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SPECIAL CLIMATE STATEMENT 25

Exceptional January rainfall in northern Tasmania

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Introduction

A trough of low pressure brought very moist air across Tasmania and produced exceptionally heavy rainfall in the north between 12 and 14 January 2011. A new state record January daily rainfall of 282 mm was set at Falmouth on the northern East Coast. In the northwest, Yolla exceeded its previous January daily rainfall record on both the 13th and 14th. Some sites had their highest January total rainfall, with a few receiving more than eight times the long-term monthly January average over the four-day spell.

The heavy rain brought flash flooding which caused significant damage in northern and northeastern Tasmania. Major flooding occurred in the Mersey and Meander Rivers, with moderate flooding in the Forth, South Esk and lower reaches of the Macquarie River, and minor flooding in the North Esk River. There were evacuations in the north and a number of people rescued from stranded vehicles. Gusty northeasterly winds also caused some damage in the northwest and north of the state.

The areas recording exceptionally high rainfall were relatively small, and have had higher totals in other months in the past. It is somewhat unusual for such heavy falls to occur during summer.

Northern East Coast

Exceptionally heavy rain fell on the northern East Coast, particularly from the evening of Wednesday 12 January until the afternoon of Thursday 13 January.

Falmouth registered 282 mm in the 24 hours to 9 am on the 13th, giving it the wettest January day ever recorded at an official rain gauge in Tasmania. Scamander, with 278 mm, also broke the old state record of 247 mm set at The Springs on Mount Wellington in 1916.

Scamander recorded a further 71 mm in the 24 hours to 9 am on the 14th and Falmouth a further 74 mm, giving 2-day totals in excess of 350 mm. There were unofficial (but credible) observations of nearly 400 mm in the area in the two days. Falmouth and Scamander have also had their wettest January on record, having already received six to eight times their average January rain.

The largest totals appear to have been confined to a narrow strip extending from north of St Helens to south of Ironhouse Point. St Helens Aerodrome (near Stieglitz, southeast of the township) had less than half the rain reported just a few kilometres further inland. Heavy falls were also reported in the highlands (Gray received 215 mm for the 13th).

Short duration heavy rainfall is a feature of Tasmania's northeast, when humid air from off the Tasman Sea is forced up and over the highlands. This is most common in autumn (the highest daily rainfall ever recorded in Tasmania was 352 mm at Cullenswood near St Marys in March 1974), but can happen at almost any time of year.

North West Coast

Another area of heavy rain affected Tasmania's North West Coast, with Yolla, inland from Burnie, receiving 100 mm in the 24 hours to 9 am on Thursday 13 January and a further 131 mm in the 24 hours to 9 am on Friday 14. Both these values exceed the site's previous January record of 70 mm in a day set in 1946. Together these have given Yolla its wettest January on record, and its second-wettest two-day period. Rain has been measured at Yolla since late 1905.

Burnie (87 mm) and Wynyard Airport (107 mm) also had their wettest January days on the 13th, both by a considerable margin. A number of sites have already had their highest total January rainfall.

On the North West Coast, heavy daily rainfalls have more often occurred during autumn than summer. Yolla's wettest day on record, for example, was on 12 April 2003 when it received 139 mm.

Northern highlands

Further heavy falls occurred in the northern highlands during Friday 14 January, mostly in the northwest in the morning and the northeast in the afternoon. Over 50 mm was reported in the 24 hours to 9 am on the 15th from several sites, and although these are not exceptionally heavy they have ensured that some sites in these areas have had record January totals.

Other weather

Moderate rain fell on King Island and in the far northwest in afternoon and evening of Monday 10 January, with Surprise Bay and Three Hummock Island reporting their wettest January day on record in the 24 hours to 9 am on the 11th.

Very high humidity was a feature of the air of tropical origin over Tasmania during the rainfall event, with a dew point exceeding 20 °C in Hobart on the afternoon of Friday 15 January. This is a value more typical of January in Brisbane; the long-term average January 3 pm dew point for Hobart is 9 °C.

On the afternoon and evening of the 12th and again during the morning of the 14th, northeasterly winds gusting between 80 and 100 km/h caused damage to trees, sheds and some roofs about the west coast and the northwest of the state, uprooting some trees in areas where heavy rainfall occurred.

