

*Dumaresq-Barwon
Border Rivers Commission*



*Annual Statistics
2009-10*



Dumaresq-Barwon Border Rivers Commission 2009-10 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 Environment and Resource Management and the New South Wales Office of Water who provided the information and statistics for this report.

Water infrastructure

Table 1 - Key features of Border Rivers Commission works

Name	Stream	AMTD (km)	Nearest town/s	Description	FSL above bed (m)	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
Glenarbon Weir	Dumaresq River	57.0	Yelarbon	Steel sheetpiling	2.7	353	1959
Goondiwindi Weir	Macintyre River	268.8	Goondiwindi	Timber crib (fishway 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	Reinforced concrete 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

Table 2 - Glenlyon Dam monthly storage volumes (megalitres)

End of month	2008-09	2009-10
July	80,610	60,280
August	73,990	59,800
September	71,280	58,630
October	65,980	51,090
November	68,220	54,350
December	68,980	56,830
January	67,520	56,930
February	64,930	56,090
March	61,960	57,110
April	60,580	56,060
May	60,410	55,590
June	60,500	56,090

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

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

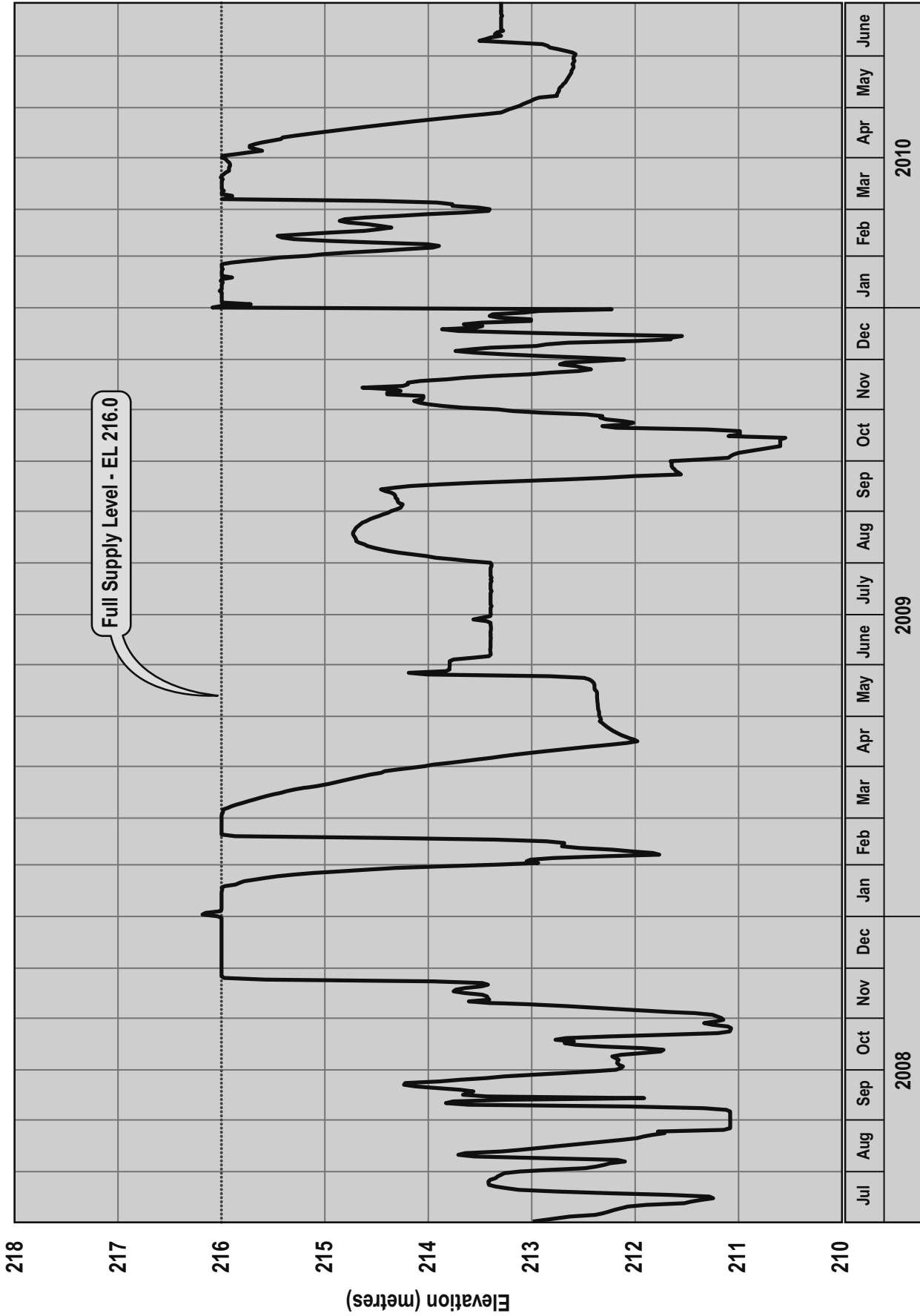
Month	2008-09		2009-10	
	Release	Spillway flows	Release	Spillway flows
July	7,598	0	0	0
August	6,784	0	91	0
September	2,711	0	768	0
October	4,792	0	7,370	0
November	974	0	2,861	0
December	0	0	3,778	0
January	235	0	9	0
February	2,079	0	0	0
March	2,160	0	4	0
April	838	0	459	0
May	792	0	318	0
June	0	0	1	0

