

*Dumaresq-Barwon
Border Rivers Commission*



*Annual Statistics
2003-04*



Dumaresq-Barwon Border Rivers Commission 2003-04 Annual Statistics

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The Border Rivers Commissioners would like to record their sincere thanks to the staff from SunWater, State Water, the Queensland Department of Natural Resources and Mines and the New South Wales Department of Infrastructure, Planning and Natural Resources who provided the information and statistics for this report.

Please note that as from 1 July 2003 the Commission's reporting period for statistics is 1 July to 30 June rather than the former reporting period of 1 October to 30 September.

Water infrastructure

Table 1 - Key features of Border Rivers Commission works

Name	Stream	AMTD (km)	Nearest town/s	Description	F.S.L above bed (EL)	Storage capacity (ML)	Date completed
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DAMS

Glenlyon Dam	Pike Creek	6.4	Stanthorpe Tenterfield Texas	Earth & rockfill	47.4	254,000	1976
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WEIRS

Boggabilla Weir	Macintyre River	283.5	Boggabilla Goondiwindi	Reinforced concrete and earthfill	8.5	5,850	1991
Boomi Weir	Macintyre River	147.0	Boomi	Steel sheetpiling	4.1	354	1960
Bonshaw Weir	Dumaresq River	126.7	Texas	Steel sheetpiling	2.9	617	1953/58
Coomonga Weir	Coomonga Creek		Toobeah	Steel sheetpiling			1986
Cunningham Weir	Dumaresq River	67.9	Texas	Timber piled (written-off)	4.6	543	1954
Glenarvon Weir	Dumaresq River	57.0	Yelarvon	Steel sheetpiling	2.7	353	1959
Goondiwindi Weir	Macintyre River	268.8	Goondiwindi	Timber crib (fish ladder added)	2.8	1,800	1942
Mungindi Weir	Barwon River	4.8	Mungindi	Steel sheetpiling	3.6	730	1936/65

REGULATORS

Boomi Regulator	Boomi River		Boomi	Steel sheetpiling with hardwood dropboards			1960
Newinga Regulator	Barwon to Weir River flood channel		Talwood	Reinforced concrete with aluminium dropboards			1993
Regulator No 1	Balonne Minor	163.5	Dirranbandi	Steel sheetpiling with rock protection			1974
	Culgoa River	162.6	Dirranbandi	Steel sheetpiling with rock protection			1974
Regulator No 2	Balonne Minor	128.9	Dirranbandi	Steel sheetpiling with rock protection			1974
	Donnegri River	14.9	Dirranbandi	Steel sheetpiling with rock protection			1974
Regulator No 3	Ballandool River	91.4	Dirranbandi	Steel sheetpiling with rock protection			1974
	Bokhara River	79.8	Dirranbandi	Steel sheetpiling with rock protection			1974
Regulator No 4	Birrie River	274.7	Goodooga	Steel sheetpiling with rock protection			1974
	Bokhara River	276.2	Goodooga	Steel sheetpiling with rock protection			1974

OTHER

Little Weir River Diversion	Barwon River		Mungindi	Excavated channel and box culverts			1986
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Table 2 - Glenlyon Dam monthly storage volumes (megalitres)

End of month	2002-03	2003-04
July	124,727	28,213
August	122,140	27,990
September	118,058	25,428
October	111,846	28,155
November	101,128	27,530
December	76,844	31,337
January	35,822	55,858
February	29,287	62,440
March	29,043	61,644
April	28,956	59,799
May	28,648	58,660
June	28,383	57,624

(1) Storage volumes in this table are at 24:00 hrs on the last day of each month as recorded by GS 416315A

Table 3 - Glenlyon Dam monthly releases / spillway flows (megalitres)

