

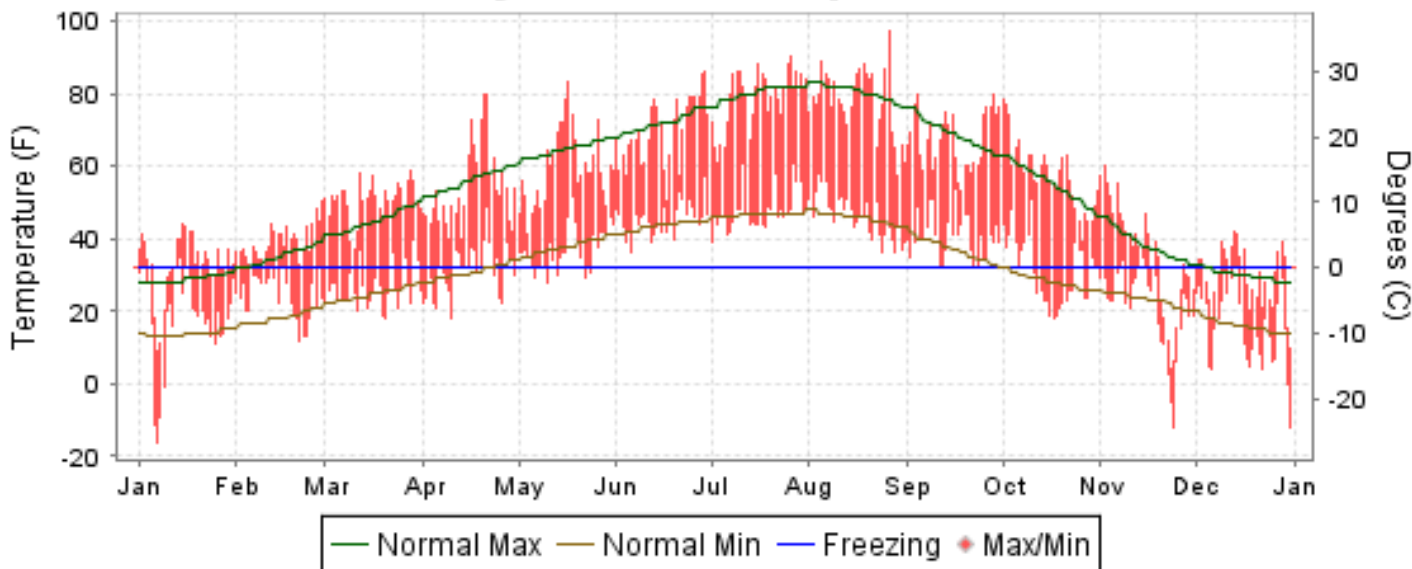


# 2010 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

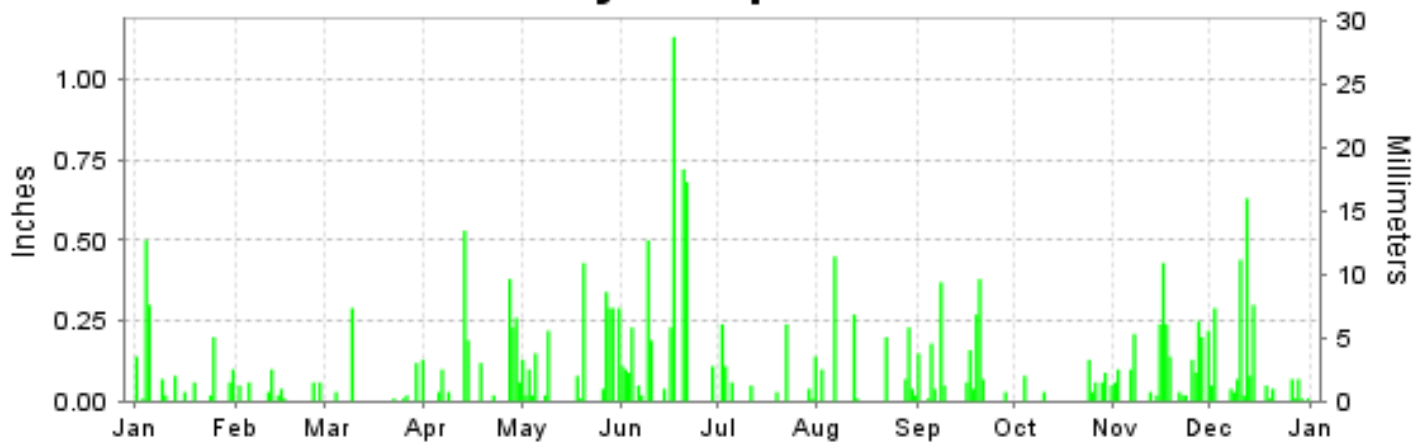
ISSN 0198-3040

## 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 2010

## 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	32.9	39.3	50.7	54.2	59.6	69.7	78.9	78.0	67.3	57.6	35.7	29.5	54.5	
	HIGHEST DAILY MAXIMUM	44	50	59	80	83	86	90	97	80	78	60	42	97	
	DATE OF OCCURRENCE	15	28	28	21+	17	29	26	26	28	01	02	13	AUG 26	
	MEAN DAILY MINIMUM	18.4	24.5	26.4	31.3	37.0	45.5	47.6	46.2	40.9	31.4	21.4	15.8	32.2	
	LOWEST DAILY MINIMUM	-16	12	18	18	28	36	39	36	32	18	-12	-12	-16	
	DATE OF OCCURRENCE	07	21	20	10	10	06	01	28+	23	17	24	31	JAN 07	
	AVERAGE DRY BULB	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	
	MEAN WET BULB	24.7	29.4	33.2	36.6	41.8	50.4	54.1	52.5	48.0	39.9	26.8	21.3	38.2	
	MEAN DEW POINT	21.7	25.8	26.1	28.4	33.7	43.9	46.4	44.3	42.8	35.5	23.0	18.3	32.5	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	0	0	1	1	0	0	0	0	2
	MAXIMUM <= 32°	12	0	0	0	0	0	0	0	0	0	11	17	40	
	MINIMUM <= 32°	29	27	26	16	6	0	0	0	1	16	27	30	178	
MINIMUM <= 0°	4	0	0	0	0	0	0	0	0	0	2	2	8		
H/C	HEATING DEGREE DAYS	1211	920	815	662	509	223	91	115	320	629	1086	1306	7887	
	COOLING DEGREE DAYS	0	0	0	0	0	8	44	32	0	0	0	0	84	
RH	MEAN (PERCENT)	83	81	66	62	61	65	58	58	71	76	80	82	70	
	HOUR 05 LST	85	89	82	76	79	84	83	84	88	89	85	85	84	
	HOUR 11 LST	80	77	50	50	47	49	43	39	59	60	73	78	59	
	HOUR 17 LST	82	73	47	49	44	47	33	35	52	65	78	83	57	
	HOUR 23 LST	84	86	79	74	74	80	78	73	81	88	84	84	80	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	8	9	1	2	1	0	2	1	4	8	2	10	48	
	THUNDERSTORMS	0	0	0	0	1	4	6	4	1	0	0	0	16	
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.)	26.90	26.91	26.88	26.78	26.85	26.88	26.89	26.87	26.90	26.96	26.92	26.87	26.88	
