Dumaresq-Barwon Border Rivers Commission

Annual Statistics 2000-01

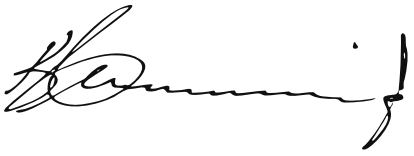
Foreword

This document provides a summary of the annual statistics associated with the activities currently overseen by the Dumaresq-Barwon Border Rivers Commission along the Queensland-New South Wales border.

This is the third Annual Statistics Report produced by the Commission. The first was produced in 1999 and contained statistics for 1997 / 1999. The feedback we have received in relation to the first two reports has been very encouraging. I feel certain these reports provide valuable reference material for persons interested in water related information in both Queensland and New South Wales.

All the statistics contained this report, except the Water Quality statistics, are based on the "hydrologic" water year and the water year used for the Border Rivers irrigation projects. Both of these water years commence on 1 October and finish 30 September. Water Quality statistics are based on the financial year. For ease of reference the report contains statistics for the year just finished as well as the previous water year 1999 / 2000.

I am well aware of the considerable effort involved in collecting and collating the information contained in this report. My sincere thanks go to the staff from the Queensland Department of Natural Resources and Mines, SunWater, the New South Wales Department of Land & Water Conservation and also the NSW Department's commercial water service provider group, State Water, for their contribution to the production of this report.



B.A. Cummings
CHAIRMAN

Dumaresq-Barwon Border Rivers Commission
2000 / 2001 Annual Statistics

Contents

Water Infrastructure

Table 1 - Key Features of Border Rivers Work

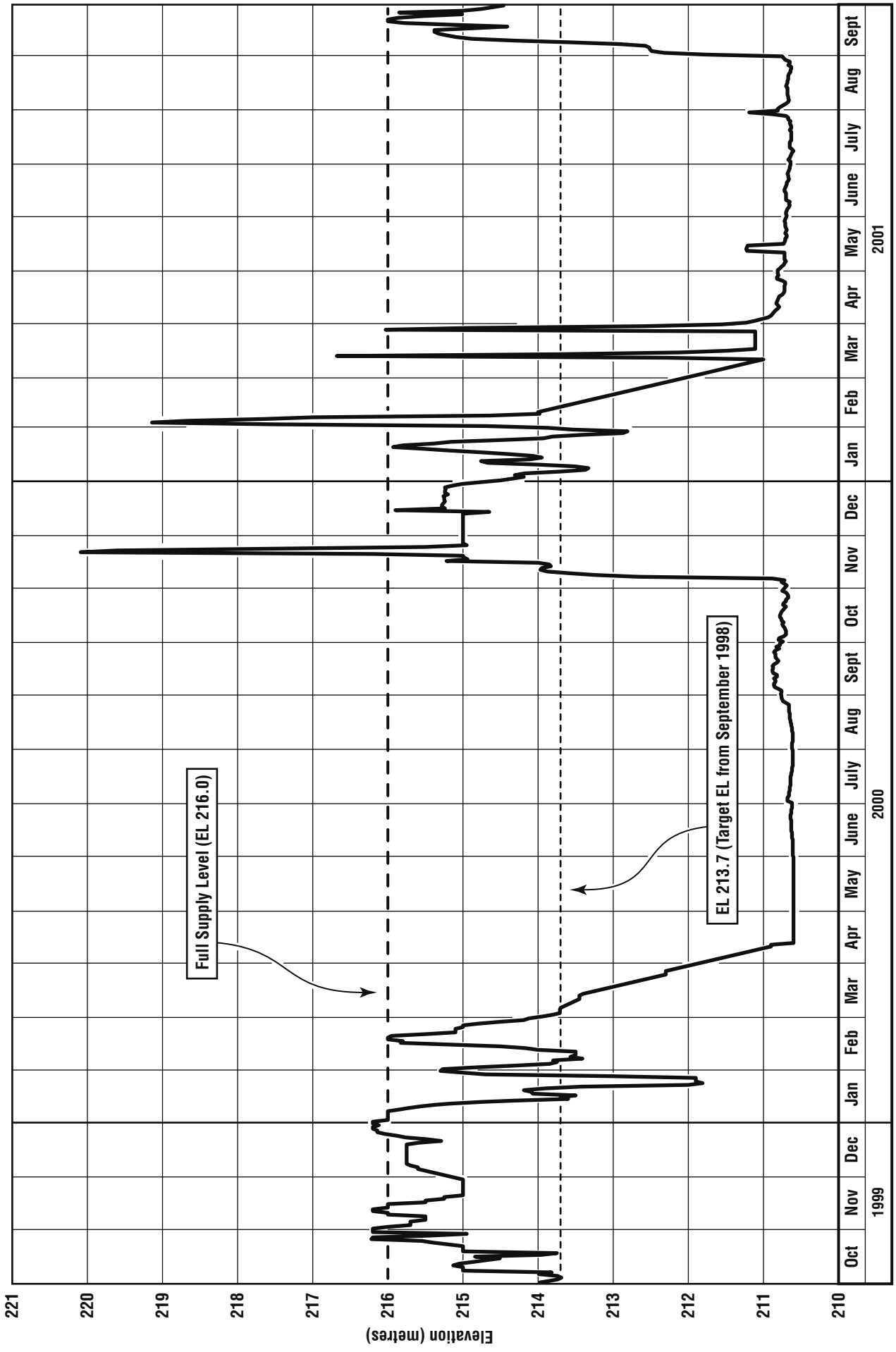
Name	Stream	AMTD (km)	Nearest Town/s	Description	F.S.L. above Bed (EL)	Storage Capacity (ML)	Date Completed
DAMS							
Glenlyon Dam	Pike Creek	6.4	Stanthorpe Tenterfield Texas	Earth & Rockfill	47.4	254,000	1976
WEIRS							
Boggabilla Weir	Macintyre River	283.5	Boggabilla Goondiwindi	Reinforced Concrete and Earthfill	8.5	5,850	1991
Boomi Weir	Macintyre River	184.3	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
Glenarbon Weir	Dumaresq River	5.7	Yelarbon	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 chanel		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