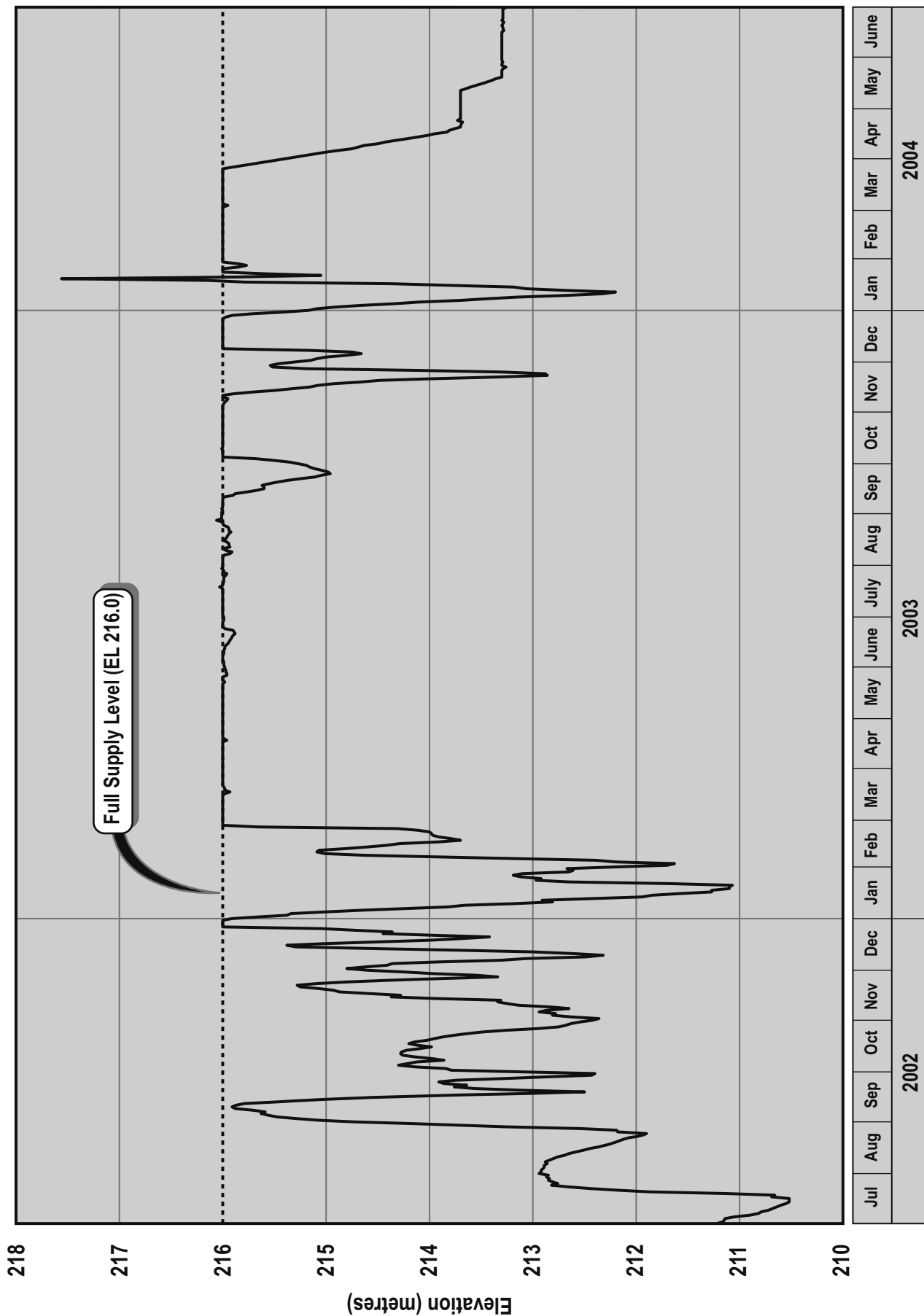
Month	2002-03		2003-04	
	Release	Spillway flows	Release	Spillway flows
July	474	0	142	0
August	2,177	0	146	0
September	3,618	0	2,666	0
October	6,405	0	186	0
November	9,783	0	527	0
December	22,415	0	128	0
January	42,901	0	1,726	0
February	7,536	0	121	0
March	109	0	125	0
April	114	0	1,463	0
May	106	0	801	0
June	114	0	685	0

(1) The monthly releases in this table are the flows as recorded at GS 4163109B less any spillway flows.

Table 4 - Glenlyon Dam recreation statistics

1 October 02 - 30 June 03		1 July 03 - 30 June 04	
Visitors	Camp sites occupied	Visitors	Camp sites occupied
60,622	4,296	41,645	4,721

Figure 1 - Boggabilla Weir Storage Levels 2002-2004



Resource allocation, sharing and use

Table 5 - Irrigation licences - Border Rivers catchment upstream of Mingoola

	Number of licences		
	New South Wales	Queensland	Total
Dumaresq River and Tributaries above Mingoola (excluding licences on Glenlyon Dam or Pike Creek downstream of Glenlyon Dam)	107	344	451

Table 6 - Irrigation, off-allocation, waterharvesting, industrial & town water licences and offstream storages - Border Rivers regulated section

	Number of licences		Allocations (Megalitres)		Off-stream Storages (Megalitres) (Number of storages)	
	NSW	QLD	NSW	QLD	NSW	QLD
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	21	32	6,118	6,628	0	0
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	17	26	6,978	5,896	0	0
Texas Town		1		270		
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	13	36	2,930	6,486	400 (1)	6,300 (5)
Yelarbon Town		1		106		
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	12	48	61,267	32,776	25,700 (5)	125,850 (51)
Boggabilla Town	1		200			
Goondiwindi Town		1		1,800		
Macintyre River from Goondiwindi Weir to Boomi Weir	17	21	123,327	9,240	77,560 (16)	25,210 (15)
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	13	41	48,627	21,570	48,100 (8)	119,370 (53)
Mungindi Town	1		300			
Totals	95	207	249,747	84,772	151,760	276,730

Table 7 - Water use from the Border Rivers 1 October 02 - 30 June 03 (megalitres)

	On-allocation			Off-allocation		
	NSW	QLD	Total	NSW	QLD	Total
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	2,461	975	3,433	208	418	626
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	3,645	558	4,203	236	140	376
Texas Town	-	197	197	-	-	-
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	428	1,972	2,426	27	790	817
Yelarbon Town	-	60	60	-	-	0
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	33,468	10,856	44,604	230	3,031	3,261
Boggabilla Town	135	-	135	-	-	-
Goondiwindi Town	-	1,496	1,496	-	-	-
Macintyre River from Goondiwindi Weir to Boomi Weir	60,500	5,921	67,171	792	1,988	2,780
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	15,482	8,901	30,242	1,317	4,717	6,034
Mungindi Town	269	-	269	-	-	-
Totals	116,388	30,936	154,236	2,810	11,084	13,894

(1) The above water use statistics include the use of water released into the Border Rivers from Pindari Dam which is owned and operated by New South Wales and Coolmunda Dam which is owned and operated by SunWater. Water temporarily transferred from one state to the other is reported as being use in the state of origin not the state of destination.

Table 8 - Water use from the Border Rivers 1 July 03 – 30 June 04 (megalitres)

	On-allocation			Off-allocation		
	NSW	QLD	Total	NSW	QLD	Total
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	1,412	178	1,590	637	408	1,045
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	2,299	151	2,450	758	505	1,263
Texas Town		155	155			
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	237	213	450	182	5,832	6,014
Yelarbon Town		71	71			
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	8,536	223	8,759	14,514	23,282	37,796
Boggabilla Town	148		148			
Goondiwindi Town		1,786	1,786			
Macintyre River from Goondiwindi Weir to Boomi Weir	22,597	299	22,896	20,122	16,275	36,397
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	9,381	1,642	11,023	15,386	35,354	50,740
Mungindi Town	256		256			
Totals	44,866	4,718	49,584	51,599	81,656	133,255

(1) The above water use statistics include the use of water released into the Border Rivers from Pindari Dam which is owned and operated by New South Wales and Coolmunda Dam which is owned and operated by SunWater. Water temporarily transferred from one state to the other is reported as being use in the state of origin not the state of destination.