Further Information

This statement is based on information as of 18 January 2011. This is preliminary data, and may change as further observations are obtained and quality assurance is undertaken.

Special Climate Statement 24, covering the frequent heavy rains across eastern Australia in the 2010-11 summer and associated flooding has also been prepared and is available at www.bom.gov.au/climate/current/special-statements.shtml

Further information on this statement can be obtained from:

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Table 1. Sites with more than 20 years of observations that reported record highest January daily rainfall in 2011. The value from Scamander is also a record for any time of year, exceeding the 199 mm received on 27 April 1974. Rainfalls are in millimetres

Record highest January daily rainfall				
Station number	Name	Highest daily rainfall in January 2011	Previous wettest for January	Years of record
091009	Burnie (Round Hill)	87.2 on the 13th	51.8 on the 17th in 1979	65
091100	Three Hummock Island	33.4 on the 11th	24.1 on the 1st in 1956	21
091107	Wynyard Airport	106.8 on the 13th	66.0 on the 25th in 1996	38
091109	Yolla (Sea View)	131.0 on the 14th	70.1 on the 20th in 1946	105
092076	Falmouth (Glencoe)	282.0 on the 13th	150.0 on the 29th in 1995	43
092094	Scamander	278.0 on the 13th	116.4 on the 29th in 2004	28
098012	Surprise Bay	26.2 on the 11th	22.9 on the 6th in 1934	29

Table 2. Sites with more than 20 years of observations that have already reached record highest January total rainfall. The average shown is the mean over all available years of record. Rainfalls are in millimetres

Record highest total January rainfall					
Station number	Name	Total rainfall for January 2011	Previous wettest for January	Years of record	Average for January
091009	Burnie (Round Hill)	162.4	126.6 in 1996	65	42.5
091065	Mole Creek	226.6	208.6 in 1996	95	51.2
091102	Ulverstone (Knights Road)	127.6	114.6 in 1904	111	41.9
091107	Wynyard Airport	177.2	166.2 in 1996	37	39.7
091109	Yolla (Sea View)	299.6	211.6 in 1996	105	60.9
091153	Barrington Post Office	218.8	199.2 in 2004	44	58.1
091186	Forthside Research Station	173.4	155.4 in 1996	45	50.0
092076	Falmouth (Glencoe)	370.0	271.8 in 1995	42	59.1
092094	Scamander	371.9	213.4 in 2004	27	46.3
098013	Yambacoona	138.8	124.0 in 1997	108	35.5
098017	King Island Airport	122.0	99.2 in 1977	36	36.4

