

## Meteorological Data of the Sugadaira Montane Research Center University of Tsukuba

### 1. Location

Sugadaira Montane Research Center, University of Tsukuba, Sanada, Nagano Prefecture, Japan (latitude 36°31'13"N, longitude 138°21'03"E, altitude 1,320m above sea level). The instrument screen is set on short grass field of *Zoysia japonica*.

### 2. Instruments

Air temperature (°C): Thermister is set at a height of 120cm above ground surface in the instrument screen.

Soil temperature (°C): Platinum resistance thermometers are buried at depths of 5, 10 and 30cm in the grass field and at depths of 5 and 30cm in a deciduous broad-leaved forest floor.

Precipitation (mm): Tipping bucket rain gauge (20cm in diameter) with 0.5mm minimum measuring unit is set at a height of 10.2m above the ground surface of building.

Global radiation (MJ/m<sup>2</sup>): 39-couple-thermopile type pyranometer of 40mm in diameter is set at the same height as rain gauge.

Recorder: Self-balancing analog chart recorder is used for a dot every 30 seconds for each observational element.

### 3. Symbols

Max: maximum value                      Min: minimum value                      Mean: mean value  
blank: without observation              -: missing observation

After 1991, the mean monthly temperature will be obtained arithmetic mean of 24 observations. Before 1991, the value was used daily mean calculated with maximum and minimum temperatures.

#### Records in 1991

Annual mean air temperature: 7.0°C

Maximum air temperature: 28.5°C (July 23)

Minimum air temperature: -18.5°C (February 26)

Total precipitation: 1512.4mm

Total solar radiation: 4620.81MJ/m<sup>2</sup>

1991

## Daily Mean Air Temperature (°C)

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	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	3.6	-8.1	-6.6	-3.8	6.5	11.9	17.3	21.9	18.2	11.7	4.2	1.7
2	-0.1	-8.2	-5.5	-3.8	1.9	11.7	15.8	21.2	19.8	12.8	4.7	0.2
3	-3.3	-9.6	-6.8	-1.3	-1.8	12.7	16.8	20.8	19.7	13.2	6.0	2.4
4	-6.4	-7.3	-1.7	2.6	0.5	11.8	17.2	17.2	19.4	15.1	2.7	0.8
5	-6.3	-7.9	1.7	4.4	3.5	13.8	17.8	16.5	20.2	10.9	0.2	1.4
6	-7.7	-7.1	3.6	5.7	7.9	13.6	17.0	16.2	20.9	11.6	1.7	3.6
7	-7.7	-7.1	-3.9	6.1	10.3	14.4	18.7	17.0	19.1	11.7	5.0	2.3
8	-6.6	-8.5	-2.0	7.9	11.8	15.8	19.9	16.4	17.7	11.7	9.2	1.9
9	-6.2	-7.4	1.9	7.0	9.2	16.1	16.5	17.7	17.6	11.1	2.4	-3.4
10	-5.2	-2.2	-2.2	9.0	9.8	16.2	19.2	19.3	16.0	11.8	4.1	-2.9
11	-5.0	-1.2	0.2	10.2	11.4	19.1	19.1	18.8	16.9	12.1	0.8	2.0
12	-4.1	-5.3	5.8	10.7	10.1	20.2	17.6	19.0	14.4	13.0	0.3	-6.6
13	-4.7	-6.8	-0.1	10.9	9.2	17.7	17.8	17.3	15.4	11.3	2.2	-6.8
14	-7.6	-2.8	-6.8	4.6	11.5	14.2	16.1	17.4	17.4	8.7	2.0	-3.5
15	-10.0	0.7	-7.5	6.3	11.6	15.3	17.6	17.8	13.8	4.6	-0.8	-2.0
16	-6.3	-1.7	-2.1	8.7	13.9	15.3	17.1	17.7	14.5	6.2	1.5	-0.6
17	-4.1	-	-3.0	11.2	9.1	16.5	17.4	17.9	13.7	9.5	3.4	3.6
18	-8.1	-	-1.1	9.0	11.8	16.7	16.7	19.3	14.6	8.7	2.2	1.9
19	-4.8	-	4.2	4.3	13.3	16.7	17.3	19.9	15.6	7.7	4.1	-3.5
20	-3.4	-8.2	5.1	1.7	12.8	14.5	18.7	18.8	15.7	5.7	0.0	-5.1
21	-2.9	-9.0	-3.1	4.3	14.5	15.5	19.1	22.0	14.1	6.4	-0.7	-0.2
22	-4.4	-7.9	-0.7	5.2	15.4	14.5	17.9	21.1	14.3	6.2	3.0	0.7
23	-9.2	-9.6	3.6	7.4	16.1	15.8	21.3	22.2	13.4	5.5	5.8	4.2
24	-6.1	-10.8	3.8	6.9	17.0	18.2	21.3	18.3	15.0	7.8	-0.3	3.9
25	-1.8	-10.0	4.2	6.6	19.2	20.2	19.7	19.4	13.8	7.2	-4.7	-3.3
26	-6.6	-8.9	4.4	10.1	20.0	21.3	20.7	17.6	11.8	8.1	1.1	-4.0
27	-6.9	-4.4	4.4	7.8	9.7	19.5	18.1	14.5	16.8	10.8	7.1	-4.1
28	-9.3	0.9	1.2	11.0	9.3	19.2	20.1	15.3	15.8	6.3	9.7	-0.4
29	-9.3	-	0.2	9.7	10.4	16.5	22.1	18.9	12.2	6.1	2.9	-8.5
30	-7.9	-	2.5	3.7	11.5	18.5	20.7	20.4	12.0	8.5	2.0	-8.7
31	-8.3	-	-1.4	-	10.4	-	22.6	18.6	-	4.4	-	-6.6
M. MEAN	-5.7	-6.3	-0.2	6.1	10.6	16.1	18.6	18.6	16.0	9.2	2.7	-1.3
M. MAX	3.6	0.9	5.8	11.2	20.0	21.3	22.6	22.2	20.9	15.1	9.7	4.2
M. MIN	-10.0	-10.8	-7.5	-3.8	-1.8	11.7	15.8	14.5	11.8	4.4	-4.7	-8.7

