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HRS Report No. 9

CATALOGUE OF SIGNIFICANT RAINFALL OCCURRENCES OF TROPICAL ORIGIN OVER AUSTRALIA

Hydrology Unit
Melbourne
February 2004

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Hydrology Unit
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1. INTRODUCTION

This catalogue describes the characteristics of 122 significant rainfall events of tropical origin that occurred, in the main, over northern Australia up to mid 2001. The duration, end date and approximate location of these events are given in Table 1 and their locations shown in Figure 1. Other tables include such information as synoptic classification, the areal average rainfall depths and the depth of rainfall bursts as a proportion of the total rainfall depths for each of the observed events.

This is a companion to the catalogue of the 110 significant rainfall events over Southeast Australia (Meighen and Kennedy, 1995). Just as that volume catalogued events that were processed for a project to derive the Generalised Southeast Australia Method (GSAM) of estimating probable maximum precipitation, the events presented here were collected and processed as part of a project that adapted that method to regions of Australia affected by storms of tropical origin (GTSMR)(Walland et al., 2003). It follows that the method of event selection, data correction and analysis is almost identical for the two projects and the relevant sections of documents based on both these projects will provide insight. These are Minty et al. (1996) and Minty and Meighen (1999), as well as the two reports mentioned previously.

A part of the GTSMR project was to include events from the south west of Western Australia; an area not included in the GSAM project. Whilst the extreme rainfall events in this region occur in summer and are of tropical origin, there is a requirement for PMP values during winter. Eight non-tropical events, usually of frontal origin, were therefore included in the catalogue.

In the context of this catalogue, the term *storm* is used to denote rainfall events significant because of the amount and extents of the rainfall produced. It is not to be confused with localised thunderstorms, which may be significant because of associated local flooding or high winds.

Table 1: Date, Duration and Location of Storms

Key to Table 1.

Storm Name:
The code used to uniquely identify each extreme rainfall event. The year, month, end date and duration are given in that order.

End Date:
The last day of the storm. The rainfall totals are to 9:00 am on this date.

Duration:
The number of days of accumulated rainfall, with each day being the 24 hours from 9:00 am to 9:00 am.

State:
The state of Australia where the centre of the event was located.

Centre:
The approximate latitude and longitude of the centre of the storm.

Table 1: Date, Duration and Location of Storms

Storm Name	End Date	Duration	State	Centre	
				°E	°S
1893FEB03-1	2/2/1893	1	Qld	152.91	-26.78
1893FEB03-2	2/2/1893	2	Qld	152.93	-26.79
1893FEB04-3	3/2/1893	3	Qld	152.90	-26.79
1893FEB06-7	5/2/1893	7	Qld	152.92	-26.79
1898APR03-2	3/4/1898	2	WA	117.85	-20.83
1910JAN15-5	15/1/1910	5	NSW	150.59	-29.90
1911JAN08-1	8/1/1911	1	Qld	139.97	-20.00
1911JAN09-5	9/1/1911	5	Qld	139.98	-20.01
1911APR02-2	2/4/1911	2	Qld	145.61	-16.74
1911APR03-5	3/4/1911	5	Qld	145.60	-16.79
1913JAN18-4	18/1/1913	4	Qld	151.79	-24.66
1916DEC28-1	28/12/1916	1	Qld	147.81	-22.61
1916DEC29-2	29/12/1916	2	Qld	147.77	-23.03
1917JAN07-4	7/1/1917	4	WA	122.41	-17.94
1918JAN22-1	22/1/1918	1	Qld	149.11	-21.15
1918JAN24-3	24/1/1918	3	Qld	149.10	-21.15
1918JAN25-5	25/1/1918	5	Qld	149.23	-21.52
1920JUL03-6	3/7/1920	6	NSW	150.35	-31.81
1922JAN31-1	31/1/1922	1	Qld	143.63	-22.46
1922FEB02-3	2/2/1922	3	Qld	145.02	-23.54
1923JAN17-1	17/1/1923	1	WA	115.10	-25.27
1927SEP21-3	21/9/1927	3	WA	117.96	-34.92
1929FEB12-7	12/2/1929	7	NSW	152.39	-31.62
1930MAR04-6	4/3/1930	6	NT	134.21	-19.58
1930JUN19-3	19/6/1930	3	NSW	152.52	-31.66
1934MAR09-1	9/3/1934	1	WA	116.00	-31.36
1942FEB17-3	17/2/1942	3	Qld	142.34	-16.01

Table 1: cont.

Storm Name	End Date	Duration	State	Centre	
				°E	°S
1945JUN13-4	13/6/1945	4	WA	116.06	-32.19
1945JUN25-10	25/6/1945	10	WA	116.00	-32.68
1946MAR03-1	3/3/1946	1	Qld	146.23	-18.95
1947JAN26-3	26/1/1947	3	Qld/NSW	152.48	-28.25
1947FEB12-1	12/2/1947	1	Qld	151.11	-24.01
1948FEB23-1	23/2/1948	1	WA	121.61	-31.51
1948FEB23-2	23/2/1948	2	WA	121.50	-30.76
1950JUN24-1	24/6/1950	1	NSW	152.79	-30.35
1950JUN25-7	25/6/1950	7	NSW	152.80	-30.34
1951JAN14-6	14/01/1951	6	Qld	149.20	-21.45
1954FEB21-1	21/2/1954	1	NSW	152.75	-30.36
1954FEB21-2	21/2/1954	2	NSW	152.68	-30.35
1955FEB17-1	17/2/1955	1	WA	116.02	-32.55
1955FEB18-4	18/2/1955	4	WA	116.02	-32.55
1955FEB25-2	25/2/1955	2	NSW	147.77	-31.86
1956JAN22-2	22/1/1956	2	Qld	151.35	-28.25
1956MAR07-1	7/3/1956	1	Qld	145.29	-18.50
1958FEB18-1	18/02/1958	1	Qld	148.64	-21.10
1958FEB22-3	22/2/1958	3	Qld	146.00	-20.42
1959FEB17-1	17/2/1959	1	Qld	148.23	-22.91
1959FEB18-1	18/2/1959	1	Qld/NSW	152.45	-28.25
1959APR06-1	6/4/1959	1	WA	128.14	-15.48
1963APR15-1	15/4/1963	1	NT	133.92	-14.93
1963APR16-4	16/4/1963	4	NT	133.98	-14.90
1964JAN14-1	14/1/1964	1	Qld	145.93	-28.69
1966JAN20-4	20/1/1966	4	WA	127.96	-18.00
1967JAN22-2	22/1/1967	2	WA	114.45	-22.98
1968JAN13-2	13/1/1968	2	NSW	152.64	-31.17

Table 1: cont.

Storm Name	End Date	Duration	State	Centre	
				°E	°S
1970JAN19-1	19/1/1970	1	Qld	148.39	-20.52
1970DEC05-1	5/12/1970	1	WA	122.69	-17.68
1971JAN26-1	26/1/1971	1	WA	115.94	-22.91
1971DEC27-1	27/12/1971	1	Qld	148.37	-26.80
1972JAN12-5	12/1/1972	5	Qld	146.19	-18.97
1973JAN24-1	24/1/1973	1	WA	121.54	-26.25
1973JAN24-2	24/1/1973	2	WA	121.54	-26.26
1973JUL10-6	10/7/1973	6	NSW	152.79	-30.32
1974JAN08-1	8/1/1974	1	Qld	148.86	-28.68
1974JAN09-3	9/1/1974	3	Qld	148.85	-28.68
1974JAN09-4	9/1/1974	4	Qld	143.16	-27.18
1974JAN14-5	14/1/1974	5	NSW	141.51	-29.62
1974JAN23-6	23/01/1974	6	Qld	141.22	-18.87
1974JAN27-9	27/1/1974	9	NT	134.45	-22.81
1974JAN27-2	27/1/1974	2	Qld	153.23	-28.03
1974JAN28-4	28/1/1974	4	Qld	153.21	-28.03
1974FEB01-5	1/2/1974	5	SA	140.83	-27.69
1974MAR13-4	13/3/1974	4	Qld/NSW	153.22	-28.23
1975FEB25-6	25/2/1975	6	WA	120.46	-28.16
1975DEC10-2	10/12/1975	2	WA	118.72	-22.62
1975DEC10-3	10/12/1975	3	WA	118.37	-22.29
1976FEB06-3	6/2/1976	3	NT	135.95	-18.61
1976FEB09-2	9/2/1976	2	NT	134.81	-25.70
1976FEB10-1	10/2/1976	1	NSW	143.60	-29.48
1976FEB11-1	11/2/1976	1	NSW	150.59	-29.53
1977FEB20-2	20/2/1977	2	Qld	141.94	-25.85
1977MAY19-3	19/5/1977	3	NSW	152.92	-30.32
1977MAY19-5	19/5/1977	5	NSW	152.92	-30.32

Table 1: cont.

Storm Name	End Date	Duration	State	Centre	
				°E	°S
1978JAN30-5	30/1/1978	5	WA	122.57	-17.32
1978FEB02-2	2/2/1978	2	Qld	147.73	-23.51
1979JAN05-1	5/1/1979	1	Qld	145.88	-17.28
1979JAN06-2	6/1/1979	2	Qld	145.88	-17.27
1979JAN06-3	6/1/1979	3	Qld	145.90	-17.28
1979JAN06-4	6/1/1979	4	Qld	145.90	-17.26
1979JAN06-5	6/1/1979	5	Qld	145.90	-17.26
1979JAN07-7	7/1/1979	7	Qld	145.88	-17.26
1979FEB06-1	6/2/1979	1	Qld	148.97	-20.96
1981JAN13-7	13/1/1981	7	Qld	145.90	-17.30
1982JAN20-5	20/1/1982	5	WA	124.53	-15.53
1982JAN22-2	22/1/1982	2	WA	116.75	-33.51
1982JAN31-7	31/1/1982	7	Qld	141.91	-12.64
1985JAN16-1	16/1/1985	1	Qld	142.65	-13.68
1985JAN16-4	16/1/1985	4	Qld	142.67	-13.64
1985MAR28-5	28/3/1985	5	NT	136.79	-15.75
1986JAN24-5	24/1/1986	5	WA	125.35	-18.34
1988MAR31-1	31/3/1988	1	NT	132.69	-23.64
1988MAY02-2	2/5/1988	2	WA	120.18	-33.95
1988MAY04-4	4/5/1988	4	WA	120.17	-33.92
1988JUN27-4	27/06/1988	4	WA	116.79	-34.98
1989MAR14-1	14/3/1989	1	SA	138.32	-31.18
1989MAR14-2	14/3/1989	2	SA	139.19	-30.57
1989MAY10-1	10/5/1989	1	Qld	143.82	-24.31
1989JUN14-1	14/6/1989	1	WA	117.64	-30.70
1990JAN29-2	29/1/1990	2	WA	118.17	-32.64
1991JAN01-7	1/1/1991	7	Qld	148.82	-20.99
1991JAN14-1	14/1/1991	1	Qld	140.66	-20.24

Table 1: cont.

Storm Name	End Date	Duration	State	Centre	
				°E	°S
1995FEB28-4	28/2/1995	4	WA	119.70	-28.58
1996MAR10-7	10/3/1996	7	Qld	141.96	-12.55
1996MAY06-6	6/5/1996	6	Qld	152.38	-27.85
1996MAY07-7	7/5/1996	7	Qld/NSW	153.25	-28.19
1997FEB03-7	3/2/1997	7	Qld	147.13	-25.52
1997MAR06-7	6/3/1997	7	Qld	139.82	-21.20
1998JAN29-4	29/1/1998	4	NT	130.51	-13.74
1998MAR05-7	5/3/1998	7	Qld	139.57	-17.76
1998DEC10-2	10/12/1998	2	NT	130.97	-12.50
1999FEB13-2	13/2/1999	2	Qld	145.75	-17.38
1999MAY28-3	28/05/1999	3	WA	114.30	-28.04

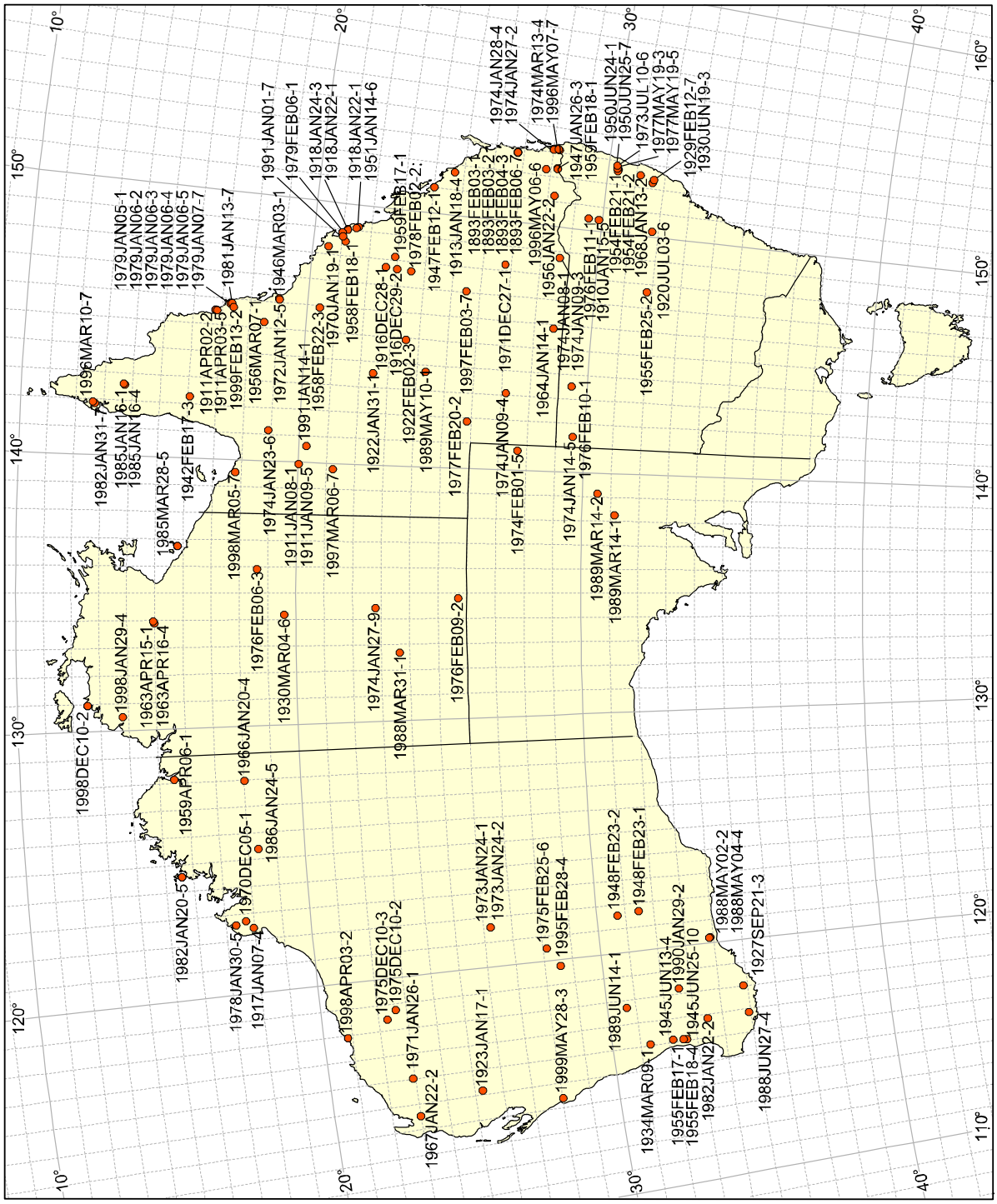

Figure 1: Location of rainfall event centres.

2. SELECTION OF EVENTS

The search for significant rainfall events started with an interrogation of the Bureau of Meteorology's daily rainfall database. Accumulated falls from 1 to 7 days duration were extracted for the region covering Queensland, Northern Territory, Western Australia, northern South Australia and northern New South Wales. The cut-off date for this search was mid 2001. Each rainfall observation was then assigned an average recurrence interval (ARI) which is an indication of its rarity. This was accomplished by using the Bureau of Meteorology's intensity-frequency-duration database of rainfall intensities (CDIRS).

With these data, the likely dates were selected from those events with daily rainfall observations exceeding the one-in-one-hundred-year ARI rainfall at sites spread across a reasonably large extent. This was done for each of the 1 to 7 days durations. To ensure a geographically representative sample, the area was divided into 17 regions.

The rainfall depths for the dates found by this first round of selection were then checked and plotted in order to make a visual inspection and the events subjectively ranked in their importance at the various durations, extents, locations and seasons required for the GTSMR project. This dramatically reduced the list, leaving a final set of 122 storm dates (Table 1) spanning the range of daily durations from 24 hours through to 168 hours, different spatial extents right through to 150,000 km^2 and the summer and winter seasons.

Although some of the winter storms were not of tropical origin and their rainfall is not as extreme as for those in summer, they were included to give a complete sample. They are of special interest in the south-west of Australia as winter is the important season in terms of flooding.

Additionally, a survey was made of archival material such as reports from the Bureau of Meteorology and other authorities on significant storms and floods. The dates obtained in this way were either confirmed by the results of the computerised search or, upon re-examination of the data, able to be discounted as being, for example, too localised. A fuller description of the selection process may be found in Section 2 of HRS 8 (Walland et al., 2003).

3. SYNOPTIC CLASSIFICATIONS

A detailed examination was made of the selected rainfall events for their causative mechanism and the moisture availability. For each storm, the surface mean sea level pressure analyses (synoptic charts drawn daily) as well as the upper air charts (if available) were obtained and examined. The meteorological features that gave rise to each event were identified and the storms were broadly classified into four groups: tropical cyclones, ex-tropical cyclones, monsoon activity and extratropical systems such as fronts and east coast lows.

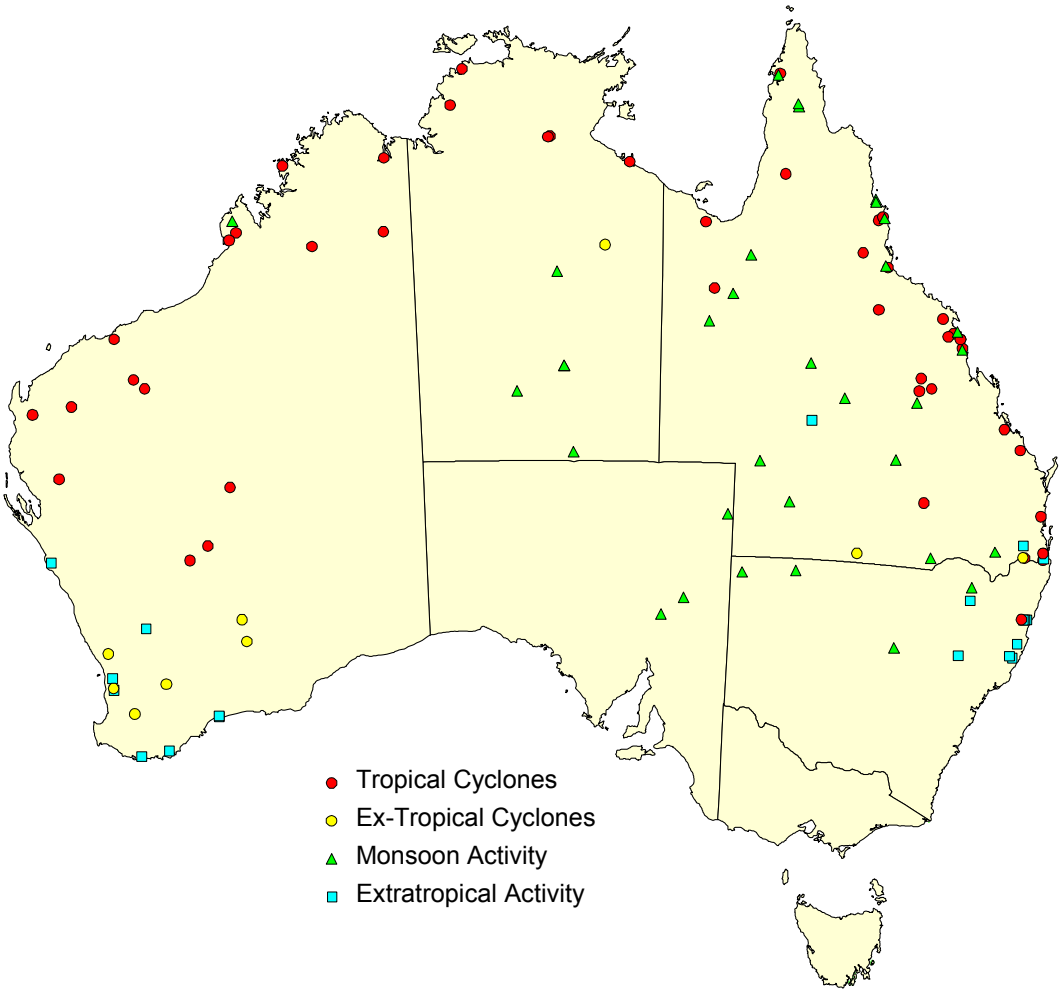

Figure 2: Synoptic origin of rainfall events. (Note that some storms are co-located so less than 122 storm locations show in this figure)

Part of Section 3.2 of HRS 8 (Walland et al., 2003) is reprinted here as it discusses and gives some illustrated examples of these mechanisms.

> Events classified as *tropical cyclones* were those that were caused by the proximate passage of a tropical cyclone. An example is shown in Figures 3(a) and (b) which depict severe tropical cyclone 'Thelma' that gave rise to heavy rainfall near Darwin in December 1998.

When tropical cyclones drift over the land, their intensity diminishes as they lose the moisture supply from the warm ocean that sustains them. However, there may still be enough remnant convection in the system to cause heavy rainfall. Such systems are classified as *ex-tropical cyclones*. Figures 4(a) and (b) depict such an event that occurred in January 1990 and resulted in heavy rainfall in southwest Western Australia.

Another common type of system, which brings heavy rainfall in the Australian tropics, is *monsoon activity*, which refers to enhanced convection associated with a monsoon depression over northern Australia. There is as yet no rigorous definition of monsoon depressions in the Australian region, however, the term 'monsoon depression' in the Australian region generally refers to a warm-cored low pressure system situated over the land (Zhao and Mills (1991) and Davidson and Holland (1987)). An example of such an event appears in Figures 5(a) and (b) for January 1991. For the purpose of this project, events classified as arising from monsoon activity also include rainfall events resulting from monsoon depressions, which were undergoing the transition to cold-cored low pressure systems owing to interactions with extratropical systems, and which may not strictly have been warm cored.

The fourth category into which the storms in the database could be classified, is *extratropical systems* which includes cold-cored events of non-tropical origin, such as extratropical cyclones, troughs and frontal systems. Most of the events in this category occurred in the cooler months of the year. Figures 6(a) and (b) show a snapshot of such an event in May 1996 for the area near the Gold Coast that caused heavy rainfall from an east coast low near the surface and a cold upper trough and a strong jet stream in the upper levels. Another example of an extratropical system is shown in Figure 7, which depicts an extratropical cyclone with a frontal system over southwest Western Australia.

The moisture availability for the rainfall events has been indicated in Table 2 by providing the associated storm dewpoint temperature. This is the dewpoint temperature observed within the rainstorm region and in the direction of moisture inflow just before any precipitation was observed, standardised to 1000 hPa. The value was derived by manual inspection of archival material, which required considerable interpretation. These data were especially difficult to find for the earlier rainstorms.

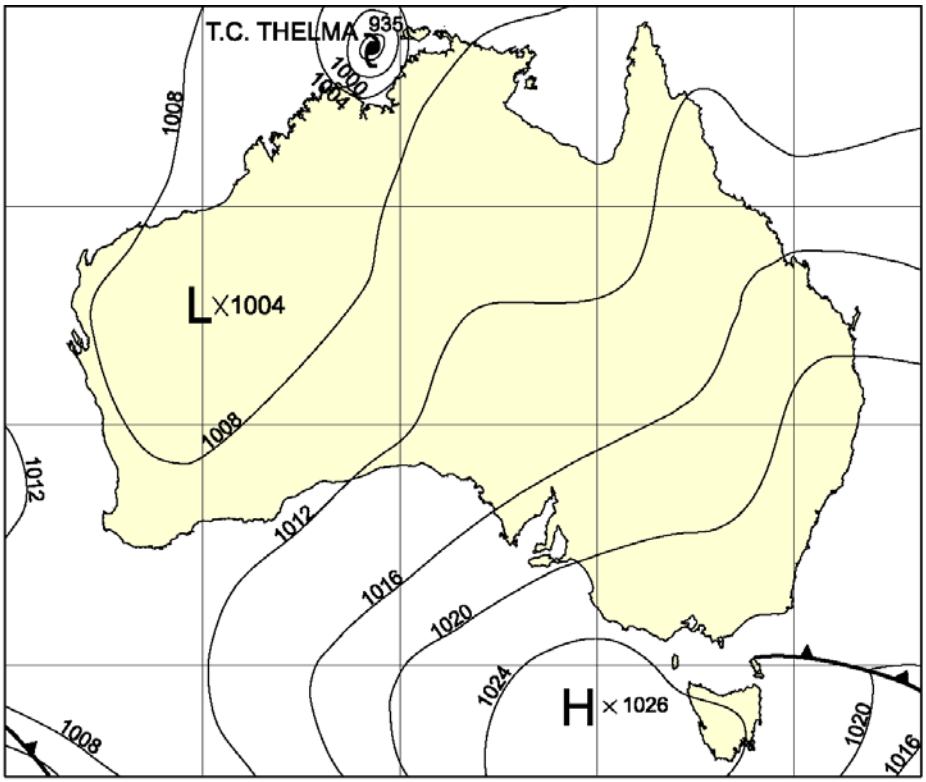

Figure 3(a): Tropical cyclone. 2-day storm ending 10 December 1998 (chart for 9 December 1998 0000 UTC).

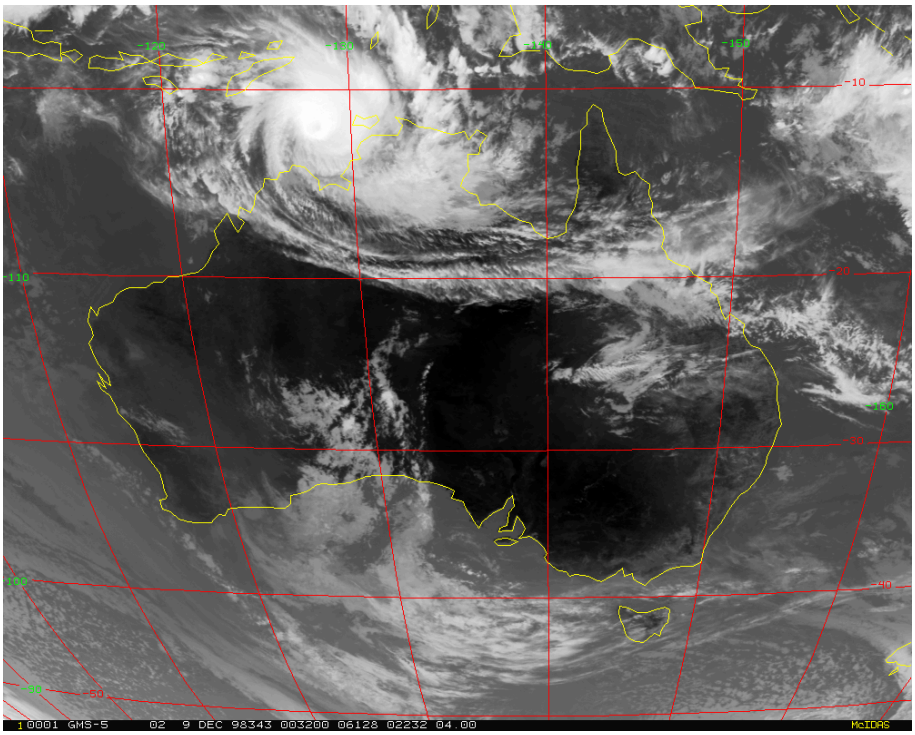

Figure 3(b): Tropical cyclone. 2-day storm ending 10 December 1998 (satellite image for 9 December 1998 0030 UTC).

