998	1.03	0.28	2.23	1.18	4.25	3.53	2.30	0.34	1.32	0.82	1.72	2.01	21.01
1999	1.20	1.49	0.75	0.52	1.80	1.88	0.95	1.06	0.28	1.61	1.66	1.31	14.51
2000	1.11	1.22	0.99	0.80	1.13	1.55	0.48	0.26	1.39	0.41	0.37	0.79	10.50
2001	0.39	1.05	0.85	2.17	0.23	2.89	1.52	0.06	0.59	1.47	0.75	0.50	12.47
2002	0.65	0.50	0.95	0.66	2.38	1.93	1.37	1.20	1.23	0.08	0.73	1.24	12.92
2003	0.86	0.21	1.55	0.90	1.74	1.24	0.09	0.33	1.93	1.28	0.92	1.25	12.30
2004	1.83	0.42	0.53	1.61	1.17	1.23	1.86	2.49	1.91	1.48	0.65	1.21	16.39
2005	0.88	0.03	1.19	0.94	1.38	5.66	0.30	0.31	2.74	1.11	1.12	1.72	17.38
2006	2.29	1.21	0.62	1.69	1.35	3.49	1.25	0.62	1.18	0.69	1.60	1.29	17.28
2007	0.69	1.29	0.39	0.89	2.59	0.95	0.60	0.27	1.07	0.84	0.59	1.33	11.50
2008	1.03	0.47	0.79	0.50	1.46	2.22	1.81	0.94	1.26	0.43	1.30	2.30	14.51
2009	1.73	0.96	1.00	0.82	1.12	1.53	2.76	1.16	0.14	1.29	0.37	1.35	14.23
2010	1.59	0.43	0.61	1.95	2.43	4.20	0.92	1.39	1.81	0.53	2.53	2.22	20.61
2011	2.39	1.16	1.12	1.84	1.85	3.16	0.69	0.47	0.47	1.86	0.42	0.74	16.17
2012	1.37	1.04	1.65	1.31	1.90	6.20	0.74	0.30	0.44	2.66	1.53	1.19	20.33
2013	0.87	0.18	0.90	1.40	2.95	2.71	0.31	1.30	2.41	0.33	2.54	1.58	17.48
POR= 116 YRS	1.42	1.04	0.99	1.04	1.74	2.26	1.13	1.08	1.25	1.05	1.41	1.48	15.89