	MEAN SEA-LEVEL PRESS. (IN.)	30.08	30.08	30.02	29.89	29.95	29.95	29.94	29.92	29.99	30.08	30.10	30.03	30.00	
WINDS	RESULTANT SPEED (MPH)	0.9		2.6	1.1	0.6	2.4	0.5	0.2	0.1	1.6	1.6	0.5		
	RES. DIR. (TENS OF DEGS.)	03		19	17	10	18	20	27	17	19	04	05		
	MEAN SPEED (MPH)	2.9	1.9	4.8	7.0	7.1	5.3	4.9	5.2	5.0	3.1	4.9	4.1	4.7	
	PREVAIL.DIR.(TENS OF DEGS.)	03	17	17	18	02	16	17	02	16	17	02	02	16	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	38	17	29	33	31	30	32	33	26	23	32	32	38	
	DIR. (TENS OF DEGS.)	02	21	20	25	04	16	24	28	03	22	03	03	02	
	DATE OF OCCURRENCE	05	07	29	08	27	20	12	06	17	15	22	29	JAN 05	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	46	35	36	44	41	41	43	45	37	35	48	38	48	
DIR. (TENS OF DEGS.)	02	09	20	27	04	16	23	29	03	24	03	04	03		
DATE OF OCCURRENCE	05	07	29	08	27	20	12	06	17	15	20	29	NOV 20		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	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	
	GREATEST 24-HOUR (IN.)	0.75	0.11	0.29	0.72	0.58	1.40	0.24	0.45	0.61	0.15	0.66	0.65	1.40	
	DATE OF OCCURRENCE	04-05	11-12	09	13-14	28-29	20-21	22+	06	19-20	28-29	15-16	11-12	JUN 20-21	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	13	9	7	11	15	14	9	9	13	8	18	18	144	
PRECIPITATION 0.10	5	1	3	7	9	10	4	5	6	1	11	4	66		
PRECIPITATION 1.00	0	0	0	0	0	1	0	0	0	0	0	0	1		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	12.1	3.0	2.5	T	0.3	T	0.0	0.0	0.0	0.0	13.8	8.8	40.5	
	GREATEST 24-HOUR (IN.)	4.5	1.0	2.5	T	0.3	T	0.0	0.0	0.0	0.0	2.6	2.6	4.5	
	DATE OF OCCURRENCE	05	11+	31	14+	05	29					17	02	JAN 05	
	MAXIMUM SNOW DEPTH (IN.)	6	4	T	0	T	0	0	0	0	0	8	10	10	
	DATE OF OCCURRENCE	05+	02+	10+		05						30+	03+	DEC 03+	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	4	2	1	0	0	0	0	0	0	0	7	4	18		