1991

## Daily Maximum Air Temperature (°C)

	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	7.2	-0.9	-4.4	-2.2	10.3	17.1	21.5	25.7	23.2	12.8	8.6	7.6
2	2.8	-4.6	1.4	1.5	9.1	14.1	19.8	25.6	25.2	17.2	12.2	3.8
3	1.3	-2.1	-1.1	5.4	-0.2	17.0	22.1	25.8	25.8	20.3	12.3	9.6
4	-2.5	-1.1	8.2	10.9	7.5	14.6	22.1	25.8	24.7	21.8	9.3	7.8
5	-0.6	-6.7	10.5	12.7	10.4	22.3	23.8	20.6	27.6	13.8	3.0	10.2
6	-5.9	0.9	11.1	13.2	17.4	19.9	22.3	21.4	27.5	14.3	10.7	11.8
7	-3.5	-2.7	1.0	9.5	18.3	21.2	25.5	23.0	23.5	14.2	15.3	8.8
8	-3.3	-3.5	4.1	10.9	16.9	22.9	26.4	20.4	20.4	12.3	11.5	7.5
9	-1.6	1.8	8.6	11.9	11.6	23.9	22.2	23.2	20.8	13.4	5.7	-1.6
10	-1.3	2.0	1.7	16.8	17.1	21.7	23.7	24.1	20.2	16.2	9.7	2.3
11	-1.8	1.2	3.5	15.3	19.0	25.6	25.2	24.4	22.4	13.5	5.0	5.2
12	3.4	-1.1	1.4	17.9	15.6	27.6	21.4	23.3	20.0	15.1	7.5	-4.2
13	0.4	-2.4	6.9	14.8	14.5	22.1	22.6	20.3	17.3	12.8	9.0	0.8
14	-3.3	4.5	-2.1	12.1	19.7	19.7	19.6	21.5	20.4	13.2	7.8	5.0
15	-4.7	2.8	-2.3	15.4	17.4	21.6	23.4	22.3	15.5	8.2	5.0	5.7
16	-1.3	4.8	2.4	15.0	19.0	19.9	19.3	24.3	18.1	14.8	8.2	9.4
17	0.9	-	1.6	20.0	14.2	21.0	21.3	24.7	19.3	14.7	10.4	11.6
18	-6.0	-	6.4	17.4	20.1	23.3	21.6	25.8	19.2	13.5	2.3	7.8
19	0.9	-	11.6	12.7	21.6	20.7	23.1	25.5	19.9	15.1	11.0	0.1
20	5.8	-1.4	12.2	7.1	20.9	16.5	23.5	20.8	22.3	10.8	2.5	-0.4
21	1.3	-1.8	-0.3	11.8	23.1	20.5	26.6	26.5	19.2	12.3	3.2	8.5
22	-1.8	-2.2	1.9	13.0	21.5	16.5	20.7	26.7	19.4	12.6	12.3	9.4
23	-7.8	-3.6	7.7	14.6	22.0	19.6	28.5	28.3	19.4	9.6	12.8	9.3
24	1.3	-4.3	9.7	11.9	24.9	22.0	27.3	21.7	20.4	12.8	5.3	10.4
25	2.3	-3.7	8.8	13.0	27.1	24.5	25.5	23.2	16.5	9.9	-1.2	-1.5
26	-4.3	1.5	10.0	17.4	24.9	27.0	25.7	21.5	14.5	14.2	9.0	-2.3
27	-1.7	5.1	7.1	14.2	10.7	24.3	23.6	19.5	19.5	13.1	11.6	-1.2
28	-6.7	4.4	6.0	18.9	17.8	24.5	25.3	22.6	21.7	9.5	11.3	1.6
29	-1.8	-	5.9	17.8	16.8	20.4	28.4	23.6	18.8	10.7	5.7	-5.3
30	-3.2	-	8.7	8.8	17.8	24.8	23.6	25.7	17.1	15.1	7.5	-7.2
31	-0.8	-	0.7	-	14.2	-	28.3	20.5	-	7.0	-	-0.6
M. MEAN	-1.2	-0.5	4.8	12.7	16.8	21.2	23.7	23.5	20.6	13.4	8.2	4.2
M. MAX	7.2	5.1	12.2	20.0	27.1	27.6	28.5	28.3	27.6	21.8	15.3	11.8
M. MIN	-7.8	-6.7	-4.4	-2.2	-0.2	14.1	19.3	19.5	14.5	7.0	-1.2	-7.2