WBAN : 24146

AVERAGE TEMPERATURE (°F) 2013 KALISPELL (KGPI)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	25.7	31.7	37.9	42.9	48.6	56.6	65.4	65.6	50.5	38.5	32.1	16.3	42.7
1985	17.6	15.4	28.0	44.7	54.3	57.1	68.5	59.4	47.9	40.4	16.8	18.2	39.0
1986	24.8	23.8	40.3	43.6	54.2	64.3	60.2	67.9	51.2	43.4	29.4	24.9	44.0
1987	20.9	28.3	36.1	48.6	54.8	62.1	64.1	60.7	56.5	43.1	35.3	23.0	44.5
1988	19.5	30.5	37.9	47.6	51.7	62.5	64.9	64.2	54.3	48.5	35.5	24.0	45.1
1989	26.6	13.8	31.1	44.7	50.7	60.5	67.5	61.9	53.3	42.8	35.7	26.7	42.9
1990	29.5	25.9	36.5	45.1	50.1	57.7	66.8	65.8	59.8	41.1	35.1	15.6	44.1
1991	16.4	33.3	33.0	42.6	50.3	54.7	63.9	66.1	54.8	39.9	29.7	29.4	42.8
1992	28.4	34.3	41.0	45.6	54.2	62.8	62.0	62.7	51.8	45.6	32.8	18.2	45.0
1993	15.4	19.2	35.4	44.2	57.9	56.9	57.4	60.4	52.4	44.2	25.9	27.6	41.4
1994	32.0	20.9	36.9	45.4	52.6	56.3	66.5	66.3	55.6	41.3	28.9	24.8	44.0
1995	23.4	31.6	33.2	41.8	51.9	56.3	62.6	58.5	54.4	40.2	33.2	25.7	42.7
1996	16.5	24.3	29.4	43.4	47.0	58.5	64.6	62.4	51.5	41.3	26.9	18.7	40.4
1997	18.7	26.0	31.3	38.4	52.4	57.4	62.3	64.1	55.6	43.2	31.7	26.7	42.3
1998	24.8	32.5	35.0	45.1	54.6	56.9	68.1	65.3	59.3	41.6	36.3	25.8	45.4
1999	29.3	32.2	37.4	42.1	48.7	55.8	61.3	66.1	51.4	42.4	37.5	29.9	44.5
2000	24.2	27.2	37.2	43.9	50.5	57.1	63.9	63.6	51.8	42.0	26.8	19.3	42.3
2001	23.6	19.7	34.7	41.5	52.9	55.3	62.4	65.0	58.5	41.2	35.2	25.4	43.0
2002	26.4	25.2	25.2	42.3	48.2	58.2	67.6	61.2	54.7	36.9	33.0	29.7	42.4
2003	27.6	28.3	34.9	44.5	51.1	60.3	68.6	67.5	56.5	44.6	26.8	21.5	44.4
2004	20.9	27.4	38.0	45.3	50.7	58.2	66.5	65.3	52.6	42.9	32.9	29.1	44.2
2005	21.2	30.9	36.5	42.9	51.9	55.7	64.0	62.0	52.7	42.9	31.8	17.8	42.5
2006	32.2	24.3	35.7	44.4	52.7	60.6	68.1	62.4	54.5	42.0	31.4	22.7	44.3
2007	21.1	28.0	38.7	43.4	51.9	58.7	71.9	64.0	54.8	44.8	33.7	26.3	44.8
2008	19.6	30.9	35.3	39.6	52.4	57.3	65.1	64.7	54.9	43.8	38.7	18.8	43.4
2009	23.7	26.9	30.9	45.2	53.7	57.6	65.7	64.4	57.7	37.2	34.0	19.0	43.0
2010	25.7	31.9	38.6	42.8	48.3	57.6	63.3	62.1	54.1	44.5	28.6	22.7	43.4
2011	23.8	21.1	35.5	39.5	50.2	55.2	62.7	65.0	57.3	43.4	30.9	26.9	42.6
2012	26.6	28.7	37.2	45.8	48.8	57.2	67.1	64.2	55.8	42.3	34.9	28.3	44.7
2013	24.0	32.2	36.0	40.6	53.1	59.2	68.1	67.0	58.0	39.2	31.1	20.7	44.1
POR= 116 YRS	21.7	25.0	33.8	42.9	51.8	57.5	65.2	63.6	53.3	43.2	31.5	24.4	42.8

HEATING DEGREE DAYS (base 65°F) 2013 KALISPELL (KGPI)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	60	50	433	816	982	1503	1463	1387	1140	601	333	240	9008
1985-86	5	180	507	755	1439	1444	1238	1148	761	637	375	65	8554
1986-87	152	13	408	664	1061	1234	1360	1022	890	484	309	124	7721
1987-88	103	143	251	671	885	1296	1402	994	832	516	405	123	7621
1988-89	69	70	337	506	879	1265	1182	1429	1045	605	438	139	7964
1989-90	34	140	345	684	872	1177	1096	1086	877	589	457	239	7596
1990-91	40	61	157	733	891	1528	1503	880	985	665	446	302	8191
1991-92	70	47	300	772	1052	1096	1124	886	739	574	325	115	7100
1992-93	105	150	390	590	958	1447	1533	1275	909	615	234	238	8444
1993-94	235	148	375	634	1170	1154	1016	1230	868	581	378	259	8048
1994-95	48	55	273	731	1079	1237	1280	927	945	686	399	253	7913
1995-96	92	209	317	759	941	1209	1496	1174	1098	643	552	200	8690
1996-97	72	100	398	730	1138	1429	1428	1087	1042	792	387	222	8825
1997-98	93	77	281	671	993	1180	1240	905	924	592	317	236	7509
1998-99	17	61	195	719	855	1209	1099	910	850	678	502	276	7371
1999-00	132	60	400	696	819	1080	1257	1092	855	626	445	235	7697
2000-01	90	103	389	703	1137	1408	1277	1265	934	701	379	290	8676
2001-02	112	60	195	730	886	1220	1192	1108	1225	673	518	218	8137
2002-03	45	120	306	864	952	1088	1153	1023	926	609	428	168	7682
2003-04	33	24	261	625	1140	1340	1360	1083	831	585	437	216	7935
2004-05	50	74	366	680	958	1106	1350	948	876	658	401	280	7747
2005-06	58	133	363	679	989	1455	980	1114	902	611	378	152	7814
2006-07	20	94	312	708	1004	1305	1356	1030	810	641	396	210	7886
2007-08	4	69	313	619	934	1195	1401	981	916	755	385	245	7817
2008-09	42	82	297	652	784	1428	1275	1063	1052	591	342	216	7824
2009-10	58	73	229	851	925	1420	1211	920	815	662	509	223	7896
2010-11	91	115	320	629	1086	1306	1272	1222	908	758	455	289	8451
2011-12	101	45	229	659	1018	1175	1182	1045	853	567	494	249	7617
2012-13	40	78	268	697	897	1130	1263	914	893	725	362	186	7453
2013-	19	21	232	793	1011	1362							