(1) The monthly releases in this table are the flow volumes as recorded at GS 416309B less any spillway flows.

Table 4 - Glenlyon Dam recreation statistics

1 July 08 - 30 June 09		1 July 09 - 30 June 10	
Visitors	Camp sites occupied	Visitors	Camp sites occupied
75,100	6,660	69,960	7,190

Figure 1 - Boggabilla Weir storage levels 2008-2010



Resource allocation, sharing and use

Table 5 - Supplemented/regulated and unsupplemented/supplementary water entitlements and off-stream storages - Border Rivers

	Supplemented/ regulated (megalitres) ⁽¹⁾		Unsupplemented/ supplementary (megalitres)		Off-stream Storages (megalitres)	
	NSW	QLD	NSW ⁽²⁾	QLD	NSW	QLD
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	5,682	3,545	2,546	511		
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	6,874	6,046	2,490	626		
Texas Town		270		0		
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	2,192	4,778	981	3,846	400	6,300
Yelarbon Town		106		0		
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	60,740	32,502	29,076	35,526	29,150	125,850
Boggabilla Town	200			0		
Goondiwindi Town		1,800		0		
Macintyre River from Goondiwindi Weir to Boomi Weir	121,393	9,978	55,618	15,940	86,000	25,210
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	51,057	25,641	23,030	42,739	60,600	119,370
Mungindi Town	300			0		
Totals	248,438	84,666	113,741	99,188	176,150	276,730

(1) The statistics for supplemented/regulated water entitlements in this table include all supplemented/regulated water entitlements including entitlements for irrigation, industrial, town water, high security, stock and domestic purposes but they not include authorities/permits issued for the taking of stock and domestic water under rights granted to riparian landholders.

Table 6 - Water use from the Border Rivers 1 July 08 - 30 June 09 (megalitres)

	Supplemented/regulated			Unsupplemented/ supplementary		
	NSW	QLD	Total	NSW	QLD	Total
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	2,224	1,719	3,943	707	570	1,277
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	1,812	2,178	3,990	579	3,666	4,245
Texas Town		217	217			
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	605	1,166	1,771	217	6,529	6,746
Yelarbon Town		84	84			
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	10,485	8,347	18,832	13,914	20,323	34,237
Boggabilla Town	140		140			
Goondiwindi Town		1,762	1,762			
Macintyre River from Goondiwindi Weir to Boomi Weir	25,318	1,654	26,972	30,733	8,152	38,885
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	9,383	1,434	10,817	15,753	16,828	32,581
Mungindi Town	273		273			
Totals	50,240	18,561	68,801	61,903	56,068	117,971

- (1) The above water use statistics only include water diverted from the Border Rivers under the authority of Border Rivers water entitlements. Water transferred from a tributary (eg the Macintyre Brook) to the Border Rivers and then diverted from the Border Rivers is not included in these statistics. Water temporarily transferred from one state to the other is reported as being use in the state of origin not the state of destination.
- (2) Water taken by both Qld and NSW irrigators under the water sharing rules permitting small enterprises upstream of Goondiwindi Weir to pump from small unregulated inflows for direct irrigation, is included in the states' supplementary/unregulated water use statistics.