	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	-0.5	-14.7	-8.9	-5.7	1.8	8.4	12.5	19.4	14.6	9.7	0.2	-3.4
2	-5.4	-13.5	-10.7	-7.0	-1.7	10.0	12.3	17.3	15.5	7.7	-1.2	-3.8
3	-7.4	-15.1	-12.1	-7.1	-3.2	8.9	12.3	16.6	15.4	5.6	0.9	-3.1
4	-9.2	-13.3	-11.8	-5.2	-5.8	7.0	13.6	15.2	15.4	8.1	-1.5	-3.7
5	-9.8	-10.0	-4.7	-1.9	-3.0	5.3	15.2	14.0	14.6	9.5	-3.3	-4.8
6	-8.9	-14.3	-2.3	0.3	-2.4	8.2	12.6	13.2	16.8	10.3	-4.2	-1.7
7	-12.9	-13.7	-7.5	2.9	4.0	8.3	12.3	14.7	14.7	10.4	-2.3	-2.7
8	-10.9	-13.3	-7.8	6.0	6.3	9.1	13.7	12.3	14.3	10.6	6.7	-2.2
9	-9.8	-11.4	-3.7	1.7	5.9	9.0	13.2	12.5	15.2	9.3	-0.5	-5.0
10	-10.4	-11.4	-4.3	1.1	3.1	11.8	16.1	15.2	13.2	9.7	-0.5	-5.2
11	-7.2	-4.0	-1.8	6.6	3.0	13.3	15.8	15.8	13.8	9.8	-3.6	-4.8
12	-9.8	-10.9	-4.2	4.5	7.3	15.5	15.7	16.7	10.5	10.8	-4.6	-11.3
13	-10.0	-10.2	-5.1	7.5	4.2	13.1	15.0	15.7	13.2	7.3	-3.3	-12.4
14	-12.4	-12.7	-10.4	-0.3	4.0	9.1	13.8	15.0	14.8	6.2	-2.4	-9.6
15	-15.0	-1.8	-11.5	-1.1	6.4	8.0	12.8	14.3	12.4	-0.7	-4.5	-6.3
16	-11.4	-5.5	-6.5	1.9	9.9	13.0	15.7	12.6	12.4	-0.7	-3.7	-7.0
17	-8.5	-	-5.8	1.1	6.2	12.3	14.8	11.4	9.3	5.2	-1.2	-5.9
18	-9.4	-	-7.3	-0.8	3.0	10.0	13.3	13.6	11.9	5.6	-3.4	-3.8
19	-9.6	-	-4.0	-1.5	8.3	14.3	12.2	16.3	14.6	1.7	-2.4	-5.1
20	-9.6	-14.5	-0.3	-2.1	5.2	13.3	15.3	16.6	11.8	0.7	-2.6	-8.2
21	-7.2	-15.6	-4.7	-2.3	6.6	11.3	15.2	19.7	11.3	1.8	-2.8	-4.8
22	-7.8	-12.8	-3.4	-2.1	10.9	11.5	15.3	18.3	10.5	1.8	-2.4	-3.8
23	-11.7	-15.3	0.8	-0.5	11.6	13.4	15.5	18.5	11.9	1.5	-1.5	-2.2
24	-15.7	-15.4	1.5	4.1	8.5	15.3	17.4	14.9	12.0	4.2	-5.2	-1.5
25	-6.3	-16.9	1.7	1.8	13.5	18.0	16.3	15.0	11.2	4.6	-7.9	-4.2
26	-8.3	-18.5	1.6	4.6	14.4	17.9	15.3	12.8	10.3	1.8	-7.6	-5.3
27	-10.7	-14.1	2.9	2.9	6.0	15.5	12.6	10.2	11.2	8.8	0.7	-8.4
28	-15.4	-14.1	-1.7	3.8	1.0	15.3	16.3	9.0	9.2	2.2	5.6	-5.3
29	-16.5	-	-4.1	3.8	5.4	14.2	16.9	13.3	8.0	2.2	-0.7	-10.5
30	-12.6	-	-1.3	0.1	7.8	14.0	18.8	17.5	8.2	4.4	-2.6	-10.4
31	-15.4	-	-3.0	-	8.4	-	18.2	15.7	-	2.7	-	-10.4
M. MEAN	-10.2	-12.4	-4.5	0.6	5.1	11.8	14.7	14.9	12.6	5.6	-2.1	-5.7
M. MAX	-0.5	-1.8	2.9	7.5	14.4	18.0	18.8	19.7	16.8	10.8	6.7	-1.5
M. MIN	-16.5	-18.5	-12.1	-7.1	-5.8	5.3	12.2	9.0	8.0	-0.7	-7.9	-12.4