Table 2 - Glenlyon Dam Monthly Storage Volumes (megalitres)		
End of Month	**1999 / 2000**	**2000 / 2001**
September	214,177	150,140
October	240,304	138,190
November	253,963	138,630
December	249,328	137,100
January	229,649	102,390
February	210,090	139,870
March	209,780	139,810
April	207,765	138,740
May	206,233	137,730
June	205,009	137,070
July	204,550	136,980
August	195,465	136,230
September	150,056	136,210

Table 3 - Glenlyon Dam Monthly Releases / Spillway Flows (megalitres)				
Month	**1999 / 2000**		**2000 / 2001**	
	Release	**Spillway Flows**	**Release**	**Spillway Flows**
October	2,179	0	12,137	0
November	120	0	397	0
December	3,217	12,493	180	0
January	16,438	0	31,631	0
February	16,954	0	226	0
March	1,036	0	155	0
April	155	0	150	0
May	353	0	155	0
June	150	0	150	0
July	155	0	155	0
August	8,079	0	155	0
September	40,499	0	150	0

Table 4 - Recreation Statistics - Glenlyon Dam			
1999 / 2000		**2000 / 2001**	
Number of Visitors	**Number of Camper Days**	**Number of Visitors**	**Number of Camper Days**
38,200	8,100	25,100	6,474

Figure 1 - Boggabilla Weir Storage Levels



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)	102	369	471

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 (ML) (Number of Storages)	
	NSW	QLD	NSW	QLD	NSW	QLD
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	25	32	7,144	6,628	0	0
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	19	26	5,723	5,896	0	0
Texas Town		1		270		
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	15	36	4,939	6,486	400 (1)	6,300 (5)
Yelarbon Town		1		106		
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	11	48	58,060	32,776	25,700 (5)	125,850 (51)
Boggabilla Town	1		320			
Goondiwindi Town		1		1,800		
Macintyre River from Goondiwindi Weir to Boomi Weir	16	21	105,191	9,240	74,460 (16)	25,210 (15)
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	19	41	61,590	21,570	46,300 (8)	119,370 (53)
Mungindi Town	1		320			
Totals	**107**	**207**	**243,287**	**84,772**	**146,860**	**276,730**

Queensland storage volume includes works considered as started under the moratorium but which may not be completed.

Table 7 - Water Use from the Border Rivers 1999 / 2000

	On-allocation			Off-allocation		
	NSW	QLD	Total	NSW	QLD	Total
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	1,722	2,089	3,811	773	584	1,407
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	1,645	3,670	5,315	866	79	945
Texas Town		141	141			
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	621	789	1410	338	447	2,834
Yelarbon Town		87	87			
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	31,135	23,924	55,059	12,861	30,639	34,026
Boggabilla Town	159		159			
Goondiwindi Town		1,338	1,338			
Macintyre River from Goondiwindi Weir to Boomi Weir	44,271	3,430	47,701	29,395	7,140	39,772
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	30,601	8,084	38,685	14,837	20,418	35,258
Mungindi Town	240		240			
Totals	**110,394**	**43,552**	**153,946**	**59,070**	**59,307**	**114,242**

Note that the above water use statistics includes the use of water released into the Border Rivers from Pindari Dam which is owned and operated by the State of New South Wales and Coolmunda Dam which is owned and operated by SunWater.

