

METEOROLOGY

Preliminary Report on the Results of Meteorological Observations on Surtsey 1968

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The spring months (April–May) were somewhat colder than usually at Vestmannaeyjar, especially May, which was also dry. June to September were near to normal, with considerably varying precipitation. Southerly and easterly winds were also frequent in May.

The following table gives some particulars about temperature and precipitation at Stórhöfði, Vestmannaeyjar.

	Temperature		Precipitation	
	Mean °C	Dev. fr. norm. °C	Total mm	% of normal
April	3.2	−0.5	114.1	118
May	5.1	−1.1	64.7	80
June	7.8	−0.9	146.1	180
July	10.4	0.1	47.2	56
August	9.8	−0.4	198.6	184
September	8.6	0.2	119.3	90

The meteorological observations on Surtsey began on April 21st and were terminated on September 17th. The observational series suffered from several interruptions however, especially near the end.

There were three measurement sites.

1. West of the field station (E10) where temperature, humidity and precipitation were measured.
2. On the sands east of the field station (F15) where soil temperature was measured at 5 and 20 cm depths, and maximum and minimum air temperature at 20 cm above the ground was read occasionally.
3. Wind direction and speed, temperature and precipitation were recorded by an automatic station on a lava field near the western extremity of the island. Temperature 20 cm above the ground was also recorded there. The

operation of the automatic station was considerably hampered by drifting sand.

TEMPERATURE

From the observations at Stórhöfði and the mean differences of temperature observed between that station and Surtsey, the mean temperatures at Surtsey are calculated to be as follows:

April	4.1 °C
May	6.2 —
June	8.5 —
July	11.2 —
August	10.7 —
Sept.	9.7 —

For the following periods (when the records for each month were only partial) the following mean temperatures were observed:

April	22–30	4.7 °C
May	1–9	3.7 —
June	11–28	8.2 —

The daily temperature amplitude was generally small, although on sunny days in July it could be as high as 3–4°C.

The average temperature at 20 cm level (W Surtsey) was as follows:

June 7–30	
Maximum (mean)	9.2 °C
Minimum (mean)	4.5 —
Average	6.9 —
July 1–25	
Maximum (mean)	13.0 °C
Minimum (mean)	7.9 —
Average	9.9 —

SOIL TEMPERATURE

For soil temperature the following averages were obtained.

April 23–30		5 cm		20 cm	
Maximum (mean)	7.7	°C	5.2	°C	
Minimum (mean)	3.1	—	4.5	—	
Average	5.4	—	4.8	—	
May 1–9					
Maximum (mean)	12.6	—	6.3	—	
Minimum (mean)	3.5	—	5.6	—	
Average	8.0	—	6.0	—	
June 7–30					
Maximum (mean)	16.2	—	12.2	—	
Minimum (mean)	9.1	—	10.7	—	
Average	12.7	—	11.5	—	
July 1–30 (excepting 17th and 18th at 5 cm)					
Maximum (mean)	22.1	—	16.6	—	
Minimum (mean)	12.0	—	14.4	—	
Average	17.0	—	15.5	—	
Aug. 1–28					
Maximum (mean)	17.8	—	14.4	—	
Minimum (mean)	13.2	—	12.7	—	
Average	15.5	—	13.6	—	

PRECIPITATION

Precipitation was measured near the field station and at the automatic recording station. The following table compares the results at Surtsey with precipitation measurements at Stórhöfði (precipitation in mm).

		Field station	Autom. st.	Stórhöfði
April	21–30	44.3	67.8	59.2
May	1–10	6.0	8.1	13.1
May	1–30	—	56.5	64.7
June	1–16	—	82.6	107.4
August	1–13	—	25.4	41.2

WIND

Wind velocity was measured at the automatic station, at 2 meters above ground level. The following mean values were obtained (meters per second).

April	21–30	5.4
May	1–31	5.1
June	1–16	5.1
July	23–31	3.2
August	1–13	3.9

This is roughly half the wind speed measured at Stórhöfði at 10 metres above the ground, and comparable to the wind at several coastal and land stations in southern Iceland.