

EXTRACTS FROM SUTHERLAND FIELD CLUB
WEATHER IN SUTHERLAND 1879 – 1882
D MELVILLE (DUNROBIN)

(WITH A CONTEMPORARY WEATHER COMPARISON)

“The weather in the north during the past year has, as in other parts of the country, been wet and cold, while the season of growth was mostly wet and unfavourable for the growth of crops. We have been on the whole better off in regard to the weather than our more southern neighbours. To begin with the winter 1878-79 it was in the north one of the most protracted winters on record. The total snowfall here, close to the sea amounted to 3½ feet. The thermometer went down to freezing point or below it on 103 nights. The lowest point reached was on December 28th when the protected thermometer registered 18° or 14° of frost. The ground was covered with snow fully three months. Hill farmers had in most cases to send their stock to within reach of rail and immense quantities of forage had to be brought into the county to tide the stock over the winter.”

“The following notes on the meteorology of the East of Sutherland for 1880 are abstracted from papers read from time to time, at the meetings of the Sutherland Field Club at Golspie, during the past year. The observations are taken at Dunrobin for the Scottish Meteorological Society the records dating back to 1865. Beginning with the Rainfall, the total for 1880 is 26.57 inches, with 172 days on which .01 or more rain fell – The Rainfall for the year being 4.73 inches under the average.”

Rainfall 1870 – 1880 (Annual Totals)

<u>Year</u>	<u>Total Rainfall</u>	<u>No of days .01" or more rainfall</u>
1870	26.75 in (679.45 mm)	
1871	23.93 in (607.822 mm)	
1872	34.98 in (888.492 mm)	
1873	34.20 in (868.68 mm)	
1874	30.76 in (781.304 mm)	
1875	27.38 in (695.452 mm)	157 days
1876	34.62 in (879.348 mm)	209 days
1877	41.65 in (1057.91 mm)	244 days
1878	34.36 in (872.744 mm)	180 days
1879	29.14 in (740.156 mm)	187 days
1880	26.57 in (674.878 mm)	172 days
1881	32.1 in (815.34 mm)	
1882	39.02 in (991 mm)	197 days
1971- 2000	624.4mm (30 year average for Kinloss)	127.6 days \geq 1mm rain

"For the three ripening and harvest months, July, August and September (of 1880), the following table of mean maximum and mean minimum temperatures, shows the difference in heat compared with 1879.

	1879 mean (deg F)		1880 mean (deg F)	
	max	min	max	min
July	59.1	48.9	61.5	50.2
August	60.4	49.9	65.2	53.5
September	58.5	44.6	62.6	47.7

The highest temperature registered in the **shade** in 1879 was 70.8°F, the only occasion 70 deg F was reached during the year. The highest temperature in 1880 occurred on August 10th when 76.0 was registered, the maximum being over 70 deg on 6 occasions. The hay crop was cut and secured in many cases without a shower, while harvest was unusually early and good, the crops being cut and got into the stackyard with scarcely any interruption from wet weather.”

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“The last quarter of the year (1880) is remarkable for the early date on which winter set in, a fall of 2 inches of snow with 6 deg F of frost occurred on the 19th October, inland the snow lay deeper and as much as 9 deg to 13 deg of frost were reported. From the 19th to the end of the month most nights were frosty with occasional showers of snow during the day. In many cases farmers had considerable breadths of potatoes to lift when the frost and snow put a stop to outdoor work. A nice break of mild weather set in from the 4th to the 13th November which was promptly taken advantage of to secure the potato crop.....”

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“Judging by agricultural and other reports the season (Autumn 1880) has not been so good in many parts of England. Hay being much damaged by wet and floods, while the yield of wheat and barley is said to be much below the average and a good deal of it spoiled in harvesting. A report in the Daily News of October 8th says the floods at Nottingham about the 6th October had attained the height of the floods of 1864. Hundreds

of acres being under water. At Derby the low lying villages of the country were literally submerged, the county presenting the appearance of one vast lake."

"March (1881) commenced with frost ranging from 8° to 9° the first three nights, snow lying on the ground at the beginning of the month from 8" to 10" in depth. On the 3rd, 4th, 5th and 6th Easterly winds increasing to a gale with driving snow and drift blocked the highways and stopped communication with the south. On Thursday the 3rd we had the last mail from the south till Tuesday the 8th, letters were sent by Aberdeen on the 8th. Papers arrived via Aberdeen on the 9th. The railway blocks of this month were probably the most protracted on record since the opening of the railways in the north. Caithness was cut off from communication with the south by this storm for 15 days during which time the mails were sent by the ord as in the old coaching days."