1991

## Daily Mean Soil Temperature, 5cm Depth in Grass Field Soil (°C)

	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	1.8	1.4	1.0	0.7	8.9	15.4	20.5	24.3	21.7	14.7	9.4	3.8
2	1.8	1.3	1.0	0.7	7.9	14.9	20.4	24.8	22.9	15.6	8.7	4.4
3	1.8	1.3	1.0	0.8	6.1	15.1	23.3	24.0	22.5	16.3	8.6	3.3
4	1.8	1.3	1.0	0.7	6.8	25.4	20.7	23.6	22.7	16.7	7.3	3.0
5	1.8	1.3	1.0	0.6	8.4	15.4	21.0	23.2	22.8	15.6	6.4	2.6
6	1.8	1.3	1.0	0.5	8.7	16.7	21.9	22.2	23.6	15.2	6.6	2.8
7	1.8	1.3	1.0	0.4	10.5	17.5	22.2	21.9	22.9	14.7	6.4	3.0
8	1.8	1.3	1.0	0.3	15.6	17.7	23.7	22.1	21.2	14.7	7.3	3.2
9	1.8	1.3	1.0	0.3	10.7	18.1	21.5	21.9	20.8	15.2	7.6	3.0
10	1.8	1.3	1.0	0.2	10.7	18.2	21.2	22.1	21.4	15.2	7.6	2.5
11	1.8	1.3	0.9	3.1	11.5	19.9	21.8	22.4	21.6	14.6	6.0	2.2
12	1.7	1.3	1.0	7.1	10.8	20.5	20.7	22.6	20.3	14.9	5.1	2.2
13	1.6	1.3	1.0	8.0	12.7	19.1	20.8	22.4	19.1	14.2	4.3	2.1
14	1.6	1.3	0.9	7.0	13.2	19.1	20.3	23.2	18.3	13.1	5.4	1.8
15	1.7	1.3	0.9	7.5	12.1	19.0	21.5	23.3	18.4	12.2	5.4	1.5
16	1.7	1.2	0.9	8.5	13.5	20.4	20.2	22.5	18.6	10.4	4.2	1.3
17	1.7	1.2	0.8	8.6	13.0	20.2	19.4	21.8	18.5	10.5	4.0	1.0
18	1.7	1.2	0.9	7.7	13.5	19.9	20.5	23.0	17.5	12.8	4.4	0.9
19	1.6	1.2	0.9	8.0	14.4	19.8	21.9	23.3	17.3	11.7	4.8	0.9
20	1.6	1.2	0.9	8.0	15.1	18.0	20.7	21.4	18.7	10.4	4.1	0.9
21	1.6	1.2	0.9	8.0	15.9	19.1	23.1	23.2	18.5	11.7	3.5	0.8
22	1.6	1.2	0.8	7.9	16.3	18.0	21.4	23.6	18.4	11.1	4.1	0.6
23	1.6	1.2	0.8	8.0	17.1	18.1	22.8	24.7	19.3	10.5	4.1	0.6
24	1.6	1.2	0.8	8.8	17.8	19.3	23.2	23.8	19.5	11.7	4.8	0.6
25	1.5	1.2	0.8	9.4	19.5	21.0	22.1	22.8	18.7	10.4	3.2	0.6
26	1.5	1.1	0.8	9.5	18.9	23.0	22.0	23.4	17.4	10.4	3.0	0.6
27	1.4	1.1	0.8	11.2	16.4	22.7	21.1	22.1	17.3	11.3	3.5	0.7
28	1.4	1.1	0.8	11.5	15.9	22.2	22.0	21.9	18.6	12.0	6.3	0.8
29	1.4		0.7	11.9	16.7	20.1	23.6	21.5	17.2	9.8	6.9	0.8
30	1.4		0.7	11.1	17.9	21.5	23.0	21.5	16.3	9.7	4.8	0.9
31	1.4		0.7		15.1		23.8	21.0		9.6		1.0
M. MEAN	1.6	1.2	0.9	5.9	13.3	18.8	21.7	22.8	19.7	12.8	5.6	1.8
M. MAX	1.8	1.4	1.0	11.9	19.5	23.0	23.8	24.8	23.6	16.7	9.4	4.4
M. MIN	1.4	1.1	0.7	0.2	6.1	14.9	19.4	21.0	16.3	9.6	3.0	0.6