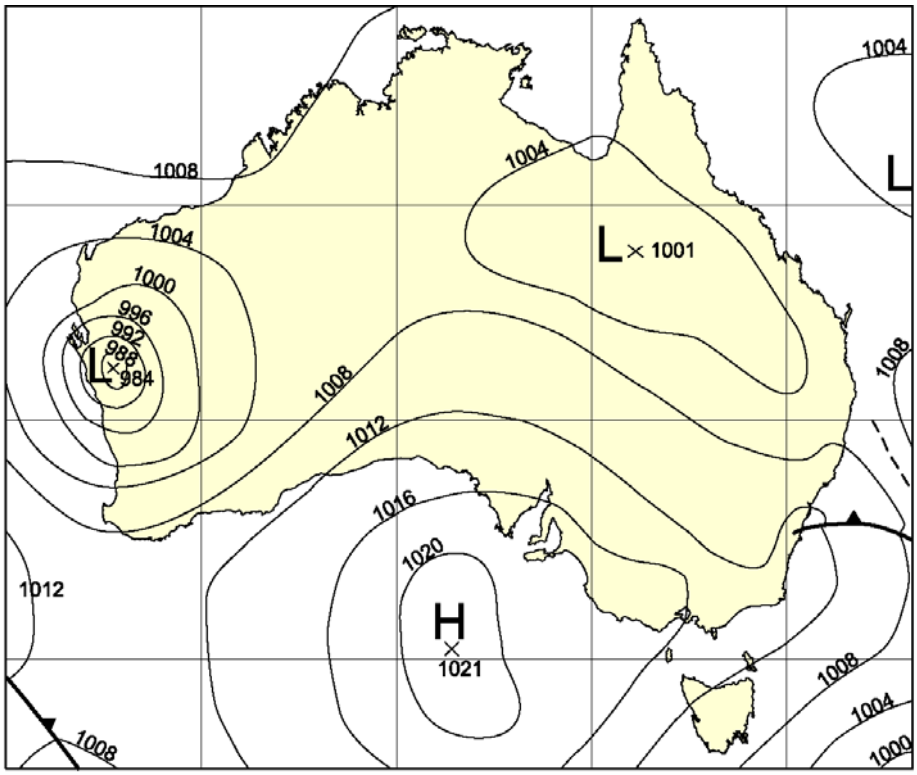

Figure 4(a): Ex-tropical cyclone. 2-day storm ending 29 January 1990 (chart for 28 January 1990 1200 UTC).

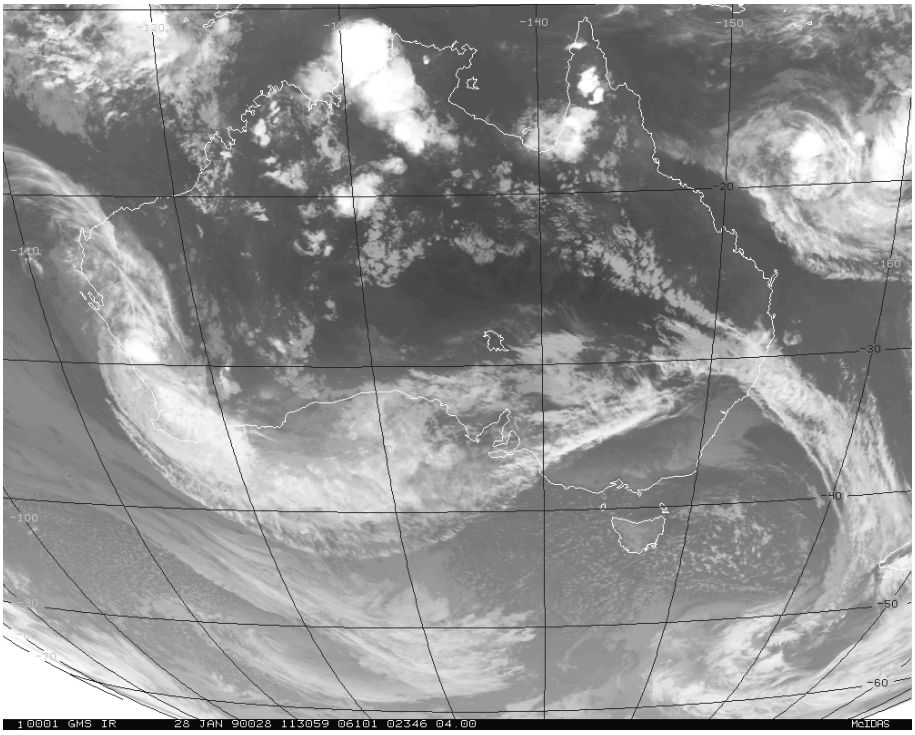

Figure 4(b): Ex-tropical cyclone. 2-day storm ending 29 January 1990 (satellite image for 28 January 1990 1130 UTC).

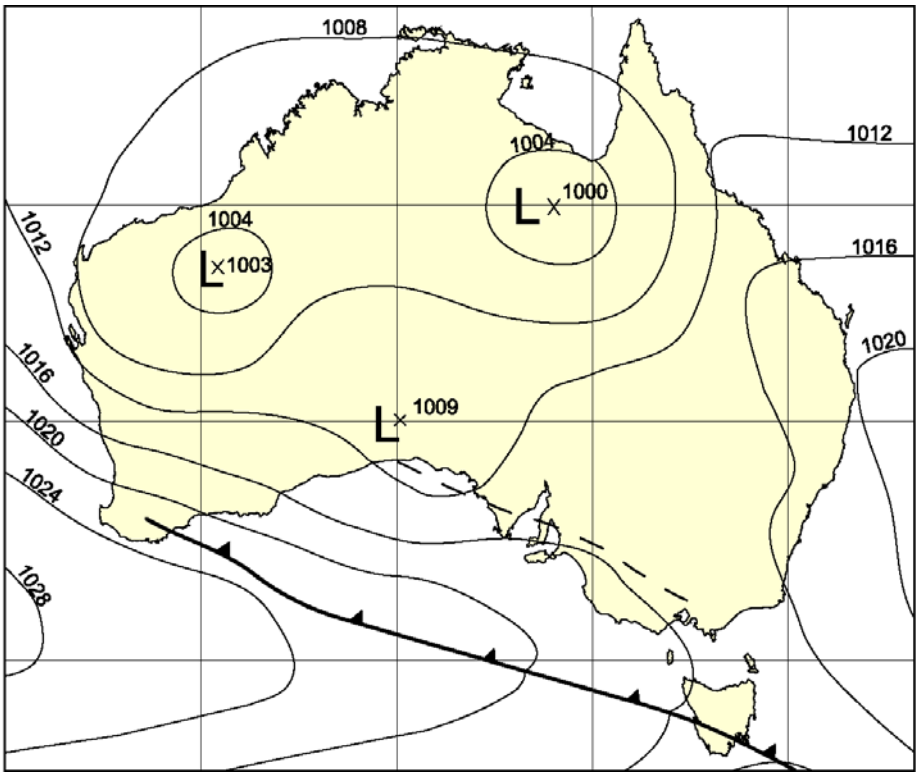

Figure 5(a): Monsoon activity. 1-day storm ending 14 January 1991 (chart for 14 January 1991 0000 UTC).

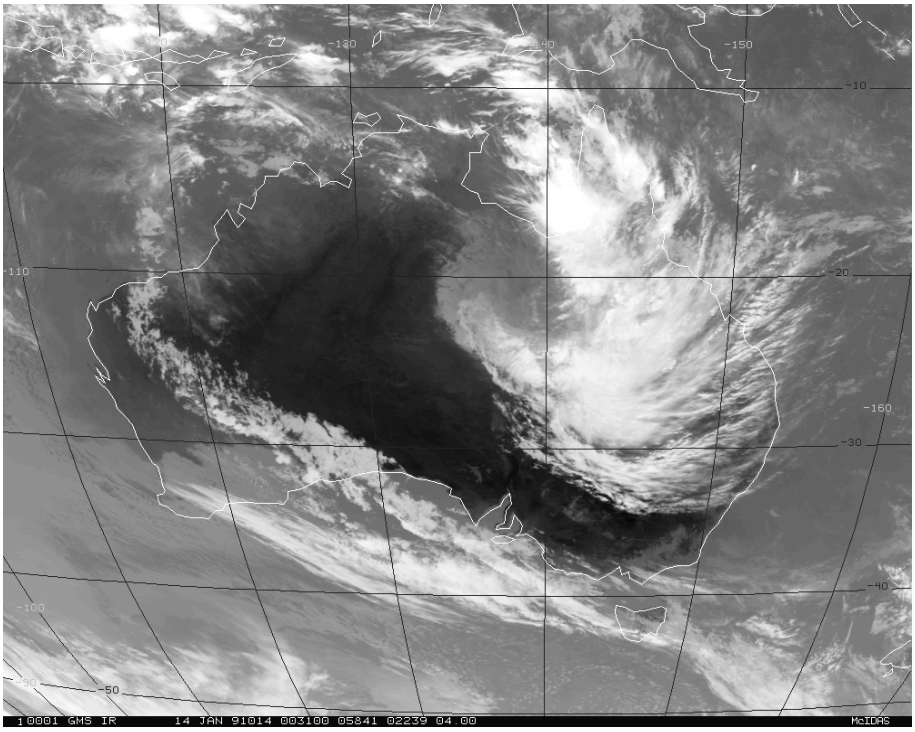

Figure 5(b): Monsoon activity. 1-day storm ending 14 January 1991 (satellite image for 14 January 1991 0030 UTC).

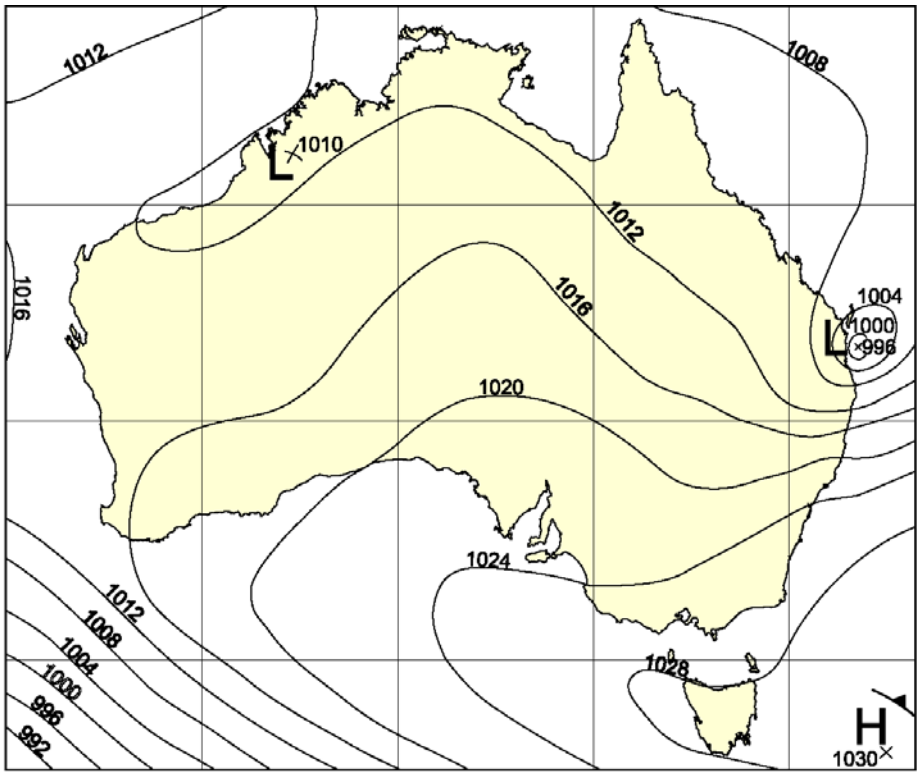

Figure 6(a): Extratropical cyclone (east coast low). 6-day storm ending 6 May 1996 (chart for 2 May 1996 1200 UTC).

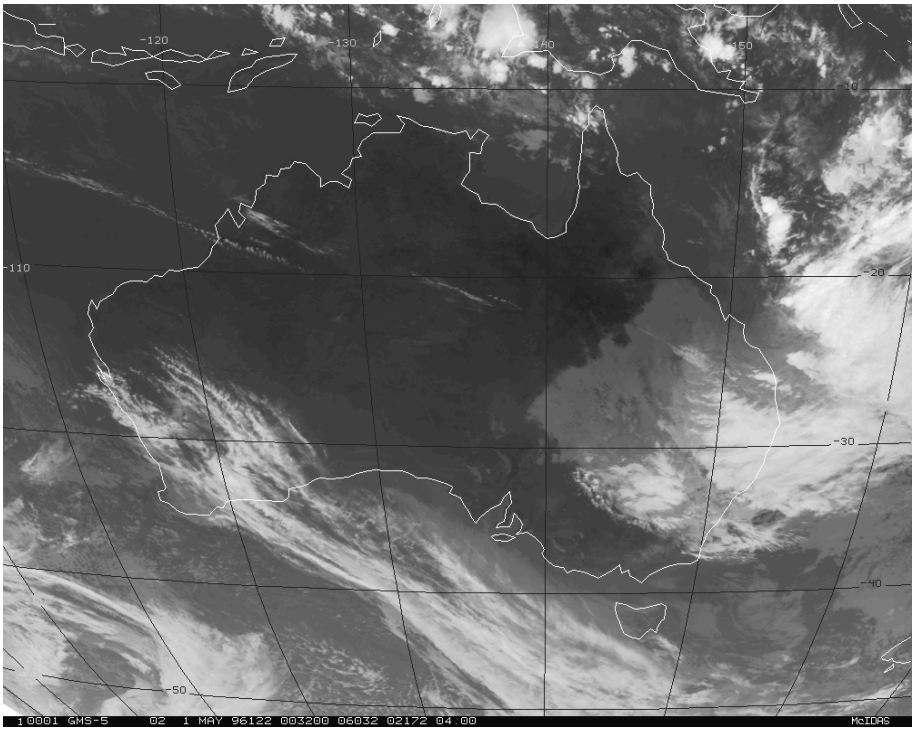

Figure 6(b): Extratropical cyclone. 6-day storm ending 6 May 1996 (satellite image for 1 May 1996 0030 UTC)

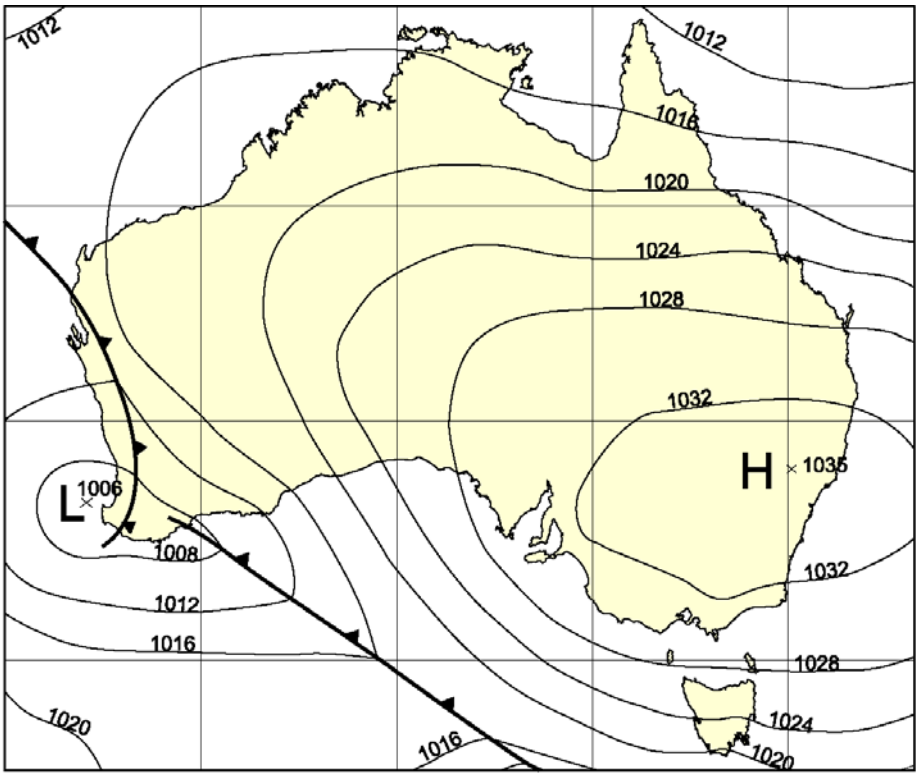

Figure 7: Front over southwest Western Australia. 4-day storm ending 27 June 1988 (chart for 25 June 1988 0000 UTC, no satellite image was available)

Table 2: Synoptic Classification and Dewpoint of Storms

Key to Table 2

Storm Name:
The code used to identify uniquely each extreme rainfall event. The year, month, end date and duration are given in that order.

State:
The state of Australia where the centre of the event was located.

End Date:
The last day of the storm. The rainfall totals are to 9:00 am on this date.

Duration:
The number of days of accumulated rainfall, with each day being the 24 hours from 9:00 am to 9:00 am.

Storm Dewpoint:
The representative 1000 hPa dewpoint temperature of the rain-producing airmass of the storm.

Classification:
A brief description of the synoptic situation at the time of the extreme rainfall event.

Table 2: Synoptic Classification and Dewpoint of Storms

Storm Name	State	End Date	Duration	Storm DewPoint	Classification
1893FEB03-1	Qld	2/ 2/1893	1	20.0	Tropical Cyclone
1893FEB03-2	Qld	2/ 2/1893	2	20.0	Tropical Cyclone
1893FEB04-3	Qld	3/ 2/1893	3	20.0	Tropical Cyclone
1893FEB06-7	Qld	5/ 2/1893	7	20.0	Tropical Cyclone
1898APR03-2	WA	3/ 4/1898	2	24.0	Tropical Cyclone
1910JAN15-5	NSW	15/ 1/1910	5	19.3	Extratropical – Easterly Dip/Trough
1911JAN08-1	Qld	8/ 1/1911	1	22.5	Tropical Cyclone
1911JAN09-5	Qld	9/ 1/1911	5	22.5	Tropical Cyclone
1911APR02-2	Qld	2/ 4/1911	2	23.0	Monsoon Low
1911APR03-5	Qld	3/ 4/1911	5	23.0	Monsoon Low
1913JAN18-4	Qld	18/ 1/1913	4	21.0	Tropical Cyclone
1916DEC28-1	Qld	28/12/1916	1	22.1	Tropical Cyclone
1916DEC29-2	Qld	29/12/1916	2	22.1	Tropical Cyclone
1917JAN07-4	WA	7/ 1/1917	4	23.0	Tropical Cyclone
1918JAN22-1	Qld	22/ 1/1918	1	20.0	Tropical Cyclone
1918JAN24-3	Qld	24/ 1/1918	3	20.0	Tropical Cyclone
1918JAN25-5	Qld	25/ 1/1918	5	20.0	Tropical Cyclone
1920JUL03-6	NSW	3/ 7/1920	6	13.7	Extratropical - Trough
1922JAN31-1	Qld	31/ 1/1922	1	21.8	Monsoon Low
1922FEB02-3	Qld	2/ 2/1922	3	21.8	Monsoon Low
1923JAN17-1	WA	17/ 1/1923	1	22.0	Tropical Cyclone
1927SEP21-3	WA	21/ 9/1927	3	13.0	Extratropical - Cut-Off Low
1929FEB12-7	NSW	12/ 2/1929	7	18.9	Extratropical - East Coast Low
1930MAR04-6	NT	4/ 3/1930	6	22.6	Monsoon Low
1930JUN19-3	NSW	19/ 6/1930	3	14.4	Extratropical - East Coast Low

Table 2: cont.

Storm Name	State	End Date	Duration	Storm DewPoint	Classification
1934MAR09-1	WA	9/ 3/1934	1	23.1	Ex-Tropical Cyclone
1942FEB17-3	Qld	17/ 2/1942	3	25.5	Tropical Cyclone
1945JUN13-4	WA	13/ 6/1945	4	16.4	Extratropical - Low/Front
1945JUN25-10	WA	25/ 6/1945	10	11.3	Extratropical - Low/Front
1946MAR03-1	Qld	3/ 3/1946	1	22.0	Tropical Cyclone
1947JAN26-3	Qld/NSW	26/ 1/1947	3	18.5	Tropical Cyclone
1947FEB12-1	Qld	12/ 2/1947	1	20.2	Tropical Cyclone
1948FEB23-1	WA	23/ 2/1948	1	21.3	Ex-Tropical Cyclone
1948FEB23-2	WA	23/ 2/1948	2	21.3	Ex-Tropical Cyclone
1950JUN24-1	NSW	24/ 6/1950	1	13.4	Extratropical - East Coast Low
1950JUN25-7	NSW	25/ 6/1950	7	13.4	Extratropical - East Coast Low
1951JAN14-6	Qld	14/ 1/1951	6	23.3	Monsoon Low
1954FEB21-1	NSW	21/ 2/1954	1	20.7	Tropical Cyclone
1954FEB21-2	NSW	21/ 2/1954	2	20.7	Tropical Cyclone
1955FEB17-1	WA	17/ 2/1955	1	18.0	Ex-Tropical Cyclone
1955FEB18-4	WA	18/ 2/1955	4	18.0	Ex-Tropical Cyclone
1955FEB25-2	NSW	25/ 2/1955	2	22.5	Monsoon Low
1956JAN22-2	Qld	22/ 1/1956	2	20.0	Monsoon Low
1956MAR07-1	Qld	7/ 3/1956	1	21.7	Tropical Cyclone
1958FEB18-1	Qld	18/ 2/1958	1	20.9	Tropical Cyclone
1958FEB22-3	Qld	22/ 2/1958	3	23.3	Tropical Cyclone
1959FEB17-1	Qld	17/ 2/1959	1	23.5	Tropical Cyclone
1959FEB18-1	Qld/NSW	18/ 2/1959	1	23.0	Ex-Tropical Cyclone
1959APR06-1	WA	6/ 4/1959	1	22.0	Tropical Cyclone
1963APR15-1	NT	15/ 4/1963	1	22.5	Tropical Cyclone

Table 2: cont.

Storm Name	State	End Date	Duration	Storm DewPoint	Classification
1963APR16-4	NT	16/ 4/1963	4	22.5	Tropical Cyclone
1964JAN14-1	Qld	14/ 1/1964	1	20.8	Ex-Tropical Cyclone 'Audrey'
1966JAN20-4	WA	20/ 1/1966	4	23.8	Tropical Cyclone 'Joy'
1967JAN22-2	WA	22/ 1/1967	2	24.0	Tropical Cyclone 'Elsie'
1968JAN13-2	NSW	13/ 1/1968	2	21.5	Extratropical – Easterly Dip/Trough
1970JAN19-1	Qld	19/ 1/1970	1	22.1	Tropical Cyclone 'Ada'
1970DEC05-1	WA	5/12/1970	1	25.0	Tropical Cyclone 'Eva'
1971JAN26-1	WA	26/ 1/1971	1	25.6	Tropical Cyclone 'Rita"
1971DEC27-1	Qld	27/12/1971	1	19.3	Tropical Cyclone 'Althea'
1972JAN12-5	Qld	12/ 1/1972	5	22.0	Monsoon Low
1973JAN24-1	WA	24/ 1/1973	1	24.6	Tropical Cyclone 'Kerry'
1973JAN24-2	WA	24/ 1/1973	2	24.6	Tropical Cyclone 'Kerry'
1973JUL10-6	NSW	10/ 7/1973	6	15.6	Extratropical - East Coast Low
1974JAN08-1	Qld	8/ 1/1974	1	21.9	Monsoon Low
1974JAN09-3	Qld	9/ 1/1974	3	21.9	Monsoon Low
1974JAN09-4	Qld	9/ 1/1974	4	21.8	Monsoon Low
1974JAN14-5	NSW	14/ 1/1974	5	22.2	Monsoon Low
1974JAN23-6	Qld	23/ 1/1974	6	25.1	Monsoon Low
1974JAN27-9	NT	27/ 1/1974	9	20.0	Monsoon Low
1974JAN27-2	Qld	27/ 1/1974	2	20.0	Tropical Cyclone 'Wanda'
1974JAN28-4	Qld	28/ 1/1974	4	20.0	Tropical Cyclone 'Wanda'
1974FEB01-5	SA	1/ 2/1974	5	21.2	Monsoon Low
1974MAR13-4	Qld/NSW	13/ 3/1974	4	22.0	Tropical Cyclone 'Zoe'
1975FEB25-6	WA	25/ 2/1975	6	20.5	Tropical Cyclone 'Trixie'
1975DEC10-2	WA	10/12/1975	2	20.4	Tropical Cyclone 'Joan'

Table 2: cont.

Storm Name	State	End Date	Duration	Storm DewPoint	Classification
1975DEC10-3	WA	10/12/1975	3	20.4	Tropical Cyclone 'Joan'
1976FEB06-3	NT	6/ 2/1976	3	23.9	Ex-Tropical Cyclone 'Alan'
1976FEB09-2	NT	9/ 2/1976	2	22.1	Monsoon Low
1976FEB10-1	NSW	10/ 2/1976	1	20.8	Monsoon Low
1976FEB11-1	NSW	11/ 2/1976	1	19.5	Monsoon Low
1977FEB20-2	Qld	20/ 2/1977	2	20.5	Monsoon Low
1977MAY19-3	NSW	19/ 5/1977	3	17.5	Extratropical - East Coast Low
1977MAY19-5	NSW	19/ 5/1977	5	17.5	Extratropical - East Coast Low
1978JAN30-5	WA	30/ 1/1978	5	24.8	Monsoon Low
1978FEB02-2	Qld	2/ 2/1978	2	21.1	Monsoon Low
1979JAN05-1	Qld	5/ 1/1979	1	24.0	Tropical Cyclone 'Peter'
1979JAN06-2	Qld	6/ 1/1979	2	24.0	Tropical Cyclone 'Peter'
1979JAN06-3	Qld	6/ 1/1979	3	24.0	Tropical Cyclone 'Peter'
1979JAN06-4	Qld	6/ 1/1979	4	24.0	Tropical Cyclone 'Peter'
1979JAN06-5	Qld	6/ 1/1979	5	24.0	Tropical Cyclone 'Peter'
1979JAN07-7	Qld	7/ 1/1979	7	24.0	Tropical Cyclone 'Peter'
1979FEB06-1	Qld	6/ 2/1979	1	21.1	Monsoon Low
1981JAN13-7	Qld	13/ 1/1981	7	23.0	Monsoon Low
1982JAN20-5	WA	20/ 1/1982	5	24.5	Tropical Cyclone 'Bruno'
1982JAN22-2	WA	22/ 1/1982	2	19.0	Ex-Tropical Cyclone
1982JAN31-7	Qld	31/ 1/1982	7	25.0	Monsoon Low
1985JAN16-1	Qld	16/ 1/1985	1	25.8	Monsoon Low
1985JAN16-4	Qld	16/ 1/1985	4	25.8	Monsoon Low
1985MAR28-5	NT	28/ 3/1985	5	24.5	Tropical Cyclone 'Sandy'
1986JAN24-5	WA	24/ 1/1986	5	23.0	Tropical Cyclone 'Hector'

Table 2: cont.

Storm Name	State	End Date	Duration	Storm DewPoint	Classification
1988MAR31-1	NT	31/ 3/1988	1	22.0	Monsoon Low
1988MAY02-2	WA	2/ 5/1988	2	14.0	Extratropical - Cut-Off Low
1988MAY04-4	WA	4/ 5/1988	4	14.0	Extratropical - Cut-Off Low
1988JUN27-4	WA	27/ 6/1988	4	13.4	Extratropical - Front/Cut-Off Low
1989MAR14-1	SA	14/ 3/1989	1	21.0	Monsoon Low
1989MAR14-2	SA	14/ 3/1989	2	21.0	Monsoon Low
1989MAY10-1	Qld	10/ 5/1989	1	19.5	Extratropical – Easterly Dip/ Upper trough
1989JUN14-1	WA	14/ 6/1989	1	16.5	Extratropical - Cut-Off Low
1990JAN29-2	WA	29/ 1/1990	2	19.5	Ex-tropical Cyclone
1991JAN01-7	Qld	1/ 1/1991	7	25.1	Tropical Cyclone ‘Joy’
1991JAN14-1	Qld	14/ 1/1991	1	22.4	Monsoon Low
1995FEB28-4	WA	28/ 2/1995	4	21.0	Tropical Cyclone ‘Bobby’
1996MAR10-7	Qld	10/ 3/1996	7	24.5	Tropical Cyclone ‘Ethel’
1996MAY06-6	Qld	6/ 5/1996	6	18.0	Extratropical - East Coast Low
1996MAY07-7	Qld/NSW	7/ 5/1996	7	18.0	Extratropical - East Coast Low
1997FEB03-7	Qld	3/ 2/1997	7	19.8	Monsoon Low
1997MAR06-7	Qld	6/ 3/1997	7	24.0	Monsoon Low
1998JAN29-4	NT	29/ 1/1998	4	24.5	Tropical Cyclone ‘Les’
1998MAR05-7	Qld	5/ 3/1998	7	24.0	Tropical Cyclone ‘May’
1998DEC10-2	NT	10/12/1998	2	23.0	Tropical Cyclone ‘Thelma’
1999FEB13-2	Qld	13/ 2/1999	2	22.5	Tropical Cyclone ‘Rona’
1999MAY28-3	WA	28/ 5/1999	3	19.1	Extratropical - Cut Off Low

4. ANALYSIS OF TOTAL RAINFALL OVER STANDARD AREAS

For each of the selected rainfall events, daily rainfall observations were extracted from the Bureau of Meteorology archive and quality controlled to correct for errors in the records. The daily data for each station were then accumulated over the duration of the storm and plotted. Using a map of the topography underneath the plot for guidance, isohyets were drawn manually. These were then digitised to obtain a string of latitudes and longitudes associated with each isohyet to which a spline function was fitted using the method of Canterford, Hutchinson and Turner (1985). The result was a regular grid representing the rainfall depth for each storm.

To represent the maximum rainfall depth of an individual storm over standard areas, a depth-area curve was used (Figure 8). A depth-area curve can be constructed by determining the number of grid points between isohyets of equal intervals and the associated arithmetic mean rainfall depth, then calculating the running-average rainfall depth and cumulative area over all intervals. Average rainfall depths for the standard areas 100, 500, 1000, 2500, 5000, 10 000, 20 000, 40 000, 60 000, 100 000 and 150 000 km² were then interpolated from this and are given in Table 3.