Table 8 - Water Use from the Border Rivers 2000 / 2001

	On-allocation			Off-allocation		
	NSW	QLD	Total	NSW	QLD	Total
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	918	313	1,231	1,048	685	1,723
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	920	1,045	1,965	1,248	2,395	3,643
Texas Town	-	192	192	-	-	-
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	341	3,454	3,795	213	13,408	13,621
Yelarbon Town	-	70	70	-	-	-
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	32,527	20,388	52,915	36,900	53,637	90,537
Boggabilla Town	156	-	156	-	-	-
Goondiwindi Town	-	1,582	1,582	-	-	-
Macintyre River from Goondiwindi Weir to Boomi Weir	50,383	6,120	56,503	44,951	25,172	70,123
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	26,392	14,193	40,585	26,127	36,667	62,794
Mungindi Town	248	-	248	-	-	-
Totals	**111,885**	**47,357**	**159,242**	**110,487**	**131,964**	**242,451**

Note that the above water use statistics includes the use of water released into the Border Rivers from Pindari Dam which is owned and operated by the State of New South Wales and Coolmunda Dam which is owned and operated by SunWater.

Table 9 - Sharing of Regulated Border Rivers Water Resources (megalitres)

	1999 / 2000			2000 / 2001		
	NSW	Qld	Total	NSW	Qld	Total
Carry-over allowed from previous water year.	0	17,187 (1)		21,821	38,044	
Share of resource available at commencement of water year (1 October)	87,515	73,036		20,312	15,323	
Additional share made available during water year	9,300	0 (2)		0	0	
Total share available during water year	96,815	73,036	169,850	42,133	53,367	95,500
Gross volume used from regulated flows during water year along Border Rivers	110,394	43,492 (3)		122,424 (4)	46,919	
Net volume released into the Border Rivers from States own Dams	35,400	8,500		55,755	6,267	
Volume of regulated "Border Rivers" resources used during the water year	74,994	34,992	109,986	66,669	40,652	107,321
Share available to carry-over to next water year	21,821	38,044		(24,536)	12,715	

(1) Carry-over allowed will be subject to rules about maximum permissible share to each State.
(2) Carry-over cancelled by internal spill when Dam spilled in November 1999 .
(3) Slight discrepancy between total 1999/2000 Qld use figure provided for resource sharing calculation and final figure provided in Table 8.
(4) This figure includes Orders in Transit at the end of the water year.

Table 10 - Access Opportunities to Unregulated Flows - Border Rivers

Month	Number of Days			
	1999 / 2000		2000 / 2001	
	Glenlyon to Goondiwindi	Goondiwindi to Mungindi	Glenlyon to Goondiwindi	Goondiwindi to Mungindi
October	4	4		
November	30	30	35	41
December	8	8		
January				
February			23	18
March	1	1	31	41
April				
May				
June				
July			2	9
August				
September				

Access to waterharvesting flows during the winter months was available on request depending on flow conditions.

Table 11 - Production - Border Rivers (hectares)						
Crop	1999 / 2000			2000 / 2001		
	NSW	Qld	TOTAL	NSW	Qld	TOTAL
Cotton	36,172	25,573	61,745	36,200	27,800	64,000
Lucerne	580	517	1,097	460	430	890
Cereals	1,450	1,694	3,144	970	1,020	1.990
Fodder Crops	900	519	1,419	700	220	920
Horticultural Crops	75	371	446	125	120	245
Other	750	8	758	790	790	1,580

Table 12 - Distribution of Groundwater Licences (Border Rivers Groundwater Area)		
	NSW	Qld
Issued Allocation	19,208	14,729
Issued Allocation (100% surface water allocation)	13,114	-
Issued Allocation (0% surface water allocation)	19,208	-
Allocation Issued, bores constructed	11,595	14,421
Allocation Issued, bores not constructed	7,613	308
Number of Licences	65	35
Number of Bores Constructed	24	34
Number of Applications Outstanding	0	10

Table 13 - Groundwater Water Use - Border Rivers Groundwater Area (megalitres)			
1999 / 2000		2000 / 2001	
NSW	Qld	NSW	Qld
2,575	3,996	3,563	3,345

Table 14 - Compensation Inflow, Storage and Releases (Beardmore Dam)

Month	1999 / 2000			2000 / 2001		
	Inflow (ML)	Release (ML)	Storage at End of Month (ML)	Inflow (ML)	Release (ML)	Storage at End of Month (ML)
June	2,960	2,960	0	0	0	0
July	1,833	0	1,641	0	0	0
August	5,913	0	7,451	0	0	0
September	0	0	0	0	0	0
October	0	0	0	0	0	0
November	18,049	24,421	0	21,200	21,200	0
December	16,191	16,191	0	5,070	5,070	0
January	21,262	21,262	0	0	0	0
February	13,751	13,751	0	14,600	14,600	0
March	4,450	4,450	0	641	0	624
April	0	0	0	0	0	592
May	0	0	0	0	0	578
June	0	0	0	0	0	564
Totals	**81,449**	**80,075**		**41,511**	**40,870**	