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COOLING DEGREE DAYS (base 65°F) 2013 KALISPELL (KGPI)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1984	0	0	0	0	0	9	78	76	5	0	0	0	168
1985	0	0	0	0	6	9	120	12	0	0	0	0	147
1986	0	0	0	0	49	53	10	107	0	0	0	0	219
1987	0	0	0	0	0	43	84	18	2	0	0	0	147
1988	0	0	0	0	0	57	70	52	25	0	0	0	204
1989	0	0	0	0	0	13	118	52	0	0	0	0	183
1990	0	0	0	0	0	24	99	92	9	0	0	0	224
1991	0	0	0	0	0	0	41	86	0	0	0	0	127
1992	0	0	0	0	0	57	16	83	0	0	0	0	156
1993	0	0	0	0	23	3	5	11	0	0	0	0	42
1994	0	0	0	0	0	4	102	105	0	0	0	0	211
1995	0	0	0	0	0	0	25	13	7	0	0	0	45
1996	0	0	0	0	0	8	66	27	0	0	0	0	101
1997	0	0	0	0	0	0	18	57	6	0	0	0	81
1998	0	0	0	0	0	2	121	78	30	0	0	0	231
1999	0	0	0	0	3	9	25	101	0	0	0	0	138
2000	0	0	0	0	0	5	61	66	0	0	0	0	132
2001	0	0	0	0	8	3	37	66	7	0	0	0	121
2002	0	0	0	0	3	20	132	10	0	0	0	0	165
2003	0	0	0	0	7	31	151	110	12	0	0	0	311
2004	0	0	0	0	0	18	103	91	0	0	0	0	212
2005	0	0	0	0	0	5	34	45	1	0	0	0	85
2006	0	0	0	0	5	25	121	22	5	0	0	0	178
2007	0	0	0	0	0	28	225	41	12	0	0	0	306
2008	0	0	0	0	1	19	52	79	0	0	0	0	151
2009	0	0	0	0	0	1	85	61	16	0	0	0	163
2010	0	0	0	0	0	8	44	32	0	0	0	0	84
2011	0	0	0	0	0	1	38	50	8	0	0	0	97
2012	0	0	0	0	0	21	113	58	0	0	0	0	192
2013	0	0	0	0	0	19	122	94	29	0	0	0	264