Further details about these analyses are provided in Walland et al. (2003, pages 6-8), Minty and Meighen (1999, pages 6-8) and Minty et al. (1996, pages 5 and 8).

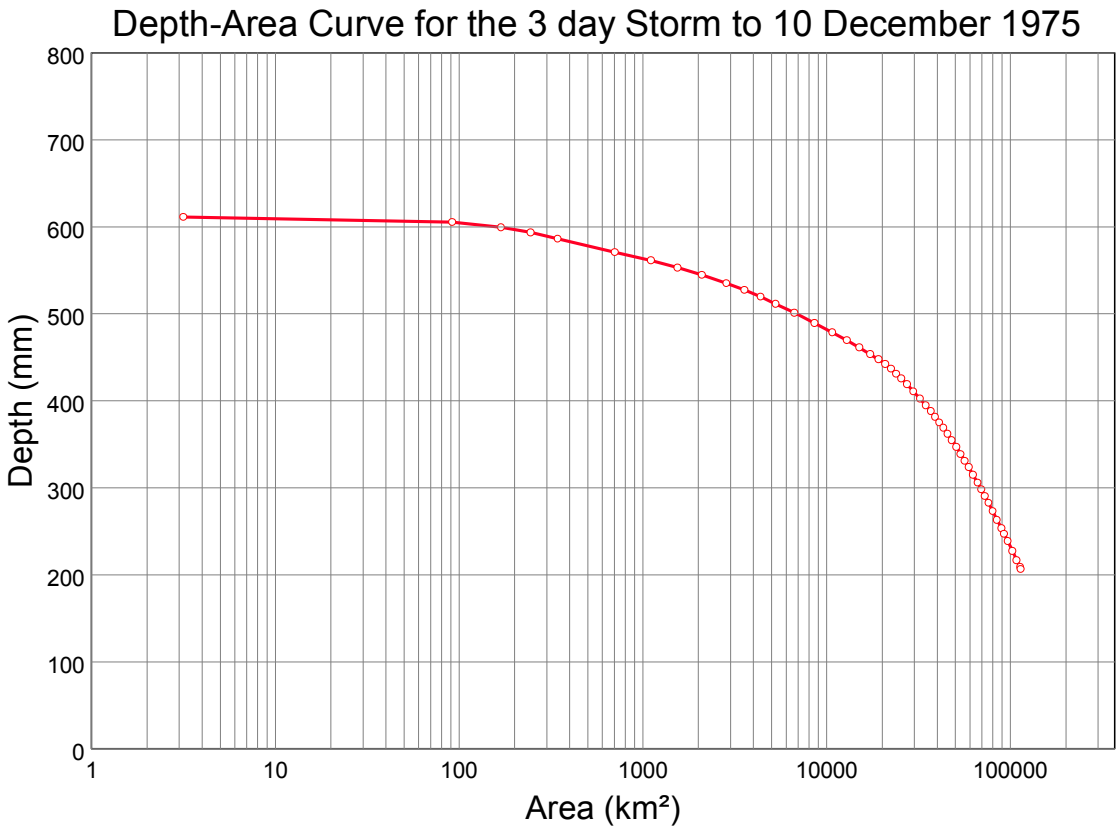

Figure 8: An example of a depth-area curve for a storm (1975DEC10-3).

Table 3: Mean Rainfall Depth over Each Standard Area for Each Storm.

Key to Table 3

Storm Name:
The code used to identify uniquely each extreme rainfall event. The year, month, end date and duration are given in that order.

Duration:
The number of days of accumulated rainfall, with each day being the 24 hours from 9:00 am to 9:00 am.

Area:
The standard area in square kilometres for which the rainfall depth has been determined.

Depth:
The rainfall depth in millimetres derived from the isohyetal analysis of the storm.

Table 3: Mean Rainfall Depth over Each Standard Area for Each Storm.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1893FEB03-1	1	100	860
		500	790
		1000	740
		2500	640
		5000	544
		10000	432
		20000	310
		40000	220
		60000	176
1893FEB03-2	2	100	1364
		500	1186
		1000	1079
		2500	906
		5000	755
		10000	580
		20000	439
		40000	326
		60000	263
		100000	192
1893FEB04-3	3	100	1662
		500	1441
		1000	1315
		2500	1093
		5000	887
		10000	690
		20000	522
		40000	398
		60000	332
		100000	245
1893FEB06-7	7	100	2044
		500	1896
		1000	1780
		2500	1562
		5000	1341
		10000	1093
		20000	888
		40000	730
		60000	637
		100000	487

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1898APR03-2	2	100	947
		500	914
		1000	864
		2500	748
		5000	632
		10000	518
		20000	429
		40000	334
		60000	276
		100000	199
1910JAN15-5	5	100	478
		500	440
		1000	415
		2500	381
		5000	359
		10000	332
		20000	301
		40000	264
		60000	239
		100000	204
1911JAN08-1	1	100	446
		500	431
		1000	419
		2500	397
		5000	370
		10000	337
		20000	294
		40000	241
		60000	206
		100000	164
1911JAN09-5	5	100	1003
		500	963
		1000	940
		2500	901
		5000	854
		10000	786
		20000	692
		40000	570
		60000	487
		100000	390

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1911APR02-2	2	100	1401
		500	1330
		1000	1243
		2500	1075
		5000	930
		10000	776
		20000	605
		40000	447
		60000	362
		100000	260
1911APR03-5	5	100	2128
		500	2004
		1000	1872
		2500	1623
		5000	1409
		10000	1155
		20000	902
		40000	670
		60000	549
		100000	413
1913JAN18-4	4	100	1105
		500	1086
		1000	1066
		2500	996
		5000	885
		10000	723
		20000	560
		40000	389
		60000	288
1916DEC28-1	1	100	653
		500	603
		1000	577
		2500	526
		5000	469
		10000	385
		20000	288
		40000	189

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1916DEC29-2	2	100	708
		500	684
		1000	667
		2500	632
		5000	582
		10000	496
		20000	386
		40000	276
		60000	218
1917JAN07-4	4	100	992
		500	935
		1000	900
		2500	854
		5000	812
		10000	746
		20000	640
		40000	464
		60000	356
1918JAN22-1	1	100	708
		500	655
		1000	608
		2500	495
		5000	424
		10000	366
		20000	315
		40000	261
		60000	226
		100000	176
1918JAN24-3	3	100	1487
		500	1368
		1000	1294
		2500	1179
		5000	1077
		10000	924
		20000	789
		40000	630
		60000	529
		100000	405

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1918JAN25-5	5	100	1651
		500	1569
		1000	1521
		2500	1409
		5000	1277
		10000	1109
		20000	957
		40000	771
		60000	638
		100000	489
1920JUL03-6	6	100	409
		500	400
		1000	387
		2500	360
		5000	338
		10000	319
		20000	296
		40000	263
		60000	242
		100000	210
1922JAN31-1	1	100	281
		500	270
		1000	260
		2500	236
		5000	216
		10000	194
		20000	173
		40000	152
		60000	134
		100000	109
1922FEB02-3	3	100	599
		500	587
		1000	575
		2500	557
		5000	532
		10000	481
		20000	410
		40000	342
		60000	311
		100000	276

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1923JAN17-1	1	100	382
		500	371
		1000	356
		2500	315
		5000	274
		10000	234
		20000	180
		40000	122
1927SEP21-3	3	100	249
		500	224
		1000	200
		2500	172
		5000	156
		10000	135
		20000	102
		40000	72
1929FEB12-7	7	100	907
		500	899
		1000	883
		2500	829
		5000	765
		10000	700
		20000	595
		40000	440
		60000	348
		100000	233
1930MAR04-6	6	100	520
		500	514
		1000	507
		2500	495
		5000	485
		10000	474
		20000	450
		40000	412
		60000	384
		100000	334

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1930JUN19-3	3	100	633
		500	571
		1000	530
		2500	465
		5000	417
		10000	367
		20000	312
		40000	246
		60000	196
1934MAR09-1	1	100	200
		500	198
		1000	194
		2500	184
		5000	169
		10000	153
		20000	136
		40000	118
		60000	107
		100000	89
1942FEB17-3	3	100	922
		500	885
		1000	858
		2500	812
		5000	762
		10000	694
		20000	607
		40000	503
		60000	444
		100000	361
1945JUN13-4	4	100	255
		500	244
		1000	236
		2500	222
		5000	206
		10000	188
		20000	170
		40000	148
		60000	131
		100000	106

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1945JUN25-10	10	100	458
		500	424
		1000	407
		2500	381
		5000	359
		10000	324
		20000	275
		40000	220
		60000	181
1946MAR03-1	1	100	818
		500	792
		1000	754
		2500	661
		5000	558
		10000	441
		20000	331
		40000	236
		60000	188
1947JAN26-3	3	100	1093
		500	918
		1000	821
		2500	671
		5000	553
		10000	439
		20000	341
		40000	247
1947FEB12-1	1	100	555
		500	524
		1000	496
		2500	443
		5000	379
		10000	298
		20000	228
		40000	161

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1948FEB23-1	1	100	245
		500	242
		1000	236
		2500	222
		5000	209
		10000	195
		20000	181
		40000	157
		60000	138
		100000	116
1948FEB23-2	2	100	315
		500	311
		1000	307
		2500	301
		5000	293
		10000	282
		20000	268
		40000	249
		60000	238
		100000	220
		150000	197
1950JUN24-1	1	100	590
		500	510
		1000	461
		2500	378
		5000	308
		10000	256
		20000	209
		40000	153
		60000	122
1950JUN25-7	7	100	1227
		500	1058
		1000	965
		2500	844
		5000	748
		10000	622
		20000	501
		40000	398
		60000	330

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1951JAN14-6	6	100	1548
		500	1427
		1000	1362
		2500	1262
		5000	1145
		10000	1009
		20000	849
		40000	652
		60000	510
1954FEB21-1	1	100	746
		500	655
		1000	591
		2500	497
		5000	440
		10000	384
		20000	327
		40000	259
		60000	210
		100000	139
1954FEB21-2	2	100	949
		500	797
		1000	722
		2500	621
		5000	540
		10000	471
		20000	405
		40000	326
		60000	260
1955FEB17-1	1	100	210
		500	206
		1000	204
		2500	194
		5000	178
		10000	162
		20000	145
		40000	127
		60000	113
		100000	91

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1955FEB18-4	4	100	303
		500	289
		1000	279
		2500	266
		5000	254
		10000	236
		20000	221
		40000	209
		60000	196
		100000	172
		150000	147
1955FEB25-2	2	100	351
		500	343
		1000	337
		2500	324
		5000	313
		10000	300
		20000	276
		40000	239
		60000	211
1956JAN22-2	2	100	417
		500	396
		1000	379
		2500	355
		5000	331
		10000	303
		20000	271
		40000	236
		60000	214
		100000	182
1956MAR07-1	1	100	305
		500	303
		1000	302
		2500	295
		5000	277
		10000	260
		20000	234
		40000	196
		60000	170
		100000	130

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1958FEB18-1	1	100	832
		500	744
		1000	686
		2500	577
		5000	476
		10000	364
		20000	256
1958FEB22-3	3	100	657
		500	613
		1000	586
		2500	542
		5000	497
		10000	446
		20000	381
		40000	297
		60000	246
1959FEB17-1	1	100	269
		500	258
		1000	250
		2500	236
		5000	225
		10000	216
		20000	208
		40000	187
		60000	165
		100000	132
1959FEB18-1	1	100	277
		500	230
		1000	203
		2500	168
		5000	144
		10000	123
		20000	97

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1959APR06-1	1	100	473
		500	453
		1000	434
		2500	403
		5000	369
		10000	328
		20000	267
		40000	196
		60000	160
		100000	122
1963APR15-1	1	100	557
		500	539
		1000	514
		2500	459
		5000	406
		10000	346
		20000	282
		40000	191
1963APR16-4	4	100	791
		500	763
		1000	737
		2500	688
		5000	642
		10000	582
		20000	501
		40000	403
		60000	338
1964JAN14-1	1	100	255
		500	253
		1000	249
		2500	234
		5000	221
		10000	211
		20000	195
		40000	175
		60000	160
		100000	137

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1966JAN20-4	4	100	657
		500	626
		1000	606
		2500	565
		5000	530
		10000	487
		20000	436
		40000	376
		60000	342
		100000	294
1967JAN22-2	2	100	347
		500	341
		1000	334
		2500	316
		5000	299
		10000	277
		20000	250
		40000	211
		60000	187
		100000	155
		150000	129
1968JAN13-2	2	100	473
		500	461
		1000	449
		2500	417
		5000	375
		10000	325
		20000	279
		40000	223
		60000	187
		100000	142
1970JAN19-1	1	100	894
		500	819
		1000	761
		2500	658
		5000	569
		10000	441
		20000	288
		40000	165

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1970DEC05-1	1	100	616
		500	579
		1000	555
		2500	517
		5000	472
		10000	410
		20000	324
		40000	207
1971JAN26-1	1	100	399
		500	370
		1000	350
		2500	321
		5000	296
		10000	263
		20000	214
		40000	149
		60000	114
1971DEC27-1	1	100	274
		500	248
		1000	228
		2500	208
		5000	197
		10000	185
		20000	169
		40000	149
		60000	133
		100000	112
1972JAN12-5	5	100	1702
		500	1467
		1000	1360
		2500	1184
		5000	1033
		10000	879
		20000	705
		40000	521
		60000	418
		100000	291

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1973JAN24-1	1	100	250
		500	246
		1000	242
		2500	232
		5000	220
		10000	201
		20000	175
		40000	144
		60000	124
		100000	100
1973JAN24-2	2	100	278
		500	276
		1000	272
		2500	261
		5000	248
		10000	232
		20000	212
		40000	188
		60000	169
		100000	137
1973JUL10-6	6	100	954
		500	699
		1000	587
		2500	454
		5000	370
		10000	300
		20000	239
		40000	181
		60000	138
1974JAN08-1	1	100	376
		500	335
		1000	318
		2500	290
		5000	259
		10000	229
		20000	195
		40000	168
		60000	149
		100000	126

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1974JAN09-3	3	100	456
		500	437
		1000	430
		2500	418
		5000	396
		10000	370
		20000	340
		40000	304
		60000	277
		100000	238
		150000	202
1974JAN09-4	4	100	428
		500	409
		1000	398
		2500	378
		5000	359
		10000	331
		20000	284
		40000	232
		60000	203
		100000	165
1974JAN14-5	5	100	459
		500	443
		1000	419
		2500	367
		5000	332
		10000	297
		20000	256
		40000	216
		60000	194
		100000	162
1974JAN23-6	6	100	858
		500	854
		1000	847
		2500	828
		5000	800
		10000	765
		20000	718
		40000	662
		60000	618
		100000	540
		150000	469

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1974JAN27-9	9	100	522
		500	520
		1000	520
		2500	514
		5000	502
		10000	481
		20000	454
		40000	426
		60000	406
		100000	374
		150000	348
1974JAN27-2	2	100	1015
		500	913
		1000	828
		2500	711
		5000	616
		10000	515
		20000	399
		40000	284
		60000	216
1974JAN28-4	4	100	1280
		500	1147
		1000	1070
		2500	944
		5000	836
		10000	709
		20000	570
		40000	413
		60000	315
1974FEB01-5	5	100	401
		500	395
		1000	387
		2500	371
		5000	354
		10000	331
		20000	308
		40000	288
		60000	278
		100000	258
		150000	229

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1974MAR13-4	4	100	988
		500	897
		1000	856
		2500	796
		5000	737
		10000	667
		20000	588
		40000	466
		60000	364
1975FEB25-6	6	100	460
		500	433
		1000	413
		2500	378
		5000	354
		10000	335
		20000	319
		40000	301
		60000	279
		100000	248
		150000	219
1975DEC10-2	2	100	580
		500	550
		1000	534
		2500	513
		5000	494
		10000	470
		20000	431
		40000	353
		60000	289
		100000	202
1975DEC10-3	3	100	604
		500	578
		1000	563
		2500	539
		5000	514
		10000	482
		20000	445
		40000	378
		60000	321
		100000	232

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1976FEB06-3	3	100	422
		500	420
		1000	415
		2500	402
		5000	384
		10000	356
		20000	319
		40000	272
		60000	240
		100000	195
		150000	157
1976FEB09-2	2	100	305
		500	303
		1000	299
		2500	289
		5000	278
		10000	266
		20000	250
		40000	223
		60000	205
		100000	178
		150000	151
1976FEB10-1	1	100	259
		500	257
		1000	253
		2500	238
		5000	219
		10000	202
		20000	189
		40000	174
		60000	161
		100000	142
		150000	125
1976FEB11-1	1	100	240
		500	239
		1000	235
		2500	222
		5000	210
		10000	197
		20000	185
		40000	167
		60000	153
		100000	128

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1977FEB20-2	2	100	353
		500	344
		1000	331
		2500	311
		5000	294
		10000	277
		20000	255
		40000	223
		60000	199
		100000	166
		150000	141
1977MAY19-3	3	100	891
		500	751
		1000	657
		2500	542
		5000	454
		10000	355
		20000	270
		40000	189
1977MAY19-5	5	100	987
		500	852
		1000	737
		2500	596
		5000	514
		10000	435
		20000	358
		40000	279
		60000	225
1978JAN30-5	5	100	763
		500	742
		1000	722
		2500	687
		5000	649
		10000	599
		20000	540
		40000	462
		60000	407
		100000	332

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1978FEB02-2	2	100	376
		500	368
		1000	361
		2500	344
		5000	326
		10000	303
		20000	264
		40000	221
		60000	197
		100000	164
1979JAN05-1	1	100	957
		500	649
		1000	528
		2500	400
		5000	308
		10000	221
		20000	154
		40000	100
1979JAN06-2	2	100	1301
		500	909
		1000	806
		2500	646
		5000	500
		10000	357
		20000	244
		40000	155
1979JAN06-3	3	100	1791
		500	1399
		1000	1276
		2500	1042
		5000	831
		10000	623
		20000	437
		40000	305
		60000	246
		100000	180

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1979JAN06-4	4	100	2768
		500	2119
		1000	1818
		2500	1436
		5000	1181
		10000	924
		20000	670
		40000	455
		60000	365
		100000	262
1979JAN06-5	5	100	3335
		500	2354
		1000	2010
		2500	1657
		5000	1395
		10000	1113
		20000	843
		40000	607
		60000	491
		100000	362
1979JAN07-7	7	100	3090
		500	2343
		1000	2080
		2500	1750
		5000	1462
		10000	1154
		20000	868
		40000	632
		60000	519
		100000	387
1979FEB06-1	1	100	645
		500	580
		1000	526
		2500	447
		5000	381
		10000	309
		20000	234
		40000	150

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1981JAN13-7	7	100	1840
		500	1732
		1000	1649
		2500	1445
		5000	1195
		10000	896
		20000	606
		40000	425
		60000	346
		100000	258
1982JAN20-5	5	100	798
		500	771
		1000	751
		2500	713
		5000	666
		10000	607
		20000	531
		40000	452
		60000	402
		100000	328
1982JAN22-2	2	100	281
		500	274
		1000	270
		2500	261
		5000	248
		10000	230
		20000	210
		40000	183
		60000	159
		100000	125
1982JAN31-7	7	100	935
		500	875
		1000	842
		2500	784
		5000	706
		10000	597
		20000	456
		40000	305

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1985JAN16-1	1	100	571
		500	534
		1000	506
		2500	460
		5000	404
		10000	328
		20000	249
		40000	163
1985JAN16-4	4	100	848
		500	788
		1000	754
		2500	695
		5000	628
		10000	535
		20000	427
		40000	321
		60000	247
1985MAR28-5	5	100	888
		500	832
		1000	789
		2500	705
		5000	628
		10000	546
		20000	453
		40000	354
1986JAN24-5	5	100	509
		500	498
		1000	479
		2500	438
		5000	414
		10000	391
		20000	364
		40000	333
		60000	313
		100000	287
		150000	263

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1988MAR31-1	1	100	329
		500	283
		1000	260
		2500	228
		5000	206
		10000	184
		20000	159
		40000	129
		60000	113
		100000	92
1988MAY02-2	2	100	303
		500	247
		1000	198
		2500	124
		5000	84
		10000	54
1988MAY04-4	4	100	304
		500	280
		1000	270
		2500	252
		5000	227
		10000	190
		20000	151
		40000	106
1988JUN27-4	4	100	212
		500	181
		1000	166
		2500	153
		5000	142
		10000	128
		20000	112
		40000	84
		60000	65

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1989MAR14-1	1	100	278
		500	265
		1000	258
		2500	248
		5000	235
		10000	221
		20000	205
		40000	183
		60000	168
		100000	149
		150000	130
1989MAR14-2	2	100	325
		500	306
		1000	298
		2500	283
		5000	270
		10000	250
		20000	230
		40000	213
		60000	201
		100000	181
		150000	159
1989MAY10-1	1	100	329
		500	310
		1000	291
		2500	259
		5000	235
		10000	207
		20000	179
		40000	147
		60000	126
		100000	94
1989JUN14-1	1	100	160
		500	156
		1000	149
		2500	131
		5000	118
		10000	104
		20000	89
		40000	71
		60000	61

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1990JAN29-2	2	100	154
		500	153
		1000	152
		2500	150
		5000	146
		10000	139
		20000	133
		40000	126
		60000	119
		100000	109
		150000	96
1991JAN01-7	7	100	1591
		500	1540
		1000	1512
		2500	1448
		5000	1370
		10000	1250
		20000	1005
		40000	746
		60000	614
		100000	459
1991JAN14-1	1	100	362
		500	351
		1000	338
		2500	317
		5000	298
		10000	274
		20000	241
		40000	208
		60000	185
		100000	151
1995FEB28-4	4	100	404
		500	402
		1000	401
		2500	393
		5000	378
		10000	359
		20000	338
		40000	307
		60000	283
		100000	250
		150000	218

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km²)	DEPTH (mm)
1996MAR10-7	7	100	821
		500	796
		1000	773
		2500	731
		5000	681
		10000	610
		20000	500
		40000	369
		60000	299
1996MAY06-6	6	100	918
		500	789
		1000	719
		2500	630
		5000	562
		10000	486
		20000	382
1996MAY07-7	7	100	1483
		500	1082
		1000	963
		2500	809
		5000	709
		10000	622
		20000	543
		40000	456
		60000	388
		100000	291
1997FEB03-7	7	100	488
		500	462
		1000	452
		2500	428
		5000	398
		10000	366
		20000	339
		40000	316
		60000	296
		100000	260

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1997MAR06-7	7	100	739
		500	714
		1000	680
		2500	626
		5000	582
		10000	536
		20000	469
		40000	383
		60000	328
		100000	263
1998JAN29-4	4	100	564
		500	561
		1000	559
		2500	547
		5000	527
		10000	498
		20000	453
		40000	408
		60000	380
		100000	333
1998MAR05-7	7	100	1131
		500	1122
		1000	1102
		2500	1037
		5000	961
		10000	875
		20000	783
		40000	670
		60000	595
		100000	490
1998DEC10-2	2	100	675
		500	562
		1000	492
		2500	396
		5000	333
		10000	274
		20000	212
		40000	145

Table 3: cont.

STORM NAME	DURATION (days)	AREA (km^2)	DEPTH (mm)
1999FEB13-2	2	100	1457
		500	1055
		1000	906
		2500	739
		5000	622
		10000	495
		20000	383
		40000	291
		60000	245
		100000	189
1999MAY28-3	3	100	270
		500	240
		1000	223
		2500	203
		5000	190
		10000	179
		20000	164
		40000	146
		60000	134
		100000	117

5. RAINFALL BURSTS AS PROPORTION OF TOTAL RAINFALL

The maximum proportion of the total storm rainfall was calculated for each standard duration embedded within the storm at each standard area. These burst proportions are given Table 4 as percentages. In order to select the maximum burst from the storm, a daily and, where possible, a 3-hourly temporal pattern were established.

The method for deriving temporal patterns for the GTSMR storms is outlined in detail in Walland et al. (2003, pages 8-10), Minty and Meighen (1999, pages 8-10) and Minty et al. (1996, pages 5-8). The initial process was to create a series of polygons approximating the standard areas 100, 500, 1000, 2500, 5000, 10 000, 20 000, 40 000, 60 000, 100 000 and 150 000 km² which enclose the area of maximum storm rainfall (Figure 9). The quality controlled data from the daily rainfall stations captured within the polygons were used to calculate the daily (9:00 am to 9:00 am) areal averages using a spatial weighting technique (Theissen, 1911). The number of daily stations used to derive the averages is given in Table A1.

These daily distributions are calculated from the 9:00 am daily rainfall observations; however, the maximum embedded burst of a given standard duration may not necessarily occur between 9:00 am and 9:00 am. Therefore, where possible, a higher resolution (3-hourly) temporal pattern was applied to the daily distributions. Any available pluviograph and synoptic data from the Bureau of Meteorology and other authorities, as well as information from individual storm studies, were collected and quality controlled for irregularities. In all, 3-hourly data were obtained for 85 of the 122 storms in the GTSMR database. For each storm and each standard area, the available 3-hourly data were weighted according to their location with respect to the standard area polygon and their temporal consistency with the daily areal averages. The weights assigned to each record are shown in Table A1.

Once the 3-hourly patterns were applied to the daily distributions, the maximum standard duration bursts (24-, 36-, 48-, 72-, 96- and 120-hours) were extracted from the total storm. They are given as percentages of the total storm in Table 4. Where only daily data were available, these embedded bursts were restricted to 9:00 am to 9:00 am distributions. By multiplying the storm depths in Table 3 by the corresponding percentages in Table 4, the rainfall depths at the standard durations can be calculated.

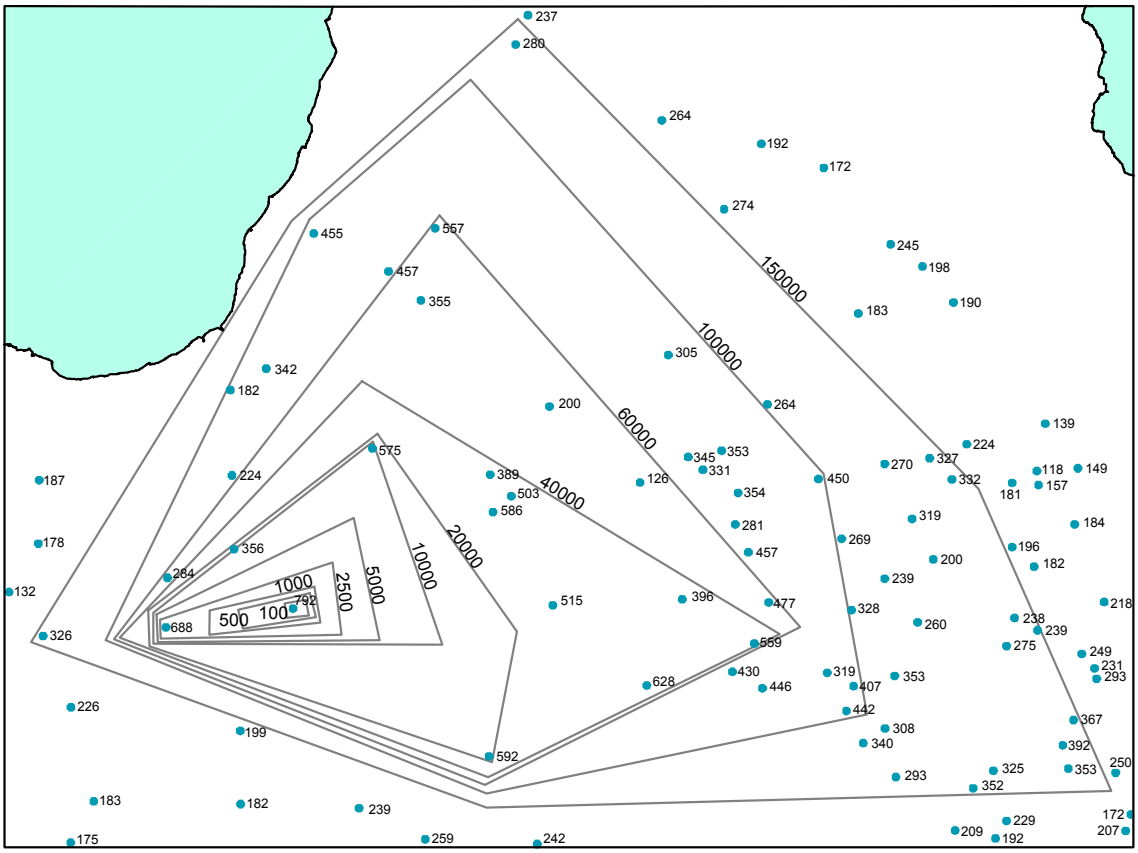

Figure 9: An example of the standard area polygons (1974JAN23-6).

Table 4: Rainfall Bursts as Percentage of Total Rainfall

Key to Table 4

Storm Name:
The code used to uniquely identify each extreme rainfall event. The year, month, end date and duration are given in that order.

Duration:
The number of days of accumulated rainfall, with each day being the 24 hours from 9:00 am to 9:00 am.

Area:
The standard area in square kilometres for which the temporal pattern was defined i.e. 100, 500, 1000, 2500, 5000, 10 000, 20 000, 40 000, 60 000, 100 000 and 150 000 km².