Table 15 - Published Water Quality Guidelines

Water Quality Indicator	Reference	Value	Purpose
Turbidity	ANZECC (1992) SPCC (1990)	Site Specific 5 NTU 50 NTU	Untreated drinking water; environmental requirements
Salinity (measured as electrical conductivity)	ANZECC (1992)	0-280 µS/cm LOW 280-800 µS/cm MEDIUM 800-2300 µS/cm HIGH 2300-5500 µS/cm VERY HIGH >5500 µS/cm EXTREME	Categories for irrigation uses Taste threshold: 1500 µS/cm
Nutrients	ANZECC (1992)	**Total Phosphorus** Streams: 0.01-0.10 mg/L Lakes: 0.005-0.05 mg/L **Total Nitrogen** Streams: 0.10-0.75 mg/L Lakes: 0.10-0.5 mg/L	Levels at or above which excessive algal growth known to occur

Table 16 - Summary of Water Quality 1999 / 2000

Basin	Site No.	Location	Electrical Conductivity µS/cm				Total Phosphorus (mg/L)				Total Nitrogen (mg/L)				Turbidity (NTU)				Total Blue Green Algae (cells/mL)			
			N	10th %ile	Med	90th %ile	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	13	204	285	369	13	0.02	0.06	0.11	13	0.35	0.45	0.79	13	2	3	7				
	416310	Severn River at Farnbro	10	169	188	210	10	0.01	0.02	0.06	10	0.35	0.53	0.86	10	3	6	12				
	416303	Pike Creek U/S Glenlyon Dam	11	182	269	517	11	0.01	0.02	0.05	11	0.20	0.35	0.75	11	1	3	10				
	416309	Pike Creek at Glenlyon Dam TW	12	176	187	201	10	0.02	0.03	0.10	10	0.50	0.60	0.75	12	2	2	8				
	416032	Mole River, Donaldson	12	147	189	269	12	0.02	0.03	0.05	12	0.31	0.40	0.64	12	3	9	15				
	416008	Beardy River, Haystack No. 4	12	118	191	285	12	0.02	0.04	0.06	12	0.31	0.40	0.64	12	8	12	48				
	416312	Oaky Creek at Texas	12	517	642	786	12	0.02	0.04	0.06	12	0.31	0.40	0.64	12	8	12	48				
	416415	Macintyre Brook, Booba Sands	12	267	417	819	12	0.04	0.05	0.07	12	0.46	0.63	0.80	12	8	16	174				
Dumaresq	416007	Bonshaw Weir	12	176	204	233	12	0.03	0.04	0.05	12	0.31	0.43	0.79	12	5	10	17				
	416049	Mauro	12	192	230	250	12	0.03	0.03	0.06	12	0.30	0.40	0.54	12	6	9	22				
Macintyre	416012	Holdfast	12	207	316	464	12	0.05	0.07	0.14	12	0.30	0.53	0.92	12	8	20	72				
	416201	Goondiwindi	12	22	274	384	12	0.05	0.08	0.10	12	0.31	0.53	0.73	12	12	26	50				
	416043	Boomi Weir	11	175	267	380	9	0.06	0.10	0.14	9	0.34	0.45	0.89	11	32	55	240				
Weir	416202	Talwood	10	158	192	214	10	0.13	0.19	0.21	9	0.87	1.20	1.52	10	331	575	770				
Intersecting Streams	424002	Willara Crossing on Paroo	8	53	82	115	8	0.53	0.75	0.94	8	0.11	0.12	0.19	8	256	330	560	8	0	0	333
	423002	Fords Bridge Bywash on Warrego	8	84	95	116	8	0.50	0.60	0.81	8	0.16	0.20	0.26	8	236	400	2160	8	0	0	42
	422015	Culgoa River at Brenda	7	155	161	245	7	0.50	0.65	0.84	7	0.11	0.16	0.22	7	286	330	426	7	0	0	0
	422014	Bokhara River at Goodooga	7	165	190	239	7	0.66	0.91	1.01	7	0.12	0.21	0.30	7	418	460	600	7	0	0	197
	422013	Birrie River near Goodooga	3	168	206	268	3	0.86	0.90	0.94	3	0.10	0.21	0.25	3	460	500	852	2	0	0	0
	422012	Narran River at New Angledool	7	163	191	228	7	0.52	0.75	0.83	7	0.07	0.19	0.22	7	218	300	670	7	0	141	2226
Storages	416315	Glenlyon 1: Top																				
		Glenlyon 1: Middle																				
		Glenlyon 1: Bottom																				

