Meteorological Records

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2004

General In 2004 the SCRI meteorological station was given a much needed overhaul. A considerable amount of maintenance, instrument replacement and 'tidying up' took place. A new purpose-built shed with heat and lighting was erected as the site base, providing shelter in adverse conditions in addition to housing instruments. The larger size can accommodate much larger groups of visitors, unlike the previous model which allowed entry to only three or four at a time.

The 'met site' was visited by approximately sixteen schoolchildren in April as part of the annual Bring Your Child to Work day. During a guided exploration of the site, the children were given the chance to be involved in the day-to-day tasks required by a weather station. They made observations, read instruments and had the opportunity to ask questions.

The first of two SCRI Open days (June) also saw the site as the subject of interest for a steady stream of schoolchildren from throughout the Tayside area who, along with their teachers, enjoyed a whistle stop tour of the facility.



Temperature Despite temperatures generally being lower than in 2003, all average maximum temperatures were higher than typical, measured against the Long Term Average with the exception of July, slightly



* The long term average for 1961-1990 is shown in blue(_____). Statistics in the text are measured against the monthly Long Term Average (LTA) for 1971 to 2000.

cooler at 18.8°C (19°C LTA). The most remarkable month was December, with an average daily maximum of 8.3°C, the highest since 1988 (6.4°C LTA).

Average minimum temperatures showed a higher than normal trend throughout the summer months, in contrast to the winter months which generally displayed lower than average minimum temperatures. Only two days of frost occurred in May, against the norm of 7. All other months were close to normal.

Mean soil temperatures for 10, 20, and 30cm depths were all higher than typical; with the exception of July, which in each case was approximately 1°C lower than the LTA.



Sunshine Sunshine figures were lower than usual with a total of 1392 hours for 2004 (1411.6 LTA). April, July and August in particular fell well short of their expected quota although, in contrast, six months out of the twelve actually had higher than normal sunshine levels. February was noteworthy for receiving almost double the expected sunshine – 108.2 hours (68.2 LTA).



Rainfall The year is likely to be remembered as one of exceptional rainfall, reaching an annual total of 817.7mm compared to the LTA of 664.5. The freak weather brought flash floods and caused disastrous harvests throughout the country. Press reports claim that cereal farmers in Angus, Perthshire and Fife suffered sig-



nificant losses during the worst month, August, which proved to be the wettest since SCRI records began in 1954. Perhaps surprisingly, eight out of the twelve months showed lower than average rainfall. February was a particularly dry month with only 15.8mm rain set against the LTA of 47.1. The deluge was restricted to four months: April, which had 59.4mm (44.6 LTA); June, with had 94.2 (51.7 LTA); October, with 155mm (67 LTA); and in particular, August with 256.3mm (52.3 LTA).

Wind Overall, windspeeds were unexceptional. The highest being the months March, October and November, which all had at least 1 day with speed of 20+ knots reached (representing a 'fresh breeze' on the Beaufort scale), and February and December which had 1 day at 25 and 24 knots, respectively ('strong breeze').

The Unusual Local press reported several sightings of a 'tornado like' phenomenon to the north of Dundee in late April.



2005

General Once again, in April the SCRI met station was the attraction for approximately nine schoolchildren involved in the annual Bring Your Child to Work day. The children spent the morning participating in 'glasshouse activities' which included the informative visit to the site, where they learned about (and tried out) observing and recording our weather with one of SCRI's trained observers. Sadly, the weather was not in our favour, it being a morning of heavy rainfall. However, the new larger Met shed proved invaluable as shelter from the worst of the elements.



Temperature Conditions were generally warmer, with all months showing average maximum temperatures higher than the Long Term Average, without exception. The most remarkable being January, the highest since 1989, at 8.9°C (LTA 5.9°C), with ten individual days achieving between 10°C and 13°C; and September, with an average of 18°C being the second warmest since 1959 (also 18°C, beaten only by 18.3°C in 1999). Although 2003 will be remembered for its hot summer, 2005 actually exceeded some of its maximum temperatures, with an individual day in July reaching 28.2°C.



This year was also remarkable in the length of the warm spell. This extended as far back as March (16.2°C on the 25th), and 18.1°C on the 1st April and into autumn with 23°C on the 6th September, and 17.9°C on the 27th October.

Similarly, average minimum temperatures were higher than typical with the exception of May, August, and November, which were all slightly lower than the LTA. March displayed the highest average minimum since 1990, at 3.7°C (2.0°C LTA). Only one day's frost occurred in October, against the norm of 9.5; January and March also having less than normal with 18 and 13 days respectively (23.5 and 17.5 days LTA). Contrarily, May had 13 occurrences compared to the LTA of 7.

Mean soil temperatures were generally higher than the LTA with the exception of February, May and November (fractionally cooler at 10cm depth); November and December (slightly cooler at 20cm). At 30cm depth all but one (which was equal to) was higher than the LTA.



Sunshine and Solar Radiation Sunshine figures were very close to normal with a total of 1419.4 hours (1411.6 LTA), with six months showing higher than average figures and six showing lower. Only two months were worthy of note: February, with sunshine amounting to 94.5 hours, compared to only 68.2 LTA; and October, which received only 48.5 hours sunshine, half of the expected 94.5

Solar radiation values were unexceptional, except for October which, unsurprisingly, was lower than normal.



Rainfall Generally, rainfall was higher than normal, the annual total reaching 714.2mm as compared to the LTA of 664.5mm. Particularly wet were October and November, which received 119.7 and 80.2mm rain respectively (67 and 52.1 LTA). October brought flood conditions after the heavy rainfall on the 24th (36.8mm). Although January rainfall was not greatly higher than normal (76.1mm, compared to LTA of 67.9), it all fell within the first eighteen days of the month, 28.9mm falling on the 7th alone. Coupled with the month's high winds, this resulted in storms causing widespread flooding, particularly in Perthshire. The main exception to this was the period from July to September when a total of only 77.4mm fell. Expected rainfall for this period is 169.4mm.



Wind For most of the year, wind speeds were unexceptional. March and April had at least one day with a mean speed of 20 knots reached at the time of recording (representing a 'fresh breeze' on the Beaufort scale), while January and August had days which reached over 24 knots ('strong breeze'). January in particular will be remembered for its severe gales which caused extensive damage in Dundee and throughout Scotland, involving damaged roofing and uprooted trees. SCRI recorded four days of gales (mean wind speeds reaching 34 knots) between the 6th and 12th, with gusts reaching 56 knots.