24 h % etc.:
These percentages show the highest percentage of the total storm rainfall that fell in that particular duration. For rainstorms without 3-hourly observations, they refer to the 9:00 am to 9:00 am period while for the storms with 3-hourly observations they refer to any 24-hour period; 0:00 to 0:00, 3:00 to 3:00, 6:00 to 6:00, 9:00 to 9:00, 12:00 to 12:00, 15:00 to 15:00, 18:00 to 18:00 or 21:00 to 21:00. To check if a particular event's temporal pattern is based on 3-hourly data see Table A1.

36 h %:
A dash in this column indicates that this storm did not have 3-hourly observation data.

Table 4: Rainfall Bursts as Percentage of Total Rainfall

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1893FEB03-1	1	100	100					
		500	100					
		1000	100					
		2500	100					
		5000	100					
		10000	100					
		20000	100					
		40000	100					
		60000	100					
1893FEB03-2	2	100	65.0	84.6	100			
		500	57.9	80.5	100			
		1000	57.8	80.3	100			
		2500	58.0	80.4	100			
		5000	58.2	80.9	100			
		10000	57.9	80.4	100			
		20000	57.8	78.9	100			
		40000	57.7	79.0	100			
		60000	57.6	79.5	100			
		100000	57.9	80.0	100			
1893FEB04-3	3	100	49.7	-	76.5	100		
		500	40.1	-	73.4	100		
		1000	43.0	-	74.8	100		
		2500	41.4	-	75.8	100		
		5000	42.3	-	77.4	100		
		10000	41.5	-	77.1	100		
		20000	39.7	-	76.8	100		
		40000	38.2	-	76.2	100		
		60000	40.0	-	76.9	100		
		100000	41.1	-	76.6	100		
1893FEB06-7	7	100	40.7	-	62.5	83.1	93.5	96.7
		500	33.1	-	59.6	81.1	92.7	96.2
		1000	32.5	-	59.2	79.8	92.1	95.8
		2500	32.5	-	59.4	78.6	91.4	95.5
		5000	33.1	-	59.6	78.2	90.2	94.9
		10000	28.9	-	56.4	73.8	88.1	93.8
		20000	26.9	-	52.9	70.2	85.4	92.7
		40000	25.1	-	46.9	66.2	81.2	89.5
		60000	23.1	-	43.5	63.3	76.6	88.1
		100000	21.6	-	41.9	62.8	75.2	86.6

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1898APR03-2	2	100	80.4	100.0	100.0			
		500	80.4	100.0	100.0			
		1000	80.4	100.0	100.0			
		2500	80.8	100.0	100.0			
		5000	80.8	100.0	100.0			
		10000	80.7	100.0	100.0			
		20000	79.9	100.0	100.0			
		40000	80.2	100.0	100.0			
		60000	79.8	100.0	100.0			
		100000	78.7	100.0	100.0			
1910JAN15-5	5	100	34.6	-	68.0	86.8	91.3	100.0
		500	36.5	-	72.7	85.5	91.1	100.0
		1000	38.3	-	74.8	85.1	90.7	100.0
		2500	39.4	-	73.9	85.2	90.0	100.0
		5000	38.2	-	71.1	84.1	90.1	100.0
		10000	37.5	-	70.0	83.7	89.4	100.0
		20000	36.8	-	70.8	84.0	90.3	100.0
		40000	35.5	-	67.7	82.9	90.8	100.0
		60000	34.1	-	64.6	81.2	91.3	100.0
		100000	32.3	-	64.1	79.8	90.9	100.0
1911JAN08-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1911JAN09-5	5	100	45.9	-	71.2	92.0	99.1	100.0
		500	42.0	-	74.3	91.9	99.1	100.0
		1000	42.0	-	74.4	92.0	99.1	100.0
		2500	42.2	-	74.1	91.9	99.1	100.0
		5000	42.1	-	74.2	91.9	99.1	100.0
		10000	42.2	-	74.6	92.2	99.1	100.0
		20000	42.6	-	75.1	92.4	98.9	100.0
		40000	42.6	-	70.6	89.7	97.5	100.0
		60000	43.8	-	69.1	88.4	96.6	100.0
		100000	44.0	-	66.9	86.4	94.9	100.0

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1911APR02-2	2	100	54.3	-	100.0			
		500	58.0	-	100.0			
		1000	55.8	-	100.0			
		2500	55.4	-	100.0			
		5000	52.5	-	100.0			
		10000	53.1	-	100.0			
		20000	57.1	-	100.0			
		40000	62.0	-	100.0			
		60000	60.9	-	100.0			
		100000	62.3	-	100.0			
1911APR03-5	5	100	34.0	-	62.6	84.5	94.6	100.0
		500	33.6	-	64.7	84.7	94.6	100.0
		1000	33.8	-	64.9	84.8	94.6	100.0
		2500	35.8	-	67.0	85.4	94.7	100.0
		5000	34.2	-	66.4	86.2	95.0	100.0
		10000	34.6	-	65.6	86.2	95.4	100.0
		20000	34.4	-	63.6	84.9	95.8	100.0
		40000	38.1	-	64.0	85.7	95.8	100.0
		60000	36.9	-	62.0	84.0	95.0	100.0
		100000	38.0	-	61.4	83.4	94.5	100.0
1913JAN18-4	4	100	45.8	-	78.8	90.1	100.0	
		500	45.7	-	79.7	90.2	100.0	
		1000	45.6	-	79.8	90.4	100.0	
		2500	45.9	-	80.2	90.6	100.0	
		5000	39.8	-	76.1	88.1	100.0	
		10000	40.9	-	77.3	89.7	100.0	
		20000	34.3	-	68.4	84.6	100.0	
		40000	32.5	-	64.7	82.7	100.0	
		60000	32.8	-	64.0	82.3	100.0	
1916DEC28-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1916DEC29-2	2	100	97.8	98.7	100.0			
		500	94.4	97.3	100.0			
		1000	92.7	96.7	100.0			
		2500	95.8	97.7	100.0			
		5000	95.0	97.4	100.0			
		10000	93.3	96.9	100.0			
		20000	91.9	96.8	100.0			
		40000	90.4	96.3	100.0			
		60000	89.4	95.9	100.0			
1917JAN07-4	4	100	58.1	-	95.3	98.7	100.0	
		500	52.7	-	94.8	98.8	100.0	
		1000	55.1	-	95.0	98.8	100.0	
		2500	52.6	-	92.5	97.8	100.0	
		5000	52.8	-	91.8	97.5	100.0	
		10000	52.7	-	89.7	96.1	100.0	
		20000	51.1	-	87.6	95.1	100.0	
		40000	51.6	-	87.2	95.4	100.0	
		60000	49.8	-	85.3	94.1	100.0	
1918JAN22-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1918JAN24-3	3	100	41.0	62.7	71.6	100.0		
		500	39.8	61.0	70.8	100.0		
		1000	40.2	59.0	69.7	100.0		
		2500	41.0	56.4	73.4	100.0		
		5000	41.4	57.4	73.0	100.0		
		10000	42.8	58.9	72.5	100.0		
		20000	42.5	61.2	72.8	100.0		
		40000	43.8	64.3	75.9	100.0		
		60000	43.4	63.7	75.4	100.0		
		100000	44.1	65.4	76.9	100.0		

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1918JAN25-5	5	100	36.3	47.2	64.5	87.1	99.6	100.0
		500	34.2	48.2	63.7	87.7	99.6	100.0
		1000	34.0	48.0	63.6	87.4	99.6	100.0
		2500	34.0	47.0	62.0	87.2	99.6	100.0
		5000	34.2	47.3	62.0	86.6	99.5	100.0
		10000	35.1	48.5	62.8	86.2	99.7	100.0
		20000	35.3	50.3	64.4	87.3	99.6	100.0
		40000	36.4	53.6	67.9	88.6	99.6	100.0
		60000	37.2	55.5	69.1	88.8	99.5	100.0
		100000	37.1	55.1	68.1	88.8	99.7	100.0
1920JUL03-6	6	100	24.5	-	45.8	60.8	74.3	93.4
		500	26.4	-	47.8	61.7	74.1	91.0
		1000	26.3	-	48.6	63.1	74.6	90.5
		2500	23.0	-	44.8	59.1	75.8	89.7
		5000	25.9	-	50.0	63.7	77.2	90.9
		10000	26.8	-	52.1	66.5	77.3	90.4
		20000	27.1	-	53.1	68.4	78.8	90.6
		40000	24.7	-	48.6	69.0	81.2	91.4
		60000	25.1	-	49.8	72.0	82.4	92.5
		100000	24.5		48.1	70.7	82.2	92.3
1922JAN31-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1922FEB02-3	3	100	61.1	-	81.7	100.0		
		500	61.3	-	82.7	100.0		
		1000	60.9	-	83.1	100.0		
		2500	58.0	-	84.5	100.0		
		5000	56.1	-	84.7	100.0		
		10000	47.3	-	81.3	100.0		
		20000	39.9	-	77.5	100.0		
		40000	39.8	-	77.8	100.0		
		60000	41.1	-	76.9	100.0		
		100000	38.8	-	73.4	100.0		

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1923JAN17-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
1927SEP21-3	3	100	73.9	-	88.9	100.0		
		500	74.3	-	87.1	100.0		
		1000	72.0	-	86.8	100.0		
		2500	71.0	-	87.0	100.0		
		5000	63.3	-	89.8	100.0		
		10000	53.8	-	91.5	100.0		
		20000	47.1	-	91.2	100.0		
		40000	48.0	-	92.0	100.0		
1929FEB12-7	7	100	28.6	-	51.9	78.3	88.5	94.5
		500	30.0	-	48.8	78.1	88.1	94.3
		1000	30.4	-	49.6	78.6	89.4	94.9
		2500	29.7	-	52.6	80.0	91.8	96.0
		5000	29.5	-	56.4	80.2	92.8	96.6
		10000	28.2	-	52.2	76.7	90.4	94.8
		20000	29.1	-	54.1	75.3	88.3	93.5
		40000	28.5	-	51.3	70.8	84.8	92.0
		60000	25.6	-	45.9	64.3	80.0	88.0
		100000	23.6	-	42.4	58.9	75.1	83.8
1930MAR04-6	6	100	32.1	-	63.8	83.0	95.9	99.6
		500	32.1	-	63.8	83.0	95.9	99.6
		1000	32.1	-	63.8	83.0	95.9	99.6
		2500	32.1	-	63.8	82.9	95.9	99.6
		5000	31.2	-	61.9	81.1	94.0	98.7
		10000	29.5	-	59.1	78.4	91.4	97.4
		20000	28.3	-	56.1	76.7	90.9	96.4
		40000	24.7	-	48.9	71.7	89.0	95.3
		60000	27.4	-	48.9	69.2	88.4	96.0
		100000	25.6	-	48.7	72.4	89.9	96.1

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1930JUN19-3	3	100	46.2	-	91.1	100.0		
		500	48.4	-	91.5	100.0		
		1000	47.3	-	91.9	100.0		
		2500	49.2	-	91.4	100.0		
		5000	48.8	-	89.2	100.0		
		10000	40.1	-	80.1	100.0		
		20000	44.3	-	73.5	100.0		
		40000	44.7	-	76.2	100.0		
		60000	44.4	-	77.8	100.0		
1934MAR09-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1942FEB17-3	3	100	45.3	-	76.7	100.0		
		500	45.3	-	76.7	100.0		
		1000	45.3	-	76.7	100.0		
		2500	44.0	-	76.1	100.0		
		5000	43.2	-	75.7	100.0		
		10000	47.5	-	77.8	100.0		
		20000	49.7	-	79.0	100.0		
		40000	50.9	-	79.5	100.0		
		60000	51.9	-	79.3	100.0		
		100000	50.7	-	78.9	100.0		
1945JUN13-4	4	100	47.7	-	58.0	81.9	100.0	
		500	44.3	-	61.1	82.2	100.0	
		1000	49.7	-	66.7	84.7	100.0	
		2500	55.5	-	69.6	86.4	100.0	
		5000	55.6	-	70.0	86.1	100.0	
		10000	58.3	-	72.6	87.5	100.0	
		20000	59.4	-	72.9	88.4	100.0	
		40000	60.0	-	73.6	86.4	100.0	
		60000	59.2	-	73.8	85.4	100.0	
		100000	55.6	-	71.8	82.9	100.0	

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1945JUN25-10	10	100	21.7	-	29.0	37.3	44.7	50.9
		500	20.9	-	27.9	38.5	45.5	52.5
		1000	20.8	-	28.1	38.0	47.1	53.4
		2500	22.7	-	32.0	41.1	50.4	56.8
		5000	22.7	-	31.1	40.1	49.3	56.6
		10000	22.3	-	30.7	39.6	48.6	57.0
		20000	22.9	-	31.3	39.8	48.9	56.3
		40000	24.1	-	32.3	42.2	50.4	57.8
		60000	25.2	-	33.7	44.1	52.5	59.4
1946MAR03-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
1947JAN26-3	3	100	48.4	-	80.6	100.0		
		500	48.9	-	82.0	100.0		
		1000	48.7	-	80.8	100.0		
		2500	47.8	-	78.6	100.0		
		5000	46.3	-	77.7	100.0		
		10000	48.1	-	78.2	100.0		
		20000	46.9	-	75.5	100.0		
		40000	48.9	-	76.1	100.0		
1947FEB12-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1948FEB23-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1948FEB23-2	2	100	58.7	-	100.0			
		500	55.8	-	100.0			
		1000	56.3	-	100.0			
		2500	52.4	-	100.0			
		5000	56.8	-	100.0			
		10000	51.1	-	100.0			
		20000	50.6	-	100.0			
		40000	52.6	-	100.0			
		60000	54.2	-	100.0			
		100000	51.5	-	100.0			
		150000	54.9	-	100.0			
1950JUN24-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
1950JUN25-7	7	100	51.0	-	67.0	75.9	77.9	80.7
		500	48.5	-	65.9	76.5	78.2	80.9
		1000	45.4	-	63.3	74.9	76.9	79.8
		2500	43.1	-	61.2	74.3	77.4	80.3
		5000	41.6	-	59.6	73.2	76.8	80.0
		10000	40.8	-	58.8	72.8	76.6	79.7
		20000	37.1	-	54.9	69.4	74.7	78.1
		40000	33.2	-	50.9	67.0	73.3	77.1
		60000	32.6	-	50.6	66.3	73.0	76.7

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1951JAN14-6	6	100	31.4	-	60.5	73.0	85.7	98.2
		500	30.8	-	59.3	72.5	85.1	98.3
		1000	33.2	-	59.7	72.3	85.5	98.1
		2500	34.5	-	60.5	72.6	85.9	98.0
		5000	31.7	-	57.6	71.1	85.9	97.9
		10000	29.8	-	54.1	69.5	84.5	97.5
		20000	24.9	-	48.0	69.4	86.0	97.7
		40000	24.5	-	46.5	67.8	85.5	97.7
		60000	25.0	-	47.8	68.3	85.3	97.9
1954FEB21-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1954FEB21-2	2	100	81.4	92.9	100.0			
		500	81.7	93.0	100.0			
		1000	81.8	93.2	100.0			
		2500	82.6	93.4	100.0			
		5000	83.4	93.7	100.0			
		10000	83.3	95.3	100.0			
		20000	79.7	94.9	100.0			
		40000	78.1	94.4	100.0			
		60000	76.9	94.9	100.0			
1955FEB17-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1955FEB18-4	4	100	74.6	84.4	93.4	99.6	100.0	
		500	75.0	84.3	93.1	99.6	100.0	
		1000	74.2	83.5	91.9	99.6	100.0	
		2500	73.6	82.6	90.9	99.6	100.0	
		5000	73.2	82.6	90.2	99.6	100.0	
		10000	70.0	79.7	88.5	99.6	100.0	
		20000	69.0	79.0	88.6	99.5	100.0	
		40000	64.6	77.1	89.1	99.5	100.0	
		60000	57.8	74.6	88.1	98.9	100.0	
		100000	55.2	70.3	84.9	97.1	100.0	
		150000	54.2	70.6	83.0	96.7	100.0	
1955FEB25-2	2	100	82.6	98.4	100.0			
		500	81.1	98.3	100.0			
		1000	77.6	97.6	100.0			
		2500	74.4	97.6	100.0			
		5000	74.0	97.6	100.0			
		10000	74.2	97.4	100.0			
		20000	74.9	97.3	100.0			
		40000	74.1	94.8	100.0			
		60000	74.8	93.7	100.0			
1956JAN22-2	2	100	89.1	100.0	100.0			
		500	90.4	100.0	100.0			
		1000	91.0	100.0	100.0			
		2500	91.4	100.0	100.0			
		5000	91.4	100.0	100.0			
		10000	85.2	100.0	100.0			
		20000	85.2	100.0	100.0			
		40000	82.0	99.1	100.0			
		60000	82.7	98.6	100.0			
		100000	78.5	95.0	100.0			
1956MAR07-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1958FEB18-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
1958FEB22-3	3	100	60.0	-	88.5	100.0		
		500	61.3	-	87.2	100.0		
		1000	61.1	-	87.0	100.0		
		2500	61.1	-	88.4	100.0		
		5000	60.0	-	84.3	100.0		
		10000	61.7	-	81.8	100.0		
		20000	60.3	-	82.4	100.0		
		40000	58.4	-	81.2	100.0		
		60000	53.7	-	78.6	100.0		
1959FEB17-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1959FEB18-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1959APR06-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1963APR15-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
1963APR16-4	4	100	75.4	89.2	96.2	100.0	100.0	
		500	75.4	89.2	96.2	100.0	100.0	
		1000	75.2	89.0	96.1	100.0	100.0	
		2500	72.3	87.5	95.7	100.0	100.0	
		5000	70.7	85.8	94.0	100.0	100.0	
		10000	69.4	85.2	93.5	100.0	100.0	
		20000	68.8	85.1	93.7	100.0	100.0	
		40000	62.1	81.6	91.9	100.0	100.0	
		60000	58.4	78.5	89.3	100.0	100.0	
1964JAN14-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1966JAN20-4	4	100	41.8	-	80.5	97.9	100.0	
		500	43.0	-	75.7	94.5	100.0	
		1000	43.9	-	74.4	93.7	100.0	
		2500	44.1	-	73.6	93.8	100.0	
		5000	44.0	-	72.8	93.2	100.0	
		10000	45.8	-	69.8	91.6	100.0	
		20000	42.5	-	70.3	91.8	100.0	
		40000	40.2	-	67.2	91.4	100.0	
		60000	37.8	-	66.5	91.1	100.0	
		100000	33.8	-	62.0	88.9	100.0	
1967JAN22-2	2	100	95.5	99.4	100.0			
		500	95.5	99.4	100.0			
		1000	95.3	99.3	100.0			
		2500	96.5	99.7	100.0			
		5000	93.8	99.3	100.0			
		10000	90.2	98.9	100.0			
		20000	88.0	99.1	100.0			
		40000	87.2	99.5	100.0			
		60000	86.8	99.5	100.0			
		100000	74.0	100.0	100.0			
		150000	76.0	100.0	100.0			
1968JAN13-2	2	100	77.7	99.8	100.0			
		500	80.4	99.8	100.0			
		1000	79.5	99.8	100.0			
		2500	75.7	96.0	100.0			
		5000	74.9	93.0	100.0			
		10000	73.2	89.9	100.0			
		20000	66.7	85.7	100.0			
		40000	62.2	85.8	100.0			
		60000	60.5	83.8	100.0			
		100000	58.8	85.1	100.0			
1970JAN19-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1970DEC05-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
1971JAN26-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
1971DEC27-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2000	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1972JAN12-5	5	100	45.5	58.9	69.1	87.2	98.5	100.0
		500	44.8	58.2	68.4	87.0	98.6	100.0
		1000	43.5	57.0	66.7	85.4	98.6	100.0
		2500	41.9	55.4	64.8	83.1	98.4	100.0
		5000	39.1	52.9	65.3	84.0	97.8	100.0
		10000	38.2	53.8	70.5	86.1	97.4	100.0
		20000	36.0	49.5	64.6	84.4	95.5	100.0
		40000	33.4	46.4	61.1	80.7	93.9	100.0
		60000	31.9	45.8	59.9	79.6	93.6	100.0
		100000	32.6	46.2	61.4	79.5	93.3	100.0

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1973JAN24-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1973JAN24-2	2	100	92.5	95.9	100.0			
		500	92.5	95.9	100.0			
		1000	92.5	95.9	100.0			
		2500	94.0	96.8	100.0			
		5000	92.3	95.7	100.0			
		10000	90.5	94.4	100.0			
		20000	90.2	94.6	100.0			
		40000	88.8	93.9	100.0			
		60000	85.0	91.9	100.0			
		100000	81.3	89.6	100.0			
1973JUL10-6	6	100	42.5	57.6	65.2	74.4	87.9	97.7
		500	40.5	55.3	63.5	74.0	87.8	97.4
		1000	39.9	53.3	63.2	73.6	87.2	97.4
		2500	38.6	51.7	62.0	73.5	87.6	97.6
		5000	38.5	50.8	60.6	71.5	88.0	97.8
		10000	35.2	49.6	61.9	73.3	90.7	98.1
		20000	30.4	43.3	55.8	73.7	90.3	98.6
		40000	31.5	42.5	53.0	71.3	89.0	97.2
		60000	30.6	40.1	50.3	68.8	87.3	95.5
1974JAN08-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1974JAN09-3	3	100	83.1	88.3	96.8	100.0		
		500	82.1	87.8	96.8	100.0		
		1000	79.4	85.9	96.2	100.0		
		2500	76.0	83.2	95.5	100.0		
		5000	73.0	83.1	95.4	100.0		
		10000	66.3	81.4	95.1	100.0		
		20000	61.2	79.1	94.5	100.0		
		40000	60.3	77.4	94.3	100.0		
		60000	60.4	76.0	93.8	100.0		
		100000	61.3	74.8	93.3	100.0		
		150000	55.1	74.6	92.2	100.0		
1974JAN09-4	4	100	57.3	69.3	88.4	98.6	100.0	
		500	57.3	69.3	88.4	98.6	100.0	
		1000	57.9	70.0	88.7	98.6	100.0	
		2500	58.5	73.1	89.2	98.5	100.0	
		5000	60.5	74.5	89.8	98.4	100.0	
		10000	62.7	73.7	87.0	97.9	100.0	
		20000	62.8	71.7	83.3	97.3	100.0	
		40000	61.2	68.7	81.1	96.9	100.0	
		60000	59.5	65.4	77.1	96.6	100.0	
		100000	54.1	60.5	74.4	95.9	100.0	
1974JAN14-5	5	100	55.1	-	73.4	86.9	99.3	100.0
		500	54.8	-	73.2	86.2	98.6	100.0
		1000	54.6	-	72.9	85.4	97.9	100.0
		2500	47.1	-	64.9	78.5	88.8	100.0
		5000	47.6	-	65.5	77.7	89.9	100.0
		10000	43.9	-	60.9	75.8	89.3	100.0
		20000	33.3	-	49.8	73.5	89.2	100.0
		40000	29.2	-	48.1	77.0	90.1	100.0
		60000	28.6	-	49.1	76.4	89.1	100.0
		100000	30.1	-	48.9	74.2	88.2	100.0
1974JAN23-6	6	100	29.3	40.0	50.4	73.6	86.6	98.9
		500	29.3	40.0	50.4	73.6	86.6	98.9
		1000	30.9	43.7	53.6	75.8	85.8	97.8
		2500	32.1	45.6	54.9	76.6	85.2	97.0
		5000	31.3	44.4	54.1	76.1	85.7	97.2
		10000	29.6	41.7	50.5	72.3	84.0	96.0
		20000	30.4	42.9	52.0	74.1	84.8	96.2
		40000	31.4	44.1	52.4	74.9	84.6	95.5
		60000	29.0	41.1	49.8	71.9	83.2	94.2
		100000	26.4	38.1	47.8	69.3	81.4	93.4
		150000	26.5	37.2	46.3	66.7	80.2	92.8

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1974JAN27-9	9	100	34.7	46.2	51.5	58.7	75.2	80.5
		500	34.7	46.2	51.5	58.7	75.2	80.5
		1000	34.5	45.9	51.2	58.4	75.3	80.6
		2500	33.7	43.6	48.5	56.8	74.6	80.9
		5000	28.1	39.8	43.8	54.2	68.8	76.6
		10000	30.5	41.4	45.8	55.3	71.1	78.5
		20000	26.2	37.3	40.9	56.0	66.1	76.4
		40000	24.7	34.5	39.3	54.9	63.1	74.3
		60000	23.3	33.8	37.5	52.0	63.6	73.6
		100000	23.6	32.2	35.8	50.7	63.9	73.7
		150000	23.6	31.6	36.2	50.9	63.8	74.2
1974JAN27-2	2	100	67.6	85.1	100.0			
		500	65.7	85.7	100.0			
		1000	66.8	85.8	100.0			
		2500	66.8	86.4	100.0			
		5000	57.0	80.0	100.0			
		10000	60.6	81.4	100.0			
		20000	61.2	82.3	100.0			
		40000	63.7	82.2	100.0			
		60000	62.1	83.2	100.0			
1974JAN28-4	4	100	51.3	64.6	75.8	93.2	100.0	
		500	48.9	64.0	74.5	92.7	100.0	
		1000	50.3	64.5	75.3	92.1	100.0	
		2500	51.2	66.3	76.7	92.4	100.0	
		5000	46.2	63.1	77.8	93.0	100.0	
		10000	42.1	57.0	73.3	92.2	100.0	
		20000	39.4	54.1	68.8	91.0	100.0	
		40000	39.5	53.1	65.8	89.7	100.0	
		60000	40.4	54.5	67.3	87.7	100.0	
1974FEB01-5	5	100	49.0	-	85.5	92.0	99.5	100.0
		500	48.5	-	86.6	94.8	99.7	100.0
		1000	48.6	-	86.7	94.8	99.7	100.0
		2500	45.7	-	85.3	93.0	99.7	100.0
		5000	42.3	-	84.0	91.8	99.7	100.0
		10000	44.6	-	82.8	90.8	99.7	100.0
		20000	36.0	-	66.1	75.3	83.4	100.0
		40000	33.5	-	60.9	71.1	82.0	100.0
		60000	33.0	-	60.0	71.1	83.0	100.0
		100000	37.6	-	61.2	73.1	84.7	100.0
		150000	37.0	-	59.7	74.1	85.2	100.0

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1974MAR13-4	4	100	46.2	54.5	58.9	84.7	100.0	
		500	51.0	60.7	63.9	89.1	100.0	
		1000	51.0	63.5	66.6	87.5	100.0	
		2500	52.6	67.4	71.7	88.2	100.0	
		5000	52.5	70.4	74.5	89.9	100.0	
		10000	52.9	71.5	76.6	90.7	100.0	
		20000	51.7	69.3	72.9	89.8	100.0	
		40000	45.6	62.3	66.4	88.2	100.0	
		60000	44.5	58.2	63.9	88.6	100.0	
1975FEB25-6	6	100	38.3	54.6	70.4	81.2	89.7	99.2
		500	40.4	55.4	69.8	82.2	91.8	97.7
		1000	39.1	55.0	70.0	81.2	90.6	98.1
		2500	33.2	49.0	61.9	78.6	90.1	95.9
		5000	31.9	47.0	60.1	78.3	91.7	97.2
		10000	31.9	46.0	58.9	77.0	91.7	95.7
		20000	34.3	47.1	61.2	80.8	91.0	96.8
		40000	36.3	49.0	64.4	83.9	93.2	96.6
		60000	35.3	46.2	60.7	81.1	90.9	96.4
		100000	34.6	47.2	61.0	79.7	92.7	96.7
		150000	35.7	48.2	60.7	79.5	92.4	96.9
1975DEC10-2	2	100	71.0	79.8	100.0			
		500	75.3	82.5	100.0			
		1000	74.5	82.2	100.0			
		2500	73.5	81.4	100.0			
		5000	71.6	79.8	100.0			
		10000	67.1	78.0	100.0			
		20000	70.9	82.5	100.0			
		40000	71.3	83.4	100.0			
		60000	67.0	82.0	100.0			
		100000	67.2	84.6	100.0			
1975DEC10-3	3	100	64.6	74.1	93.2	100.0		
		500	64.6	74.1	93.2	100.0		
		1000	64.4	73.8	93.6	100.0		
		2500	63.7	73.0	93.7	100.0		
		5000	60.6	70.5	95.8	100.0		
		10000	62.7	72.3	96.1	100.0		
		20000	64.8	77.9	95.2	100.0		
		40000	66.4	79.3	92.5	100.0		
		60000	63.9	78.9	90.4	100.0		
		100000	60.4	78.3	88.0	100.0		