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

Table 17 - Summary of Water Quality 2000 / 2001

Basin	Site No.	Location	Electrical Conductivity µS/cm				Total Phosphorus (mg/L)				Total Nitrogen (mg/L)				Turbidity (NTU)				Total Blue Green Algae (cells/mL)			
			N	10th %ile	Med	90th %ile	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	13	198	410	688	13	0.012	0.023	0.090	13	0.284	0.450	0.720	13	1.3	2.4	7.6				
	416310	Severn River at Farnbro	5	127	160	169	5	0.023	0.045	0.062	5	0.496	0.650	0.996	5	3.2	5.9	14.0				
	416303	Pike Creek U/S Glenlyon Dam	8	246	425	1130	2				2				2							
	416309	Pike Creek at Glenlyon Dam TW	14	182	196	209	14	0.014	0.027	0.123	14	0.533	0.625	0.841	14	1.4	2.5	6.5				
	416032	Mole River, Donaldson	13	110	169	224	13	0.016	0.042	0.057	13	0.226	0.330	0.736	13	4.1	6.2	15.4				
	416008	Beardy River, Haystack No. 4	14	130	207	237	14	0.021	0.037	0.054	14	0.270	0.490	0.637	14	5.3	11.5	36.1				
	416312	Oaky Creek at Texas	10	599	691	733	10	0.022	0.038	0.135	10	0.242	0.390	1.000	10	14.8	20.0	52.0				
	416415	Macintyre Brook, Booba Sands	28	231	609	756	28	0.025	0.057	0.114	28	0.459	0.690	0.990	72	1.4	3.1	7.7				
Dumaresq	416007	Bonshaw Weir	14	123	189	275	14	0.019	0.039	0.070	14	0.276	0.465	0.894	14	4.8	13.5	50.5				
	416049	Mauro	14	125	206	304	14	0.030	0.052	0.090	14	0.297	0.505	1.068	14	5.2	16.0	61.0				
Macintyre	416012	Holdfast	14	165	257	480	14	0.036	0.107	0.145	14	0.355	0.545	0.954	14	6.7	17.0	50.5				
	416201	Goondiwindi	14	145	237	444	14	0.046	0.092	0.145	14	0.375	0.625	0.979	14	9.2	22.5	124.0				
	416043	Boomi Weir	11	193	220	456	11	0.044	0.086	0.171	11	0.300	0.440	0.810	11	30.0	50.0	90.0				
Weir	416202	Talwood	8	161	187	206	8	0.153	0.181	0.242	8	0.991	1.160	1.593	8	246.0	425.0	1130				
Intersecting Streams	424002	Willara Crossing on Paroo	11	119	139	165	11	0.17	0.25	0.32	11	1	1.13	1.5	11	485	675	880	11	0	0	0
	423002	Fords Bridge Bywash on Warrego	7	84	135	167	7	0.14	0.24	0.30	7	0.61	0.73	1.0	7	200	400	790	11	0	0	0
	422015	Culgoa River at Brenda	10	156	175	195	10	0.13	0.19	0.28	10	0.56	0.86	1.21	10	273	375	500	10	0	0	1099
	422014	Bokhara River at Goodooga	12	185	250	296	12	0.12	0.15	0.36	12	0.67	1.05	1.37	12	143	250	427	1	7639	7639	7639
	422013	Birrie River near Goodooga	1	144	144	144	1	0.25	0.25	0.25	1	0.87	0.87	0.87	1	400	400	400				
	422012	Narran River at New Angledool	11	155	182	198	11	0.08	0.09	0.22	11	0.49	0.63	0.93	11	45	400	300	9	0	282	1250
Storages	416315	Glenlyon 1: Top																				
		Glenlyon 1: Middle																				
		Glenlyon 1: Bottom																				

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

Table 18 - Stream Gauging Stations (Border Rivers)