SNOWFALL (inches) 2013 KALISPELL (KGPI)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0.0	0.0	0.0	11.1	9.6	14.0	2.5	19.1	6.7	1.0	T	0.0	64.0
1985-86	0.0	0.0	T	1.0	12.7	11.9	19.8	17.2	0.4	0.5	T	0.0	63.5
1986-87	0.0	0.0	0.0	T	20.3	7.2	9.3	4.0	18.9	0.8	T	0.0	60.5
1987-88	0.0	0.0	0.0	T	5.5	14.0	8.7	8.2	2.7	2.3	T	0.0	41.4
1988-89	0.0	0.0	0.0	T	6.1	20.2	13.5	11.5	5.4	1.1	T	0.0	57.8
1989-90	T	0.0	0.0	0.4	3.2	13.6	12.6	11.5	6.4	7.6	0.4	0.0	55.7
1990-91	0.0	T	0.0	0.4	3.2	52.1	25.9	1.6	4.4	4.2	0.0	0.0	91.8
1991-92	0.0	0.0	0.0	6.3	14.7	4.6	10.6	4.4	T	1.7	T	0.0	42.3
1992-93	T	T	0.2	T	7.3	23.1	17.8	9.7	2.5	0.3	T	0.0	60.9
1993-94	0.0	0.0	0.0	0.0	16.6	14.4	8.6	18.0	T	4.2	T	T	61.8
1994-95	0.0	0.0	0.0	1.4	7.1	8.7	3.6	3.9	9.3	0.0	0.0	5.5	39.5
1995-96	0.0	0.0	0.0	0.0	17.6	14.5	27.3	1.2	21.3	T	2.0	0.0	
1996-97	T	0.0	0.0	1.3	48.6	47.4	11.1	19.7	15.5	2.7	T	0.0	146.3
1997-98	0.0	T	0.0	T	2.5	4.7	8.9	1.6	8.4	0.1	0.0	0.0	26.2
1998-99	0.0	0.0	0.0	T	4.4	14.6	10.8	10.7	7.4	0.8	1.3		
1999-00													
2000-01													
2001-02													
2002-03													
2003-04													
2004-05				2.0	1.0	9.1	10.6	0.2	9.4	1.1	0.0	0.0	
2005-06	0.0	0.0	0.0	0.0	9.8	14.8	5.8	8.0	1.1	0.8	0.0	0.0	40.3
2006-07	0.0	0.0	0.0	1.5	14.3	9.0	5.1	13.8	0.6	1.0	T	0.0	45.3
2007-08	0.0	0.0	0.0	0.0	0.8	21.6	20.7	5.6	5.5	0.3	T	1.5	56.0
2008-09	0.0	0.0	0.0	0.0	T	34.3	31.9	14.6	14.1	5.0	0.0	0.0	99.9
2009-10	0.0	0.0	0.0	0.9	2.3	18.2	12.1	3.0	2.5	T	0.3	T	39.3
2010-11	0.0	0.0	0.0	0.0	13.8	8.8	14.6	9.1	2.0	1.3	T	0.0	49.6
2011-12	0.0	0.0	0.0	T	2.2	4.1	11.7	11.3	2.1	T	T	0.0	31.4
2012-13	0.0	0.0	0.0	2.0	0.3	6.5	6.0	1.5	0.8	0.9	0.9	0.0	18.9
2013-	0.0	0.0	0.0	T	11.3	22.2							
POR= 83 YRS	T	T	0.1	1.4	8.2	14.6	16.1	10.7	6.6	1.9	0.5	0.2	60.3

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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. 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 CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS.</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</p>	<p>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 EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED STATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS: http://www.ncdc.noaa.gov/homr/ SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.</p> <p>NOTE: The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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2013

KALISPELL

MONTANA (KGPI)

The climate of the Flathead Valley is influenced by the topography. The high mountains to the east form an effective barrier to many severe winter cold waves that move into areas east of the Rockies from Alberta. The mountains to the east rise abruptly 4,500 feet above the valley floor. The mountain snows and spring rains assure an adequate supply of water for the area.

In addition to Flathead Lake, the valley contains many smaller lakes, three rivers, and numerous streams and sloughs. Until late in the winter when a large portion of the lakes and sloughs become frozen, this water surface tends to limit temperature extremes. This effect is most noticeable in the southern end of the valley, because of the influence of Flathead Lake. Due to its size, Flathead Lake seldom freezes over.

The weather at the airport is considerably different in some respects from the weather in Kalispell. Generally there is more cloudiness at the airport since it is closer to the mountains to the east and north. Moist air moving in from the west and southwest, lifting and cooling as it moves over the mountains, is the major cause. On average there is more precipitation on the east side of the valley than on the west side. Average snowfall during the winter at the airport is 68 inches and in Kalispell it is 49 inches.

The annual prevailing wind direction at Kalispell is from the west. At the airport it is from the south. Wind speeds average considerably stronger at the airport than in Kalispell.