Table 9 – Resource assessments for the Border Rivers 1 October 02 - 30 June 03 (gigalitres)

Date of assessment	Queensland accounts						New South Wales accounts						
	Storage loss	Essential supplies	Essential supplies delivery loss	General use	General use delivery loss	Total	Storage loss (Glenlyon Dam)	Storage loss (Pindari Dam)	Essential supplies	Essential supplies delivery loss	General use	General use delivery loss	Total
1 October	5.10	10.96	N/A	31.37	9.41	56.84	5.02	11.55	58.55	N/A	117.38	33.87	226.37
1 November	4.02	10.59	N/A	30.08	8.13	52.82	3.90	10.48	53.81	N/A	113.40	30.74	212.33
1 December	3.14	10.21	N/A	28.40	7.48	49.23	2.95	9.01	53.71	N/A	88.15	22.15	175.97
1 January	4.33	10.00	N/A	22.34	5.66	42.33	3.59	8.82	54.72	N/A	52.20	11.36	130.69
1 February	2.10	9.28	N/A	5.45	-1.37	15.46	2.38	7.48	53.28	N/A	21.83	0.64	85.61
1 March	1.60	8.98	N/A	3.93	-3.20	11.31	2.21	7.86	62.20	N/A	15.15	4.54	91.96
1 April	1.57	8.71	N/A	3.92	-3.12	11.08	2.20	7.88	62.20	N/A	15.45	4.63	92.36
1 May	2.71	10.96	N/A	4.29	1.29	19.25	1.04	8.34	62.2	N/A	17.15	5.15	93.88
1 June	2.54	8.20	2.76	3.41	1.03	17.94	1.16	8.50	46.60	15.60	18.23	5.48	95.57
1 July	2.44	8.08	2.72	3.41	1.03	17.69	1.17	8.51	46.60	15.60	18.31	5.51	95.70

(1) The resource assessments take into account the water stored in Glenlyon Dam as well as the water stored in Pindari Dam. The water stored in Pindari Dam is available only to NSW. The water stored in Glenlyon Dam is shared between NSW and Qld in the ratio 57:43.

Table 10 – Resource assessments for the Border Rivers 1 July 03 – 30 June 04 (gigalitres)

Date of assessment	Queensland accounts						New South Wales accounts						
	Storage loss	Essential supplies	Essential supplies delivery loss	General use	General use delivery loss	Total	Storage loss (Glenlyon Dam)	Storage loss (Pindari Dam)	Essential supplies	Essential supplies delivery loss	General use	General use delivery loss	Total
1 July	2.44	8.08	2.72	3.41	1.03	17.69	1.17	8.51	46.60	15.60	18.31	5.51	95.70
1 August	2.36	7.98	2.69	3.41	1.03	17.47	1.18	8.47	45.64	15.60	18.57	5.59	95.05
1 September	2.23	7.85	2.65	3.33	1.01	17.07	1.19	8.51	30.79	10.31	34.67	10.42	95.89
1 October	1.92	7.64	2.59	2.79	-0.43	14.51	1.17	8.50	30.79	10.31	34.35	10.33	95.45
1 November	2.20	7.98	2.69	2.62	0.00	15.49	1.44	10.25	30.79	10.31	61.11	18.36	132.25
1 December	2.61	8.20	2.76	3.65	1.10	18.32	0.94	10.21	30.79	10.31	58.15	17.47	127.87
1 January	3.68	8.20	2.76	9.22	2.77	26.63	0.41	10.36	30.79	10.31	57.85	17.37	127.10
1 February	4.43	8.20	2.76	16.92	5.09	37.40	1.96	14.24	30.79	10.31	131.54	39.48	228.32
1 March	4.86	8.20	2.76	20.72	6.23	42.77	2.09	14.25	30.79	10.31	133.07	39.94	230.45
1 April	4.30	8.03	2.71	20.55	6.18	41.77	2.09	14.24	30.79	10.31	132.69	39.82	229.95
1 May	3.98	7.83	2.65	19.99	6.01	40.46	1.96	13.86	28.50	10.30	132.10	39.64	226.36
1 June	3.61	7.67	2.61	19.97	6.00	39.87	1.78	13.44	27.45	10.29	131.80	39.55	224.31
1 July	3.32	7.48	2.57	19.95	5.99	39.31	1.87	13.75	26.54	10.27	131.37	39.42	223.23

(1) The resource assessments take into account the water stored in Glenlyon Dam as well as the water stored in Pindari Dam. The water stored in Pindari Dam is available only to NSW. The water stored in Glenlyon Dam is shared between NSW and Qld in the ratio 57:43.

Table 11 - Access opportunities to unregulated flows from the Border Rivers

Month	Number of days			
	1 October 02 – 30 June 03		1 July 03 – 30 June 04	
	Glenlyon to Goondiwindi	Goondiwindi to Mungindi	Glenlyon to Goondiwindi	Goondiwindi to Mungindi
July				
August				
September				
October			1 (Old only)	1 (Old only)
November				
December	(See Note 2)	(See Note 2)	1 (Old only)	(See Note 3)
January			9	(See Note 4)
February	1 (Old only)	1 (Old only)		
March				11 (Newing-Mungindi only)
April				
May		0.5 (d/s of Boomi only)		
June				

- (1) Generally NSW irrigators are granted 3 percent off-allocation pumping for each 1 day that access is permitted to unregulated flows.
(2) Limited access permitted in both Qld and NSW.
(3) 1 day for Qld irrigators (Goondiwindi-Newing); 4 days for Qld irrigators (Newing-Macintyre/Weir R junction); 5 days for Qld irrigators (Macintyre/Weir River junction-Mungindi).
(4) 9 days for Qld and NSW irrigators (Goondiwindi-Newing); 12 days for Qld and NSW irrigators (Newing-Mungindi).