# 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	28.9	35.2	44.9	56.0	64.7	71.9	80.2	80.5	69.0	55.3	38.6	30.1	54.6	
	MEAN DAILY MAXIMUM	113	28.7	32.9	43.2	54.2	64.2	70.1	80.8	79.3	67.0	54.8	38.6	30.8	53.7	
	HIGHEST DAILY MAXIMUM	61	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	1979	AUG 1961
	MEAN OF EXTREME MAXS.	113	44.7	48.3	59.2	72.4	81.6	87.8	93.7	93.5	85.5	72.1	54.6	45.7	69.9	
	NORMAL DAILY MINIMUM	30	13.8	18.4	24.8	30.8	37.9	43.5	46.7	45.8	37.1	28.4	23.2	16.1	30.5	
	MEAN DAILY MINIMUM	113	14.4	16.8	24.1	31.5	39.4	44.8	49.5	47.8	39.4	31.6	24.3	17.9	31.8	
	LOWEST DAILY MINIMUM	61	-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	1990	OCT 1950
	MEAN OF EXTREME MINS.	113	-12.2	-4.2	4.9	19.8	26.3	33.1	37.1	36.1	27.0	16.9	4.7	-6.5	15.3	
	NORMAL DRY BULB	30	21.4	26.8	34.9	43.4	51.3	57.7	63.5	63.2	53.1	41.9	30.9	23.1	42.6	
	MEAN DRY BULB	113	21.6	24.9	33.7	42.9	51.8	57.5	65.2	63.6	53.2	43.2	31.5	24.4	42.8	
	MEAN WET BULB	27	21.9	23.9	29.7	36.2	43.5	49.8	53.7	51.9	45.4	36.5	28.6	21.5	36.9	
	MEAN DEW POINT	27	19.9	20.8	26.2	31.4	39.1	46.0	49.1	47.0	41.5	33.5	26.7	19.7	33.4	
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.0	0.2	0.8	5.1	5.8	0.4	0.0	0.0	0.0	12.3	
	MAXIMUM <= 32	30	16.7	8.4	2.4	0.1	0.0	0.0	0.0	0.0	0.0	0.5	6.4	17.3	51.8	
MINIMUM <= 32	30	29.0	25.9	27.2	17.7	5.5	0.7	0.2	0.3	5.6	21.4	25.5	28.9	187.9		
MINIMUM <= 0	30	6.1	2.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	*	0.9	4.0	14.2		
H/C	NORMAL HEATING DEG. DAYS	30	1359	1079	933	640	412	220	88	102	344	705	1014	1297	8193	
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	3	17	57	62	3	0	0	0	142	
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															
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	46	5.4	4.6	2.5	0.9	1.2	1.2	1.0	1.0	2.2	4.2	4.5	5.3	34.0	
	THUNDERSTORMS	51	0.0	0.1	0.3	0.9	2.9	5.6	5.9	5.3	1.9	0.5	0.0	0.0	23.4	
CLOUDNESS	MEAN: SUNRISE-SUNSET (OKTAS)															