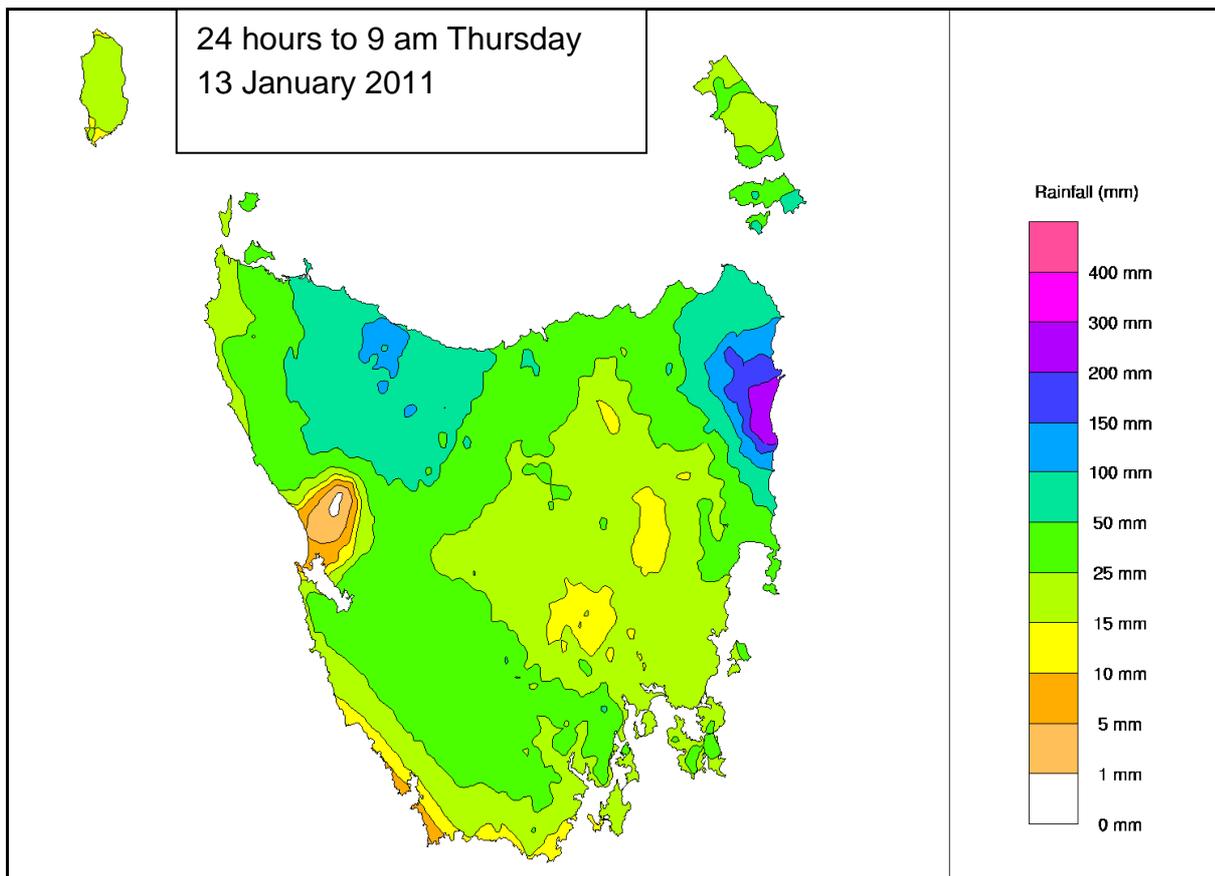


Figure 1. Rainfall to 9 am on Thursday 13 January, showing the relatively small areas of heavy rain on the northern East Coast and on the North West Coast.