1991

## Daily Mean Soil Temperature, 10cm Depth in Grass Field Soil (°C)

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	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	3.0	2.2	1.8	1.4	10.2	14.9	20.4	23.5	21.4	16.3	10.3	5.3
2	2.8	2.2	1.8	1.4	8.6	15.7	20.0	23.9	21.8	15.9	9.7	5.0
3	2.8	2.2	1.8	1.4	8.0	14.8	20.3	23.7	22.4	16.3	9.6	4.6
4	2.8	2.2	1.8	1.4	6.7	14.9	20.4	23.3	22.6	16.8	8.9	4.1
5	2.8	2.2	1.8	1.3	8.3	14.9	20.4	23.0	22.3	16.8	8.1	3.9
6	2.8	2.2	1.8	1.2	8.3	15.4	21.5	22.1	22.9	16.1	7.7	3.8
7	2.8	2.2	1.8	1.0	9.5	16.3	21.4	21.7	22.8	15.7	7.6	4.0
8	2.8	2.2	1.8	0.8	10.1	16.7	21.9	21.7	21.9	15.5	8.2	4.1
9	2.8	2.2	1.8	0.6	10.5	17.2	21.6	21.7	21.2	15.7	9.0	4.1
10	2.8	2.2	1.8	0.6	10.1	17.3	21.0	22.0	21.3	15.6	8.1	3.8
11	2.8	2.2	1.7	2.0	10.8	18.4	21.1	21.9	21.5	15.5	7.5	3.5
12	2.8	2.1	1.7	4.9	11.2	19.1	21.0	22.2	21.0	15.0	6.7	3.3
13	2.7	2.1	1.7	6.5	11.5	18.6	20.5	22.2	20.3	15.3	6.2	3.3
14	2.7	2.1	1.7	6.9	12.7	18.3	20.3	22.5	19.3	14.0	6.5	3.0
15	2.7	2.1	1.7	6.4	12.2	18.5	20.3	22.8	19.2	13.9	6.1	2.8
16	2.7	2.1	1.7	7.2	12.5	19.2	20.9	22.3	18.9	12.2	6.0	2.6
17	2.7	2.1	1.7	7.5	12.5	19.3	19.8	21.8	19.0	12.2	5.4	2.4
18	2.7	2.0	1.7	8.5	12.6	19.3	20.1	22.3	18.6	12.7	5.8	2.3
19	2.6	2.0	1.7	7.5	13.3	19.2	21.0	22.7	18.1	12.5	5.9	2.1
20	2.6	2.0	1.7	7.3	13.9	18.6	21.2	22.4	18.4	12.0	5.5	2.0
21	2.6	1.9	1.7	7.3	14.6	18.1	21.9	22.4	18.6	12.2	5.1	1.9
22	2.5	1.9	1.6	7.5	15.0	18.6	21.9	22.9	18.6	12.0	4.6	1.8
23	2.6	1.9	1.6	7.3	15.7	18.0	21.8	23.6	19.1	11.5	4.9	1.7
24	2.5	1.9	1.6	8.1	26.3	18.6	22.5	23.5	19.4	12.0	5.5	1.7
25	2.5	1.9	1.6	8.9	17.4	19.7	22.1	22.9	18.7	11.9	5.0	1.7
26	2.4	1.8	1.6	9.0	17.7	21.1	21.7	23.0	18.5	11.3	4.1	1.7
27	2.4	1.8	1.5	10.1	16.8	21.5	21.3	21.2	17.8	11.7	4.4	1.7
28	2.3	1.8	1.5	10.6	15.4	21.4	21.7	21.6	18.6	11.3	6.1	1.8
29	2.3		1.4	11.0	16.1	20.8	22.9	21.6	17.1	10.8	6.9	1.8
30	2.3		1.4	9.2	16.5	20.4	22.9	21.5	17.4	10.7	5.9	1.8
31	2.3		1.4		16.1		22.9	21.3		10.6		1.9
M. MEAN	2.6	2.1	1.7	5.5	12.6	18.2	21.2	22.5	20.0	13.6	6.7	2.9
M. MAX	3.0	2.2	1.8	11.0	17.7	21.5	22.9	23.9	22.9	16.8	10.3	5.3
M. MIN	2.3	1.8	1.4	0.6	6.7	14.8	19.8	21.3	17.4	10.6	4.1	1.7

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## Daily Mean Soil Temperature, 30cm Depth in Grass Field Soil (°C)

	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	4.8	3.8	3.0	2.3	9.2	13.7	13.3	20.8	20.7	17.5	12.0	6.9
2	4.7	3.7	3.0	2.3	8.8	13.6	18.5	21.1	20.7	16.9	11.7	6.7
3	4.7	3.7	3.0	2.2	8.3	13.5	18.5	21.2	20.9	16.7	11.5	6.5
4	4.6	3.6	3.0	2.1	7.7	13.4	18.5	21.3	21.0	16.8	11.3	6.3
5	4.6	3.6	3.0	2.0	7.2	13.3	18.5	21.4	21.1	16.8	11.0	6.1
6	4.6	3.6	3.0	1.8	7.5	13.6	18.6	21.2	21.2	16.7	10.6	5.9
7	4.6	3.6	3.0	1.4	8.0	13.9	18.9	20.9	21.3	16.6	10.2	5.8
8	4.6	3.6	3.0	1.1	8.2	14.2	19.1	20.8	21.4	16.3	9.9	5.8
9	4.6	3.6	3.0	1.1	8.5	14.5	19.3	20.7	21.1	16.2	10.0	5.8
10	4.6	3.6	3.0	0.9	8.8	14.9	19.3	20.6	20.9	16.2	9.9	5.8
11	4.5	3.6	2.9	0.9	9.0	15.1	19.3	20.8	20.4	16.2	9.8	5.6
12	4.4	3.5	2.9	1.6	9.3	15.5	19.3	21.0	20.6	16.0	9.5	5.3
13	4.3	3.5	2.9	2.7	9.5	15.9	19.5	21.1	20.5	15.9	9.1	5.3
14	4.3	3.5	2.9	3.8	9.9	16.2	19.4	21.0	19.9	15.7	8.8	5.2
15	4.3	3.5	2.9	4.2	10.2	16.3	19.2	21.1	19.5	15.4	8.6	5.0
16	4.3	3.4	2.9	4.7	10.2	16.3	19.3	21.1	19.3	14.8	8.4	4.8
17	4.2	3.4	2.8	5.0	10.6	16.5	19.2	21.0	19.2	14.2	8.2	4.6
18	4.2	3.4	2.8	5.5	10.8	16.7	19.0	21.0	19.1	13.9	7.8	4.4
19	4.2	3.4	2.8	5.9	11.0	16.8	19.2	21.1	18.8	13.8	7.7	4.2
20	4.2	3.4	2.8	6.0	11.2	16.8	19.3	21.1	19.3	13.7	7.7	4.1
21	4.2	3.3	2.8	6.1	11.6	16.6	19.5	20.9	18.4	13.5	7.5	4.1
22	4.1	3.3	2.7	6.2	12.0	16.7	19.8	21.1	18.5	13.4	7.2	3.9
23	4.1	3.3	2.7	6.3	12.4	16.5	19.8	21.2	18.6	13.3	7.0	3.8
24	4.0	3.2	2.6	6.4	12.8	16.5	20.0	21.5	18.7	13.2	6.9	3.7
25	3.9	3.2	2.6	6.7	13.2	16.8	20.2	21.6	18.8	13.1	7.0	3.7
26	3.9	3.2	2.5	7.1	13.8	17.4	20.2	21.4	18.8	12.9	6.8	3.6
27	3.9	3.2	2.5	7.6	14.2	18.0	20.2	21.5	18.5	12.6	6.5	3.6
28	3.8	3.2	2.4	8.0	13.9	18.3	20.2	21.1	18.3	12.6	6.5	3.5
29	3.8		2.3	8.4	13.9	18.5	20.2	20.9	18.3	12.5	6.8	3.5
30	3.8		2.3	8.9	13.9	17.3	20.3	20.8	18.0	12.3	7.1	3.4
31	3.8		2.3		14.1		20.5	20.8		12.2		3.5
M. MEAN	4.3	3.5	2.8	4.3	10.6	15.8	19.2	21.1	19.7	14.8	8.8	4.9
M. MAX	4.8	3.8	3.0	8.9	14.2	18.5	20.5	21.6	21.4	17.5	12.0	6.9
M. MIN	3.8	3.2	2.3	0.9	7.2	13.3	13.3	20.6	18.0	12.2	6.5	3.4