"During the period of hay harvest, the Royal Meteorological Society have for the past two seasons carried out an interesting experiment with very successful results, viz; the sending of weather forecasts to the press and observers, in different parts of the kingdom by telegraph. The observers for the North of Scotland were Dr Joass (?), Golspie the president of this club, and J. R Mitchell, Esq, Drynie, Inverness. To most of the observers, the forecasts were telegraphed daily for a space of about five weeks and in 3 instances, viz, Golspie, Uttoxeter and Leyburn, were by request continued for a further period of a fortnight. The Results obtained by Dr Joass are made out from 4 daily observations as to the success or failure of the forecast for the day. The following is an extract of the results at Golspie and Inverness, also the mean percentages for the 24 Stations to which forecasts were sent."

	No of forecasts sent	Percentages				Total of failures	Total of successes
		Complete success	Partial success	Partial failure	Total failure		
J.R Mitchell	29	44.8	48.3	6.9	-	6.9	93.1
Dr Joass	42	50.0	35.7	9.5	4.8	14.3	85.7

Weather Statistics recorded by Sutherland Field Club for Years 1879 – 1881

Year	Rainfall	Winds	Temperature	Comments
1879	"Total rainfall 29.6" with 187 days of 0.1 " or more rainfall, 2" under the average of the last 10 years."	Prevailing Westerly		
1880	"Total rainfall 30.7". No of wet days 172			"The season and harvest of 1880 is generally admitted to be one of the best on record."
1881	"Total rainfall 32.1" – 1" over the average for the last 10 years."	Prevailing winds N, NNE or NNW on 23 days in Jan.	January – 25 frosty nights with 10 days of rain or snow. May highest temp – 70 °F (Shade) (31 st).	"The high temperature experienced on the 31 st was altogether unusual such a high temperature in May had not previously occurred for at least 20 years." "The wettest year since 1870 was 1877 with rainfall of 41.5 (805mm) ". The driest year during the same period was 1871 with a rainfall of 23.9" (607 mm). And the average rainfall since 1870 is 31.7" (805 mm)
1882	"The total amount of rainfall for 1882 was 39.02 inches and is the highest registered here for 15 years with the exception of 1877."		"There were no very low temperatures experienced during the winter of 81-82 the lowest being 8° and 9° of frost on the 15 th and 16 th February. The frosts were not of long duration sheets of water in the neighbourhood were not in a bearing	

			condition for more than three or four days."	
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Met Office Statistics 1971 – 2000 for Kinloss 5m above sea level.

****30 YEAR AVERAGES****

Whilst these statistics cannot be directly compared with the Dunrobin reports, there is a clear indication (1870-1882) that these were significantly wetter years than the above rainfall average for Kinloss one hundred years later. The winter of 1878-79 (first extract) with 3 months snow cover and 103 nights of freezing temperatures reflects a climate somewhat different to that experienced today.

The Sutherland Field Club notes contain a wealth of information of both a statistical nature and with references to the impact of the weather on farming and communications and experiments with combining weather reports (by telegraph) to provide farmers with reliable weather information during the harvest periods.

Kinloss (5 m AMSL) (Above mean sea level)

Month	Max Temp [deg C]	Min Temp [deg C]	Days of Air Frost [days]	Sunshine [hours]	Rainfall [mm]	Days of Rainfall ≥ 1mm [days]	Wind at 10 m [knots]
Jan	6.6	0.6	11.9	43.7	55.4	11.0	10.7
Feb	7.1	0.5	11.2	73.5	39.0	8.6	10.2
Mar	9.0	2.0	7.1	102.3	45.7	10.8	10.8
Apr	10.8	3.4	3.5	126.3	42.0	9.2	9.5
May	14.1	5.9	0.8	180.1	45.4	9.2	8.6
Jun	16.4	8.7	0.0	156.6	52.9	10.0	8.6
Jul	18.7	10.8	0.0	152.8	52.5	10.5	8.1
Aug	18.4	10.6	0.0	140.4	57.4	11.3	7.8
Sep	15.8	8.5	0.2	112.5	64.7	11.8	9.2
Oct	12.7	5.8	1.8	85.6	58.4	11.5	9.6
Nov	9.0	2.7	6.3	51.6	59.4	11.9	10.0
Dec	7.0	1.0	10.7	36.0	51.4	11.8	10.2
Year	12.2	5.1	53.5	1261.4	624.4	127.6	9.4