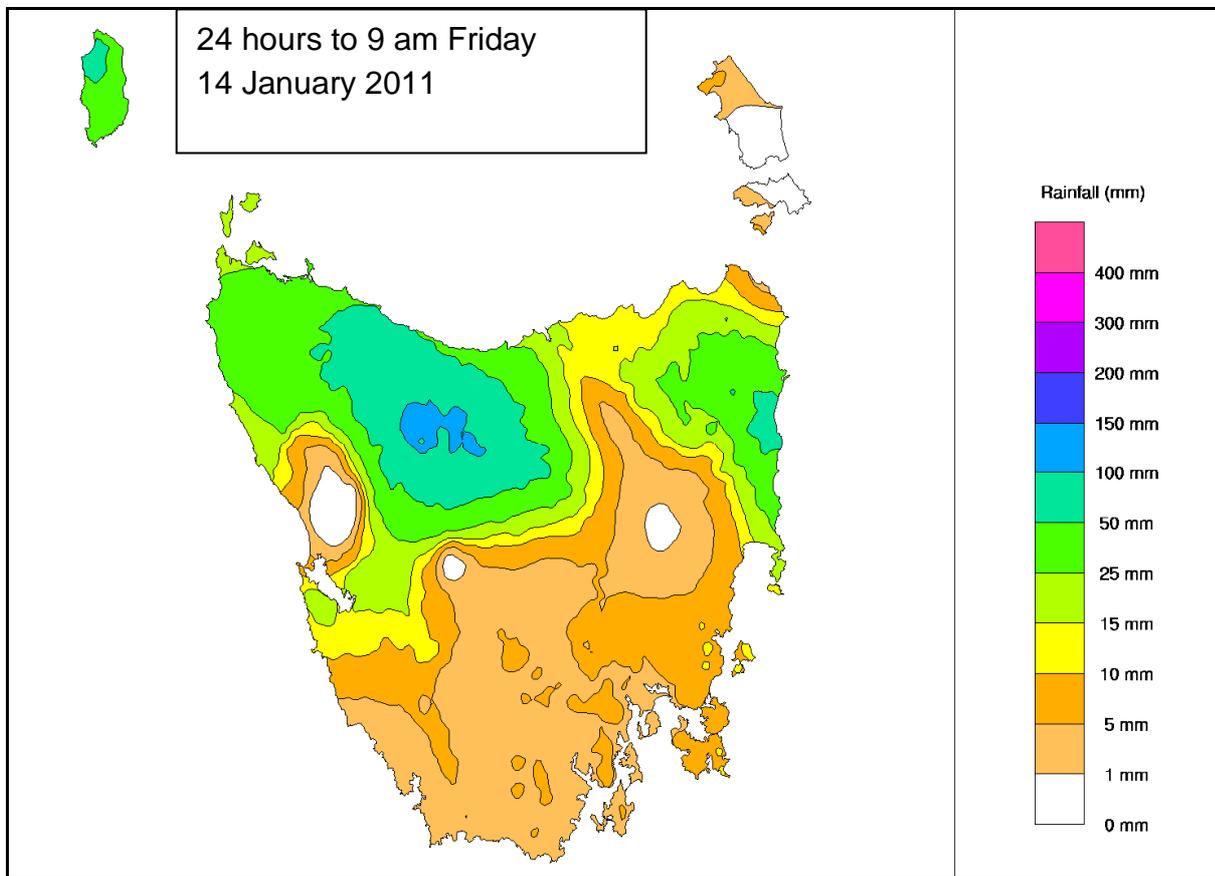


Figure 2. Rainfall to 9 am on Friday 14 January, where the rain was mostly in the northwestern highlands, with additional falls on the northern East Coast