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## Daily Mean Soil Temperature, 5cm Depth in Forest Soil (°C)

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	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	2.4	1.7	1.3	0.7	7.0	10.7	14.9	18.2	16.9	12.5	8.0	4.2
2	2.3	1.7	1.3	0.8	6.0	10.7	14.9	18.0	16.9	12.5	7.7	4.0
3	2.3	1.6	1.2	0.7	4.3	10.9	14.6	17.9	17.0	12.5	7.7	3.6
4	2.3	1.6	1.2	0.7	5.0	11.3	14.7	17.5	17.4	13.0	7.4	3.3
5	2.3	1.5	1.2	0.7	6.0	11.0	15.0	16.4	17.0	12.9	6.6	3.1
6	2.5	1.5	1.2	0.7	6.3	11.6	15.0	15.7	17.5	12.3	6.0	3.1
7	2.5	1.5	1.2	0.6	7.7	11.7	14.9	15.9	17.4	12.3	5.9	3.2
8	2.5	1.5	1.2	0.7	8.3	12.0	15.7	16.0	17.0	12.2	6.9	3.4
9	2.5	1.4	1.2	0.9	8.6	12.3	15.1	15.7	16.7	12.1	7.1	3.3
10	2.5	1.4	1.1	1.5	8.5	12.6	15.3	16.1	16.2	12.0	6.5	2.9
11	2.1	1.4	1.1	2.4	8.9	13.5	15.6	16.6	16.0	12.0	6.0	2.7
12	2.1	1.4	1.1	3.8	9.3	14.3	15.7	16.5	15.5	12.3	5.2	2.6
13	2.1	1.4	1.1	4.8	9.6	14.6	15.8	16.5	15.1	12.1	4.7	2.6
14	2.1	1.4	1.1	5.3	9.9	13.6	15.4	16.1	15.5	11.3	5.1	2.4
15	2.1	1.4	1.1	5.4	10.0	13.0	15.2	16.1	15.4	10.3	4.6	2.3
16	2.1	1.3	1.1	6.8	10.6	13.5	15.3	15.9	14.7	8.5	4.2	2.0
17	2.1	1.3	1.0	6.6	10.3	13.5	15.4	15.8	14.4	9.6	4.5	1.7
18	2.0	1.3	1.0	7.4	10.1	13.4	15.5	16.2	14.3	10.1	4.3	1.6
19	1.9	1.3	1.0	6.1	11.0	13.8	15.1	16.6	14.5	9.8	4.3	1.6
20	2.0	1.3	1.0	6.2	11.2	13.5	15.6	16.5	14.7	9.3	4.3	1.5
21	1.9	1.3	1.0	6.3	11.8	13.1	15.9	17.3	14.2	9.1	3.9	1.3
22	1.9	1.3	1.0	6.4	12.1	13.2	16.0	17.7	13.9	9.0	3.5	1.2
23	1.9	1.3	1.0	6.5	12.6	13.2	16.4	18.1	13.7	8.5	3.9	1.3
24	1.9	1.3	0.9	7.2	13.0	14.0	17.0	17.7	13.9	8.9	3.9	1.5
25	1.8	1.3	0.8	7.1	13.8	15.0	16.8	16.9	13.9	8.6	3.5	1.7
26	1.8	1.3	0.8	8.0	14.1	15.9	16.9	16.7	13.3	8.7	3.0	1.6
27	1.8	1.3	0.8	8.7	13.0	16.0	16.5	15.8	13.4	9.6	3.6	1.5
28	1.8	1.3	0.7	9.7	10.7	15.6	16.6	15.1	14.3	9.8	5.4	1.5
29	1.8		0.7	10.0	10.8	15.2	17.0	15.8	13.3	8.9	5.9	1.6
30	1.8		0.7	8.3	11.2	15.3	17.3	16.9	13.0	8.8	4.9	1.7
31	1.8		0.6		10.6		18.0	17.4		8.5		1.8
M. MEAN	2.1	1.4	1.0	4.7	9.8	13.3	15.9	16.5	15.2	10.6	5.3	2.3
M. MAX	2.5	1.7	1.3	10.0	14.1	16.0	18.0	18.2	17.5	13.0	8.0	4.2
M. MIN	1.8	1.3	0.6	0.6	4.3	10.7	14.6	15.1	13.0	8.5	3.0	1.2



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## Daily Mean Soil Temperature, 30cm Depth in Forest Soil (°C)