AWRC No	Stream	Station	Equipment (See Note)	Telemetry	Established Date	Maintained by	99/00 Total Flow ($MLx10^3$)	00/01 Total Flow ($MLx10^3$)	Historical Annual Totals & (Year) ($MLx10^3$)		
									Min.	Max.	Median
416001	Barwon River	Mungindi	AR	Yes	1889	DLWC	188	429	21 *(94/95)*	3,288 *(55/56)*	429
416002	Macintyre River	Boggabilla	AR	Yes	1895	DLWC	536	1415	59 *(01/02)*	5,393 *(89/90)*	741
416003	Tenterfield Creek	Clifton	AR	Yes	1921	DLWC	38	33	4 *(94/95)*	305 *(49/50)*	36
416006	Severn River	Ashford	AR	Yes	1970	DLWC	119	612	30 *(94/95)*	695 *(77/78)*	195
416007	Dumaresq River	Bonshaw Weir	AR	Yes	1934	DLWC	338	475	49 *(93/94)*	1,200 *(75/76)*	284
416008	Beardy River	Haystack	AR	Yes	1970	DLWC	29	104	7 *(71/72)*	183 *(74/75)*	49
416010	Macintyre River	Wallangra	AR	Yes	1973	DLWC	92	300	9 *(94/95)*	371 *(83/84)*	92
416011	Dumaresq River	Roseneath	AR	Yes	1972	DLWC	319	377	35 *(93/94)*	1,798 *(55/56)*	311
416012	Macintyre River	Holdfast	AR	Yes	1951	DLWC	225	978	53 *(60/61)*	1,865 *(55/56)*	311
416020	Ottleys Creek	Coolatai	AR	Yes	1967	DLWC	9	69	1 *(92/93)*	69 *(00/01)*	8
416032	Mole River	Donaldson	AR	Yes	1969	DLWC	64	198	12 *(93/94)*	442 *(75/76)*	78
416037	Boomi River	Offtake	AR	Yes	1973	DLWC	29	54	3 *(94/95)*	125 *(83/84)*	39
416040	Dumaresq River	Glenarbon Weir	AR	Yes	1996	DLWC	316	474	261 *(98/99)*	819 *(97/98)*	308
416043	Macintyre River	Boomi Weir	AR	Yes	1976	DLWC	197	320	20 *(94/95)*	390 *(95/96)*	166
416047	Macintyre River	Terrewah	AR	Yes	1985	DLWC	345	629	70 *(93/94)*	1,274 *(97/88)*	376
416048	Macintyre River	Kanowna	AR	Yes	1988	DLWC	183	330	24 *(94/95)*	560 *(95/96)*	248
416060	Macintyre River	Boggabilla Weir D/S	AR	Yes	1997	DLWC	536	1,415	537 *(99/01)*	2,128 *(97/98)*	631
416201A	Macintyre River	Goondiwindi	AR	Yes	1917	DNR	498	1,376	61 *(94/95)*	4,488 *(55/56)*	724
416201B	Macintyre River	Goondiwindi Weir	AR	Yes	1997	DNR	454	1,224	454 *(99/00)*	1,625 *(97/98)*	869
416202A	Weir River	Talwood	AR	Yes	1949	DNR	26	66	1 *(79/80)*	688 *(95/96)*	59
416305B	Brush Creek	Beebo	AR	Yes	1950	DNR	0.3	3.2	0 *(Several)*	55 *(95/96)*	3
416309B	Pike Creek	Glenlyon Dam TW	AR	Yes	1973	DNR	108	49	3 *(76/77)*	173 *(90/91)*	77
416310A	Dumaresq River	Farnbro	AR	Yes	1962	DNR	65	64	2 *(93/94)*	407 *(75/76)*	63
416312A	Oakey Creek	Texas	AR	Yes	1969	DNR	5	17	0 *(73/74)*	100 *(95/96)*	7
416315A	Pike Creek	Glenlyon Dam HW	AR	Yes	1977	DNR	15	0	0 *(Several)*	178 *(83/84)*	0
416402C	Macintyre Brook	Inglewood	AR	Yes	1953	DNR	60	38	8 *(94/95)*	549 *(95/96)*	46
416415A	Macintyre Brook	Booba Sands	AR	Yes	1987	DNR	58	32	4 *(94/95)*	637 *(95/96)*	52

Note: AR = Automatic Recorder; SG = Staff Gauge, Established Date = HYDSYS Period of Record (from which all long term calculations are made).

Table 19 - Stream Gauging Stations (Intersecting Streams)