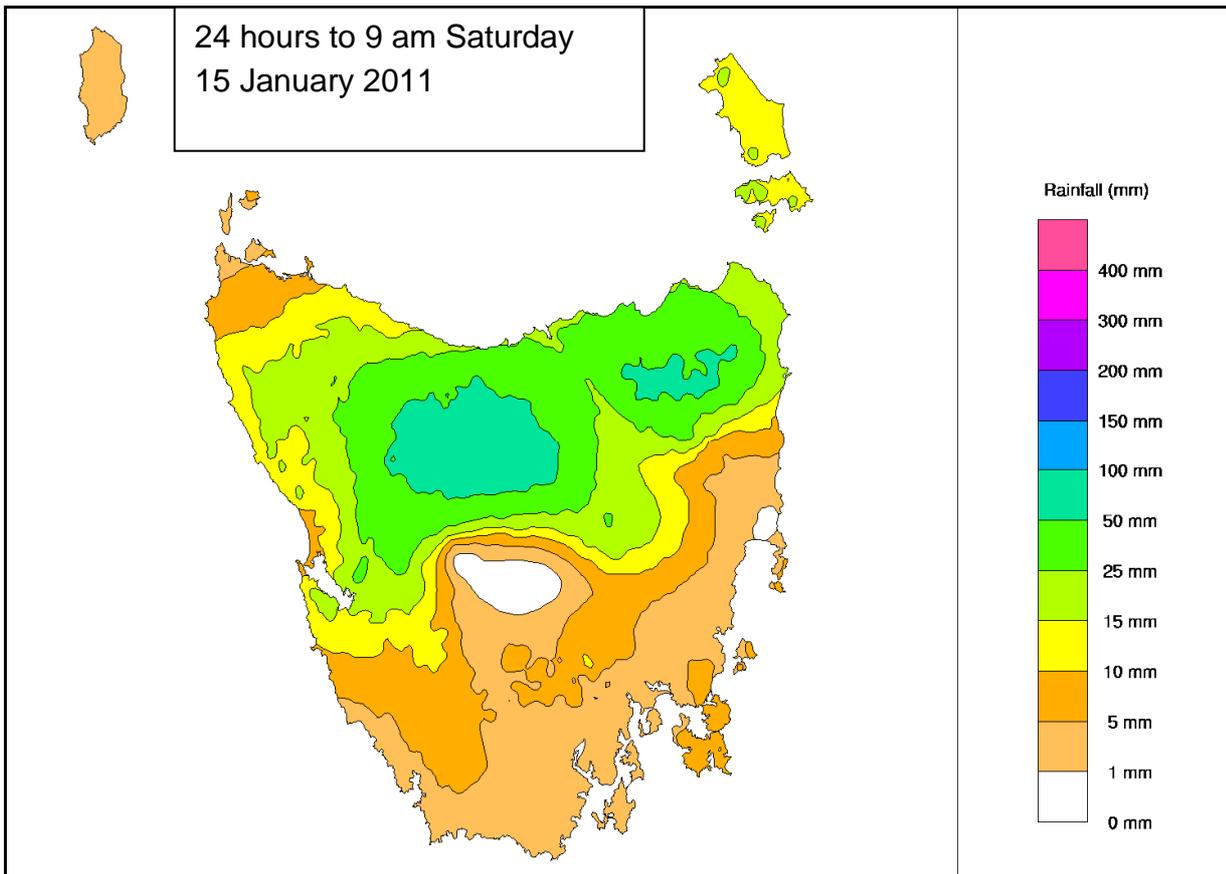


Figure 3. Rainfall to 9 am on Saturday 15 January, with the heaviest falls in the northern highlands

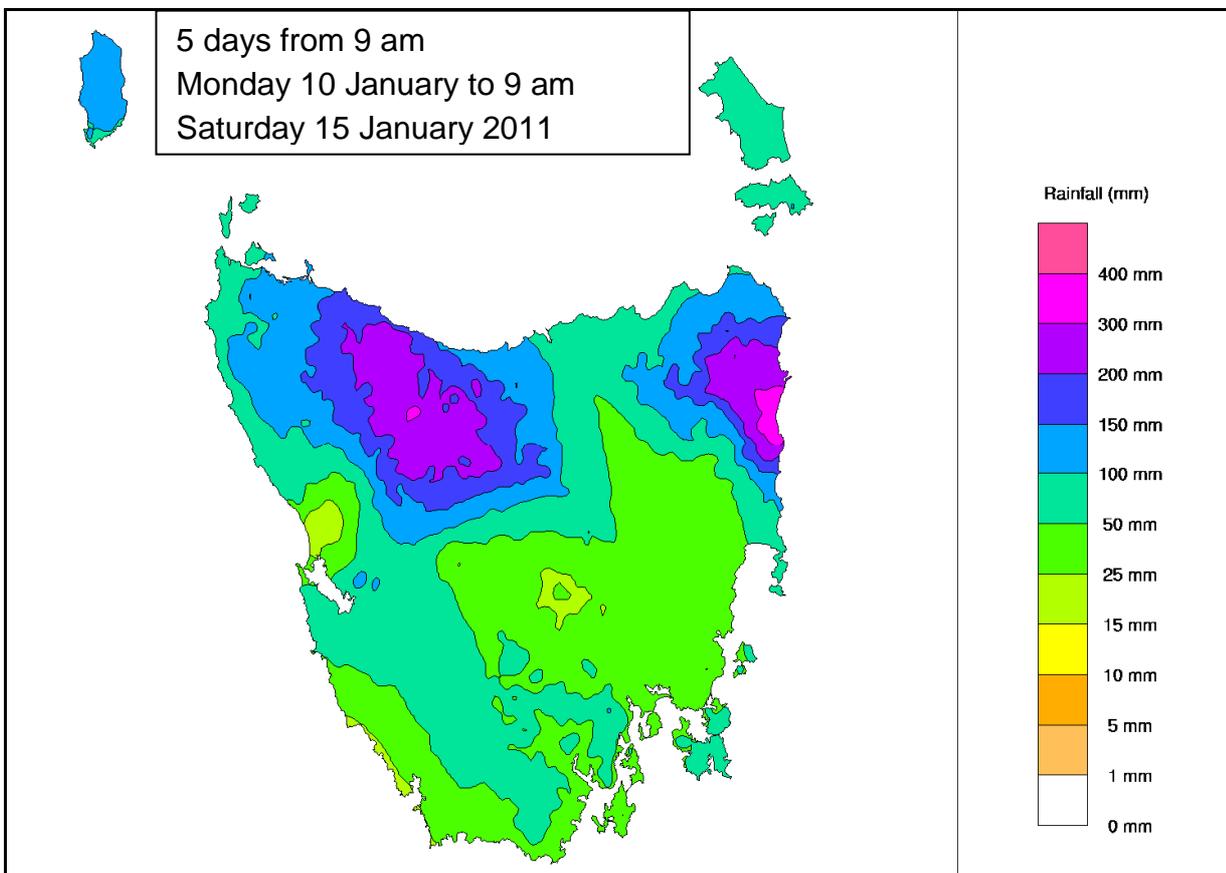


Figure 4. Event total rain, showing areas in excess of 200 mm in the northeast and the northwest and peaking at over 370 mm near Scamander on the northern East Coast.