	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	4.3	3.2	2.7	1.7	6.9	10.3	13.3	15.1	15.6	13.2	9.5	5.7
2	4.3	3.2	2.6	1.7	6.0	10.2	13.3	15.3	15.4	12.9	9.2	5.7
3	4.2	3.2	2.6	1.4	5.4	10.2	13.3	15.4	15.5	12.9	8.9	5.5
4	4.2	3.2	1.5	1.2	4.8	10.2	13.3	15.4	15.5	12.9	8.9	5.4
5	4.2	3.2	2.5	1.2	5.5	10.2	13.2	15.3	15.6	12.9	8.7	5.3
6	4.1	3.2	2.5	1.1	6.1	10.2	13.3	15.2	15.6	12.8	8.5	5.2
7	4.1	3.1	2.5	1.0	6.9	10.3	13.3	15.0	15.7	12.6	8.3	5.1
8	4.1	3.1	2.4	1.0	8.0	10.4	13.3	14.9	15.7	12.6	8.1	5.1
9	4.1	3.1	2.4	1.1	8.1	10.6	13.4	14.8	15.6	12.6	8.1	5.1
10	4.1	3.1	2.4	1.5	7.8	10.7	13.4	14.8	15.5	12.4	8.1	4.9
11	4.0	3.0	2.4	2.3	7.9	10.9	13.5	14.8	15.4	12.4	7.9	4.9
12	4.0	3.0	2.4	3.2	8.2	11.1	13.7	14.8	15.3	12.3	7.8	4.7
13	3.9	3.0	2.4	4.4	8.2	11.4	14.0	14.8	15.1	12.4	7.4	4.6
14	3.8	3.0	2.4	5.0	8.5	11.7	14.1	14.8	14.9	12.3	7.3	4.6
15	3.8	3.0	2.3	4.8	8.8	11.8	13.9	14.8	14.9	12.0	7.1	4.5
16	3.8	2.9	2.3	5.9	8.9	11.7	13.8	14.8	14.8	11.6	6.8	4.3
17	3.8	2.8	2.3	6.1	9.1	11.7	13.8	14.8	14.6	11.4	6.6	4.2
18	3.8	2.8	2.3	7.0	8.9	11.8	13.8	14.8	14.5	11.2	6.5	4.1
19	3.8	2.8	2.2	5.9	9.0	11.9	13.8	14.8	14.3	9.6	6.4	3.9
20	3.7	2.8	2.3	6.1	9.0	11.9	13.8	14.8	14.3	10.8	6.3	3.8
21	3.7	2.8	2.3	6.4	9.2	11.9	13.9	15.0	14.3	10.7	6.1	3.7
22	3.7	2.8	2.2	5.7	9.4	11.9	14.0	15.2	14.2	10.6	5.9	3.6
23	3.7	2.8	2.1	6.2	9.7	11.9	14.1	15.3	14.1	10.5	5.8	3.5
24	3.6	2.8	1.9	6.6	9.9	11.9	14.2	15.6	13.9	10.3	5.7	3.5
25	3.5	2.8	1.8	6.6	10.2	12.1	14.5	15.6	13.9	10.1	5.7	3.5
26	3.5	2.8	1.8	7.3	10.5	12.5	14.7	15.5	13.8	10.1	5.5	3.5
27	3.5	2.7	1.7	8.1	10.9	12.8	14.7	15.4	13.6	10.0	5.4	3.5
28	3.5	2.7	1.7	8.5	10.8	12.9	14.6	15.1	13.6	10.1	5.4	3.5
29	3.4		1.6	8.9	10.6	13.1	14.7	14.9	13.6	5.5	5.6	3.4
30	3.4		1.6	8.1	10.4	13.2	14.8	14.8	13.5	9.8	5.8	3.5
31	3.4		1.5		10.3		14.9	15.1		9.8		3.5
M. MEAN	3.8	3.0	2.2	4.5	8.5	11.4	13.9	15.1	14.7	11.3	7.1	4.4
M. MAX	4.3	3.2	2.7	8.9	10.9	13.2	14.9	15.6	15.7	13.2	9.5	5.7
M. MIN	3.4	2.7	1.5	1.0	4.8	10.2	13.2	14.8	13.5	5.5	5.4	3.4

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## Daily Precipitation (mm)

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	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1			4.7		1.5		14.0	3.0		45.5		0.5
2		4.6	0.2		1.0	8.5	21.0		2.5			2.0
3	1.9	2.8	1.2		2.5	8.5			1.0			
4						0.5	5.0					
5	1.8	8.7					6.5		5.0	2.5		
6	7.9			0.5		2.5	5.5	1.0		5.0		
7	11.0	2.2		14.5		1.5		38.5		16.5		
8	4.6	0.8		4.0	1.5			0.5	0.5	1.0	9.0	1.5
9	4.2	7.2			2.5				11.0	4.5	1.0	5.8
10	2.9					3.0		5.0	0.5	0.5		3.4
11	4.7	8.2	11.5				0.5	33.0		29.5		2.0
12		4.9			5.5	1.5	52.0	3.0		5.5		6.5
13		2.7		0.5		32.0	7.0		14.5	18.5		3.6
14	31.0		1.3			0.5			39.0			
15	0.3		13.5		1.5				1.0	8.5		
16	5.2	2.6	0.3				20.5		0.5			
17			6.9				10.0			28.0		
18	11.5	110.1		6.0			0.5		3.0	0.5		2.0
19	4.5	3.4							55.5			
20		25.7				18.0	6.0	14.5			3.5	0.5
21						0.5		0.5			4.0	
22	28.2	1.0					16.5					
23	5.3	5.5	23.8			7.0	0.5				0.5	
24				11.5		17.5					2.5	
25	3.6	2.3		13.5		5.5			2.5	26.5	2.4	
26	0.8								10.0	0.5		6.8
27	1.6				12.0	6.5				18.5	3.5	
28	2.3				0.5				3.0		42.5	6.8
29	2.7			18.5		17.5		3.0			2.0	13.2
30				0.5		8.0	2.5	32.5	8.0			14.3
31			8.3		11.5		15.0	34.0				2.9
M. TOTAL	136.0	192.7	71.7	69.5	40.0	139.0	183.0	168.8	157.5	211.5	70.9	71.8
M. MAX	31.0	110.1	23.8	18.5	12.0	32.0	52.0	38.5	55.5	45.5	42.5	14.3