Table 7 - Water use from the Border Rivers 1 July 09 – 30 June 10 (megalitres)

	Supplemented/regulated			Unsupplemented/ supplementary		
	NSW	QLD	Total	NSW	QLD	Total
Pike Creek and Dumaresq River from Glenlyon Dam to Bonshaw Weir	1,632	240	1,872	445	30	475
Dumaresq River from Bonshaw Weir to Cunningham Weir (excluding Texas town)	1,046	990	2,036	190	370	560
Texas Town		100	100			
Dumaresq River from Cunningham Weir to Macintyre River junction (excluding Yelarbon town)	672	1,040	1,712	101	1,020	1,121
Yelarbon Town		80	80			
Macintyre River from Dumaresq River junction to Goondiwindi Weir (excluding Goondiwindi & Boggabilla towns)	13,528	4,920	18,448	6,532	9,940	16,472
Boggabilla Town	168		168			
Goondiwindi Town		2,080	2,080			
Macintyre River from Goondiwindi Weir to Boomi Weir	28,579	850	29,429	14,356	4,340	18,696
Macintyre River and Barwon River from Boomi Weir to Mungindi Weir (excluding Mungindi town)	12,988	3,710	16,698	15,186	25,470	40,656
Mungindi Town	280		280			
Totals	58,893	14,010	72,903	36,810	41,170	77,980

- (1) The above water use statistics only include water diverted from the Border Rivers under the authority of Border Rivers water entitlements. Water transferred from a tributary (eg the Macintyre Brook) to the Border Rivers and then diverted from the Border Rivers is not included in these statistics. Water temporarily transferred from one state to the other is reported as being use in the state of origin not the state of destination.
- (2) Water taken by both Qld and NSW irrigators under the water sharing rules permitting small enterprises upstream of Goondiwindi Weir to pump from small unregulated inflows for direct irrigation, is included in the states' supplementary/unregulated water use statistics.

Table 8 – Summary of resource assessments (Border Rivers) 1 July 08 – 30 June 09 (gigalitres)

Bulk Accounts	Queensland				New South Wales			
	Account balance 1/7/08	Total use/loss for year	Total distribution for year	Account balance 1/7/09	Account balance 1/7/08	Total use/loss for year	Total distribution for year	Account balance 1/7/09
	(a)	(b)	(c)	(a)-(b)+(c)	(a)	(b)	(c)	(a)-(b)+(c)
Storage Loss (Glenlyon Dam)	4.81	6.97	5.94	3.78	3.83	5.64	4.80	2.99
Storage Loss (Pindari Dam)					9.01	7.67	9.51	10.85
Essential Supplies (minimum release)	0.00	0.00	0.00	0.00	6.08	11.12	11.12	6.08
Essential Supplies (other)	6.95	1.90	1.62	6.67	24.71	4.49	4.49	24.71
Essential Supplies Delivery Loss	2.64	0.69	0.61	2.56	10.24	2.16	2.23	10.31
General Use	26.95	15.36	3.64	15.23	64.45	49.28	65.42	80.59
General Use Delivery Loss	6.71	4.61	2.47	4.57	17.63	14.80	21.35	24.18

Table 9 – Summary of resource assessments (Border Rivers) 1 July 09 – 30 June 10 (gigalitres)

Bulk Accounts	Queensland				New South Wales			
	Account balance 1/7/09	Total use/loss for year	Total distribution for year	Account balance 1/7/10	Account balance 1/7/09	Total use/loss for year	Total distribution for year	Account balance 1/7/10
	(a)	(b)	(c)	(a)-(b)+(c)	(a)	(b)	(c)	(a)-(b)+(c)
Storage Loss (Glenlyon Dam)	3.78	5.83	5.20	3.15	2.99	5.32	5.61	3.28
Storage Loss (Pindari Dam)					10.85	7.64	4.84	8.05
Essential Supplies (minimum release)	0.00	0.00	0.00	0.00	6.08	15.83	15.83	6.08
Essential Supplies (other)	6.67	2.30	2.29	6.66	24.71	3.34	3.34	24.71
Essential Supplies Delivery Loss	2.56	0.77	0.76	2.55	10.31	1.01	1.01	10.31
General Use	15.23	12.44	8.21	11.00	80.59	71.11	31.53	41.01
General Use Delivery Loss	4.57	3.75	2.46	3.28	24.18	21.33	9.45	12.30