Table 12 – Irrigated production in the Border Rivers (hectares)

Crop	2002-03			2003-04		
	NSW	Qld	TOTAL	NSW	Qld	TOTAL
Cotton	26,420	13,648	40,068	10,800	5,808	16,608
Lucerne	380	469	849	650	613	1,263
Cereals	880	3,480	4,360	455	3,548	4,003
Peanuts	200	0	200	156	0	156
Fodder crops	400	971	1,371	490	513	1,003
Horticultural crops	225	151	376	20	137	157
Other	100	227	327	130	938	1,068
Total	28,605	18,946	47,551	12,701	11,557	24,258

- (1) The irrigated production statistics in this table include the crops grown on properties which take regulated/supplemented water from the Border Rivers. Crops grown on properties not supplied at least in part from the Border Rivers are not included in this table.
(2) The statistics for each year include the winter crop areas planted during the year.

Table 13 - Groundwater licences in the Border Rivers Groundwater Area

	NSW	Qld ⁽²⁾
Issued allocation	21,192 ⁽¹⁾	13,429
Issued allocation (100% surface water allocation)	13,677	-
Issued allocation (0% surface water allocation)	21,192	-
Allocation issued, bores constructed	20,972	13,429
Allocation issued, bores not constructed	220	0
Number of licences	64	37
Number of bores constructed	63	37
Number of applications outstanding	0	18

- (1) This amount does not include 2 unrestricted perpetual licences for which a volumetric entitlement has not yet been determined.
(2) The Queensland figures do not include the allocation issued in the shallow aquifer, which is about 3,500 ML.

Table 14 - Groundwater use in the Border Rivers Groundwater Area (megalitres)

1 Oct 02 – 30 June 03		1 July 03 – 30 June 04	
NSW	Qld	NSW	Qld
5,530	6,967	7,126	5,339

Resource management

Table 15 - Beardmore Dam compensation inflow, storage and releases

Month	2002-03			2003-04		
	Inflow (ML)	Release (ML)	Storage at end of month (ML)	Inflow (ML)	Release (ML)	Storage at end of month (ML)
June	0	0	0	3,714		3,705
July	187	0	180	4,730	0	6,250 ⁽³⁾
August	1,404	0	1,575	0	0	6,025
September	3,995	0	945 ⁽¹⁾	0	0	4,125 ⁽³⁾
October	0	0	0 ⁽¹⁾	0	0	2,210 ⁽³⁾
November	0	0	0	0	0	1,965
December	0	0	0	12,180	13,960	0
January	0	0	0	12,990	12,790	0
February	0	0	0	20,170	19,970	0
March	1,680	0	1,654	17,200	16,720	280
April	12,882	8,875	897 ⁽¹⁾	2,570	480	2,250
May	7,389	12,793 ⁽²⁾	0	7,640	7,260	2,450
June	3,714		3,705	920	0	3,240
Totals	31,251	21,668		82,114	71,180	

(1) In September 2003 the amounts of 451 and 313 releases respectively were deducted from the compensation storage to release to the allocation holders who contributed water to the 2002-03 compensation release.

(2) The compensation release for the month of May 2003 includes 537 ML of water contributed by St George allocation holders.

(3) In July 2003 September 2003 the amounts of 1,173 and 1711 releases respectively were deducted from the compensation storage to release to the allocation holders who contributed water to the 2003-04 compensation release.

Table 16 - Guidelines for physical and chemical stressors - ANZECC (2000)

Water quality indicator		Default trigger value ⁽¹⁾	Notes
Salinity (μScm^{-1})	Upland rivers ⁽²⁾	350	Conductivity may be higher during low flow periods.
	Lowland rivers	300	
	Lakes and reservoirs	20 - 30	Conductivity in lakes and reservoirs is generally low but will vary depending on catchment geology.
Turbidity (NTU)	Upland rivers ⁽²⁾	25	High turbidities may be observed during high flow events.
	Lowland rivers	50	
	Lakes and reservoirs	1 - 20	Deep reservoirs will generally have a lower turbidity than shallow reservoirs.
Total Nitrogen (mgL^{-1})	Upland rivers ⁽²⁾	0.20	
	Lowland rivers	0.60	
	Lakes and reservoirs	0.35	
Total Phosphorus (mgL^{-1})	Upland rivers ⁽²⁾	0.02	Above these levels excessive algal growth may occur.
	Lowland rivers	0.05	
	Lakes and reservoirs	0.01	

(1) The default trigger values provide a guide to the value or range of values of the specific water quality indicator which if exceeded may indicate conditions detrimental to the health of the ecosystem which may require management action.

(2) Upland rivers are those above 15 m altitude.