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Daily Total of Global Radiation (MJ/m<sup>2</sup>)

	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1	4.18	12.37	7.78	9.41	7.37	19.15	13.57	13.17	19.17	2.51	5.18	10.07
2	2.96	9.57	17.94	18.49	16.44	5.85	17.63	23.31	14.37	5.07	12.22	5.61
3	9.97	14.66	13.10	23.35	9.84	10.77	21.97	12.97	14.61	15.33	10.84	9.59
4	5.38	10.36	17.68	22.16	25.99	12.21	14.01	17.39	13.06	14.01	6.43	9.71
5	7.36	5.24	18.18	2154	26.46	23.87	13.36	14.13	18.21	3.30	6.42	9.78
6	5.68	13.83	17.19	14.55	23.48	16.34	23.39	16.29	19.17	5.06	12.81	8.75
7	9.49	9.49	18.01	8.22	23.21	21.89	23.09	11.29	16.50	2.17	12.66	8.78
8	6.09	4.45	6.94	9.94	14.29	23.12	20.56	21.24	7.26	4.05	3.03	4.59
9	10.93	13.99	7.70	19.52	3.38	22.04	13.02	20.36	6.53	6.61	4.64	5.90
10	7.87	3.31	17.78	22.02	20.08	13.85	14.62	13.62	21.32	9.80	11.11	8.98
11	8.15	9.68	6.21	9.62	22.43	24.57	18.27	12.75	15.49	2.64	7.39	2.77
12	10.14	10.18	13.77	21.95	8.36	17.85	7.68	18.18	13.06	4.29	11.95	4.68
13	8.51	12.75	19.22	10.51	23.59	7.68	12.37	11.74	2.51	2.50	10.65	9.84
14	9.32	13.57	10.73	6.97	25.35	28.39	9.90	20.54	4.23	10.89	5.68	9.50
15	8.99	8.18	17.83	23.85	10.39	25.20	20.71	18.98	5.14	10.56	9.15	7.03
16	10.76	4.49	9.93	22.67	13.24	24.07	6.38	18.32	8.53	11.24	11.77	9.55
17	6.60	3.75	15.08	23.04	16.04	19.78	8.42	18.19	10.62	3.21	8.17	8.78
18	4.76	10.14	19.85	4.29	26.53	20.10	17.12	22.36	7.50	14.82	10.41	1.60
19	9.56	7.84	20.04	24.22	21.69	10.75	20.78	22.83	4.61	12.87	10.54	9.32
20	11.94	12.96	10.17	22.55	25.51	5.88	10.86	8.53	12.82	11.99	4.34	9.38
21	2.43	12.73	10.13	23.98	22.15	18.85	23.32	16.25	15.91	14.21	7.65	9.52
22	4.38	14.63	7.22	25.10	17.08	10.46	6.06	15.01	14.02	12.12	10.87	8.59
23	6.95	13.99	7.10	16.85	19.09	8.57	22.23	17.69	15.32	11.29	5.03	5.92
24	10.79	13.90	18.47	10.10	24.35	11.67	15.52	14.73	14.43	12.62	5.72	7.37
25	8.03	11.87	8.34	14.98	23.88	12.70	11.81	13.09	10.84	3.61	10.03	2.54
26	7.35	17.42	17.10	15.07	13.60	24.22	16.08	22.01	6.84	9.20	7.92	4.98
27	12.10	17.40	5.75	22.25	4.76	19.41	12.50	23.77	7.37	2.31	5.46	2.99
28	7.29	4.23	4.23	24.27	27.25	19.58	15.21	22.01	11.45	6.96	2.10	2.43
29	13.15		18.77	13.77	21.71	7.69	22.52	10.14	16.40	13.80	5.27	4.43
30	12.90		11.20	23.56	25.49	22.12	10.28	11.86	6.91	8.71	6.37	3.55
31	13.70		7.06		7.69		19.20	5.83		5.71		10.22
M. MEAN	8.31	10.61	12.92	17.62	18.42	16.96	15.56	16.41	11.81	8.18	8.06	6.99
M. MAX	13.70	17.42	20.04	25.10	27.25	28.39	23.39	23.77	21.32	15.33	12.81	10.22
M. MIN	2.43	3.31	4.23	4.29	3.38	5.85	6.06	5.83	2.51	2.17	2.10	1.60
M. TOTAL	257.69	296.97	400.49	528.74	571.08	508.65	482.41	508.58	354.19	253.44	241.80	216.75