Table 10 - Access to unsupplemented/supplementary water from the Border Rivers

Month	1 July 08 – 30 June 09		1 July 09 – 30 June 10	
	Access by small irrigation enterprises u/s of Goondiwindi Weir ⁽¹⁾	General access to unregulated flows ⁽²⁾	Access by small irrigation enterprises u/s of Goondiwindi Weir	General access to unregulated flows ⁽²⁾
July			31 days	
August				
September				
October				
November		(Note 3) / 8%		1 day 23 hrs/19.5%
December		1 day 23 hrs / 9%	1 day	
January			22 days	
February		(Note 4)		
March				(Note 5)
April				
May		1 day 14 hrs / 7%		
June			26 days	

(1) Figures not available for 2008-09.

(2) General access to unregulated flows is authorised in hours and days in Qld and as a percentage in NSW.

(3) Qld water users were permitted to pump for 1 day 8 hrs upstream of Goondiwindi and 1 day 19 hrs downstream for Goondiwindi.

(4) Qld water users between Terrewah and Newinga were permitted to pump for 21 hrs and NSW irrigators were permitted to take 4%. Qld water users between Newinga and Mungindi were permitted to pump for 1 day and 18 hrs and NSW water users were permitted to take 8%.

(5) Downstream of the Macintyre Brook junction to the Newinga regulator Qld water users were permitted to pump for 13 hrs and NSW water users were permitted to take 5.5% of allocation. Downstream of the Newinga regulator Qld water users were permitted to pump for 18 days 16 hrs and NSW water users were permitted to take 100% of allocation.

Table 11 – Irrigated production in the Border Rivers (hectares)

Crop	2008-09			2009-10		
	NSW	Qld	TOTAL	NSW	Qld	TOTAL
Cotton	6,693	6,000	12,693	17,500	5,200	22,700
Lucerne	520	350	870	625	375	1,000
Cereals	13,100	3,600	16,700	2,500	2,200	4,700
Peanuts	120	0	120	200	0	200
Fodder crops	490	300	790	655	325	980
Horticultural crops	50	50	100	50	20	70
Other	1,160	100	1,260	280	100	380
Total	22,133	10,400	32,533	21,810	8,220	30,030

(1) The irrigated production statistics in this table include the crops grown on properties which take all or part of their irrigation water supplies 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 12 - Groundwater allocation/entitlements in the Border Rivers Groundwater Area

	NSW ⁽¹⁾	Qld
Issued allocation/entitlement	15,402	14,421 ⁽³⁾
Allocation/entitlement issued, bores constructed	15,402	14,421
Allocation/entitlement issued, bores not constructed	0	0
Number of entitlements	26	26
Number of bores constructed	46	37
Number of applications outstanding	3 ⁽²⁾	8 ⁽⁴⁾

(1) The figures provided for NSW are for the area defined as the Border Rivers Alluvium GWMA 022 Glenlyon Dam to Keetah Bridge

(2) Applications are for replacement bores. No additional allocation will be granted.

(3) The Qld figures do not include the allocation issued in the shallow aquifer, which is about 3,500 ML.

(4) Applications for proposed bores.

Table 13 - Groundwater use in the Border Rivers Groundwater Area (megalitres)

1 July 08 – 30 June 09		1 July 09 – 30 June 10	
NSW	Qld	NSW	Qld
5,536	6,168 ⁽¹⁾	6,144	6,897 ⁽²⁾

(1) Usage for the period 1 July 2008 to 31 March 2009 only

(2) Usage for the period 1 April 2009 to 31 March 2010.