Table 17 - Summary of water quality 2002-03

Basin	Site no	Location	Electrical Conductivity $\mu\text{S/cm}$				Total Phosphorus (mg/L)				Total Nitrogen (mg/L)				Turbidity (NTU)			
			N	10th %ile	Med	90th %ile	N	10th %ile	Med	90th %ile	N	10th %ile	Med	90th %ile	N	10th %ile	Med	90th %ile
Dumaresq Tributaries	416003	Tenterfield Creek, Clifton	12	511	556	847	12	0.02	0.07	0.14	12	0.65	1.15	2.96	12	1.4	2.4	8.8
	416310	Severn River at Farnbro	0				0				0				0			
	416303	Pike Creek U/S Glenlyon Dam	5	279	310	322	5	0.03	0.03	0.04	5	0.23	0.40	0.51	5	0.6	0.8	3.6
	416309	Pike Creek at Glenlyon Dam Tailwater	12	192	204	257	12	0.02	0.03	0.04	12	0.63	0.70	0.88	12	1.6	2.4	3.7
	416032	Mole River, Donaldson	12	173	352	480	12	0.02	0.04	0.09	12	0.28	0.56	1.27	12	1.7	5.7	10.9
	416008	Beardy River, Haystack No. 4	12	142	170	246	12	0.03	0.04	0.06	12	0.30	0.45	0.75	12	5.3	12.5	18.7
	416312	Oaky Creek at Texas	5	641	720	1066	5	0.08	0.13	0.22	5	0.85	1.30	3.14	5	18.8	33.0	53.0
	416415	Macintyre Brook, Booba Sands	12	270	417	583	12	0.05	0.07	0.10	12	0.65	0.79	1.09	12	10.1	19.5	44.5
Dumaresq	416007	Bonshaw Weir	12	178	213	237	12	0.02	0.03	0.04	12	0.41	0.47	0.65	12	3.8	6.3	10.8
	416049	Mauro	12	188	232	330	12	0.03	0.04	0.04	12	0.47	0.51	0.61	12	4.4	7.6	19.4
Macintyre	416012	Holdfast	12	212	0307	425	12	0.06	0.08	0.15	12	0.41	0.49	0.86	12	7.9	15.0	69.5
	41610044	Salisbury Bridge (Boggabilla)	12	219	296	392	12	0.06	0.07	0.13	12	0.45	0.49	0.73	12	11.1	17.0	74.1
	416048	Kanowna	12	219	280	355	12	0.05	0.07	0.09	12	0.40	0.49	0.63	12	27.6	37.5	64.5
Weir	416202	Talwood	11	135	159	198	11	0.15	0.18	0.28	11	1.00	1.30	1.60	11	500	600	800
Intersecting Streams	424002	Willara Crossing on Paroo	134	119.4	194.0	214.0	4	0.74	0.89	1.05	4	0.09	0.18	0.22	4	154	543	676
	423002	Fords Bridge Bywash on Warrego	3	110.4	118.8	120.7	2	0.88	0.90	0.91	2	0.21	0.21	0.21	3	414	447	469
	422015	Culgoa River at Brenda	3	115.0	119.2	140.0	3	0.89	0.95	0.96	3	0.21	0.22	0.23	3	450	465	509
	422014	Bokhara River at Goodooga	134	123.1	193.9	209.5	5	0.98	1.00	1.20	5	0.20	0.22	0.26	2	593	619	645
	422013	Birrie River near Goodooga	135	117.8	169.1	222.1	7	0.62	0.64	1.08	7	0.15	0.19	0.35	7	185	191	328
	422012	Narran River at New Angledool	7	85.3	136.4	174.6	7	0.72	0.82	0.89	7	0.12	0.13	0.15	7	170	221	442
Storages	416315	Glenlyon 1: Top	12	201	213	252	12	0.02	0.04	0.04	12	0.66	0.88	1.00	12	1.3	4.2	5.1
		Glenlyon 1: Middle	12	201	214	247	12	0.01	0.03	0.04	12	0.74	0.91	1.09	12	1.9	3.5	5.5
		Glenlyon 1: Bottom	12	199	214	263	12	0.03	0.03	0.14	12	0.89	0.98	1.88	12	1.9	3.1	5.6

1 The table provides information on the median value (middle value) the 1st percentile (10% of the samples are below this value) and the 90th percentile (90% of the samples are below this value v.v. 10% of the samples are greater than this value)
 Statistics are for the period 1 July - 31 June