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1976FEB06-3	3	100	63.5	89.3	96.4	100.0		
		500	63.5	89.3	96.4	100.0		
		1000	63.5	89.3	96.4	100.0		
		2500	63.1	89.4	96.4	100.0		
		5000	63.1	89.4	96.4	100.0		
		10000	60.4	87.4	94.4	100.0		
		20000	62.2	86.5	93.7	100.0		
		40000	56.6	85.0	92.0	100.0		
		60000	51.4	81.5	89.3	100.0		
		100000	47.2	76.4	87.4	100.0		
		150000	47.9	76.1	87.7	100.0		
1976FEB09-2	2	100	85.8	96.8	100.0			
		500	85.8	96.7	100.0			
		1000	85.8	96.6	100.0			
		2500	84.6	96.0	100.0			
		5000	84.6	95.9	100.0			
		10000	83.8	95.5	100.0			
		20000	84.2	95.4	100.0			
		40000	85.1	96.3	100.0			
		60000	84.8	96.1	100.0			
		100000	84.1	95.7	100.0			
		150000	84.4	96.0	100.0			
1976FEB10-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
		150000	100.0					
1976FEB11-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1977FEB20-2	2	100	69.7		100.0			
		500	69.5		100.0			
		1000	69.3		100.0			
		2500	69.2		100.0			
		5000	68.6		100.0			
		10000	71.1		100.0			
		20000	71.7		100.0			
		40000	68.2		100.0			
		60000	66.0		100.0			
		100000	66.1		100.0			
		150000	59.1		100.0			
1977MAY19-3	3	100	44.0	53.9	69.9	100.0		
		500	44.5	54.8	69.8	100.0		
		1000	45.1	55.7	69.8	100.0		
		2500	43.9	55.1	72.7	100.0		
		5000	45.0	56.2	73.6	100.0		
		10000	46.6	58.3	75.6	100.0		
		20000	43.5	59.9	72.8	100.0		
		40000	43.4	59.7	72.9	100.0		
1977MAY19-5	5	100	40.8	50.1	64.9	92.8	95.8	100.0
		500	41.4	50.7	63.7	91.6	95.5	100.0
		1000	40.1	50.2	65.7	90.8	95.8	100.0
		2500	38.7	48.8	64.0	88.1	94.5	100.0
		5000	39.7	49.8	63.0	86.8	94.3	100.0
		10000	40.5	50.8	62.9	85.8	94.1	100.0
		20000	35.6	46.3	57.2	79.9	92.2	100.0
		40000	31.7	43.6	52.2	74.4	90.1	100.0
		60000	28.9	39.9	48.4	71.4	86.4	100.0
1978JAN30-5	5	100	67.8	86.0	89.3	91.8	96.6	100.0
		500	67.7	85.9	89.2	91.8	96.6	100.0
		1000	65.8	84.7	88.3	91.2	96.3	100.0
		2500	61.6	80.2	86.6	89.9	94.3	100.0
		5000	53.9	74.6	86.2	90.8	96.1	100.0
		10000	54.8	76.4	85.7	90.2	95.6	100.0
		20000	52.8	75.1	85.2	89.9	95.8	100.0
		40000	50.5	72.5	83.0	87.6	94.0	100.0
		60000	48.1	69.7	82.0	87.3	94.0	100.0
		100000	46.9	66.0	78.6	84.8	93.3	100.0

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1978FEB02-2	2	100	70.2	88.3	100.0			
		500	69.3	87.9	100.0			
		1000	67.0	87.1	100.0			
		2500	65.3	87.1	100.0			
		5000	66.7	87.0	100.0			
		10000	64.5	86.9	100.0			
		20000	63.4	86.8	100.0			
		40000	67.0	88.1	100.0			
		60000	68.9	88.4	100.0			
		100000	68.1	89.6	100.0			
1979JAN05-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
1979JAN06-2	2	100	70.0	88.6	100.0			
		500	69.6	87.9	100.0			
		1000	69.1	86.9	100.0			
		2500	68.1	86.5	100.0			
		5000	66.5	86.2	100.0			
		10000	60.3	83.8	100.0			
		20000	61.5	85.1	100.0			
		40000	61.8	85.3	100.0			
1979JAN06-3	3	100	52.4	68.9	79.9	100.0		
		500	48.5	65.6	79.1	100.0		
		1000	46.8	64.1	78.3	100.0		
		2500	43.0	60.3	77.0	100.0		
		5000	40.5	57.2	75.5	100.0		
		10000	39.6	59.5	76.0	100.0		
		20000	43.1	64.1	77.8	100.0		
		40000	42.7	64.4	78.3	100.0		
		60000	43.8	65.5	79.0	100.0		
		100000	47.1	65.2	78.7	100.0		

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1979JAN06-4	4	100	43.3	56.8	65.8	87.8	100.0	
		500	38.9	51.9	62.9	86.4	100.0	
		1000	36.9	49.7	61.2	85.5	100.0	
		2500	33.0	44.9	60.3	84.3	100.0	
		5000	29.9	43.0	57.9	82.4	100.0	
		10000	30.3	44.7	58.2	82.6	100.0	
		20000	31.5	47.0	60.8	84.3	100.0	
		40000	32.8	46.6	61.9	85.5	100.0	
		60000	33.6	48.0	62.7	85.8	100.0	
		100000	32.3	47.0	63.0	85.3	100.0	
1979JAN06-5	5	100	38.0	50.1	58.0	77.3	91.5	100.0
		500	34.0	46.0	56.4	75.6	91.3	100.0
		1000	31.7	43.6	55.4	74.5	91.1	100.0
		2500	27.5	40.1	53.3	72.2	90.3	100.0
		5000	28.1	38.3	50.3	69.6	89.5	100.0
		10000	25.3	38.2	47.9	69.9	88.7	100.0
		20000	26.0	39.2	49.3	71.5	88.9	100.0
		40000	27.3	39.8	50.5	72.4	89.6	100.0
		60000	28.5	39.5	51.5	72.3	89.3	100.0
		100000	28.2	38.7	51.4	73.0	89.7	100.0
1979JAN07-7	7	100	36.6	48.3	55.9	74.5	88.1	96.9
		500	32.3	43.6	53.9	72.0	87.1	96.3
		1000	30.4	41.7	52.8	71.1	87.1	96.4
		2500	26.3	38.4	51.0	69.0	86.3	96.1
		5000	26.7	36.5	47.8	66.4	85.3	95.5
		10000	24.2	35.9	45.0	65.4	83.0	93.8
		20000	24.2	35.8	45.3	63.0	80.2	91.9
		40000	24.3	35.2	45.2	63.0	79.5	89.9
		60000	24.4	33.8	45.1	62.3	78.8	90.1
		100000	23.6	34.1	42.3	61.2	78.9	90.0
1979FEB06-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1981JAN13-7	7	100	25.7	38.6	42.8	61.0	71.6	85.1
		500	23.1	36.9	41.0	57.5	69.3	84.1
		1000	22.5	34.0	38.3	53.7	66.5	81.5
		2500	22.2	32.4	35.8	51.1	65.6	77.4
		5000	21.9	33.0	35.9	52.0	66.3	77.0
		10000	21.1	31.8	36.6	51.9	63.0	77.1
		20000	19.0	30.3	34.7	48.8	63.7	80.2
		40000	18.6	29.0	33.3	49.0	64.8	80.8
		60000	18.8	28.7	33.4	48.0	63.9	79.2
		100000	18.1	27.6	33.0	47.2	63.8	78.0
1982JAN20-5	5	100	63.5	70.7	78.1	89.9	98.5	100.0
		500	63.5	70.7	78.1	89.9	98.5	100.0
		1000	63.5	70.7	78.1	89.9	98.5	100.0
		2500	63.5	70.7	78.1	89.9	98.5	100.0
		5000	63.4	70.4	78.4	90.2	98.5	100.0
		10000	62.3	69.9	80.5	91.2	98.7	100.0
		20000	61.1	69.3	78.9	89.5	98.4	100.0
		40000	53.3	63.4	77.2	88.1	98.3	100.0
		60000	48.4	61.2	74.8	87.8	98.7	100.0
		100000	43.4	56.8	71.0	86.1	98.8	100.0
1982JAN22-2	2	100	66.4	91.4	100.0			
		500	66.2	91.4	100.0			
		1000	66.5	91.4	100.0			
		2500	66.3	91.2	100.0			
		5000	64.0	91.6	100.0			
		10000	64.6	92.9	100.0			
		20000	64.3	92.9	100.0			
		40000	64.1	94.0	100.0			
		60000	61.3	92.0	100.0			
		100000	63.6	89.4	100.0			
1982JAN31-7	7	100	30.0	-	36.2	48.2	57.6	64.4
		500	30.0	-	36.2	48.2	57.6	64.4
		1000	30.0	-	36.2	48.2	57.6	64.4
		2500	23.0	-	40.5	53.4	60.4	68.6
		5000	23.0	-	40.5	53.5	60.7	68.8
		10000	24.2	-	40.8	55.0	63.8	71.2
		20000	23.6	-	39.4	54.5	64.5	72.1
		40000	22.3	-	39.8	55.4	66.0	74.9

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1985JAN16-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
1985JAN16-4	4	100	67.3		94.7	96.2	100.0	
		500	67.3		94.6	96.2	100.0	
		1000	67.9		94.3	96.0	100.0	
		2500	67.9		93.6	95.8	100.0	
		5000	67.2		92.5	95.2	100.0	
		10000	65.3		91.8	95.5	100.0	
		20000	54.5		77.5	87.4	100.0	
		40000	47.8		70.4	83.0	100.0	
		60000	45.7		67.7	81.7	100.0	
1985MAR28-5	5	100	36.7	44.1	53.1	82.5	98.5	100.0
		500	36.7	44.1	53.1	82.5	98.5	100.0
		1000	36.6	44.4	52.7	82.6	98.5	100.0
		2500	37.0	48.4	55.8	83.6	98.6	100.0
		5000	38.6	50.1	57.3	83.9	98.7	100.0
		10000	35.8	47.7	54.6	80.3	97.7	100.0
		20000	33.7	45.7	52.2	75.7	96.5	100.0
		40000	33.7	45.9	52.6	77.3	97.0	100.0
1986JAN24-5	5	100	54.7	66.8	75.5	88.5	100.0	100.0
		500	54.7	67.0	75.3	89.0	100.0	100.0
		1000	54.6	67.8	75.5	89.9	100.0	100.0
		2500	55.4	69.8	76.3	90.9	100.0	100.0
		5000	54.7	68.0	74.7	91.0	100.0	100.0
		10000	56.7	66.7	76.1	88.4	100.0	100.0
		20000	53.9	63.5	72.8	86.9	98.7	100.0
		40000	43.7	53.5	61.8	88.4	98.5	100.0
		60000	40.7	50.6	58.4	86.3	97.2	100.0
		100000	39.5	50.5	57.7	86.6	95.5	100.0
		150000	34.2	47.6	56.0	85.8	95.6	100.0

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1988MAR31-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1988MAY02-2	2	100	74.1	93.4	100.0			
		500	75.0	93.0	100.0			
		1000	74.8	92.8	100.0			
		2500	75.2	93.4	100.0			
		5000	69.9	92.0	100.0			
		10000	72.6	92.9	100.0			
1988MAY04-4	4	100	73.0	92.3	93.7	95.7	100.0	
		500	71.1	88.5	89.9	93.7	100.0	
		1000	71.8	89.8	91.2	94.2	100.0	
		2500	63.3	79.4	83.5	89.9	100.0	
		5000	47.2	59.8	65.3	86.4	100.0	
		10000	42.6	54.2	63.2	86.8	100.0	
		20000	35.1	50.6	61.0	87.7	100.0	
		40000	45.8	58.3	63.3	92.5	100.0	
1988JUN27-4	4	100	74.3	87.4	93.2	97.4	100.0	
		500	76.6	88.6	94.0	98.2	100.0	
		1000	76.1	88.3	93.9	98.2	100.0	
		2500	71.5	88.9	94.4	98.6	100.0	
		5000	70.0	90.0	96.2	99.2	100.0	
		10000	63.7	87.9	96.8	99.2	100.0	
		20000	61.4	82.5	93.9	99.1	100.0	
		40000	62.8	84.0	93.6	98.9	100.0	
		60000	62.3	83.2	93.1	97.7	100.0	

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1989MAR14-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
		150000	100.0					
1989MAR14-2	2	100	72.2	100.0	100.0			
		500	72.1	100.0	100.0			
		1000	75.4	100.0	100.0			
		2500	82.9	100.0	100.0			
		5000	86.5	100.0	100.0			
		10000	89.4	100.0	100.0			
		20000	91.3	100.0	100.0			
		40000	91.7	100.0	100.0			
		60000	89.1	100.0	100.0			
		100000	86.4	100.0	100.0			
		150000	85.9	100.0	100.0			
1989MAY10-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1989JUN14-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1990JAN29-2	2	100	99.3	100.0	100.0			
		500	98.6	100.0	100.0			
		1000	98.6	100.0	100.0			
		2500	98.5	100.0	100.0			
		5000	98.5	100.0	100.0			
		10000	98.4	100.0	100.0			
		20000	99.2	100.0	100.0			
		40000	99.2	100.0	100.0			
		60000	98.3	100.0	100.0			
		100000	97.2	100.0	100.0			
		150000	94.9	100.0	100.0			
1991JAN01-7	7	100	28.4	36.0	41.8	54.2	69.0	81.2
		500	30.5	37.6	41.8	52.0	69.2	82.7
		1000	30.6	37.9	41.7	51.8	69.4	83.2
		2500	28.3	35.8	39.3	53.0	71.1	84.6
		5000	27.6	35.1	39.6	50.2	69.4	84.0
		10000	27.3	34.7	38.5	47.7	67.5	83.7
		20000	26.6	33.8	39.2	47.9	68.6	83.5
		40000	24.5	32.1	38.0	47.4	66.6	81.5
		60000	23.8	31.7	39.2	51.1	70.1	83.3
		100000	23.1	32.2	40.2	53.1	72.0	84.3
1991JAN14-1	1	100	100.0					
		500	100.0					
		1000	100.0					
		2500	100.0					
		5000	100.0					
		10000	100.0					
		20000	100.0					
		40000	100.0					
		60000	100.0					
		100000	100.0					
1995FEB28-4	4	100	47.7	69.0	81.8	100.0	100.0	
		500	47.7	69.0	81.8	100.0	100.0	
		1000	47.7	69.0	81.8	100.0	100.0	
		2500	46.2	70.8	82.4	100.0	100.0	
		5000	46.4	71.5	83.0	100.0	100.0	
		10000	46.2	73.0	83.7	100.0	100.0	
		20000	50.5	74.3	83.0	98.1	100.0	
		40000	47.3	68.0	77.3	95.7	100.0	
		60000	48.6	65.4	75.2	96.2	100.0	
		100000	49.2	66.0	75.2	95.6	100.0	
		150000	50.7	65.8	75.6	96.0	100.0	

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1996MAR10-7	7	100	31.3	42.4	44.3	49.7	55.6	70.0
		500	26.5	43.8	46.2	53.6	59.8	73.7
		1000	26.4	44.4	47.0	54.7	61.0	74.9
		2500	28.3	45.9	48.8	57.9	63.7	77.8
		5000	28.1	45.7	48.6	57.2	63.1	77.3
		10000	26.5	42.5	45.8	55.0	61.3	77.3
		20000	22.8	36.5	41.9	50.8	57.7	75.8
		40000	20.5	32.2	37.3	47.1	56.3	74.6
		60000	19.1	30.6	36.3	46.2	56.7	74.2
1996MAY06-6	6	100	25.2	36.3	44.4	60.2	76.7	93.3
		500	26.1	34.7	42.9	60.1	75.7	93.3
		1000	26.8	32.2	42.6	59.0	75.6	92.8
		2500	25.6	33.2	43.0	59.9	79.3	92.2
		5000	25.9	33.8	43.8	58.5	78.7	90.9
		10000	26.9	35.2	46.7	61.3	78.4	91.2
		20000	27.6	37.2	48.5	63.7	77.5	90.7
1996MAY07-7	7	100	26.6	33.1	43.4	61.3	74.0	86.6
		500	26.7	34.1	42.2	55.8	71.5	83.3
		1000	25.7	34.7	41.8	56.7	70.1	82.6
		2500	27.6	37.0	44.4	59.1	71.1	81.7
		5000	28.2	38.4	46.6	60.4	73.5	83.4
		10000	27.7	37.7	47.0	61.6	74.8	85.0
		20000	27.5	37.3	46.4	61.3	74.7	85.7
		40000	28.3	40.3	49.3	63.7	73.1	84.7
		60000	29.6	41.1	50.0	63.8	73.2	84.7
		100000	29.9	41.8	50.3	64.3	73.5	83.5
1997FEB03-7	7	100	32.9	43.4	49.8	66.0	73.3	87.4
		500	32.1	43.3	46.7	63.8	72.0	85.6
		1000	30.3	40.9	43.8	60.6	68.5	84.0
		2500	29.0	39.6	42.9	59.2	67.2	84.0
		5000	27.4	37.9	41.1	57.7	66.5	83.1
		10000	28.2	39.0	42.6	59.5	67.2	82.8
		20000	29.2	39.3	43.2	58.8	66.6	82.5
		40000	27.9	37.4	44.9	60.3	71.8	80.0
		60000	26.7	38.1	44.5	60.1	73.3	81.1
		100000	26.3	38.4	45.5	62.7	74.1	82.7

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1997MAR06-7	7	100	27.7	35.5	40.0	60.2	76.0	89.8
		500	27.8	37.0	41.3	61.8	77.7	90.4
		1000	27.5	38.0	43.0	63.2	78.9	90.9
		2500	27.7	41.4	49.9	68.0	81.7	91.8
		5000	27.8	41.8	51.2	68.7	82.1	91.9
		10000	27.7	37.6	49.3	67.4	82.1	91.9
		20000	26.2	33.8	43.8	63.3	80.1	89.3
		40000	26.7	39.3	42.4	61.0	76.4	86.8
		60000	26.2	35.6	42.5	60.9	75.0	85.9
		100000	26.3	36.7	41.8	59.0	73.7	84.5
1998JAN29-4	4	100	47.9	62.8	81.5	98.5	100.0	
		500	47.0	60.4	77.4	97.4	100.0	
		1000	47.2	57.6	78.5	96.5	100.0	
		2500	40.5	58.0	72.8	93.6	100.0	
		5000	46.1	58.6	77.5	93.4	100.0	
		10000	51.3	64.7	81.0	94.2	100.0	
		20000	53.7	69.8	83.2	94.2	100.0	
		40000	51.9	67.6	83.3	94.2	100.0	
		60000	50.8	66.0	81.7	93.6	100.0	
		100000	51.9	66.1	82.3	94.9	100.0	
1998MAR05-7	7	100	36.7	39.8	46.0	70.2	78.5	85.6
		500	38.6	42.5	47.8	69.8	78.2	85.6
		1000	38.0	41.9	46.9	68.2	76.0	84.3
		2500	36.6	40.9	46.3	62.0	68.9	80.4
		5000	35.3	39.9	45.0	58.5	64.8	78.3
		10000	32.9	37.2	43.7	56.5	62.8	76.5
		20000	31.6	35.9	42.5	55.9	62.4	75.7
		40000	32.2	37.0	44.6	56.0	63.3	77.5
		60000	32.6	37.6	45.0	56.5	64.5	78.8
		100000	33.2	38.5	46.2	57.1	65.8	79.8
1998DEC10-2	2	100	62.2	84.6	100.0			
		500	60.8	82.3	100.0			
		1000	61.1	82.4	100.0			
		2500	59.9	83.3	100.0			
		5000	59.7	84.0	100.0			
		10000	57.5	84.6	100.0			
		20000	60.2	84.0	100.0			
		40000	66.5	84.3	100.0			

Table 4: cont.

STORM NAME	DURATION (days)	AREA (km²)	24 h %	36 h %	48 h %	72 h %	96 h %	120 h %
1999FEB13-2	2	100	63.3	86.3	100.0			
		500	59.0	86.2	100.0			
		1000	57.5	86.2	100.0			
		2500	56.2	86.3	100.0			
		5000	57.7	86.8	100.0			
		10000	60.1	90.7	100.0			
		20000	64.4	91.6	100.0			
		40000	64.9	90.7	100.0			
		60000	61.7	89.7	100.0			
		100000	64.7	88.5	100.0			
1999MAY28-3	3	100	72.5	84.3	94.6	100.0		
		500	69.9	84.5	94.7	100.0		
		1000	68.6	83.8	94.1	100.0		
		2500	68.1	83.3	93.6	100.0		
		5000	65.2	83.1	93.8	100.0		
		10000	60.7	79.8	91.7	100.0		
		20000	58.3	77.6	90.4	100.0		
		40000	58.5	76.9	89.8	100.0		
		60000	57.3	78.3	90.9	100.0		
		100000	57.9	77.8	89.7	100.0		

6. SUMMARY

The characteristics of 122 significant rainfall events of mainly tropical origin have been analysed and the results tabulated. The storms cover the range of standard durations, regions, standard areas and seasons that meet the requirements of the project to revise the generalised tropical storm method of estimating Probable Maximum Precipitation (GTSMR). This means that some non-tropical events have been included.

Table 1 gives the dates and locations of the storms and Figure 1 is a plot of their approximate centres. The synoptic origins of the storms were classified and these are presented along with the storm dewpoints, which are a measure of moisture availability, in Table 2.

The mean rainfall depth as derived from an isohyetal analysis is given for each storm and for each standard area in Table 3.

The percentages in Table 4 represent the maximum proportions of the total storm rainfall that fell within the embedded standard durations. These are given for each standard area and are calculated from the storm temporal distributions.

Information about the data used to construct the temporal distributions for the storms is given in the Appendix. Table A1 presents the number of daily stations used to determine the daily distributions for each storm at each standard area as well as any 3-hourly observing stations used and the weightings assigned to them. For 3-hourly information extracted from individual storm reports, the location of the observations and report references are given in Table A2.

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8. GLOSSARY

airmass - Body of air possessing similar characteristics over an extensive area.

ARI - Average Recurrence Interval. The average, or expected, value of the periods between exceedances of a given rainfall total accumulated over a given duration.

CDIRS - Computerised Design **IFD** Rainfall System. A database developed by the Bureau of Meteorology to allow automatic determination of **IFD** data for any location in Australia.

burst – Rainfall depth for a sub-duration of a storm, used here for the maximum proportion of the total storm for that sub-duration. For example, the 24-hour burst of a 3-day storm is the maximum 24-hour rainfall depth falling in any of the 24-hour periods within those 3 days.

cold-cored low - A low pressure system which has its coldest temperatures near the centre, and warmer temperatures near the periphery.

depth-area curve - Curve showing, for a given duration, the relation of maximum average depth to size of area within a storm or storms.

dewpoint temperature - The temperature at which saturation is attained when air is cooled at constant pressure without the addition or subtraction of water vapour.

extratropical cyclone - A low pressure frontal system not of tropical origin found in the **middle** and **high latitudes**.

ex-tropical cyclone - A low pressure system which was previously categorised as a **tropical cyclone** but which does not satisfy the criteria for a tropical cyclone any more, and is undergoing the transition from a wa**rm-cored** to a **cold-cored** low pressure system.

generalised methods of PMP estimation - Methods which utilise the rainfalls recorded over a large region by separating the portion of rainfall arising from 'site-specific' influences from that portion arising from regional influences. Such methods provide regional consistency of PMP estimation.

GSAM - Generalised Southeast Australia Method of PMP estimation. A generalised method for estimating longer-duration PMP in southeast Australia.

GTSMR – Generalised Tropical Storm Method of PMP estimation as revised in 2003. A generalised method for estimating longer-duration PMP in those parts of Australia affected by tropical storms.

hectopascal (hPa) - Unit of atmospheric pressure, standard atmospheric pressure being 1013.2 hPa.

high latitudes – Regions located approximately 60 to 90 degrees latitude North or South.

HRS – Hydrometeorological Report Series

IFD - Intensity-Frequency-Duration of rainfall. Frequency analyses of rainfall expressed as rainfall intensities (in mm/hr) maintained over a specified duration (in hr), and recurring on average once every n-years (an ARI of n-years). Maps of the intensity-frequency-duration (IFD) design rainfall are found in Volume 2 of 'Australian Rainfall and Runoff' (Inst. Engrs Aust., 1987).

isohyet - Line of equal depth of precipitation.

middle latitudes - Regions located approximately between 35 and 65 degrees latitude North and South.

monsoon activity - Enhanced convection associated with a **monsoon depression** over northern Australia.

monsoon depression – In the Australian region, this generally refers to a warm-cored low pressure system situated over the land.

Pluviograph – A rain gauge that includes an apparatus for continuously recording the rainfall depth.

PMP - Probable Maximum Precipitation is *'the greatest depth of precipitation for a given duration meteorologically possible over a given size storm area at a particular location at a particular time of the year, with no allowance made for long-term climatic trends.'* (WMO, 1986).

severe tropical cyclone - A **tropical cyclone** with maximum sustained winds equalling or exceeding 65 knots (1 knot = 1 nautical mile per hour).

spatial distribution - The size, shape and orientation of the isohyets of the storm analysis.

storm - As used in this catalogue, it is a meteorological phenomenon significant only for the amount and extent of the rainfall it produces. Not to be confused with thunderstorms.

storm analysis - The manually drawn **spatial distribution** of isohyets of storm rainfall.

storm dewpoint temperature - The 1000hPa dewpoint temperature that is representative of the rain-producing airmass of the storm.

summer – October to April inclusive. As used in the GTSMR, it approximates the northern wet season.

synoptic classification – Classifications of meteorological phenomena at the scale that can be detected on synoptic weather maps, i.e. not local.

synoptic station network - The network of Australian meteorological observing stations that record observations at 3-hourly intervals.

tropical cyclones - These are non-frontal, synoptic scale, cyclonic rotational low pressure systems of tropical origin with maximum sustained winds between 34 and 64 knots (1 knot = 1 nautical mile per hour).

tropical – Pertaining to the region between the Tropic of Cancer (23.5 degrees latitude North) and the Tropic of Capricorn (23.5 degrees latitude South).

wa**rm-cored low** – A low pressure system which has its warmest temperatures near the centre, and cooler temperatures near the periphery.

winter – May to September inclusive. As used in the GTSMR, it approximates the northern dry season.

APPENDIX

INFORMATION ABOUT THE DATA USED IN DERIVING TEMPORAL PATTERNS

APPENDIX

INFORMATION ABOUT THE DATA USED IN DERIVING TEMPORAL PATTERNS

As described in Section 4, the temporal patterns for the storms were derived by calculating the daily distributions from the 9 am rainfall records and imposing a 3-hourly pattern on these using sub-daily rainfall observations where available. For each storm, this was done for each of the standard areas up to the maximum extent of the storm. Three-hourly temporal patterns were constructed for 85 out of the 122 storms in this catalogue.

Given the sparsity of pluviograph stations across Australia, especially prior to the 1950's, it was important to source as much sub-daily data as possible. Therefore, in addition to the Bureau of Meteorology held pluviograph records, data was obtained from the synoptic station network and also from several state authorities; these are listed in the Key to Table A1. For some of the early storms, the only sources of sub-daily information are reports. The studies used to construct 3-hourly temporal patterns at one or more locations are referenced in Table A2.

Where there are multiple sub-daily stations for the one event, the patterns are weighted as a proportion of one. This is done in such a way that the stations geographically closest to the standard area polygon and most consistent with the daily averages have a greater influence on the overall storm distribution. The weights assigned to each record are given in Table A1. For more information on the derivation of the storm temporal patterns, refer to Walland et al. (2003, pages 8-10), Minty and Meighen (1999, pages 8-10) and Minty et al. (1996, pages 5-8).

It should be noted that although the data from a site may have the same weighting as data from another site within a different storm, it does not follow that these data sets are equally credible. This is because the weighting of data from a site is relative to the available data for that individual storm. The paucity of sub-daily data means that, for some storms, any data we do have is not discarded unless it actually contradicts the daily distributions or is located too far from the standard area boundary whilst other storms, with the same lack of sub-daily distributions, may have data that match the daily distributions at representatively located sites.

Table A1: Number of Observation Sites and the Weight Assigned to the 3-Hourly Temporal Pattern Information for Each Standard Area in Each Storm.

Key to Table A1

Storm Name:
The code used to uniquely identify each extreme rainfall event. The year, month, end date and duration are given in that order.

Area:
The standard area in square kilometres for which the rainfall depth has been determined i.e. 100, 500, 1000, 2500, 5000, 10000, 20000, 40000, 60000, 100000 or 150000 km².

Stations – Daily:
The number of daily rainfall observing stations within the standard area polygons that were used in the storm analysis. Although no daily rainfall data is required for the 1-day storms, the number of stations within the polygons is provided for interest.

Stations – 3-Hourly:
The number of 3-hourly rainfall data sources used to construct the temporal patterns.

Weighting of 3-Hourly Stations – No.:
The official Bureau of Meteorology pluviograph station number.
Exceptions to this are:

(i) One or two digit station numbers – artificial station numbers assigned to records without station numbers, such as those obtained from storm reports.
(ii) Numbers labelled with '$_S$' – synoptic stations in the Bureau of Meteorology database.
(iii) Numbers labelled with '$_R$' – stations that have 3-hourly data constructed from information in storm reports (see Table A2 for the list of these references).
(iv) Numbers labelled with '$_{WA}$' – pluviograph stations for which data was provided by the Western Australian Water and Rivers Commission.
(v) Numbers labelled with '$_{SA}$' – pluviograph stations for which data was provided by the South Australian Department for Water Resources.
(vi) Numbers labelled with '$_{Qld}$' – pluviograph stations for which data was provided by the Queensland Department of Natural Resources.
(vii) Numbers labelled with '$_{NSW}$' – pluviograph stations for which data was provided by the New South Wales Department of Land and Water Conservation (currently New South Wales Department of Infrastructure, Planning and Natural Resources).
(viii) Numbers labelled with '$_{NT}$' – pluviograph stations for which data was provided by the Northern Territory Department of Lands.