Resource management

Table 14 - Beardmore Dam compensation inflow, storage and releases

Month	2008-09			2009-10		
	Inflow (ML)	Release (ML)	Storage at end of month (ML)	Inflow (ML)	Release (ML)	Storage at end of month (ML)
June			0			0
July	0	0	0	0	0	0
August	0	0	0	0	0	0
September	3,890	3,790	0	0	0	0
October	1,730	0	1,700	0	0	0
November	6,450	2,820	5,310	0	0	0
December	22,020	21,670	5,130	1,460	0	1,460
January	6,110	10,940	0	12,250	13,360	0
February	8,760	860	8,050	17,520	17,520	0
March	3,860	11,650	0	22,630	22,630	0
April	0	0	0	13,420	13,420	0
May	5,110	0	5,120	0	0	0
June	1,800	6,860	0	0	0	0
Totals	59,730	58,590		67,280	66,930	

Table 15 - 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 150m altitude.

Table 16 - Summary of water quality 2008-09

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 at Clifton	13	169	302	415	13	0.03	0.09	0.17	13	0.48	0.62	1.07	13	2.5	4.4	28.0
	416310	Severn River at Farnbro	6	160	178	302	6	0.03	0.04	0.14	6	0.63	0.80	1.40	6	6.5	9.0	17.0
	416303	Pike Creek at U/S Glenlyon Dam	6	219	286	371	6	0.01	0.02	0.02	6	0.19	0.28	0.97	6	0.8	2.8	3.8
	416309	Pike Creek at Glenlyon Dam Tailwater	13	192	220	438	13	0.02	0.05	0.15	13	0.59	0.76	1.24	13	2.4	3.4	9.3
	416032	Mole River at Donaldson	13	155	230	315	13	0.03	0.04	0.06	13	0.34	0.49	0.83	13	4.2	10.0	30.0
	416008	Beady River at Haystack No. 4	13	135	178	201	13	0.02	0.03	0.07	13	0.23	0.36	0.80	13	5.1	13.0	37.8
	416312	Oaky Creek at Texas	0	n/a	n/a	n/a	0	n/a	n/a	n/a	0	n/a	n/a	n/a	0	n/a	n/a	n/a
	416415	Macintyre Brook at Booba Sands	13	230	324	379	13	0.02	0.04	0.13	13	0.54	0.68	1.08	13	2.5	9.1	76.8
Dumaresq River	416007	Bonshaw Weir	13	155	200	221	13	0.03	0.05	0.07	13	0.47	0.62	0.91	13	5.7	8.3	28.6
	416049	Mauro	13	145	196	222	13	0.03	0.05	0.10	13	0.54	0.63	0.97	13	6.2	13.0	37.4
Macintyre River	416012	Holdfast	13	217	248	291	13	0.04	0.06	0.14	13	0.47	0.60	0.77	13	7.4	20.0	84.0
	41610044	Salisbury Bridge (Boggabilla)	13	181	222	306	13	0.05	0.07	0.15	13	0.54	0.66	0.94	13	10.4	24.0	110.0
	416048	Kanowna	13	140	198	276	13	0.05	0.07	0.20	13	0.56	0.71	1.20	13	27.2	60.0	550.0
Barwon River	416001	Mungindi	13	173	184	292	13	0.03	0.08	0.12	13	0.45	0.74	0.92	13	20.4	95.0	136.0
Weir River	416202	Talwood	13	97	122	176	13	0.14	0.18	0.25	13	1.02	1.10	1.50	13	340.0	600.0	700.0
Intersecting Streams	424002	Paroo River at Willara Crossing	10	59	84	124	10	0.13	0.20	0.36	10	0.70	0.94	1.51	10	59	84	124
	423002	Warrego River at Fords Bridge Bywash	5	92	140	168	5	0.18	0.31	0.35	5	0.66	1.00	1.92	5	92	140	168
	422015	Culgoa River at Brenda	8	108	197	243	8	0.18	0.23	0.48	8	0.67	0.83	1.18	8	108	197	243
	422014	Bokhara River at Goodooga	6	150	211	260	6	0.21	0.31	0.38	6	0.75	1.20	1.35	6	150	211	260
	422013	Birrie River at Near Goodooga	1	236	236	236	1	0.25	0.25	0.25	1	0.96	0.96	0.96	1	236	236	236
	422012	Narran River at New Angledool	5	183	238	250	5	0.12	0.18	0.28	5	0.80	0.96	1.10	5	183	238	250
Glenlyon Dam	416315	Glenlyon 1: Top	13	191	201	211	13	0.023	0.028	0.033	13	0.84	0.95	1.10	13	2.2	2.8	5.1
		Glenlyon 1: Middle	13	189	200	217	13	0.019	0.023	0.026	13	0.66	0.87	1.00	13	2.4	3.0	4.2
		Glenlyon 1: Bottom	13	189	196	213	13	0.021	0.041	0.124	13	0.81	0.91	1.3	13	2.5	3.6	5.9

(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). N=No. of samples collected and analysed.