3 No samples were taken from the Severn river at Farnbro 41 31 due to lack of water

Table 18 - Summary of water quality 2003-04

Basin	Site no	Location	Electrical Conductivity $\mu\text{S/cm}$				Total Phosphorus (mg/L)				Total Nitrogen (mg/L)				Turbidity (NTU)			
			N	10th %ile	Med	90th %ile	N	10th %ile	Med	90th %ile	N	10th %ile	Med	90th %ile	N	10th %ile	Med	90th %ile
Dumaresq Tributaries	416003	Tenterfield Creek, Clifton	11	215	381	506	11	0.016	0.091	0.171	11	0.790	0.560	1.200	11	4.2	1.3	13
	416310	Severn River at Farnbro	9	133	159	178	9	0.031	0.048	0.464	9	0.550	0.860	4.400	9	5.0	9.1	24.0
	416303	Pike Creek U/S Glenlyon Dam	7	161	252	300	7	0.023	0.039	0.076	7	0.300	0.460	1.100	7	1.2	1.9	27.0
	416309	Pike Creek at Glenlyon Dam Tailwater	12	233	273	289	12	0.020	0.030	0.116	12	0.750	0.850	1.200	12	2.0	2.9	6.3
	416032	Mole River, Donaldson	12	139	189	244	11*	0.031	0.052	0.082	11*	0.310	0.570	0.740	11*	6.7	20.0	23.0
	416008	Beardy River, Haystack No. 4	12	139	175	194	12	0.018	0.033	0.062	12	0.220	0.365	0.640	12	5.2	7.6	30.0
	416312	Oaky Creek at Texas	2	438	516	594	2	0.070	0.114	0.157	2	0.410	0.805	1.200	2	7.4	7.8	8.2
	416415	Macintyre Brook, Booba Sands	12	221	389	552	11*	0.046	0.058	0.164	11*	0.530	0.850	1.300	11*	11.0	20.0	65.0
Dumaresq	416007	Bonshaw Weir	12	166	216	284	12	0.026	0.045	0.059	12	0.380	0.600	0.800	12	4.9	6.4	25.0
	416049	Mauro	12	150	210	254	11*	0.025	0.050	0.071	11*	0.420	0.570	7.90	11*	6.7	10.0	23.0
Macintyre	416012	Holdfast	12	238	308	360	11*	0.064	0.106	0.150	11*	0.440	0.550	0.720	11*	11.0	24.0	60.0
	41610044	Salisbury Bridge (Boggabilla)	12	179	245	330	11*	0.036	0.092	0.151	11*	0.430	0.740	0.830	11*	7.7	24.0	38.0
	416048	Kanowna	12	195	268	340	12	0.050	0.091	0.134	12	0.420	0.610	0.870	12	26.0	60.0	150.0
	416001	Mungindi	12	187	268	330	12	0.040	0.080	0.126	11*	0.380	0.690	1.000	12	31.0	62.5	120.0
Weir	416202	Talwood	11	136	162	190	10*	0.108	0.127	0.198	10*	1.150	1.200	1.500	10*	102.0	450.0	875.0
Intersecting Streams	424002	Willara Crossing on Paroo	6	50.00	58.50	107.80	6	0.146	0.188	0.477	6	0.71	0.96	1.95	6	544	705	1450
	423002	Fords Bridge Bywash on Warrego	268	115.95	174.55	244.70	4	0.073	0.212	0.352	4	0.67	0.76	1.02	3	165	202	524
	422015	Culgoa River at Brenda	299	144.00	155.99	203.60	1	0.322	0.322	0.322	1	1.1	1.1	1.1	2	468	627	786
	422014	Bokhara River at Goodooga	4	156.60	159.50	165.20	4	0.300	0.342	0.371	4	0.88	1.1	1.17	4	490	571	796
	422013	Birrie River near Goodooga	3	116.00	128.00	154.40	3	0.293	0.308	0.342	3	0.75	0.91	1.06	3	517	607	915
	422012	Narran River at New Angledool	313	117.58	143.59	188.56	4	0.273	0.294	0.304	4	0.84	0.99	1.00	4	319	611	1663
Storages	416315	Glenlyon 1: Top																
		Glenlyon 1: Middle																
		Glenlyon 1: Bottom																

1 The table provides information on the median value (middle value), the 10th percentile (10% of the samples are below this value) and the 90th percentile (90% of the samples are below this value; v.v. 10% of the samples are greater than this value)

2 Statistics are for the period 1 July – 30 June

3 Data not available for Glenlyon Dam.

* Indicates some sample analysis data was not available at the time of preparation of this table.

Table 19 - Stream gauging stations (Border Rivers)

AWRC No	Stream	Station	Equipment (see note)	Telemetry	Established Date	Maintained By	2002-03 Total Flow (MLx10 ³)	2003-04 Total Flow (MLx10 ³)	Historical Annual Totals & (Year) (MLx10 ³)		
									Min	Max	Median
416001	Barwon River	Mungindi	AR	Yes	1889	DLWC	65	389	21 (1 4 5)	3131 (1 5 51)	446
416002	Macintyre River	Boggabilla	AR	Yes	1895	DLWC	239	428	29 (1 1)	5228 (1)	652
416003	Tenterfield Creek	Clifton	AR	Yes	1921	DLWC	1	15	1 ()	235 (1 4 5)	38
416006	Severn River	Ashford	AR	Yes	1970	DLWC	127	164	17 (1 41 4)	1389 (1 5 51)	229
416007	Dumaresq River	Bonshaw Weir	AR	Yes	1934	DLWC	121	158	54 (1 3 4)	1327 (1 75 7)	302
416008	Beardy River	Haystack	AR	Yes	1970	DLWC	13	35	5 (1 41 4)	149 (1 74 75)	31
416010	Macintyre River	Wallangra	AR	Yes	1973	DLWC	39	115	6 (1 41 4)	667 (1 7 71)	82
416011	Dumaresq River	Roseneath	AR	Yes	1972	DLWC	109	124	36 (1 3 4)	1603 (1 55 5)	314
416012	Macintyre River	Holdfast	AR	Yes	1951	DLWC	174	286	49 (1 57 5)	1682 (1 55 5)	375
416020	Otteleys Creek	Coolatai	AR	Yes	1967	DLWC	3	11	1 (1 3)	65 ()	10
416032	Mole River	Donaldson	AR	Yes	1969	DLWC	17	52	13 (1 3 4)	465 (1 75 7)	76
416037	Boomi River	Offlake	AR	Yes	1973	DLWC	11	22	3 (1 4 5)	143 (1 3 4)	53
416040	Dumaresq River	Glenarbon Weir	AR	Yes	1996	DLWC	106	151	108 ()	871 (1)	253
416043	Macintyre River	Boomi Weir	AR	Yes	1976	DLWC	111	145	21 (1 4 5)	460 (1)	163
416047	Macintyre River	Terrewah	AR	Yes	1985	DLWC	164	226	31 (1 4 5)	1144 (1)	282
416048	Macintyre River	Kanowna	AR	Yes	1988	DLWC	85	204	25 (1 4 5)	724 (1)	175
416060	Macintyre River	Boggabilla Weir Downstream	AR	Yes	1997	DLWC					
416201A	Macintyre River	Goondiwindi	AR	Yes	1917	NRM	246	413	61 (1 4 5)	4,488 (1 55 5)	850
416201B	Macintyre River	Goondiwindi Weir	AR	Yes	1997	NRM	239	374	239 ()	1,885 (1)	402
416202A	Weir River	Talwood	AR	Yes	1949	NRM	2.4	275	1 (1 7)	688 (1 5)	59
416305B	Brush Creek	Beebo	AR	Yes	1950	NRM	1.5	1.7	0 (Several)	55 (1 5)	3
416309B	Pike Creek	Glenlyon Dam Tailwater	AR	Yes	1973	NRM	95	8.7	4 (1 7 77)	180 (1)	68
416310A	Dumaresq River	Farnbro	AR	Yes	1962	NRM	0.9	41	0.8 ()	375 (1 75 7)	57
416312A	Oakey Creek	Texas	AR	Yes	1969	NRM	0.05	6.2	7 (1 73 74)	99 (1 5)	7
416315A	Pike Creek	Glenlyon Dam Headwater	AR	Yes	1977	NRM	0	0	0 (Several)	100 (1 4 5)	0
416402C	Macintyre Brook	Inglewood	AR	Yes	1953	NRM	29	35	6 (1 4 5)	546 (1 5)	43
416415A	Macintyre Brook	Booba Sands	AR	Yes	1987	NRM	24	38	4 (1994 5)	630 (1 5)	46