Weighting of 3-Hourly Stations – Weight:
The weight (as a proportion of one) assigned to each set of 3-hourly data.

Table A1: Number of Observation Sites and the Weight Assigned to the 3-Hourly Temporal Pattern Information for Each Standard Area in Each Storm.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1893FEB03-1	100	4	1	1_R	1.000				
	500	6	1	1_R	1.000				
	1000	8	1	1_R	1.000				
	2500	10	1	1_R	1.000				
	5000	15	1	1_R	1.000				
	10000	21	1	1_R	1.000				
	20000	27	1	1_R	1.000				
	40000	35	1	1_R	1.000				
	60000	39	1	1_R	1.000				
1893FEB03-2	100	3	1	1_R	1.000				
	500	6	1	1_R	1.000				
	1000	7	1	1_R	1.000				
	2500	9	1	1_R	1.000				
	5000	12	1	1_R	1.000				
	10000	17	1	1_R	1.000				
	20000	30	1	1_R	1.000				
	40000	37	1	1_R	1.000				
	60000	42	1	1_R	1.000				
	100000	54	1	1_R	1.000				
1893FEB04-3	100	3	N/A						
	500	6	N/A						
	1000	8	N/A						
	2500	9	N/A						
	5000	12	N/A						
	10000	20	N/A						
	20000	31	N/A						
	40000	42	N/A						
	60000	47	N/A						
	100000	56	N/A						
1893FEB06-7	100	3	N/A						
	500	6	N/A						
	1000	6	N/A						
	2500	9	N/A						
	5000	14	N/A						
	10000	19	N/A						
	20000	29	N/A						
	40000	36	N/A						
	60000	44	N/A						
	100000	50	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1898APR03-2	100	1	1	4042_R	1.000				
	500	1	1	4042_R	1.000				
	1000	1	1	4042_R	1.000				
	2500	4	1	4042_R	1.000				
	5000	4	1	4042_R	1.000				
	10000	6	1	4042_R	1.000				
	20000	7	1	4042_R	1.000				
	40000	7	1	4042_R	1.000				
	60000	8	1	4042_R	1.000				
	100000	11	1	4042_R	1.000				
1910JAN15-5	100	1	N/A						
	500	3	N/A						
	1000	7	N/A						
	2500	12	N/A						
	5000	18	N/A						
	10000	34	N/A						
	20000	63	N/A						
	40000	126	N/A						
	60000	168	N/A						
	100000	240	N/A						
1911JAN08-1	100	1	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	2	N/A						
	5000	3	N/A						
	10000	4	N/A						
	20000	5	N/A						
	40000	10	N/A						
	60000	12	N/A						
	100000	17	N/A						
1911JAN09-5	100	1	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	2	N/A						
	5000	2	N/A						
	10000	4	N/A						
	20000	6	N/A						
	40000	9	N/A						
	60000	13	N/A						
	100000	17	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1911APR02-2	100	1	N/A						
	500	3	N/A						
	1000	6	N/A						
	2500	7	N/A						
	5000	10	N/A						
	10000	17	N/A						
	20000	20	N/A						
	40000	25	N/A						
	60000	29	N/A						
	100000	38	N/A						
1911APR03-5	100	1	N/A						
	500	4	N/A						
	1000	4	N/A						
	2500	8	N/A						
	5000	10	N/A						
	10000	16	N/A						
	20000	19	N/A						
	40000	24	N/A						
	60000	31	N/A						
	100000	37	N/A						
1913JAN18-4	100	1	N/A						
	500	3	N/A						
	1000	6	N/A						
	2500	8	N/A						
	5000	12	N/A						
	10000	20	N/A						
	20000	36	N/A						
	40000	59	N/A						
	60000	73	N/A						
1916DEC28-1	100	3	2	2_R	0.700	3_R	0.300		
	500	3	2	2_R	0.600	3_R	0.400		
	1000	5	3	2_R	0.400	3_R	0.400	4_R	0.200
	2500	10	4	2_R	0.300	3_R	0.300	4_R	0.200
				5_R	0.200				
	5000	12	4	2_R	0.300	3_R	0.300	4_R	0.200
				5_R	0.200				
	10000	15	4	2_R	0.300	3_R	0.300	4_R	0.200
				5_R	0.200				
	20000	19	5	2_R	0.200	3_R	0.200	4_R	0.200
				5_R	0.200	6_R	0.200		
	40000	30	5	2_R	0.200	3_R	0.200	4_R	0.200
				5_R	0.200	6_R	0.200		

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1916DEC29-2	100	2	1	5_R	1.000				
	500	3	2	4_R	0.300	5_R	0.700		
	1000	5	2	4_R	0.500	5_R	0.500		
	2500	10	4	2_R	0.200	3_R	0.200	4_R	0.300
				5_R	0.300				
	5000	12	4	2_R	0.200	3_R	0.200	4_R	0.300
				5_R	0.300				
	10000	14	5	2_R	0.200	3_R	0.200	4_R	0.200
				5_R	0.300	6_R	0.100		
	20000	19	5	2_R	0.200	3_R	0.200	4_R	0.200
				5_R	0.200	6_R	0.200		
	40000	29	5	2_R	0.200	3_R	0.200	4_R	0.200
				5_R	0.200	6_R	0.200		
	60000	36	5	2_R	0.200	3_R	0.200	4_R	0.200
				5_R	0.200	6_R	0.200		
1917JAN07-4	100	2	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	3	N/A						
	5000	4	N/A						
	10000	5	N/A						
	20000	7	N/A						
	40000	11	N/A						
	60000	17	N/A						
1918JAN22-1	100	4	1	7_R	1.000				
	500	7	1	7_R	1.000				
	1000	10	1	7_R	1.000				
	2500	13	1	7_R	1.000				
	5000	18	1	7_R	1.000				
	10000	20	1	7_R	1.000				
	20000	27	1	7_R	1.000				
	40000	51	1	7_R	1.000				
	60000	60	1	7_R	1.000				
	100000	76	1	7_R	1.000				
1918JAN24-3	100	4	1	7_R	1.000				
	500	5	1	7_R	1.000				
	1000	8	1	7_R	1.000				
	2500	12	1	7_R	1.000				
	5000	15	1	7_R	1.000				
	10000	20	1	7_R	1.000				
	20000	25	1	7_R	1.000				
	40000	50	1	7_R	1.000				
	60000	59	1	7_R	1.000				
	100000	76	1	7_R	1.000				

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1918JAN25-5	100	3	1	7_R	1.000				
	500	6	1	7_R	1.000				
	1000	8	1	7_R	1.000				
	2500	14	1	7_R	1.000				
	5000	14	1	7_R	1.000				
	10000	19	1	7_R	1.000				
	20000	24	1	7_R	1.000				
	40000	43	1	7_R	1.000				
	60000	55	1	7_R	1.000				
	100000	73	1	7_R	1.000				
1920JUL03-6	100	3	N/A						
	500	7	N/A						
	1000	9	N/A						
	2500	20	N/A						
	5000	29	N/A						
	10000	41	N/A						
	20000	73	N/A						
	40000	117	N/A						
	60000	157	N/A						
	100000	253	N/A						
1922JAN31-1	100	1	N/A						
	500	3	N/A						
	1000	3	N/A						
	2500	8	N/A						
	5000	10	N/A						
	10000	11	N/A						
	20000	20	N/A						
	40000	29	N/A						
	60000	41	N/A						
	100000	60	N/A						
1922FEB02-3	100	2	N/A						
	500	4	N/A						
	1000	4	N/A						
	2500	8	N/A						
	5000	9	N/A						
	10000	14	N/A						
	20000	19	N/A						
	40000	31	N/A						
	60000	40	N/A						
	100000	55	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1923JAN17-1	100	1	N/A						
	500	3	N/A						
	1000	4	N/A						
	2500	6	N/A						
	5000	9	N/A						
	10000	12	N/A						
	20000	19	N/A						
	40000	26	N/A						
1927SEP21-3	100	2	N/A						
	500	8	N/A						
	1000	10	N/A						
	2500	12	N/A						
	5000	19	N/A						
	10000	24	N/A						
	20000	41	N/A						
	40000	89	N/A						
	60000	104	N/A						
1929FEB12-7	100	2	N/A						
	500	6	N/A						
	1000	7	N/A						
	2500	11	N/A						
	5000	14	N/A						
	10000	27	N/A						
	20000	45	N/A						
	40000	97	N/A						
	60000	147	N/A						
	100000	210	N/A						
1930MAR04-6	100	1	N/A						
	500	1	N/A						
	1000	1	N/A						
	2500	2	N/A						
	5000	3	N/A						
	10000	3	N/A						
	20000	4	N/A						
	40000	6	N/A						
	60000	6	N/A						
	100000	6	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1930JUN19-3	100	2	N/A						
	500	5	N/A						
	1000	10	N/A						
	2500	13	N/A						
	5000	21	N/A						
	10000	38	N/A						
	20000	68	N/A						
	40000	105	N/A						
	60000	141	N/A						
1934MAR09-1	100	3	N/A						
	500	4	N/A						
	1000	5	N/A						
	2500	12	N/A						
	5000	24	N/A						
	10000	48	N/A						
	20000	83	N/A						
	40000	158	N/A						
	60000	203	N/A						
	100000	294	N/A						
1942FEB17-3	100	1	N/A						
	500	1	N/A						
	1000	1	N/A						
	2500	2	N/A						
	5000	2	N/A						
	10000	3	N/A						
	20000	5	N/A						
	40000	9	N/A						
	60000	11	N/A						
	100000	20	N/A						
1945JUN13-4	100	5	N/A						
	500	9	N/A						
	1000	11	N/A						
	2500	18	N/A						
	5000	24	N/A						
	10000	38	N/A						
	20000	66	N/A						
	40000	110	N/A						
	60000	141	N/A						
	100000	219	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1945JUN25-10	100	2	N/A						
	500	5	N/A						
	1000	8	N/A						
	2500	15	N/A						
	5000	31	N/A						
	10000	48	N/A						
	20000	75	N/A						
	40000	117	N/A						
	60000	138	N/A						
1946MAR03-1	100	2	N/A						
	500	3	N/A						
	1000	4	N/A						
	2500	11	N/A						
	5000	16	N/A						
	10000	23	N/A						
	20000	37	N/A						
	40000	52	N/A						
	60000	62	N/A						
1947JAN26-3	100	3	N/A						
	500	11	N/A						
	1000	16	N/A						
	2500	29	N/A						
	5000	41	N/A						
	10000	70	N/A						
	20000	147	N/A						
	40000	217	N/A						
1947FEB12-1	100	3	1	39006	1.000				
	500	4	1	39006	1.000				
	1000	6	1	39006	1.000				
	2500	13	1	39006	1.000				
	5000	20	1	39006	1.000				
	10000	29	2	39006	0.700	39083	0.300		
	20000	53	2	39006	0.500	39083	0.500		
	40000	99	2	39006	0.500	39083	0.500		
	60000	127	2	39006	0.500	39083	0.500		
1948FEB23-1	100	1	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	3	N/A						
	5000	3	N/A						
	10000	7	N/A						
	20000	12	N/A						
	40000	17	N/A						
	60000	25	N/A						
	100000	36	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1948FEB23-2	100	2	N/A						
	500	4	N/A						
	1000	4	N/A						
	2500	6	N/A						
	5000	7	N/A						
	10000	10	N/A						
	20000	14	N/A						
	40000	18	N/A						
	60000	21	N/A						
	100000	33	N/A						
	150000	54	N/A						
1950JUN24-1	100	4	1	56018	1.000				
	500	8	1	56018	1.000				
	1000	13	1	56018	1.000				
	2500	18	1	56018	1.000				
	5000	31	1	56018	1.000				
	10000	47	1	56018	1.000				
	20000	72	1	56018	1.000				
	40000	112	1	56018	1.000				
	60000	152	1	56018	1.000				
1950JUN25-7	100	4	N/A						
	500	7	N/A						
	1000	11	N/A						
	2500	17	N/A						
	5000	31	N/A						
	10000	43	N/A						
	20000	73	N/A						
	40000	121	N/A						
	60000	160	N/A						
1951JAN14-6	100	3	N/A						
	500	5	N/A						
	1000	9	N/A						
	2500	15	N/A						
	5000	23	N/A						
	10000	29	N/A						
	20000	41	N/A						
	40000	54	N/A						
	60000	65	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1954FEB21-1	100	5	1	42_R	1.000				
	500	8	1	42_R	1.000				
	1000	12	1	42_R	1.000				
	2500	21	1	42_R	1.000				
	5000	33	1	42_R	1.000				
	10000	50	2	42_R	0.600	58025	0.400		
	20000	68	2	42_R	0.500	58025	0.500		
	40000	146	3	42_R	0.350	58013	0.300	58025	0.350
	60000	196	4	42_R	0.250	58013	0.250	58025	0.250
				60076	0.250				
	100000	356	7	42_R	0.150	40214	0.140	41044	0.140
				58025	0.150	60076	0.140	61078	0.140
				58013	0.140				
1954FEB21-2	100	4	1	42_R	1.000				
	500	9	1	42_R	1.000				
	1000	12	1	42_R	1.000				
	2500	23	1	42_R	1.000				
	5000	32	1	42_R	1.000				
	10000	47	2	42_R	0.700	58025	0.300		
	20000	74	2	42_R	0.650	58025	0.350		
	40000	147	2	42_R	0.600	58025	0.400		
	60000	209	3	42_R	0.500	58025	0.250	60076	0.250
1955FEB17-1	100	3	1	9538	1.000				
	500	4	1	9538	1.000				
	1000	9	1	9538	1.000				
	2500	12	1	9538	1.000				
	5000	22	1	9538	1.000				
	10000	34	1	9538	1.000				
	20000	63	1	9538	1.000				
	40000	110	1	9538	1.000				
	60000	158	2	9538	0.800	509005	0.200		
	100000	248	2	9538	0.700	509005	0.300		
1955FEB18-4	100	3	1	9538	1.000				
	500	4	1	9538	1.000				
	1000	6	1	9538	1.000				
	2500	10	1	9538	1.000				
	5000	20	1	9538	1.000				
	10000	32	1	9538	1.000				
	20000	64	1	9538	1.000				
	40000	123	1	9538	1.000				
	60000	171	2	9538	0.800	509005	0.200		
	100000	244	2	9538	0.700	509005	0.300		
	150000	348	2	9538	0.600	509005	0.400		

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS		
	(km²)	Daily	3hrly	No. Weight	No. Weight	No. Weight
1955FEB25-2	100	3	1	8_R 1.000		
	500	4	1	8_R 1.000		
	1000	8	1	8_R 1.000		
	2500	11	1	8_R 1.000		
	5000	15	1	8_R 1.000		
	10000	21	1	8_R 1.000		
	20000	48	1	8_R 1.000		
	40000	88	2	8_R 0.800	55024 0.200	
	60000	116	2	8_R 0.700	55024 0.300	
1956JAN22-2	100	2	1	9_R 1.000		
	500	5	1	9_R 1.000		
	1000	8	1	9_R 1.000		
	2500	17	3	9_R 0.400	10_R 0.400	11_R 0.200
	5000	23	3	9_R 0.400	10_R 0.400	11_R 0.200
	10000	40	4	9_R 0.300	10_R 0.300	11_R 0.200
				12_R 0.200		
	20000	68	5	9_R 0.200	10_R 0.200	11_R 0.200
				12_R 0.200	13_R 0.200	
	40000	118	10	9_R 0.100	10_R 0.100	11_R 0.100
				12_R 0.100	13_R 0.100	14_R 0.100
				15_R 0.100	16_R 0.100	17_R 0.100
				56059 0.100		
	60000	173	12	9_R 0.100	10_R 0.100	11_R 0.060
				12_R 0.060	13_R 0.100	14_R 0.060
				15_R 0.060	16_R 0.100	17_R 0.100
				41044 0.060	56059 0.100	56224 0.100
	100000	237	15	9_R 0.090	10_R 0.090	11_R 0.050
				12_R 0.050	13_R 0.090	14_R 0.050
				15_R 0.050	16_R 0.080	17_R 0.080
				18_R 0.050	19_R 0.050	41044 0.050
				56059 0.090	56224 0.080	59013 0.050
1956MAR07-1	100	2	2	31034 0.700	31066 0.300	
	500	2	2	31034 0.700	31066 0.300	
	1000	2	2	31034 0.700	31066 0.300	
	2500	5	2	31034 0.700	31066 0.300	
	5000	7	2	31034 0.700	31066 0.300	
	10000	13	2	31034 0.700	31066 0.300	
	20000	18	2	31034 0.700	31066 0.300	
	40000	30	2	31034 0.700	31066 0.300	
	60000	37	2	31034 0.700	31066 0.300	
	100000	55	2	31034 0.700	31066 0.300	

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1958FEB18-1	100	4	2	20_R	0.500	21_R	0.500		
	500	6	5	20_R	0.200	21_R	0.200	22_R	0.200
				23_R	0.200	24_R	0.200		
	1000	8	5	20_R	0.200	21_R	0.200	22_R	0.200
				23_R	0.200	24_R	0.200		
	2500	11	6	20_R	0.170	21_R	0.170	22_R	0.170
				23_R	0.170	24_R	0.160	25_R	0.160
	5000	20	6	20_R	0.170	21_R	0.170	22_R	0.170
				23_R	0.170	24_R	0.160	25_R	0.160
	10000	32	6	20_R	0.170	21_R	0.170	22_R	0.170
				23_R	0.170	24_R	0.160	25_R	0.160
	20000	45	6	20_R	0.170	21_R	0.170	22_R	0.170
				23_R	0.170	24_R	0.160	25_R	0.160
1958FEB22-3	100	1	N/A						
	500	3	N/A						
	1000	3	N/A						
	2500	5	N/A						
	5000	9	N/A						
	10000	15	N/A						
	20000	25	N/A						
	40000	41	N/A						
	60000	55	N/A						
1959FEB17-1	100	1	1	39083	1.000				
	500	3	1	39083	1.000				
	1000	3	1	39083	1.000				
	2500	9	1	39083	1.000				
	5000	13	1	39083	1.000				
	10000	18	1	39083	1.000				
	20000	25	1	39083	1.000				
	40000	49	1	39083	1.000				
	60000	71	1	39083	1.000				
	100000	110	1	39083	1.000				
1959FEB18-1	100	8	2	40082	0.600	41044	0.400		
	500	16	2	40082	0.600	41044	0.400		
	1000	26	2	40082	0.600	41044	0.400		
	2500	46	2	40082	0.600	41044	0.400		
	5000	71	2	40082	0.600	41044	0.400		
	10000	109	2	40082	0.500	41044	0.500		
	20000	180	3	40082	0.400	41044	0.400	41467	0.200

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1959APR06-1	100	1	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	4	N/A						
	5000	4	N/A						
	10000	6	N/A						
	20000	11	N/A						
	40000	15	N/A						
	60000	20	N/A						
	100000	22	N/A						
1963APR15-1	100	1	1	14626	1.000				
	500	1	1	14626	1.000				
	1000	2	1	14626	1.000				
	2500	3	1	14626	1.000				
	5000	5	1	14626	1.000				
	10000	6	1	14626	1.000				
	20000	8	1	14626	1.000				
	40000	11	1	14626	1.000				
1963APR16-4	100	1	1	14626	1.000				
	500	1	1	14626	1.000				
	1000	2	1	14626	1.000				
	2500	3	1	14626	1.000				
	5000	4	1	14626	1.000				
	10000	7	1	14626	1.000				
	20000	10	1	14626	1.000				
	40000	11	1	14626	1.000				
	60000	12	1	14626	1.000				
	100000	17	1	14626	1.000				
1964JAN14-1	100	1	N/A						
	500	2	N/A						
	1000	3	N/A						
	2500	5	N/A						
	5000	6	N/A						
	10000	12	N/A						
	20000	23	N/A						
	40000	42	N/A						
	60000	60	N/A						
	100000	81	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1966JAN20-4	100	1	N/A						
	500	2	N/A						
	1000	3	N/A						
	2500	5	N/A						
	5000	7	N/A						
	10000	9	N/A						
	20000	13	N/A						
	40000	18	N/A						
	60000	23	N/A						
	100000	32	N/A						
1967JAN22-2	100	1	1	6011	1.000				
	500	1	1	6011	1.000				
	1000	3	1	6011	1.000				
	2500	4	1	6011	1.000				
	5000	6	1	6011	1.000				
	10000	10	1	6011	1.000				
	20000	16	1	6011	1.000				
	40000	36	1	6011	1.000				
	60000	44	1	6011	1.000				
	100000	63	2	6011	0.500	7132	0.500		
	150000	93	2	6011	0.500	7132	0.500		
1968JAN13-2	100	1	1	60110	1.000				
	500	4	1	60110	1.000				
	1000	6	1	60110	1.000				
	2500	16	2	59000	0.300	60110	0.700		
	5000	38	2	59000	0.500	60110	0.500		
	10000	66	6	57058	0.200	57059	0.100	59000	0.200
				59048	0.200	60030	0.100	60110	0.200
	20000	107	9	57056	0.130	57058	0.130	57059	0.070
				59000	0.130	59013	0.130	59048	0.130
				60030	0.080	60110	0.130	61151	0.070
	40000	179	11	57033	0.060	57056	0.120	57058	0.120
				57059	0.060	57105	0.120	59000	0.060
				59013	0.120	59048	0.090	60030	0.080
				60110	0.090	61151	0.080		
	60000	295	14	57033	0.040	57056	0.100	57058	0.100
				57059	0.040	57105	0.100	58076	0.080
				59000	0.040	59013	0.100	59048	0.070
				60030	0.060	60110	0.070	61151	0.060
				61158	0.070	61356	0.070		
	100000	561	19	56018	0.050	56041	0.050	56059	0.050
				57033	0.050	57056	0.050	57058	0.060
				57059	0.050	57105	0.050	58026	0.050
				58076	0.050	58116	0.050	59000	0.060
				59013	0.050	59048	0.060	60030	0.060
				60110	0.060	61151	0.050	61158	0.050
				61356	0.050				

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS		
	(km²)	Daily	3hrly	No. Weight	No. Weight	No. Weight
1970JAN19-1	100	1	2	43_R 0.500	44_R 0.500	
	500	3	2	43_R 0.500	44_R 0.500	
	1000	6	4	43_R 0.300	44_R 0.300	45_R 0.200
				46_R 0.200		
	2500	13	7	43_R 0.200	44_R 0.200	45_R 0.150
				46_R 0.150	47_R 0.100	48_R 0.100
				49_R 0.100		
	5000	24	10	43_R 0.150	44_R 0.150	45_R 0.100
				46_R 0.100	47_R 0.100	48_R 0.100
				49_R 0.100	50_R 0.100	51_R 0.050
				52_R 0.050		
	10000	38	15	43_R 0.100	44_R 0.100	45_R 0.070
				46_R 0.070	47_R 0.070	48_R 0.070
				49_R 0.070	50_R 0.070	51_R 0.070
				52_R 0.070	53_R 0.050	54_R 0.050
				55_R 0.040	33087 0.050	33099 0.050
	20000	52	16	43_R 0.100	44_R 0.100	45_R 0.070
				46_R 0.070	47_R 0.070	48_R 0.070
				49_R 0.070	50_R 0.070	51_R 0.070
				52_R 0.070	53_R 0.040	54_R 0.040
				55_R 0.040	33047 0.040	33087 0.040
				33099 0.040		
	40000	67	18	43_R 0.080	44_R 0.080	45_R 0.065
				46_R 0.065	47_R 0.065	48_R 0.065
				49_R 0.065	50_R 0.065	51_R 0.065
				52_R 0.065	53_R 0.040	54_R 0.040
				55_R 0.040	56_R 0.040	33047 0.040
				33087 0.040	33099 0.040	33119 0.040
1970DEC05-1	100	1	1	3003 1.000		
	500	1	1	3003 1.000		
	1000	3	1	3003 1.000		
	2500	3	1	3003 1.000		
	5000	3	1	3003 1.000		
	10000	7	1	3003 1.000		
	20000	11	1	3003 1.000		
	40000	16	1	3003 1.000		
1971JAN26-1	100	1	1	5017 1.000		
	500	1	1	5017 1.000		
	1000	3	1	5017 1.000		
	2500	3	1	5017 1.000		
	5000	6	1	5017 1.000		
	10000	9	1	5017 1.000		
	20000	18	1	5017 1.000		
	40000	24	1	5017 1.000		
	60000	33	1	5017 1.000		

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1971DEC27-1	100	2	2	44021	0.700	42016	0.300		
	500	3	2	44021	0.700	42016	0.300		
	1000	4	2	44021	0.700	42016	0.300		
	2500	7	2	44021	0.700	42016	0.300		
	5000	13	2	44021	0.700	42016	0.300		
	10000	22	2	44021	0.700	42016	0.300		
	20000	33	2	44021	0.600	42016	0.400		
	40000	54	2	44021	0.600	42016	0.400		
	60000	70	2	44021	0.600	42016	0.400		
	100000	106	2	44021	0.500	42016	0.500		
1972JAN12-5	100	2	1	32064	1.000				
	500	2	1	32064	1.000				
	1000	5	1	32064	1.000				
	2500	14	1	32064	1.000				
	5000	20	1	32064	1.000				
	10000	40	1	32064	1.000				
	20000	58	2	32040	0.500	32064	0.500		
	40000	87	3	31011	0.200	32040	0.400	32064	0.400
	60000	123	3	31011	0.200	32040	0.400	32064	0.400
	100000	181	7	31011	0.100	31034	0.100	31066	0.100
				32040	0.200	32063	0.200	32064	0.200
				33090	0.100				
1973JAN24-1	100	1	1	513002_{WA}	1.000				
	500	1	1	513002_{WA}	1.000				
	1000	2	1	513002_{WA}	1.000				
	2500	2	1	513002_{WA}	1.000				
	5000	4	1	513002_{WA}	1.000				
	10000	6	1	513002_{WA}	1.000				
	20000	9	1	513002_{WA}	1.000				
	40000	12	1	513002_{WA}	1.000				
	60000	17	1	513002_{WA}	1.000				
	100000	24	1	513002_{WA}	1.000				
1973JAN24-2	100	1	1	513002_{WA}	1.000				
	500	1	1	513002_{WA}	1.000				
	1000	2	1	513002_{WA}	1.000				
	2500	2	1	513002_{WA}	1.000				
	5000	4	1	513002_{WA}	1.000				
	10000	6	1	513002_{WA}	1.000				
	20000	9	1	513002_{WA}	1.000				
	40000	14	1	513002_{WA}	1.000				
	60000	17	1	513002_{WA}	1.000				
	100000	27	1	513002_{WA}	1.000				

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km^2)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1973JUL10-6	100	7	1	59067	1.000				
	500	12	1	59067	1.000				
	1000	23	1	59067	1.000				
	2500	35	1	59067	1.000				
	5000	49	3	57059	0.450	59040	0.100	59067	0.450
	10000	67	4	57059	0.350	58076	0.200	59040	0.100
				59067	0.350				
	20000	107	9	57058	0.050	57059	0.180	58076	0.120
				58099	0.120	59000	0.120	59040	0.060
				59048	0.120	59067	0.150	60110	0.080
	40000	203	11	57058	0.040	57059	0.110	58076	0.110
				58099	0.110	58129	0.110	58158	0.110
				59000	0.100	59040	0.040	59048	0.100
				59067	0.100	60110	0.070		
	60000	241	13	56217	0.050	57058	0.050	57059	0.110
				58076	0.110	58099	0.100	58129	0.100
				58158	0.100	59000	0.070	59040	0.050
				59048	0.070	59067	0.070	60030	0.050
				60110	0.070				
1974JAN08-1	100	3	2	44030	0.600	52062	0.400		
	500	5	2	44030	0.600	52062	0.400		
	1000	7	2	44030	0.600	52062	0.400		
	2500	9	2	44030	0.600	52062	0.400		
	5000	17	2	44030	0.500	52062	0.500		
	10000	30	2	44030	0.500	52062	0.500		
	20000	52	2	44030	0.400	52062	0.600		
	40000	86	3	44030	0.400	52062	0.400	53048	0.200
	60000	128	3	44030	0.400	52062	0.400	53048	0.200
	100000	229	3	44030	0.400	52062	0.400	53048	0.200
1974JAN09-3	100	3	2	44030	0.600	52062	0.400		
	500	5	2	44030	0.600	52062	0.400		
	1000	8	2	44030	0.600	52062	0.400		
	2500	13	2	44030	0.500	52062	0.500		
	5000	17	2	44030	0.400	52062	0.600		
	10000	24	2	44030	0.400	52062	0.600		
	20000	39	2	44030	0.400	52062	0.600		
	40000	75	3	44030	0.400	52062	0.500	53048	0.100
	60000	106	3	44030	0.400	52062	0.500	53048	0.100
	100000	177	3	44030	0.400	52062	0.500	53048	0.100
	150000	285	4	44030	0.300	52062	0.500	53048	0.100
				64046	0.100				