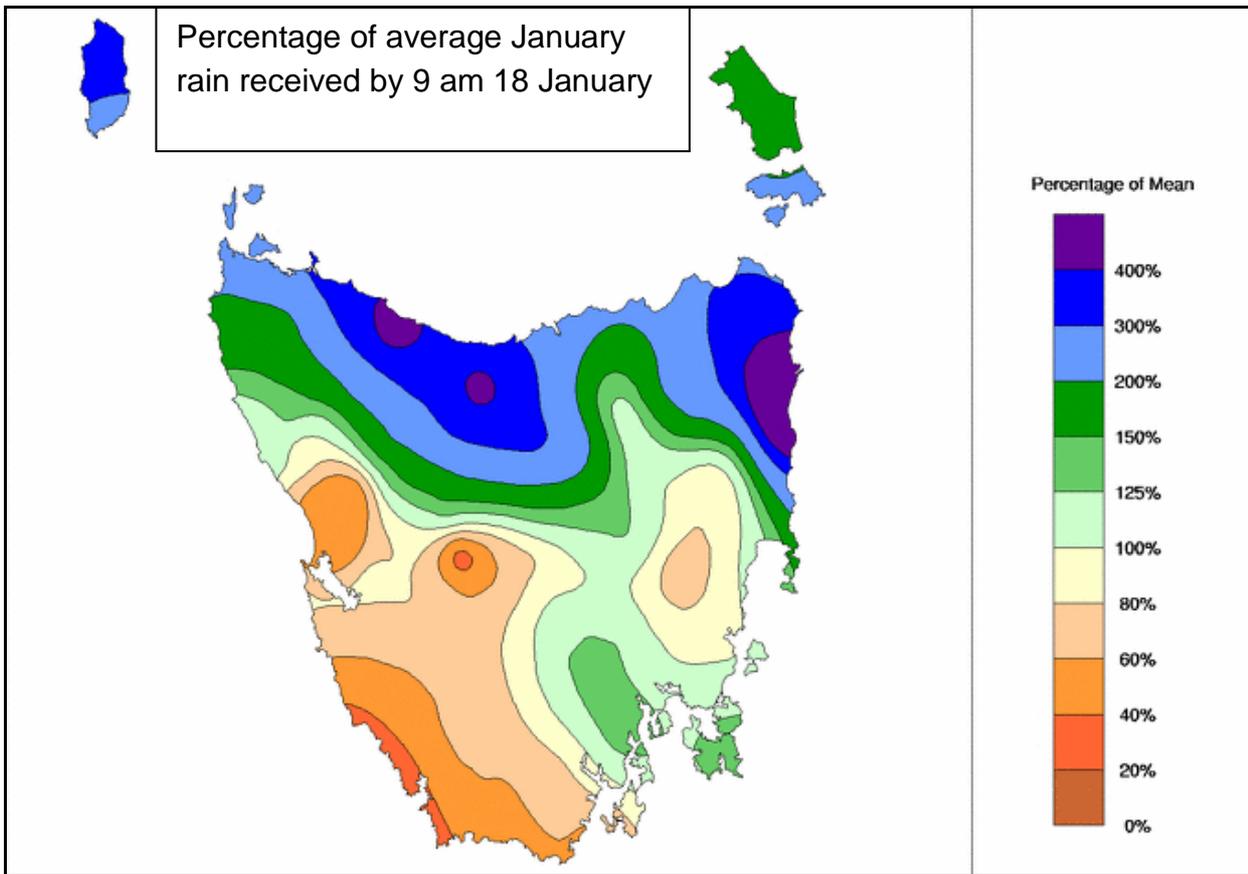


Figure 5. Percentage of average January rain received up to 9 am on 18 January 2011. Note the areas above 400% (that is, four times the long-term average for all of January); some individual sites have reported more than eight times their January average.