(1) automatic recorder SG sta au e established date DS S eriod o record (rom which all lon term calculations are made).
 () The annual statistics rovided in this table are or the inancial year i.e. 1 uly to 3 une.

Table 20 - Stream gauging stations (Intersecting Streams)

AWRC No	Stream	Station	Equipment (see note)	Telemetry	Established Date	Maintained By	2002-03 Total Flow (MLx10 ³)	2003-04 Total Flow (MLx10 ³)	Historical Annual Totals & (Year) (MLx10 ³)		
									Min.	Max.	Median
417001	Moonie River	Gundablouie	AR	Yes	1945	DLWC	6	203	0 (1 51 5)	596 (1 75 7)	61
417204A	Moonie River	Fenton	AR	Yes	1971	NRM	8	38	0 (Several)	652 (1 55 5)	26
422005	Bokhara River	Goodwin's	AR	Yes	1944	DLWC	3	146	7 (1)	2341 (1)	311
422006	Culgoa River	Downstream Collierina (Kenebree)	SG	No	1944	DLWC	15	26	0 (Several)	379 (1 75 7)	27
422010	Birrie River	Talawanta	SG	No	1964	DLWC	1	106	6 (1)	1002 (1 7 71)	190
422011	Culgoa River	Upstream Collierina (Mundiwa)	AR	Yes	1964	DLWC	12	48	0 (1 3)	574 (1 7 71)	114
422012	Narran River	Angledool	SG	No	1959	DLWC	3	29	0 (1 3)	441 (1 3)	33
422013	Birrie River	Near Goodooga	SG	No	1964	DLWC	2	23	0 (Several)	290 (1 3)	15
422014	Bokhara River	Goodooga	SG	No	1915	DLWC	2	79	0 (1 3)	1619 (1 7 71)	280
422015	Culgoa River	Brenda	AR	Yes	1960	DLWC	14		1 (1 7)	519 (1 3 4)	108
422016	Narran River	Wilby Wilby	SG	No	1964	DLWC	1	78	0 (1 3)	999 (1 3 4)	249
422017	Culgoa River	Weilmoringle	SG	No	1964	DLWC	12	38	0 (Several)	652 (1 55 5)	26
422204A	Culgoa River	Whyenbah	AR	Yes	1965	NRM	32	273	2.6 (1 3)	1,614 (1 7 71)	340
422206A	Narran River	Dirranbandi-Hebel Road	AR	Yes	1965	NRM	8	64	0.2 (1 3)	826 (1 3)	119
422207A	Ballandool River	Hebel-Bollon Road	AR	Yes	1965	NRM	3	15	0 (1 3)	37 (1 3)	17
422209A	Bokhara River	Hebel	AR	Yes	1967	NRM	6	21	1 (1 3)	288 (1 3)	25
422211A	Briarie Creek	Woolerbilla-Hebel Road	AR	Yes	1992	NRM	0	17	0 (several)	489 (1 3)	15
423001	Warrego River	Fords Bridge	AR	No	1921	DLWC	2	6	1 (3 4)	344 (1)	8
423002	Warrego River	Fords Bridge (Bywash)	AR	No	1921	DLWC	12	32	0 (1 57 5)	249 (1 55 5)	39
423202C	Warrego River	Cunnamulla Weir	AR	Yes	1992	NRM	310	343	34 (1)	1,589 (1 7)	293
424002	Paroo River	Willara Crossing	AR	No	1975	DLWC	28	472	26 (1 7)	2072 (1 75 7)	195
424201A	Paroo River	Caiwarro	AR	Yes	1967	NRM	52	587	41 (1 77 7)	2,028 (1)	333
011202	Bulloo River	Autumnvale	AR	Yes	1967	NRM	58	936	19 (1 7 77)	3,215 (1 73 74)	413

(1) automatic recorder SG station established date DS period of record (from which all long term calculations are made).
() The annual statistics provided in this table are for the financial year i.e. 1 July to 30 June.