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1974JAN09-4	100	1	1	45015	1.000				
	500	1	1	45015	1.000				
	1000	3	1	45015	1.000				
	2500	3	1	45015	1.000				
	5000	6	1	45015	1.000				
	10000	10	1	45015	1.000				
	20000	14	1	45015	1.000				
	40000	30	1	45015	1.000				
	60000	44	1	45015	1.000				
	100000	59	2	45015	0.800	44021	0.200		
1974JAN14-5	100	1	N/A						
	500	2	N/A						
	1000	3	N/A						
	2500	3	N/A						
	5000	4	N/A						
	10000	5	N/A						
	20000	10	N/A						
	40000	18	N/A						
	60000	26	N/A						
	100000	38	N/A						
1974JAN23-6	100	1	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	500	1	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	1000	3	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	2500	4	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	5000	5	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	10000	8	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	20000	11	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	40000	19	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	60000	27	5	29101	0.200	29102	0.200	29103	0.200
				30121	0.200	30122	0.200		
	100000	41	7	29041	0.100	29101	0.150	29102	0.150
				29103	0.150	30120	0.150	30121	0.150
				30122	0.150				
	150000	69	8	29041	0.090	29101	0.130	29102	0.130
				29103	0.130	30036	0.130	30120	0.130
				30121	0.130	30122	0.130		

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1974JAN27-9	100	1	1	15590	1.000				
	500	1	1	15590	1.000				
	1000	3	1	15590	1.000				
	2500	5	1	15590	1.000				
	5000	5	1	15590	1.000				
	10000	6	1	15590	1.000				
	20000	13	1	15590	1.000				
	40000	18	1	15590	1.000				
	60000	24	1	15590	1.000				
	100000	35	1	15590	1.000				
	150000	45	1	15590	1.000				
1974JAN27-2	100	5	1	40197	1.000				
	500	14	2	40192	0.500	40197	0.500		
	1000	20	3	40160	0.300	40192	0.400	40197	0.300
	2500	45	3	40160	0.300	40192	0.400	40197	0.300
	5000	94	6	40160	0.150	40192	0.250	40197	0.150
				40214	0.150	40223	0.150	40533	0.150
	10000	134	8	40004	0.100	40160	0.150	40192	0.150
				40197	0.150	40214	0.100	40223	0.100
				40533	0.100	58158	0.150		
	20000	217	14	40004	0.070	40062	0.050	40135	0.070
				40160	0.110	40192	0.070	40197	0.110
				40214	0.050	40223	0.050	40282	0.050
				40533	0.050	58072	0.070	58109	0.070
				58129	0.070	58158	0.110		
	40000	325	16	40004	0.060	40052	0.040	40102	0.040
				40135	0.080	40160	0.080	40192	0.060
				40197	0.080	40270	0.060	40386	0.040
				40451	0.060	58026	0.080	58044	0.060
				58072	0.080	58109	0.040	58129	0.060
				58158	0.080				
	60000	385	19	40004	0.050	40102	0.050	40112	0.050
				40126	0.050	40135	0.060	40160	0.050
				40192	0.050	40197	0.060	40270	0.050
				40451	0.050	40467	0.050	41044	0.060
				41467	0.050	58026	0.060	58044	0.050
				58072	0.060	58129	0.050	58131	0.050
				58158	0.050				

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1974JAN28-4	100	5	1	40197	1.000				
	500	14	2	40192	0.500	40197	0.500		
	1000	21	3	40160	0.300	40192	0.400	40197	0.300
	2500	50	3	40160	0.300	40192	0.400	40197	0.300
	5000	93	5	40160	0.180	40192	0.280	40197	0.180
				40223	0.180	40533	0.180		
	10000	141	6	40004	0.130	40160	0.160	40192	0.230
				40197	0.160	40223	0.160	40533	0.160
	20000	210	9	40004	0.150	40160	0.150	40192	0.080
				40197	0.150	40223	0.080	40282	0.080
				40386	0.080	40533	0.080	58072	0.150
	40000	304	16	40004	0.090	40052	0.050	40093	0.050
				40102	0.050	40135	0.090	40160	0.090
				40192	0.050	40197	0.090	40223	0.050
				40270	0.050	40282	0.050	40382	0.050
				40386	0.050	40451	0.050	40533	0.050
				58072	0.090				
	60000	387	18	40004	0.060	40052	0.050	40093	0.050
				40102	0.050	40112	0.050	40135	0.060
				40160	0.060	40192	0.050	40197	0.060
				40270	0.060	40282	0.050	40382	0.060
				40386	0.050	40624	0.050	41467	0.060
				58026	0.060	58072	0.060	58131	0.060
1974FEB01-5	100	1	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	3	N/A						
	5000	3	N/A						
	10000	3	N/A						
	20000	4	N/A						
	40000	7	N/A						
	60000	9	N/A						
	100000	16	N/A						
	150000	20	N/A						

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1974MAR13-4	100	6	1	40192	1.000				
	500	19	2	40192	0.400	58109	0.600		
	1000	26	3	40192	0.300	58109	0.400	58158	0.300
	2500	43	5	40192	0.150	58072	0.200	58109	0.300
				58131	0.150	58158	0.200		
	5000	62	6	40052	0.100	40192	0.100	58072	0.170
				58109	0.230	58131	0.170	58158	0.230
	10000	84	7	40052	0.120	40160	0.120	40192	0.120
				58072	0.160	58109	0.160	58131	0.160
				58158	0.160				
	20000	147	10	40052	0.060	40160	0.100	40192	0.060
				58072	0.160	58076	0.100	58081	0.060
				58109	0.100	58131	0.100	58158	0.160
				59040	0.100				
	40000	237	11	40052	0.060	40160	0.100	40192	0.060
				58072	0.100	58076	0.100	58081	0.060
				58109	0.100	58131	0.100	58158	0.160
				59040	0.100	60030	0.060		
	60000	340	16	40004	0.050	40052	0.050	40160	0.100
				40192	0.050	40223	0.050	57058	0.050
				57059	0.050	58072	0.070	58076	0.070
				58081	0.050	58109	0.070	58131	0.070
				58158	0.100	59040	0.070	59048	0.050
				60030	0.050				
1975FEB25-6	100	2	2	512004_{WA}	0.800	512005_{WA}	0.200		
	500	2	2	512004_{WA}	0.800	512005_{WA}	0.200		
	1000	3	2	512004_{WA}	0.800	512005_{WA}	0.200		
	2500	5	2	512004_{WA}	0.700	512005_{WA}	0.300		
	5000	8	2	512004_{WA}	0.700	512005_{WA}	0.300		
	10000	11	3	512001_{WA}	0.300	512004_{WA}	0.500	512005_{WA}	0.200
	20000	15	3	512001_{WA}	0.500	512004_{WA}	0.300	512005_{WA}	0.200
	40000	31	3	512001_{WA}	0.500	512004_{WA}	0.300	512005_{WA}	0.200
	60000	36	4	512001_{WA}	0.500	512003_{WA}	0.200	512004_{WA}	0.200
				512005_{WA}	0.100				
	100000	68	6	7045	0.200	12038	0.100	512001_{WA}	0.300
				512003_{WA}	0.100	512004_{WA}	0.200	512005_{WA}	0.100
	150000	86	6	7045	0.200	12038	0.100	512001_{WA}	0.300
				512003_{WA}	0.100	512004_{WA}	0.200	512005_{WA}	0.100

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1975DEC10-2	100	2	1	505004$_{WA}$	1.000				
	500	2	1	505004$_{WA}$	1.000				
	1000	2	2	505004$_{WA}$	0.800	505022$_{WA}$	0.200		
	2500	4	2	505004$_{WA}$	0.800	505022$_{WA}$	0.200		
	5000	5	3	505004$_{WA}$	0.400	505020$_{WA}$	0.300	505022$_{WA}$	0.300
	10000	6	5	505004$_{WA}$	0.200	505018$_{WA}$	0.200	505020$_{WA}$	0.200
				505021$_{WA}$	0.200	505022$_{WA}$	0.200		
	20000	9	7	505004$_{WA}$	0.130	505011$_{WA}$	0.130	505018$_{WA}$	0.130
				505020$_{WA}$	0.200				
				505021$_{WA}$	0.130	505022$_{WA}$	0.200	505026$_{WA}$	0.080
	40000	20	10	504003$_{WA}$	0.040	504005$_{WA}$	0.090	504006$_{WA}$	0.040
				505004$_{WA}$	0.140	505011$_{WA}$	0.190	505018$_{WA}$	0.090
				505020$_{WA}$	0.140	505021$_{WA}$	0.090	505022$_{WA}$	0.140
				505026$_{WA}$	0.040				
	60000	27	12	504003$_{WA}$	0.050	504005$_{WA}$	0.050	504006$_{WA}$	0.050
				504007$_{WA}$	0.050	504021$_{WA}$	0.050	505004$_{WA}$	0.100
				505011$_{WA}$	0.150	505018$_{WA}$	0.100	505020$_{WA}$	0.150
				505021$_{WA}$	0.050	505022$_{WA}$	0.150	505026$_{WA}$	0.050
	100000	35	15	504004$_{WA}$	0.060	504005$_{WA}$	0.060	504008$_{WA}$	0.040
				504011$_{WA}$	0.040	504012$_{WA}$	0.060	504021$_{WA}$	0.040
				505002$_{WA}$	0.040	505004$_{WA}$	0.100	505009$_{WA}$	0.100
				505011$_{WA}$	0.100	505018$_{WA}$	0.0 60	505020$_{WA}$	0.100
				505021$_{WA}$	0.040	505022$_{WA}$	0.100	505024$_{WA}$	0.060
1975DEC10-3	100	1	2	505004$_{WA}$	0.200	505022$_{WA}$	0.800		
	500	1	2	505004$_{WA}$	0.200	505022$_{WA}$	0.800		
	1000	2	2	505004$_{WA}$	0.200	505022$_{WA}$	0.800		
	2500	4	2	505004$_{WA}$	0.200	505022$_{WA}$	0.800		
	5000	4	3	505004$_{WA}$	0.200	505020$_{WA}$	0.200	505022$_{WA}$	0.600
	10000	7	4	505004$_{WA}$	0.200	505018$_{WA}$	0.100	505020$_{WA}$	0.200
				505022$_{WA}$	0.500				
	20000	9	7	505004$_{WA}$	0.120	505011$_{WA}$	0.270	505018$_{WA}$	0.080
				505020$_{WA}$	0.120				
				505021$_{WA}$	0.080	505022$_{WA}$	0.270	505026$_{WA}$	0.060
	40000	20	7	505004$_{WA}$	0.120	505011$_{WA}$	0.270	505018$_{WA}$	0.080
				505020$_{WA}$	0.120				
				505021$_{WA}$	0.080	505022$_{WA}$	0.270	505026$_{WA}$	0.060
	60000	25	10	504004$_{WA}$	0.060	504008$_{WA}$	0.060	504010$_{WA}$	0.060
				504021$_{WA}$	0.060	505004$_{WA}$	0.120	505011$_{WA}$	0.200
				505018$_{WA}$	0.060	505020$_{WA}$	0.120	505021$_{WA}$	0.060
				505022$_{WA}$	0.200				
	100000	35	14	504004$_{WA}$	0.050	504008$_{WA}$	0.050	504010$_{WA}$	0.050
				504011$_{WA}$	0.050	504012$_{WA}$	0.050	504021$_{WA}$	0.050
				505004$_{WA}$	0.100	505011$_{WA}$	0.150	505018$_{WA}$	0.050
				505020$_{WA}$	0.100	505021$_{WA}$	0.050	505022$_{WA}$	0.150
				505023$_{WA}$	0.050	505024$_{WA}$	0.050		

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1976FEB06-3	100	1	1	15085	1.000				
	500	1	1	15085	1.000				
	1000	2	1	15085	1.000				
	2500	2	1	15085	1.000				
	5000	3	1	15085	1.000				
	10000	3	1	15085	1.000				
	20000	7	1	15085	1.000				
	40000	9	3	41_{NT}	0.100	15085	0.800	15135	0.100
	60000	15	3	41_{NT}	0.150	15085	0.700	15135	0.150
	100000	22	3	41_{NT}	0.200	15085	0.600	15135	0.200
	150000	30	3	41_{NT}	0.200	15085	0.600	15135	0.200
1976FEB09-2	100	1	1	15590	1.000				
	500	3	1	15590	1.000				
	1000	3	1	15590	1.000				
	2500	5	1	15590	1.000				
	5000	6	1	15590	1.000				
	10000	8	1	15590	1.000				
	20000	11	1	15590	1.000				
	40000	17	1	15590	1.000				
	60000	24	1	15590	1.000				
	100000	32	1	15590	1.000				
	150000	41	1	15590	1.000				
1976FEB10-1	100	1	1	44026	1.000				
	500	2	1	44026	1.000				
	1000	3	1	44026	1.000				
	2500	4	1	44026	1.000				
	5000	5	1	44026	1.000				
	10000	9	1	44026	1.000				
	20000	13	1	44026	1.000				
	40000	22	1	44026	1.000				
	60000	34	1	44026	1.000				
	100000	56	2	44026	0.700	48031	0.300		
	150000	85	2	44026	0.700	48031	0.300		
1976FEB11-1	100	2	1	54104	1.000				
	500	4	1	54104	1.000				
	1000	5	1	54104	1.000				
	2500	16	1	54104	1.000				
	5000	26	1	54104	1.000				
	10000	42	1	54104	1.000				
	20000	68	1	54104	1.000				
	40000	121	2	54104	0.700	48031	0.300		
	60000	165	3	54104	0.600	48031	0.250	41175	0.150
	100000	284	4	54104	0.500	48031	0.200	41060	0.150
				41175	0.150				

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1977FEB20-2	100	1	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	2	N/A						
	5000	4	N/A						
	10000	7	N/A						
	20000	14	N/A						
	40000	23	N/A						
	60000	36	N/A						
	100000	67	N/A						
	150000	83	N/A						
1977MAY19-3	100	5	1	26_{NSW}	1.000				
	500	11	1	26_{NSW}	1.000				
	1000	18	1	26_{NSW}	1.000				
	2500	28	2	26_{NSW}	0.800	59040	0.200		
	5000	38	2	26_{NSW}	0.700	59040	0.300		
	10000	57	2	26_{NSW}	0.600	59040	0.400		
	20000	94	6	26_{NSW}	0.220	58099	0.140	59000	0.140
				59040	0.180	59048	0.180	60080	0.140
	40000	171	12	26_{NSW}	0.070	57056	0.070	57058	0.070
				57059	0.110	58044	0.070	58099	0.070
				59000	0.070	59040	0.110	59048	0.110
				60030	0.070	60080	0.110	60085	0.070
1977MAY19-5	100	5	1	26_{NSW}	1.000				
	500	13	1	26_{NSW}	1.000				
	1000	17	2	26_{NSW}	0.800	59040	0.200		
	2500	29	2	26_{NSW}	0.800	59040	0.200		
	5000	38	2	26_{NSW}	0.800	59040	0.200		
	10000	57	3	26_{NSW}	0.600	59000	0.200	59040	0.200
	20000	97	7	26_{NSW}	0.160	57058	0.130	59000	0.130
				59040	0.160	59048	0.160	60080	0.130
				60085	0.130				
	40000	157	12	26_{NSW}	0.080	57058	0.080	57059	0.100
				58099	0.080	59000	0.100	59040	0.100
				59048	0.100	60030	0.080	60080	0.080
				60085	0.120	61288	0.040	61325	0.040
	60000	241	17	26_{NSW}	0.040	57056	0.040	57058	0.080
				57059	0.080	58099	0.040	59000	0.080
				59040	0.080	59048	0.100	60030	0.040
				60080	0.080	60085	0.100	60104	0.040
				61029	0.040	61174	0.040	61250	0.040
				61314	0.040	61325	0.040		

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS		
	(km²)	Daily	3hrly	No. Weight	No. Weight	No. Weight
1978JAN30-5	100	1	2	3003 0.200	3032 0.800	
	500	2	2	3003 0.200	3032 0.800	
	1000	2	2	3003 0.200	3032 0.800	
	2500	4	2	3003 0.400	3032 0.600	
	5000	5	2	3003 0.500	3032 0.500	
	10000	8	2	3003 0.400	3032 0.600	
	20000	11	2	3003 0.400	3032 0.600	
	40000	16	2	3003 0.500	3032 0.500	
	60000	22	3	3003 0.400	3032 0.400	503008_{WA} 0.200
	100000	31	4	3003 0.300	3032 0.300	503001_{WA} 0.200
				503008_{WA} 0.200		
1978FEB02-2	100	3	1	35010 1.000		
	500	4	1	35010 1.000		
	1000	5	1	35010 1.000		
	2500	8	1	35010 1.000		
	5000	15	1	35010 1.000		
	10000	26	1	35010 1.000		
	20000	42	2	35010 0.800	35025 0.200	
	40000	80	2	35010 0.700	35025 0.300	
	60000	104	2	35010 0.700	35025 0.300	
	100000	147	2	35010 0.600	35025 0.400	
1979JAN05-1	100	4	2	31011 0.500	31034 0.500	
	500	8	2	31011 0.500	31034 0.500	
	1000	11	2	31011 0.500	31034 0.500	
	2500	24	2	31011 0.500	31034 0.500	
	5000	40	2	31011 0.500	31034 0.500	
	10000	64	5	31011 0.200	31034 0.200	31053 0.200
					31083 0.200	
	20000	84	7	31011 0.150	31034 0.150	31053 0.140
				31066 0.140	31083 0.140	32004 0.140
				32042 0.140		
	40000	99	9	31011 0.150	31034 0.150	31046 0.100
				31053 0.100	31066 0.100	31083 0.100
				32004 0.100	32042 0.100	32086 0.100
1979JAN06-2	100	4	2	31011 0.400	31034 0.600	
	500	8	2	31011 0.500	31034 0.500	
	1000	12	2	31011 0.600	31034 0.400	
	2500	24	2	31011 0.650	31034 0.350	
	5000	40	2	31011 0.700	31034 0.300	
	10000	62	6	31011 0.220	31034 0.140	31053 0.220
				31066 0.140	31083 0.140	32042 0.140
	20000	84	7	31011 0.200	31034 0.120	31053 0.200
				31066 0.120	31083 0.120	32004 0.120
				32042 0.120		
	40000	100	7	31011 0.200	31034 0.120	31053 0.200
				31066 0.120	31083 0.120	32004 0.120
				32042 0.120		

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1979JAN06-3	100	4	2	31011	0.200	31034	0.800		
	500	9	2	31011	0.200	31034	0.800		
	1000	12	2	31011	0.200	31034	0.800		
	2500	25	2	31011	0.300	31034	0.700		
	5000	38	2	31011	0.500	31034	0.500		
	10000	67	4	31011	0.300	31034	0.250	31066	0.250
				31083	0.200				
	20000	81	6	31011	0.250	31034	0.100	31053	0.250
				31066	0.150	31083	0.100	32042	0.150
	40000	96	7	28004	0.120	31011	0.200	31034	0.120
				31053	0.200	31066	0.120	31083	0.120
				32042	0.120				
	60000	104	8	28004	0.100	31011	0.200	31034	0.100
				31053	0.200	31066	0.100	31083	0.100
				32004	0.100	32042	0.100		
	100000	119	9	28004	0.100	31011	0.160	31016	0.080
				31034	0.100	31053	0.160	31066	0.100
				31083	0.100	32004	0.100	32042	0.100
1979JAN06-4	100	4	2	31011	0.300	31034	0.700		
	500	8	2	31011	0.400	31034	0.600		
	1000	12	2	31011	0.400	31034	0.600		
	2500	22	2	31011	0.500	31034	0.500		
	5000	41	3	31011	0.350	31034	0.300	31083	0.350
	10000	67	6	31011	0.150	31034	0.150	31053	0.150
				31066	0.200	31083	0.200	32042	0.150
	20000	84	6	31011	0.140	31034	0.170	31053	0.170
				31066	0.210	31083	0.170	32042	0.140
	40000	97	8	28004	0.120	31011	0.100	31034	0.120
				31053	0.200				
				31066	0.100	31083	0.120	32004	0.120
	60000	106	9	32042	0.120	28004	0.090	31011	0.120
				31016	0.060	31034	0.160	31053	0.120
				31066	0.120	31083	0.120	32004	0.090
				32042	0.120				
	100000	126	9	28004	0.090	31011	0.120	31016	0.060
				31034	0.160	31053	0.120	31066	0.120
				31083	0.120	32004	0.090	32042	0.120

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS		
	(km²)	Daily	3hrly	No. Weight	No. Weight	No. Weight
1979JAN06-5	100	4	2	31011 0.200	31034 0.800	
	500	9	2	31011 0.200	31034 0.800	
	1000	13	2	31011 0.200	31034 0.800	
	2500	24	2	31011 0.300	31034 0.700	
	5000	40	2	31011 0.500	31034 0.500	
	10000	67	5	31011 0.300	31034 0.150	31053 0.200
				31066 0.200	31083 0.150	
	20000	85	6	31011 0.150	31034 0.110	31053 0.220
				31066 0.220	31083 0.150	32042 0.150
	40000	97	8	28004 0.080	31011 0.140	31034 0.080
				31053 0.200	31066 0.200	31083 0.100
				32004 0.100	32042 0.100	
	60000	106	9	28004 0.100	31011 0.140	31016 0.060
				31034 0.060	31053 0.200	31066 0.140
				31083 0.100	32004 0.100	32042 0.100
	100000	122	9	28004 0.100	31011 0.200	31016 0.060
				31034 0.060	31053 0.140	31066 0.140
				31083 0.100	32004 0.100	32042 0.100
1979JAN07-7	100	4	2	31011 0.200	31034 0.800	
	500	9	2	31011 0.200	31034 0.800	
	1000	13	2	31011 0.200	31034 0.800	
	2500	23	2	31011 0.300	31034 0.700	
	5000	39	2	31011 0.500	31034 0.500	
	10000	67	5	31011 0.300	31034 0.250	31053 0.150
				31066 0.150	31083 0.150	
	20000	83	6	31011 0.220	31034 0.100	31053 0.220
				31066 0.220	31083 0.100	32042 0.140
	40000	99	7	31011 0.170	31016 0.080	31034 0.120
				31053 0.170	31066 0.170	31083 0.120
				32042 0.170		
	60000	112	8	28004 0.150	31011 0.150	31016 0.050
				31034 0.100	31053 0.150	31066 0.150
				31083 0.100	32042 0.150	
	100000	123	9	28004 0.120	31011 0.120	31016 0.080
				31034 0.100	31053 0.120	31066 0.120
				31083 0.100	32004 0.120	32042 0.120

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1979FEB06-1	100	2	1	33152	1.000				
	500	6	1	33152	1.000				
	1000	12	2	33021	0.400	33152	0.600		
	2500	20	2	33021	0.500	33152	0.500		
	5000	27	3	33021	0.400	33119	0.200	33152	0.400
	10000	41	7	33021	0.250	33087	0.100	33099	0.100
				33119	0.100	33152	0.250	33172	0.100
				533004_{Qld}	0.100				
	20000	61	7	33021	0.250	33087	0.100	33099	0.100
				33119	0.100	33152	0.250	33172	0.100
				533004_{Qld}	0.100				
	40000	90	9	33002	0.100	33013	0.100	33021	0.100
				33087	0.100	33099	0.100	33119	0.100
				33152	0.200	33172	0.100	533004_{Qld}	0.100
1981JAN13-7	100	5	1	32042	1.000				
	500	9	1	32042	1.000				
	1000	19	1	32042	1.000				
	2500	25	1	32042	1.000				
	5000	37	1	32042	1.000				
	10000	54	3	31011	0.330	32004	0.330	32042	0.340
	20000	86	7	31011	0.145	31066	0.140	31083	0.140
				32004	0.145				
				32042	0.145	32078	0.140	32086	0.145
	40000	114	10	31011	0.100	31053	0.100	31066	0.100
				31083	0.100	32004	0.100	32042	0.100
				32043	0.100	32064	0.100		
				32078	0.100	32086	0.100		
	60000	124	10	31011	0.100	31053	0.100	31066	0.100
				31083	0.100	32004	0.100	32042	0.100
				32043	0.100	32064	0.100		
				32078	0.100	32086	0.100		
	100000	135	11	28004	0.090	31011	0.090	31053	0.090
				31066	0.090	31083	0.090	32004	0.090
				32042	0.100	32043	0.090	32064	0.090
				32078	0.090	32086	0.090		
1982JAN20-5	100	1	2	501022_{WA}	0.600	501023_{WA}	0.400		
	500	1	2	501022_{WA}	0.600	501023_{WA}	0.400		
	1000	1	2	501022_{WA}	0.600	501023_{WA}	0.400		
	2500	1	2	501022_{WA}	0.600	501023_{WA}	0.400		
	5000	2	2	501022_{WA}	0.600	501023_{WA}	0.400		
	10000	2	2	501022_{WA}	0.600	501023_{WA}	0.400		
	20000	5	3	3003_{S}	0.100	501022_{WA}	0.500	501023_{WA}	0.400
	40000	11	3	3003_{S}	0.100	501022_{WA}	0.500	501023_{WA}	0.400
	60000	15	5	3003_{S}	0.100	501003_{WA}	0.200	501019_{WA}	0.200
				501022_{WA}	0.200	501023_{WA}	0.300		
	100000	27	5	3003_{S}	0.100	501023_{WA}	0.200	501019_{WA}	0.300
				501022_{WA}	0.200	501023_{WA}	0.200		

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1982JAN22-2	100	4	1	509108_{WA}	1.000				
	500	6	1	509108_{WA}	1.000				
	1000	10	1	509108_{WA}	1.000				
	2500	16	2	509108_{WA}	0.600	509321_{WA}	0.400		
	5000	27	3	509108_{WA}	0.400	509309_{WA}	0.300	509321_{WA}	0.300
	10000	47	6	509079_{WA}	0.160	509108_{WA}	0.200	509109_{WA}	0.160
				509309_{WA}	0.160	509321_{WA}	0.160	510039_{WA}	0.160
	20000	82	7	509079_{WA}	0.140	509108_{WA}	0.160	509109_{WA}	0.140
				509309_{WA}	0.140	509321_{WA}	0.140	509389_{WA}	0.140
				510039_{WA}	0.140				
	40000	153	8	509079_{WA}	0.125	509108_{WA}	0.125	509109_{WA}	0.125
				509309_{WA}	0.125	509321_{WA}	0.125	509389_{WA}	0.125
				510039_{WA}	0.125	510257_{WA}	0.125		
	60000	223	10	9741	0.100	509079_{WA}	0.100	509108_{WA}	0.100
				509109_{WA}	0.100	509309_{WA}	0.100	509321_{WA}	0.100
				509331_{WA}	0.100	509389_{WA}	0.100		
				510039_{WA}	0.100	510257_{WA}	0.100		
	100000	327	14	9021	0.070	9034	0.070	9741	0.070
				10795	0.070	509079_{WA}	0.070	509108_{WA}	0.090
				509109_{WA}	0.070	509256_{WA}	0.070	509309_{WA}	0.070
				509321_{WA}	0.070	509331_{WA}	0.070	509389_{WA}	0.070
				510039_{WA}	0.070	510257_{WA}	0.070		
1982JAN31-7	100	1	N/A						
	500	1	N/A						
	1000	1	N/A						
	2500	2	N/A						
	5000	3	N/A						
	10000	5	N/A						
	20000	6	N/A						
	40000	11	N/A						
1985JAN16-1	100	1	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	3	N/A						
	5000	4	N/A						
	10000	6	N/A						
	20000	7	N/A						
	40000	12	N/A						
1985JAN16-4	100	1	N/A						
	500	2	N/A						
	1000	2	N/A						
	2500	3	N/A						
	5000	4	N/A						
	10000	6	N/A						
	20000	8	N/A						
	40000	13	N/A						
	60000	16	N/A						