In the winter, when a cold wave moving down the east side of the Continental Divide does come over the mountains, the airport is in direct line of the pass the cold air comes through. During these cold waves the wind is from the northeast and will usually have speeds reaching 30 to 40 mph. The strongest gusts reported during these storms exceed 80 mph. As the cold air moves down the valley it spreads out, decreasing the wind velocity, and mixes with the warmer air of the valley. Unless these cold strong winds persist for 3 or 4 days, the wind in the lower part of the valley will be from the northwest, because of the influence of Flathead Lake and the mountains to the west. This wind is always much stronger in the northeast end of the valley where the airport is located than any other place in the valley. In the northwest corner where Whitefish is located, and in the southeast part of the valley, there is rarely much wind from this storm.

Station History

KALISPELL, MT

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
KALISPELL GLACIER PARK INTL AP	1969-03-20	1970-01-01	48° 18'	-114° 16'	2965		AIRWAYS, COOP, USHCN
KALISPELL GLACIER PARK INTL AP	1997-07-07	1997-07-20	48° 18'	-114° 16'	2965		ASOS, COOP, USHCN
KALISPELL GLACIER PARK INTL AP	1994-02-01	1997-07-07	48° 18'	-114° 16'	2965		ASOS, COOP, USHCN
KALISPELL GLACIER PARK INTL AP	2003-09-24	Present	48° 18'	-114° 15'	2957		ASOS, COOP, USHCN
KALISPELL FLATHEAD COUNTY AP	1949-05-12	1969-03-20	48° 18'	-114° 16'	2965	8.5 MI NNE	AIRWAYS, COOP, USHCN
KALISPELL GLACIER PARK INTL AP	1981-12-31	1994-02-01	48° 18'	-114° 16'	2965		COOP, USHCN
KALISPELL GLACIER PARK INTL AP	1970-01-01	1981-12-31	48° 18'	-114° 16'	2965		COOP, USHCN, WXSVC
KALISPELL GLACIER PARK INTL AP	1997-07-20	2003-09-24	48° 18'	-114° 15'	2957	.7 MI SW	ASOS, COOP, USHCN
KALISPELL	1899-05-03	1949-05-12	48° 12'	-114° 19'	2956		COOP, USHCN, WXSVC

Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
PRECIP	1899-05-03	1982-01-01	DAILY	2400	UNIV	RCRD	
PRECIP	1982-01-01	1995-07-01	HOURLY	2400			
TEMP	1995-07-01	1999-09-01	DAILY	2400	HYGR		
PRECIP	2001-06-27	2003-09-24	DAILY	2400	TB	RCRD	
PRECIP	2003-10-25	Present	DAILY	2400	PCPNX	SHLD	
TEMP	1899-05-03	1982-01-01	DAILY	2400	HYGR		
PRECIP	1982-01-01	1995-07-01	DAILY	2400	UNIV	RCRD	
PRECIP	1995-07-01	1999-09-01	HOURLY	2400	UNIV	RCRD	
PRECIP	1999-09-01	2001-06-27	HOURLY	2400	TB	RCRD	
TEMP	1999-09-01	2001-06-27	DAILY	2400	HYGR		
TEMP	2003-09-24	2003-10-25	DAILY	2400	ATEMP		
PRECIP	2003-09-24	2003-10-25	DAILY	2400	PCPNX		
TEMP	2003-10-25	Present	DAILY	2400	ATEMP		
PRECIP	1999-09-01	2001-06-27	DAILY	2400	TB	RCRD	
PRECIP	2003-10-25	Present	HOURLY	2400	AWPAG	SHLD;RCRD;HTD	
TEMP	1982-01-01	1995-07-01	DAILY	2400	HYGR		
PRECIP	2001-06-27	2003-09-24	HOURLY	2400	TB	RCRD	
PRECIP	1995-07-01	1999-09-01	DAILY	2400	UNIV	RCRD	
TEMP	2001-06-27	2003-09-24	DAILY	2400	ATEMP		
PRECIP	2003-09-24	2003-10-25	HOURLY	2400	AWPAG	RCRD;HTD	

* For explanation of codes and abbreviations see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: <http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm>

Station Metadata website: <http://www.ncdc.noaa.gov/homr>

INQUIRES/COMMENTS CALL: (828) 271-4800, option 2

Fax Number : (828) 271-4876

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Email : ncdc.orders@noaa.gov

NOAA/National Climatic Data Center

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