AWRC No	Stream	Station	Equipment (See Note)	Telemetry	Established Date	Maintained by	99/00 Total Flow ($MLx10^3$)	00/01 Total Flow ($MLx10^3$)	Historical Annual Totals & (Year) ($MLx10^3$)		
									Min.	Max.	Median
417001	Moonie River	Gundablouie	AR	Yes	1945	DLWC	11	90	0 *(Several)*	628 *(82/83)*	68
417204A	Moonie River	Fenton	AR	Yes	1971	DNR		76	0 *(79/80)*	669 *(75/76)*	72
422005	Bokhara River	Goodwin's	AR	Yes	1944	DLWC	25	28	0 *(Several)*	771 *(55/56)*	24
422006	Culgoa River	D/S Collerina (Kenebree)	SG	No	1944	DLWC	186	160	5 *(79/80))*	2,337 *(82/83)*	314
422010	Birrie River	Talawanta	SG	No	1964	DLWC	16	5	0 *(Several)*	380 *(75/76)*	30
422011	Culgoa River	U/S Collerina (Mundiwa)	AR	Yes	1964	DLWC	66	85	7 *(79/80)*	1,009 *(70/71)*	208
422012	Narran River	Angledool	SG	No	1959	DLWC	9	45	0 *(Several)*	623 *(82/83)*	111
422013	Birrie River	Near Goodooga	SG	No	1964	DLWC	1	14	0 *(92/93)*	659 *(82/83)*	32
422014	Bokhara River	Goodooga	SG	No	1915	DLWC	8	14	0 *(Several)*	442 *(82/83)*	22
422015	Culgoa River	Brenda	AR	Yes	1960	DLWC	28	37	0 *(92/93)*	2,409 *(82/83)*	279
422016	Narran River	Wilby Wilby	SG	No	1964	DLWC	9	45	0 *(79/80)*	558 *(82/83)*	114
422017	Culgoa River	Weilmoringle	SG	No	1964	DLWC	33	37	0 *(92/93)*	946 *(83/84)*	232
422204A	Culgoa River	Whyenbah	AR	Yes	1965	DNR	85	113	2 *(92/93)*	1,822 *(82/83)*	361
422206A	Narran River	Dirranbandi-Hebel Road	AR	Yes	1965	DNR	16	32	0 *(92/93)*	1,063 *(82/83)*	122
422207A	Ballandool River	Hebel-Bollon Road	AR	Yes	1965	DNR	8	8	0 *(92/93)*	532 *(82/83)*	18
422209A	Bokhara River	Hebel	AR	Yes	1967	DNR	8	9	1 (92/93)	367 (82/83)	39
422211A	Briarie Creek	Woolerbilla-Hebel Road	AR	Yes	1992	DNR	1	5	0	701 *(82/83)*	7
423001	Warrego River	Fords Bridge	AR	No	1921	DLWC	58		1 *(97/98)*	328 *(89/90)*	9
423002	Warrego River	Fords Bridge (Bywash)	AR	No	1921	DLWC	70		0 *(57/58)*	315 *(55/56)*	37
423202C	Warrego River	Cunnamulla Weir	AR	Yes	1992	DNR	33	720	33 *(94/95)*	1,587 *(96/97)*	184
424002	Paroo River	Willara Crossing	AR	No	1975	DLWC	672		16 *(84/85)*	2071 *(75/76)*	300
424201A	Paroo River	Caiwarro	AR	Yes	1967	DNR	890	173	26 *(84/85)*	2,037 *(89/90)*	379
011202	Bulloo River	Autumnvale	AR	Yes	1967	DNR	928	403	48 *(79/80)*	3,022	410

Note: AR = Automatic Recorder; SG = Staff Gauge, Est. Date = HYDSYS Period of Record (from which all long term calculations are made).

Table 20 - Groundwater Monitoring Network

Bore No	Location	State	Piezometer	Depth (m)	Automatic W.L. Recorder (Yes/No)	Year Installed	Depth to WL 1999 / 2000		Depth to WL 2000 / 2001	
							Max. (m)	Min. (m)	Max. (m)	Min. (m)
41640001	Keetah Crossing	Q	A	87.3	No	1985	-2.87	-2.8	-3.28	-3.01
41640001	Keetah Crossing	Q	B	46.8	No	1985	-4.86	-4.82	-5.18	-4.96
41640002	Keetah Crossing	Q	A	17.8	No	1985	-7.83	-7.63	-8.19	-7.6
41640003	Yelarbon Desert	Q	A	92.4	No	1985	-2.33	-2.32	-2.79	-2.48
41640003	Yelarbon Desert	Q	B	47.9	No	1985	-4.03	-3.37	-4.34	-4.13
41630053	'Tranquil' – Val Lennon	Q	A	13.0	No	1958				
41630009	Glenarbon	Q	A	93	No	1996	-24.68	-15.58	-31.38	-17.52
41630042	David Muggleton	Q	A	13.3	No	1959	-6.65	-6.52	-6.85	-6.77
41630039	'Eldorado' – Harley Girle	Q	A	16.7	No	1959	-5.17	-4.83	-5.65	-4.89
41630072	Cunningham Weir	Q	A	90.4	Yes	1985	-25.07	-16.63	-30.37	-20.28
41630072	Cunningham Weir	Q	B	41.4	Yes	1985	-23.22	-15.83	-27.92	-18.64
41630072	Cunningham Weir	Q	C	10.4	Yes	1985	-5.31	-5.22	-5.65	-5.15
41630064	Texas	Q	A	52.5	No	1985	-15.33	-10.91	-19.63	-12.65
41630064	Texas	Q	B	28.5	No	1985	-11.02	-9.20	-14.91	-10.23
41630066	Bill & Tater	Q	A	90.4	Yes	1985	-9.69	-9.00	-20.29	-9.39
41630066	Bill & Tater	Q	B	45.9	Yes	1985	-9.26	-8.46	-18.66	-8.81
41630067	Bill & Tater	Q	A	12.2	Yes	1985	-4.13	-3.99	-4.59	-3.84
41630063	Finlay's	Q	A	100.6	No	1983	-12.60	-4.94	-16.02	-4.9
41630063	Finlay's	Q	B	64.6	No	1983	-12.85	-4.89	-16.67	-4.88
41630062	Finlay's	Q	A	17.4	No	1985	-4.28	-3.87	-4.8	-4.13
41630071	Finlay's	Q	A	48.2	No	1985	-6.08	-3.74	-7.19	-3.9
41630071	Finlay's	Q	B	41.2	No	1985	-5.78	-3.81	-6.8	-3.95
41630059	John Moore	Q	A	101.7	No	1985	-6.10	-5.84	-6.45	-6.1
41630069	John Moore	Q	A	92	No	1985	-14.20	-6.43	-13.57	-6.41
41630069	John Moore	Q	B	35.9	No	1985	-13.88	-6.07	-13.16	-6.1
41630069	John Moore	Q	C	15.4	No	1985	-6.23	-5.67	-6.59	-5.64
41630060	John Moore	Q	A	12.1	No	1985	-7.85	-7.78	-8.09	-7.56
41630058	John Moore	Q	A	10.6	No	1985	-6.83	-6.76	-7.06	-6.54
41630070	Phillip Harpham	Q	A	9.2	No	1985	-4.79	-4.69	-5.03	-4.18
41630004	V and E Sattolo	Q	A	11.8	No	1960	-8.03	-7.79	-8.73	-8.56