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1985MAR28-5	100	1	2	514705_{NT}	0.600	514703_{NT}	0.400		
	500	1	2	514705_{NT}	0.600	514703_{NT}	0.400		
	1000	2	2	514705_{NT}	0.600	514703_{NT}	0.400		
	2500	2	2	514705_{NT}	0.600	514703_{NT}	0.400		
	5000	2	2	514705_{NT}	0.600	514703_{NT}	0.400		
	10000	5	2	514705_{NT}	0.600	514703_{NT}	0.400		
	20000	5	2	514705_{NT}	0.600	514703_{NT}	0.400		
	40000	5	2	514705_{NT}	0.600	514703_{NT}	0.400		
1986JAN24-5	100	1	3	502001_{WA}	0.400	502008_{WA}	0.400	503008_{WA}	0.200
	500	4	3	502001_{WA}	0.400	502008_{WA}	0.400	503008_{WA}	0.200
	1000	4	3	502001_{WA}	0.400	502008_{WA}	0.400	503008_{WA}	0.200
	2500	6	3	502001_{WA}	0.400	502008_{WA}	0.400	503008_{WA}	0.200
	5000	7	3	502001_{WA}	0.400	502008_{WA}	0.400	503008_{WA}	0.200
	10000	10	3	502001_{WA}	0.400	502008_{WA}	0.400	503008_{WA}	0.200
	20000	14	3	502001_{WA}	0.400	502008_{WA}	0.400	503008_{WA}	0.200
	40000	22	4	502001_{WA}	0.300	502008_{WA}	0.300	503006_{WA}	0.200
				503008_{WA}	0.200				
	60000	26	6	502001_{WA}	0.300	502008_{WA}	0.300	502024_{WA}	0.100
				503006_{WA}	0.100	503008_{WA}	0.100	503009_{WA}	0.100
	100000	34	10	3007	0.080	502001_{WA}	0.180	502002_{WA}	0.080
				502003_{WA}	0.080	502006_{WA}	0.080	502008_{WA}	0.180
				502024_{WA}	0.080	503006_{WA}	0.080		
				503008_{WA}	0.080	503009_{WA}	0.080		
	150000	42	15	2012	0.050	3007	0.080	501010_{WA}	0.050
				502001_{WA}	0.150	502002_{WA}	0.080	502003_{WA}	0.050
				502006_{WA}	0.050	502008_{WA}	0.080	502015_{WA}	0.080
				502017_{WA}	0.050	502021_{WA}	0.050	502024_{WA}	0.080
				503006_{WA}	0.050	503008_{WA}	0.050	503009_{WA}	0.050
1988MAR31-1	100	2	1	515501_{NT}	1.000				
	500	2	1	515501_{NT}	1.000				
	1000	3	1	515501_{NT}	1.000				
	2500	4	1	515501_{NT}	1.000				
	5000	7	1	515501_{NT}	1.000				
	10000	10	1	515501_{NT}	1.000				
	20000	16	3	515501_{NT}	0.400	515511_{NT}	0.300	15590	0.300
	40000	23	3	515501_{NT}	0.400	515511_{NT}	0.300	15590	0.300
	60000	31	4	515501_{NT}	0.300	515511_{NT}	0.300	15590	0.300
				515502_{NT}	0.100				
	100000	39	4	515501_{NT}	0.250	515511_{NT}	0.250	15590	0.250
				515502_{NT}	0.250				
1988MAY02-2	100	2	1	512235_{WA}	1.000				
	500	3	1	512235_{WA}	1.000				
	1000	5	1	512235_{WA}	1.000				
	2500	9	1	512235_{WA}	1.000				
	5000	15	2	512235_{WA}	0.400	512250_{WA}	0.600		
	10000	24	6	509004_{WA}	0.150	509195_{WA}	0.150	512235_{WA}	0.150
				512233_{WA}	0.200	512250_{WA}	0.200	512251_{WA}	0.150

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1988MAY04-4	100	2	1	512251_{WA}	1.000				
	500	3	1	512251_{WA}	1.000				
	1000	3	1	512251_{WA}	1.000				
	2500	7	2	510026_{WA}	0.200	512251_{WA}	0.800		
	5000	11	2	510026_{WA}	0.400	512251_{WA}	0.600		
	10000	21	2	510026_{WA}	0.500	512251_{WA}	0.500		
	20000	47	5	9741	0.200	509340_{WA}	0.200	509353_{WA}	0.200
				510026_{WA}	0.200	512251_{WA}	0.200		
	40000	95	6	509340_{WA}	0.100	509353_{WA}	0.100	510026_{WA}	0.200
				510027_{WA}	0.200	510257_{WA}	0.200	512251_{WA}	0.200
1988JUN27-4	100	3	1	509426_{WA}	1.000				
	500	8	1	509426_{WA}	1.000				
	1000	10	1	509426_{WA}	1.000				
	2500	14	3	509300_{WA}	0.200	509426_{WA}	0.600	509441_{WA}	0.200
	5000	21	3	509300_{WA}	0.300	509426_{WA}	0.400	509441_{WA}	0.300
	10000	30	4	509300_{WA}	0.250	509413_{WA}	0.250	509426_{WA}	0.250
				509441_{WA}	0.250				
	20000	53	7	9741	0.140	509212_{WA}	0.140	509300_{WA}	0.140
				509413_{WA}	0.140				
				509426_{WA}	0.150	509441_{WA}	0.150	509455_{WA}	0.140
	40000	121	10	9741	0.100	509212_{WA}	0.100	509300_{WA}	0.100
				509301_{WA}	0.100	509353_{WA}	0.100	509413_{WA}	0.100
				509414_{WA}	0.100	509426_{WA}	0.100		
				509441_{WA}	0.100	509455_{WA}	0.100		
	60000	170	13	9741	0.770	509128_{WA}	0.760	509212_{WA}	0.770
				509300_{WA}	0.770	509301_{WA}	0.770	509321_{WA}	0.770
				509353_{WA}	0.770	509392_{WA}	0.770	509413_{WA}	0.770
				509414_{WA}	0.770	509426_{WA}	0.770	509441_{WA}	0.770
				509455_{WA}	0.770				
1989MAR14-1	100	2	2	27_{SA}	0.500	28_{SA}	0.500		
	500	2	2	27_{SA}	0.500	28_{SA}	0.500		
	1000	4	2	27_{SA}	0.500	28_{SA}	0.500		
	2500	7	2	27_{SA}	0.500	28_{SA}	0.500		
	5000	9	2	27_{SA}	0.500	28_{SA}	0.500		
	10000	16	4	27_{SA}	0.250	28_{SA}	0.250	29_{SA}	0.250
				30_{SA}	0.250				
	20000	25	5	27_{SA}	0.200	28_{SA}	0.200	29_{SA}	0.200
				30_{SA}	0.200	31_{SA}	0.200		
	40000	35	6	27_{SA}	0.200	28_{SA}	0.200	29_{SA}	0.200
				30_{SA}	0.200	31_{SA}	0.100	16001	0.100
	60000	48	6	27_{SA}	0.200	28_{SA}	0.200	29_{SA}	0.200
				30_{SA}	0.200	31_{SA}	0.100	16001	0.100
	100000	60	6	27_{SA}	0.200	28_{SA}	0.200	29_{SA}	0.150
				30_{SA}	0.150	31_{SA}	0.150	16001	0.150
	150000	75	6	27_{SA}	0.200	28_{SA}	0.200	29_{SA}	0.150
				30_{SA}	0.150	31_{SA}	0.150	16001	0.150

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1989MAR14-2	100	1	1	31_{SA}	1.000				
	500	3	1	31_{SA}	1.000				
	1000	4	1	31_{SA}	1.000				
	2500	5	2	29_{SA}	0.400	31_{SA}	0.600		
	5000	12	4	27_{SA}	0.200	29_{SA}	0.200	30_{SA}	0.200
				31_{SA}	0.400				
	10000	18	4	27_{SA}	0.200	29_{SA}	0.300	30_{SA}	0.200
				31_{SA}	0.300				
	20000	26	5	27_{SA}	0.200	28_{SA}	0.200	29_{SA}	0.200
				30_{SA}	0.200	31_{SA}	0.200		
	40000	35	5	27_{SA}	0.220	28_{SA}	0.220	29_{SA}	0.220
				30_{SA}	0.170	31_{SA}	0.170		
	60000	44	5	27_{SA}	0.180	28_{SA}	0.180	29_{SA}	0.180
				30_{SA}	0.230	31_{SA}	0.230		
	100000	58	7	27_{SA}	0.150	28_{SA}	0.150	29_{SA}	0.150
				30_{SA}	0.150	31_{SA}	0.200	32_{SA}	0.100
				16001	0.100				
	150000	69	7	27_{SA}	0.150	28_{SA}	0.150	29_{SA}	0.150
				30_{SA}	0.150	31_{SA}	0.200	32_{SA}	0.100
				16001	0.100				
1989MAY10-1	100	2	1	36026	1.000				
	500	3	1	36026	1.000				
	1000	5	1	36026	1.000				
	2500	8	1	36026	1.000				
	5000	12	1	36026	1.000				
	10000	19	1	36026	1.000				
	20000	25	1	36026	1.000				
	40000	40	1	36026	1.000				
	60000	54	2	36026	0.700	45015	0.300		
	100000	73	4	36026	0.600	36031	0.100	44021	0.100
				45015	0.200				
1989JUN14-1	100	2	2	510023_{WA}	0.500	510024_{WA}	0.500		
	500	4	2	510023_{WA}	0.500	510024_{WA}	0.500		
	1000	6	2	510023_{WA}	0.500	510024_{WA}	0.500		
	2500	12	2	510023_{WA}	0.500	510024_{WA}	0.500		
	5000	21	2	510023_{WA}	0.500	510024_{WA}	0.500		
	10000	38	2	510023_{WA}	0.500	510024_{WA}	0.500		
	20000	63	4	8039_{S}	0.100	10092	0.300	510023_{WA}	0.300
				510024_{WA}	0.300				
	40000	108	6	8039_{S}	0.170	10092	0.170	508004_{WA}	0.150
				510023_{WA}	0.170	510024_{WA}	0.170	510036_{WA}	0.170
	60000	153	9	8039_{S}	0.110	8138	0.110	10092	0.110
				508004_{WA}	0.110	510023_{WA}	0.120	510024_{WA}	0.110
				510031_{WA}	0.110	510036_{WA}	0.110	510052_{WA}	0.110

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1990JAN29-2	100	2	1	510020_{WA}	1.000				
	500	5	1	510020_{WA}	1.000				
	1000	8	1	510020_{WA}	1.000				
	2500	14	1	510020_{WA}	1.000				
	5000	24	1	510020_{WA}	1.000				
	10000	42	1	510020_{WA}	1.000				
	20000	69	3	510020_{WA}	0.400	510055_{WA}	0.300	510254_{WA}	0.300
	40000	114	5	510020_{WA}	0.220	510031_{WA}	0.120	510051_{WA}	0.220
				510055_{WA}	0.220	510254_{WA}	0.220		
	60000	171	10	10092	0.060	509158_{WA}	0.110	509388_{WA}	0.110
				510009_{WA}	0.110	510020_{WA}	0.110	510031_{WA}	0.060
				510042_{WA}	0.110	510051_{WA}	0.110	510055_{WA}	0.110
				510254_{WA}	0.110				
	100000	276	13	10092	0.044	508002_{WA}	0.043	509143_{WA}	0.087
				509158_{WA}	0.087	509281_{WA}	0.087	509388_{WA}	0.087
				510009_{WA}	0.087	510020_{WA}	0.087	510031_{WA}	0.043
				510042_{WA}	0.087	510051_{WA}	0.087	510055_{WA}	0.087
				510254_{WA}	0.087				
	150000	357	19	9021	0.060	9186	0.060	10092	0.025
				508002_{WA}	0.025	508008_{WA}	0.060	509143_{WA}	0.060
				509158_{WA}	0.060	509281_{WA}	0.060	509388_{WA}	0.060
				509424_{WA}	0.060	510009_{WA}	0.060	510020_{WA}	0.060
				510044_{WA}	0.060	510024_{WA}	0.025	510031_{WA}	0.025
				510042_{WA}	0.060	510051_{WA}	0.060	510055_{WA}	0.060
				510254_{WA}	0.060				
1991JAN01-7	100	2	3	533004_{Qld}	0.300	533010_{Qld}	0.300	533019_{Qld}	0.400
	500	8	3	533004_{Qld}	0.300	533010_{Qld}	0.300	533019_{Qld}	0.400
	1000	10	3	533004_{Qld}	0.300	533010_{Qld}	0.300	533019_{Qld}	0.400
	2500	15	3	533004_{Qld}	0.300	533010_{Qld}	0.300	533019_{Qld}	0.400
	5000	22	3	533004_{Qld}	0.300	533010_{Qld}	0.300	533019_{Qld}	0.400
	10000	32	6	533004_{Qld}	0.140	533005_{Qld}	0.180	533010_{Qld}	0.140
				533018_{Qld}	0.180	533019_{Qld}	0.180	533022_{Qld}	0.180
	20000	52	10	533003_{Qld}	0.110	533004_{Qld}	0.080	533005_{Qld}	0.150
				533010_{Qld}	0.080	533011_{Qld}	0.080	533018_{Qld}	0.150
				533019_{Qld}	0.110	533020_{Qld}	0.080	533021_{Qld}	0.050
				533022_{Qld}	0.110				
	40000	71	10	533003_{Qld}	0.090	533004_{Qld}	0.090	533005_{Qld}	0.150
				533010_{Qld}	0.090	533011_{Qld}	0.090	533018_{Qld}	0.150
				533019_{Qld}	0.120	533020_{Qld}	0.050	533021_{Qld}	0.050
				533022_{Qld}	0.120				
	60000	93	10	533003_{Qld}	0.050	533004_{Qld}	0.050	533005_{Qld}	0.150
				533010_{Qld}	0.050	533011_{Qld}	0.150	533018_{Qld}	0.150
				533019_{Qld}	0.100	533020_{Qld}	0.050	533021_{Qld}	0.100
				533022_{Qld}	0.150				
	100000	133	11	39083	0.060	533003_{Qld}	0.060	533004_{Qld}	0.060
				533005_{Qld}	0.130	533010_{Qld}	0.060	533011_{Qld}	0.130
				533018_{Qld}	0.130	533019_{Qld}	0.090	533020_{Qld}	0.060
				533021_{Qld}	0.090	533022_{Qld}	0.130		

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1991JAN14-1	100	1	1	29127	1.000				
	500	2	1	29127	1.000				
	1000	3	1	29127	1.000				
	2500	4	1	29127	1.000				
	5000	6	1	29127	1.000				
	10000	8	1	29127	1.000				
	20000	15	1	29127	1.000				
	40000	25	1	29127	1.000				
	60000	34	1	29127	1.000				
	100000	53	1	29127	1.000				
1995FEB28-4	100	1	2	7057	0.800	12038	0.200		
	500	1	2	7057	0.800	12038	0.200		
	1000	1	2	7057	0.800	12038	0.200		
	2500	2	2	7057	0.800	12038	0.200		
	5000	3	2	7057	0.800	12038	0.200		
	10000	5	2	7057	0.800	12038	0.200		
	20000	9	2	7057	0.800	12038	0.200		
	40000	18	2	7057	0.800	12038	0.200		
	60000	24	2	7057	0.700	12038	0.300		
	100000	43	2	7057	0.700	12038	0.300		
	150000	65	2	7057	0.700	12038	0.300		
1996MAR10-7	100	1	2	27045	0.400	527000_{Qld}	0.600		
	500	4	2	27045	0.500	527000_{Qld}	0.500		
	1000	4	2	27045	0.500	527000_{Qld}	0.500		
	2500	4	2	27045	0.600	527000_{Qld}	0.400		
	5000	6	2	27045	0.600	527000_{Qld}	0.400		
	10000	9	2	27045	0.700	527000_{Qld}	0.300		
	20000	10	3	27045	0.600	527000_{Qld}	0.200	527010_{Qld}	0.200
	40000	14	4	27006	0.100	27045	0.400	527000_{Qld}	0.200
				527010_{Qld}	0.300				
	60000	16	5	27006	0.100	27045	0.400	527000_{Qld}	0.200
				527009_{Qld}	0.100	527010_{Qld}	0.200		
1996MAY06-6	100	4	3	40082	0.300	540007_{Qld}	0.300	540035_{Qld}	0.400
	500	8	3	40082	0.300	540007_{Qld}	0.300	540035_{Qld}	0.400
	1000	14	3	40082	0.400	540007_{Qld}	0.300	540035_{Qld}	0.300
	2500	31	5	40082	0.280	540007_{Qld}	0.180	540011_{Qld}	0.180
				540035_{Qld}	0.180	540044_{Qld}	0.180		
	5000	56	5	40082	0.280	540007_{Qld}	0.180	540011_{Qld}	0.180
				540035_{Qld}	0.180	540044_{Qld}	0.180		
	10000	93	6	40004	0.250	40082	0.250	540007_{Qld}	0.100
				540011_{Qld}	0.150	540035_{Qld}	0.150	540044	0.100
	20000	158	6	40004	0.250	40082	0.250	540007_{Qld}	0.100
				540011_{Qld}	0.150	540035_{Qld}	0.150	540044_{Qld}	0.100

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1996MAY07-7	100	7	2	40606	0.400	58158	0.600		
	500	17	2	40606	0.400	58158	0.600		
	1000	28	4	40197	0.340	40584	0.220	40606	0.220
				58158	0.220				
	2500	47	4	40197	0.340	40584	0.220	40606	0.220
				58158	0.220				
	5000	97	6	40197	0.260	40223	0.100	40406	0.160
				40584	0.160				
				40606	0.160	58158	0.160		
	10000	145	7	40004	0.120	40197	0.200	40223	0.100
				40406	0.120	40584	0.200	40606	0.140
				58158	0.120				
	20000	213	7	40004	0.120	40197	0.200	40223	0.100
				40406	0.120	40584	0.200	40606	0.140
				58158	0.120				
	40000	287	9	40004	0.100	40197	0.180	40223	0.050
				40406	0.140	40584	0.140	40606	0.100
				57095	0.140	58131	0.050	58158	0.100
	60000	356	9	40004	0.100	40197	0.180	40223	0.050
				40406	0.140	40584	0.140	40606	0.100
				57095	0.140	58131	0.050	58158	0.100
	100000	514	11	40004	0.080	40197	0.140	40223	0.050
				40406	0.110	40584	0.110	40606	0.080
				41060	0.080	41359	0.110	57095	0.110
				58131	0.050	58158	0.080		
1997FEB03-7	100	1	3	35069	0.600	535010_{Qld}	0.200	544001_{Qld}	0.200
	500	3	3	35069	0.600	535010_{Qld}	0.200	544001_{Qld}	0.200
	1000	4	3	35069	0.600	535010_{Qld}	0.200	544001_{Qld}	0.200
	2500	6	3	35069	0.500	535010_{Qld}	0.200	544001_{Qld}	0.300
	5000	11	3	35069	0.500	535010_{Qld}	0.200	544001_{Qld}	0.300
	10000	17	3	35069	0.400	535010_{Qld}	0.200	544001_{Qld}	0.400
	20000	25	3	35069	0.400	535010_{Qld}	0.300	544001_{Qld}	0.300
	40000	40	4	35069	0.300	535010_{Qld}	0.300	535011_{Qld}	0.100
				544001_{Qld}	0.300				
	60000	56	6	35069	0.250	535010_{Qld}	0.180	535011_{Qld}	0.130
				536002_{Qld}	0.130	536003_{Qld}	0.130	544001_{Qld}	0.180
	100000	89	7	35069	0.200	44021	0.140	535010_{Qld}	0.140
				535011_{Qld}	0.140	536002_{Qld}	0.100	536003_{Qld}	0.140
				544001_{Qld}	0.140				

Table A1: cont.

STORM NAME	AREA (km²)	STATIONS Daily	STATIONS 3hrly	WEIGHTING OF 3-HOURLY STATIONS No.	Weight	No.	Weight	No.	Weight
1997MAR06-7	100	1	1	529005_{Qld}	1.000				
	500	2	1	529005_{Qld}	1.000				
	1000	4	1	529005_{Qld}	1.000				
	2500	4	1	529005_{Qld}	1.000				
	5000	6	1	529005_{Qld}	1.000				
	10000	9	3	29141	0.100	529003_{Qld}	0.100	529005_{Qld}	0.800
	20000	15	4	29127	0.250	29141	0.150	529003_{Qld}	0.150
				529005_{Qld}	0.450				
	40000	23	5	29127	0.250	29141	0.150	529002_{Qld}	0.250
				529003_{Qld}	0.150	529005_{Qld}	0.200		
	60000	32	7	29127	0.160	29141	0.120	529000_{Qld}	0.120
				529001_{Qld}	0.160	529002_{Qld}	0.160	529003_{Qld}	0.120
				529005_{Qld}	0.160				
	100000	46	7	29127	0.160	29141	0.120	529000_{Qld}	0.120
				529001_{Qld}	0.160	529002_{Qld}	0.160	529003_{Qld}	0.120
				529005_{Qld}	0.160				
1998JAN29-4	100	2	1	33_{NT}	1.000				
	500	2	1	33_{NT}	1.000				
	1000	3	2	33_{NT}	0.400	34_{NT}	0.600		
	2500	8	3	33_{NT}	0.400	34_{NT}	0.300	35_{NT}	0.300
	5000	10	3	33_{NT}	0.300	34_{NT}	0.300	35_{NT}	0.400
	10000	16	3	33_{NT}	0.300	34_{NT}	0.300	35_{NT}	0.400
	20000	24	3	33_{NT}	0.250	34_{NT}	0.250	35_{NT}	0.500
	40000	30	3	33_{NT}	0.250	34_{NT}	0.250	35_{NT}	0.500
	60000	39	3	33_{NT}	0.250	34_{NT}	0.250	35_{NT}	0.500
	100000	47	3	33_{NT}	0.300	34_{NT}	0.300	35_{NT}	0.400
1998MAR05-7	100	1	2	29041	0.900	529008_{Qld}	0.100		
	500	2	2	29041	0.900	529008_{Qld}	0.100		
	1000	3	2	29041	0.900	529008_{Qld}	0.100		
	2500	3	2	29041	0.700	529008_{Qld}	0.300		
	5000	5	2	29041	0.700	529008_{Qld}	0.300		
	10000	5	2	29041	0.600	529008_{Qld}	0.400		
	20000	6	2	29041	0.600	529008_{Qld}	0.400		
	40000	14	3	29041	0.500	529007_{Qld}	0.100	529008_{Qld}	0.400
	60000	15	3	29041	0.500	529007_{Qld}	0.100	529008_{Qld}	0.400
	100000	24	3	29041	0.500	529007_{Qld}	0.100	529008_{Qld}	0.400

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1998DEC10-2	100	3	2	36_{NT}	0.500	37_{NT}	0.500		
	500	21	6	36_{NT}	0.200	37_{NT}	0.200	38_{NT}	0.100
				39_{NT}	0.100	40_{NT}	0.300	14015_{S}	0.100
	1000	25	6	36_{NT}	0.200	37_{NT}	0.200	38_{NT}	0.100
				39_{NT}	0.100	40_{NT}	0.300	14015_{S}	0.100
	2500	32	6	36_{NT}	0.150	37_{NT}	0.150	38_{NT}	0.150
				39_{NT}	0.150	40_{NT}	0.250	14015_{S}	0.150
	5000	37	6	36_{NT}	0.100	37_{NT}	0.100	38_{NT}	0.250
				39_{NT}	0.250	40_{NT}	0.100	14015_{S}	0.200
	10000	44	6	36_{NT}	0.130	37_{NT}	0.130	38_{NT}	0.200
				39_{NT}	0.200	40_{NT}	0.140	14015_{S}	0.200
	20000	47	7	36_{NT}	0.100	37_{NT}	0.100	38_{NT}	0.170
				39_{NT}	0.170	40_{NT}	0.100	14015_{S}	0.260
				14245_{S}	0.100				
	40000	56	7	36_{NT}	0.100	37_{NT}	0.100	38_{NT}	0.170
				39_{NT}	0.170	40_{NT}	0.100	14015_{S}	0.190
				14245_{S}	0.170				
1999FEB13-2	100	5	1	531002_{Qld}	1.000				
	500	8	2	531002_{Qld}	0.600	531005_{Qld}	0.400		
	1000	11	2	531002_{Qld}	0.500	531005_{Qld}	0.500		
	2500	21	4	531002_{Qld}	0.400	531005_{Qld}	0.200	531016_{Qld}	0.200
				532010_{Qld}	0.200				
	5000	31	5	531002_{Qld}	0.300	531005_{Qld}	0.200	531015_{Qld}	0.150
				531016_{Qld}	0.150	532010_{Qld}	0.200		
	10000	48	12	31011	0.070	31034	0.110	531002_{Qld}	0.070
				531005_{Qld}	0.150	531006_{Qld}	0.070	531011_{Qld}	0.110
				531015_{Qld}	0.070	531016_{Qld}	0.070	531017_{Qld}	0.070
				532002_{Qld}	0.070	532009_{Qld}	0.070	532010_{Qld}	0.070
	20000	63	13	31011	0.055	31034	0.055	31103	0.055
				531004_{Qld}	0.055	531005_{Qld}	0.055	531006_{Qld}	0.110
				531011_{Qld}	0.055	531015_{Qld}	0.055	531016_{Qld}	0.055
				531017_{Qld}	0.110	532002_{Qld}	0.110	532009_{Qld}	0.110
				532010_{Qld}	0.120				
	40000	78	15	31011	0.050	31034	0.050	31103	0.050
				32086	0.050	531004_{Qld}	0.050	531005_{Qld}	0.050
				531006_{Qld}	0.100	531011_{Qld}	0.050	531015_{Qld}	0.050
				531016_{Qld}	0.050	531017_{Qld}	0.100	532002_{Qld}	0.100
				532009_{Qld}	0.100	532010_{Qld}	0.100	532015_{Qld}	0.050
	60000	86	15	31011	0.050	31034	0.050	31103	0.050
				531002_{Qld}	0.050	531004_{Qld}	0.050	531005_{Qld}	0.100
				531006_{Qld}	0.050	531011_{Qld}	0.100	531015_{Qld}	0.050
				531016_{Qld}	0.050	531017_{Qld}	0.100	532002_{Qld}	0.100
				532009_{Qld}	0.050	532010_{Qld}	0.100	532015_{Qld}	0.050
	100000	96	13	28004	0.050	31034	0.120	31103	0.050
				528002_{Qld}	0.120	531002_{Qld}	0.120	531005_{Qld}	0.120
				531006_{Qld}	0.050	531011_{Qld}	0.120	531016_{Qld}	0.050
				531017_{Qld}	0.050	532002_{Qld}	0.050	532009_{Qld}	0.050
				532010_{Qld}	0.050				

Table A1: cont.

STORM NAME	AREA	STATIONS		WEIGHTING OF 3-HOURLY STATIONS					
	(km²)	Daily	3hrly	No.	Weight	No.	Weight	No.	Weight
1999MAY28-3	100	2	1	508023_{WA}	1.000				
	500	9	1	508023_{WA}	1.000				
	1000	10	1	508023_{WA}	1.000				
	2500	14	1	508023_{WA}	1.000				
	5000	21	1	508023_{WA}	1.000				
	10000	34	2	8051	0.200	508023_{WA}	0.800		
	20000	51	2	8051	0.300	508023_{WA}	0.700		
	40000	77	3	8051	0.350	9037	0.250	508023_{WA}	0.400
	60000	109	4	8051	0.250	8297	0.250	9037	0.250
				508023_{WA}	0.250				
	100000	154	5	8051	0.200	8138	0.150	8297	0.200
				9037	0.200	508023_{WA}	0.250		

Table A2: References for the 3-hourly Data Stations Sourced from Reports in Table A1.

STORM	STATION	LOCATION AND SOURCE OF DATA
1893FEB03-1 1893FEB03-2	1_R	Constructed from rainfall observations at Yandina given in the report: Brunt, A. T., 1958. The Crohamhurst Storm of 1893. Conference on the Estimation of Extreme Precipitation, Bureau of Meteorology, Melbourne, April 22-24 1958, pp191-228.
1898APR03-2	4042_R	Constructed from extra rainfall observations at Whim Creek given in the following report (prepared for the GTSMR project): Hartley, R.G., 2000. Whim Creek Storm, April 1898: Report on Supplementary Rainfall Distribution Data. Unpublished report.
1916DEC28-1 1916DEC29-2	2_R, 3_R, 4_R, 5_R, 6_R	Interpolated from the mass curves for Huntley, Arbor Downs, Clement, Orikovo and Botantungan given in the report: Harman, B. and Whittingham, H. E., 1970. A Documentary and Investigation of the Clermont Storm, December 1916. Queensland Irrigation and Water Supply Commission and Bureau of Meteorology.
1918JAN22-1 1918JAN24-3 1918JAN25-5	7_R	Constructed using extra rainfall observations at Mackay and descriptive notes given in the following report: Bath, A. T., 1957. The Mackay Cyclone of 21 January, 1918. Aust. Met. Mag., Vol. 19, pp 46-59.
1954FEB21-1 1954FEB21-2	42_R	Derived from the mass curve constructed from observations at Deer Vale given in the report: Water Conservation and Irrigation Commission, 1956. Report on the Hydrologic Features of the Floods of February 1954, North Coast New South Wales.
1955FEB25-2	8_R	Derived from the 3-hourly increments given in the following report which were constructed from observations at Anglewood, Leadville and Wellington: Bureau of Meteorology, 1981. The Temporal Pattern of the 1955 Storm Centre Near Dunedoo. Dept. of Science & Technology, Bureau of Meteorology, Sydney Regional Office, March 1981.
1956JAN22-2	9_R, 10_R, 11_R, 12_R, 13_R, 14_R, 15_R, 16_R, 17_R, 18_R, 19_R	Derived from mass curves constructed for five private locations, Monkstadt, Deepwater, Bonshaw, Pittsworth, Dalby and Gaynah given in the report: Water Conservation and Irrigation Commission, 1957. Depth Area Duration Study of Storm of January 1956 in Northern New South Wales and Southern Queensland.
1958FEB18-1	20_R, 21_R, 22_R, 23_R, 24_R, 25_R	Constructed from extra rainfall observations at Mt Charlton, Sybil Creek, Calen, Mt Pelion, Owens Creek and Elaroo given in the report: Brunt, A. T., 1958. Notes on the Mackay Storm of February, 1958. Seminar on Rain, Sydney, August 1960. Volume 1 - Synoptic Case Histories 1952-1959.
1970JAN19-1	43_R, 44_R, 45_R, 46_R, 47_R, 48_R, 49_R, 50_R, 51_R, 52_R, 53_R, 54_R,	Derived from data supplied in an internal document by the Queensland Regional Office, Bureau of Meteorology for the locations: Bloomsbury,Taranga, Cathu, Wajoora, Calen, Cameron's Pocket, Mt Charlton, Mt Jukes, Finch Hatton, Ross (Credition), Wood (Ridgelands),

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