	MIDNIGHT-MIDNIGHT (OKTAS)															
	MEAN NO. DAYS WITH: CLEAR															
	PARTLY CLOUDY CLOUDY															
PR	MEAN STATION PRESSURE(IN)	27	26.95	26.94	26.89	26.88	26.87	26.88	26.92	26.92	26.93	26.95	26.93	26.96	26.92	
	MEAN SEA-LEVEL PRES. (IN)	27	30.15	30.12	30.04	29.99	29.96	29.95	29.97	29.97	30.02	30.08	30.10	30.17	30.04	
WINDS	MEAN SPEED (MPH)	27	4.5	4.7	6.0	7.1	6.8	6.1	5.6	5.5	5.1	4.6	4.8	4.1	5.4	
	PREVAIL.DIR(TENS OF DEGS)	5	16	17	16	15	16	16	17	17	16	17	18	02	16	
	MAXIMUM 2-MINUTE: SPEED (MPH)	16	38	38	36	43	37	38	38	37	34	36	39	33	43	
	DIR. (TENS OF DEGS)		02	02	01	23	26	26	26	13	15	03	22	03	23	
	YEAR OF OCCURRENCE		2010	2003	2002	2000	1997	2001	2004	2006	1997	2009	2003	2008	APR 2000	
	MAXIMUM 3-SECOND SPEED (MPH)	16	48	46	46	53	52	54	47	45	45	75	48	57	75	
	DIR. (TENS OF DEGS)		20	02	09	21	25	18	26	29	15	03	03	23	03	
YEAR OF OCCURRENCE		2007	2003	2007	2000	1997	2004	2004	2010	1997	2009	2010	1995	OCT 2009		
PRECIPITATION	NORMAL (IN)	30	1.47	1.15	1.11	1.22	2.04	2.30	1.41	1.25	1.20	0.96	1.45	1.65	17.21	
	MAXIMUM MONTHLY (IN)	61	3.11	2.00	2.96	2.37	4.75	5.66	6.02	3.78	3.97	3.11	4.44	4.38	6.02	
	YEAR OF OCCURRENCE		1970	1996	1987	1978	1990	2005	1993	1976	1985	1970	1959	1990	JUL 1993	
	MINIMUM MONTHLY (IN)	61	0.20	.03	0.08	0.26	0.23	0.43	0.02	T	0.01	0.20	0.26	0.32	T	
	YEAR OF OCCURRENCE		1985	2005	1994	1968	2001	1977	1953	1955	1990	1985	1969	1954	AUG 1955	
	MAXIMUM IN 24 HOURS (IN)	61	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	30	14.3	11.3	11.8	10.2	12.3	12.0	8.1	7.9	7.7	8.3	13.2	15.1	132.2	
PRECIPITATION >= 1.00	30	*	0.0	0.0	*	0.1	0.3	0.1	0.1	*	0.0	*	0.0	0.6		
SNOWFALL	NORMAL (IN)	30	14.7	10.0	6.7	2.4	0.2	0.2	0.0	0.*	0.*	1.4	9.9	16.2	61.7	
	MAXIMUM MONTHLY (IN)	56	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)	56	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)	54	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	4.9	3.2	2.3	0.8	0.1	0.0	0.0	0.0	0.0	0.5	3.0	5.2	20.0		