Table 20 - Groundwater Monitoring Network (Continued)

Bore No	Location	State	Piezometer	Depth (m)	Automatic W.L. Recorder (Yes/No)	Year Installed	Depth to WL 1999 / 2000		Depth to WL 2000 / 2001	
							Max (m)	Min (m)	Max (m)	Min (m)
41630003	V and E Sattolo	Q	A	27.1	No	1961	-8.17	-8.17	-10.18	-8.77
41630002	V and E Sattolo	Q	A	29.9	No	1961	-7.26	-7.05	-8.8	-7.59
GW036697	Keetah Bridge	NSW	1	20	No	1987	-8.7	-8.51	-8.62	-8.51
GW036697	Keetah Bridge	NSW	2	64	No	1987	-5.9	-5.75	-5.96	-1.79
GW036697	Keetah Bridge	NSW	3	83.5	No	1987	-3.51	-2.85	-3.61	-2.98
GW040635	Smithfield Section	NSW	1	15.9	No	1960	-8.38	-7.86	-8.21	-7.29
GW040636	Smithfield Section	NSW	1	11.3	No	1960	-7.44	-6.88	-7.43	-6.96
GW040637	Smithfield Section	NSW	1	7.9	No	1960	-5.83	-5.45	-5.94	-5.37
GW040638	Smithfield Section	NSW	1	11.9	No	1960	-9.2	-8.71	-9.7	-9.19
GW040639	Smithfield Section	NSW	1		No	1960	-8.45	-8.45	-8.45	-8.45
GW040640	Smithfield Section	NSW	1	10.2	No	1960				
GW40771	Smithfield Section	NSW	1	30	Yes	1994	-20.98	-18.2	-20.98	-19.07
GW40771	Smithfield Section	NSW	2	37	Yes	1994	-22.71	-22.71	-21.85	-20.75
GW40771	Smithfield Section	NSW	3	50	No	1994	-25.69	-20.53	-27.65	-22.64
GW040641	Riverstone Section	NSW	1	35	No	1960	-16.5	-7.65	-7.97	-6.7
GW040642	Riverstone Section	NSW	1	9.7	No	1960				
GW040644	Riverstone Section	NSW	1	9.5	No	1960	-8.5	-7.79	-8.22	-7.53
GW040645	Riverstone Section	NSW	1	7.5	No	1960				
GW040646	Riverstone Section	NSW	1	7.7	No	1960	-7.35	-6.12	-6.83	-5.28
GW040647	Hopwood Section	NSW	1	12.8	No	1959	-9.41	-9.08	-9.27	-8.01
GW040648	Hopwood Section	NSW	1	10.1	No	1959				
GW040649	Hopwood Section	NSW	1	28.9	No	1959	-7.48	-7.01	-7.42	-7.19
GW040650	Hopwood Section	NSW	1	11.4	No	1959				
GW040652	Hopwood Section	NSW	1	12.2	No	1959	-8.53	-7.35	-7.7	-7.43
GW040653	Hopwood Section	NSW	1	10.3	No	1959				
GW40829	Lochiel Section	NSW	1	12	No	1996	-8.64	-8.34	-8.8	-8.27
GW40829	Lochiel Section	NSW	2	42	Yes	1996			-8.8	-8.69
GW40830	Lochiel Section	NSW	1	27	No	1996	-8.28	-8.01	-8.5	-8.42
GW40831	Lochiel Section	NSW	1	44	No	1996	-28.68	-17.10	-26.84	-19.72
GW40831	Lochiel Section	NSW	2	96	Yes	1996			-27.28	-20.15