Table 21 - Groundwater monitoring network

Bore number	Location	State	Piezometer	Depth (m)	Automatic WL Recorder (Yes/No)	Year Installed	Depth to WL 2002-03		Depth to WL 2003-04	
							Max (m)	Min (m)	Max (m)	Min (m)
41640001	Keetah Crossing	Q	A	87.3	No	1985	-3.90	-3.56	-3.97	-3.79
41640001	Keetah Crossing	Q	B	46.8	No	1985	-5.62	-5.43	-5.64	-5.57
41640002	Keetah Crossing	Q	A	17.8	No	1985	-8.63	-8.60	-8.62	-8.56
41640003	Yelarbon Desert	Q	A	92.4	No	1985	-3.40	-3.20	-3.52	-3.23
41640003	Yelarbon Desert	Q	B	47.9	No	1985	-5.00	-4.70	-5.07	-4.92
41630009	Glenarbon	Q	A	93	No	1996	-35.71	-27.76	-33.51	-24.8
41630042	David Muggleton	Q	A	13.3	No	1959	-7.120	-7.06	-7.21	-7.14
41630039	'Eldorado' - Harley Girdle	Q	A	16.7	No	1959	-6.49	-6.09	-6.39	-6.20
41630072	Cunningham Weir	Q	A	90.4	Yes	1985	-43.37	-31.91	-45.58	-41.93
41630072	Cunningham Weir	Q	B	41.4	Yes	1985	-40.40	-37.23	-39.37	-39.22
41630072	Cunningham Weir	Q	C	10.4	Yes	1985	-5.95	-5.77	-5.90	-5.90
41630064	Texas	Q	A	52.5	No	1985	-21.78	-20.20	-23.72	-22.90
41630064	Texas	Q	B	28.5	No	1985	-17.60		-18.02	-16.90
41630066	Bill & Tater	Q	A	90.4	Yes	1985	-27.16	-18.03	-27.20	-22.21
41630066	Bill & Tater	Q	B	45.9	Yes	1985	-24.60	-19.60	-25.90	-24.30
41630067	Bill & Tater	Q	A	12.2	Yes	1985	-5.14	-4.91	-5.34	-5.28
41630063	Finlay's	Q	A	100.6	No	1983	-21.14	-9.47	-22.90	-12.56
41630063	Finlay's	Q	B	64.6	No	1983	-21.84	-9.25	-23.55	-12.27
41630062	Finlay's	Q	A	17.4	No	1985	-6.14	-5.25	-6.52	-5.88
41630071	Finlay's	Q	A	48.2	No	1985	-11.46	-7.00	-11.60	-8.08
41630071	Finlay's	Q	B	41.2	No	1985	-10.94	-6.89	-11.20	-7.85
41630059	John Moore	Q	A	101.7	No	1985	-7.90	-6.73	-7.81	-7.11
41630069	John Moore	Q	A	92	No	1985	-21.18	-8.45	-16.06	-10.86
41630069	John Moore	Q	B	35.9	No	1985	-20.07	-6.63	-16.19	-9.66
41630069	John Moore	Q	C	15.4	No	1985	-9.17	-7.37	-7.30	-6.71
41630060	John Moore	Q	A	12.1	No	1985	-8.54	-8.42	-8.47	-8.30
41630058	John Moore	Q	A	10.6	No	1985	-7.46	-7.40	-7.49	-7.40
41630070	Phillip Harpham	Q	A	9.2	No	1985	-7.31	-4.67	-4.63	-4.60
41630004	V and E Sattolo	Q	A	11.8	No	1960	-11.80	-10.29	-11.85	-10.84
41630003	V and E Sattolo	Q	A	27.1	No	1961	-17.61	-11.72	14.69	-12.47
41630002	V and E Sattolo	Q	A	29.9	No	1961	-13.83	-10.09	12.53	-10.75
GW036697	Keetah Bridge	NSW	1	20	No	1987	-8.61	-8.67	-8.67	-8.56
GW036697	Keetah Bridge	NSW	2	64	No	1987	-6.15	-6.03	-6.23	-8.04
GW036697	Keetah Bridge	NSW	3	83.5	No	1987	-4.46	-3.93	-4.51	-4.1
GW040635	Smithfield Section	NSW	1	15.9	No	1960	-8.63	-8.28	-8.73	-8.04
GW040636	Smithfield Section	NSW	1	11.3	No	1960	-8.09	-7.97	-8.14	-7.78
GW040637	Smithfield Section	NSW	1	7.9	No	1960	-7.87	-6.67	-6.94	-6.67
GW040638	Smithfield Section	NSW	1	11.9	No	1960	-11.69	-11.65	-11.69	-11.67
GW40771	Smithfield Section	NSW	1	30	Yes	1994	-24.88	-23.93	-27.93	-23.93
GW40771	Smithfield Section	NSW	2	37	Yes	1994	-27.13	-26.4	-29.64	-26.69
GW40771	Smithfield Section	NSW	3	50	No	1994	-30.7	-28.61	-33.18	-28.93
GW040641	Riverstone Section	NSW	1	35	No	1960	-14.05	-8.62	-16.02	-8.62
GW040644	Riverstone Section	NSW	1	9.5	No	1960	-8.41	-8.34	-8.41	-8
GW040646	Riverstone Section	NSW	1	7.7	No	1960	-7.03	-6.92	-8.08	-6.11
GW040647	Hopwood Section	NSW	1	12.8	No	1959	-9.74	-9.60	-9.74	-9.13
GW040649	Hopwood Section	NSW	1	28.9	No	1959	-8.12	-7.94	-8.16	-7.9
GW040652	Hopwood Section	NSW	1	12.2	No	1959	-8.44	-8.3	-8.73	-8.4
GW40829	Lochiel Section	NSW	1	12	No	1996	-9.44	-9.23	-9.56	-9.1
GW40829	Lochiel Section	NSW	2	42	Yes	1996	-9.46	-9.09	-9.74	-9.06
GW40830	Lochiel Section	NSW	1	27	No	1996	-9.38	-9.18	-9.66	-9.34
GW40831	Lochiel Section	NSW	1	44	No	1996	-36.76	-32.03	-38.4	-31.71
GW40831	Lochiel Section	NSW	2	96	Yes	1996	-39.16	-32.05	-39.16	-32.23

(1) The annual statistics provided in this table are for the financial year i.e. 1 July to 30 June.