**PRECIPITATION (inches) 2010 KALISPELL (KGPI)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1981	1.44	1.99	1.43	0.94	3.37	3.62	0.72	1.32	0.48	0.20	1.30	1.81	18.62
1982	2.66	1.60	0.92	1.32	0.78	4.05	1.59	0.82	1.92	0.52	1.43	1.88	19.49
1983	1.09	0.93	1.50	2.18	0.78	3.09	2.06	0.73	1.31	0.83	1.61	1.69	17.80
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
POR= 113 YRS	1.42	1.05	0.99	1.03	1.73	2.22	1.14	1.09	1.26	1.03	1.41	1.49	15.86

WBAN : 24146

**AVERAGE TEMPERATURE (°F) 2010 KALISPELL (KGPI)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1981	29.7	30.5	38.8	45.0	52.6	53.8	63.0	67.9	55.3	40.2	32.6	21.5	44.2
1982	17.0	21.1	35.7	38.2	48.8	60.4	61.5	63.2	53.3	40.9	28.5	23.3	41.0
1983	29.6	32.9	38.0	42.3	51.5	57.3	61.2	66.3	50.6	42.8	33.9	7.9	42.9
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
POR= 113 YRS	21.6	24.9	33.7	42.9	51.8	57.5	65.2	63.6	53.2	43.2	31.5	24.4	42.8

**HEATING DEGREE DAYS (base 65°F) 2010 KALISPELL (KGPI)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1981-82	84	36	287	760	966	1342	1484	1226	901	797	495	154	8532
1982-83	133	88	343	742	1088	1286	1090	893	831	676	417	227	7814
1983-84	130	32	427	680	927	1768	1209	958	835	657	501	254	8378
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-	91	115	320	629	1086	1306							

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**COOLING DEGREE DAYS (base 65°F) 2010 KALISPELL (KGPI)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1981	0	0	0	0	0	0	32	135	2	0	0	0	169
1982	0	0	0	0	0	21	33	39	0	0	0	0	93
1983	0	0	0	0	4	4	17	83	4	0	0	0	112
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

**SNOWFALL (inches) 2010 KALISPELL (KGPI)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1981-82	0.0	0.0	0.0	T	1.7	16.3	32.7	6.6	1.9	6.8	0.2	0.0	66.2
1982-83	0.0	0.0	T	T	10.4	17.6	5.9	5.2	1.0	4.6	T	0.0	44.7
1983-84	0.0	0.0	0.0	0.0	6.8	21.3	8.6	7.4	2.8	0.4	T	0.0	47.3
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-	0.0	0.0	0.0	0.0	13.8	8.8							
POR= 80 YRS	T	T	0.1	1.4	8.3	14.7	16.2	10.8	6.7	2.0	0.5	0.2	60.9

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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. 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: <a href="https://mi3.ncdc.noaa.gov/mi3qry/login.cfm">https://mi3.ncdc.noaa.gov/mi3qry/login.cfm</a> SNOWFALL STOPPED MONTH &amp; YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.</p> <p><b>NOTE:</b> 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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# 2010 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.

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