Table 17 - Summary of water quality 2009-10

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 at Clifton	12	215	296	372	11	0.04	0.06	0.12	11	0.56	0.74	0.89	11	2.2	6.4	12
	416310	Severn River at Farnbro	6	117	182	245	5	0.02	0.03	0.05	5	0.41	0.53	0.59	5	6.0	9.4	6
	416303	Pike Creek at U/S Glenlyon Dam	7	205	252	340	5	0.02	0.03	0.15	5	0.24	0.31	0.93	5	2.4	3.2	7
	416309	Pike Creek at Glenlyon Dam Tailwater	12	242	396	465	10	0.03	0.05	0.09	10	0.58	0.70	1.05	10	4.4	6.0	12
	416032	Mole River at Donaldson	12	128	172	240	11	0.04	0.05	0.07	11	0.43	0.49	0.94	11	5.2	9.5	12
	416008	Beardy River at Haystack No. 4	12	115	159	224	11	0.03	0.04	0.05	11	0.31	0.47	0.65	11	4.3	12.0	12
	416312	Oaky Creek at Texas	3	473	487	553	3	0.05	0.05	0.11	3	0.51	0.53	0.87	3	2.2	4.8	3
	416415	Macintyre Brook at Booba Sands	12	238	336	465	11	0.03	0.05	0.13	11	0.52	0.85	1.20	11	5.1	10.0	12
Dumaresq River	416007	Bonshaw Weir	12	152	206	236	11	0.03	0.03	0.05	11	0.41	0.47	0.73	11	2.5	8.1	12
	416049	Mauro	12	171	205	253	11	0.04	0.06	0.10	11	0.49	0.63	0.86	11	4.7	15.0	12
Macintyre River	416012	Holdfast	12	181	270	334	11	0.04	0.05	0.11	11	0.45	0.50	0.77	11	5.7	13.0	12
	41610044	Salisbury Bridge (Boggabilla)	12	186	213	269	12	0.04	0.07	0.11	12	0.53	0.69	0.74	12	13.3	24.5	12
	416048	Kanowna	11	156	202	256	11	0.05	0.07	0.14	11	0.50	0.64	1.00	10	53.0	67.5	11
Barwon River	416001	Mungindi	12	156	203	257	12	0.04	0.07	0.14	12	0.52	0.75	1.09	12	26.0	70.0	12
Weir River	416202	Talwood	12	122	152	224	12	0.14	0.18	0.24	12	1.01	1.35	1.79	12	321.0	450.0	12
Intersecting Streams	424002	Paroo River at Willara Crossing	5	80	103	151	4	0.14	0.17	0.33	4	0.75	0.92	1.42	4	206.0	480.0	5
	423002	Warrego River at Fords Bridge Bywash	4	83	111	130	5	0.14	0.19	0.32	5	0.58	0.78	1.19	5	310.0	600.0	4
	422015	Culgoa River at Brenda	4	48	172	195	5	0.20	0.21	0.45	5	0.75	0.87	1.28	5	308.0	500.0	4
	422014	Bokhara River at Goodooga	3	156	194	224	4	0.21	0.28	0.34	4	0.77	1.10	1.34	4	200.0	355.0	3
	422013	Birrie River at Near Goodooga	1	198	198	198	2	0.24	0.24	0.24	2	0.65	1.03	1.41	2	333.0	345.0	1
	422012	Narran River at New Angledool	3	209	255	269	4	0.11	0.14	0.26	4	0.79	0.84	0.87	4	125.0	320.0	3
Glenlyon Dam	416315	Glenlyon 1: Top	11	194	210	218	11	0.02	0.03	0.03	11	0.79	0.93	1.20	11	1.8	4.5	11
		Glenlyon 1: Middle	11	204	211	220	11	0.02	0.03	0.03	11	0.72	0.81	1.00	11	2.4	4.5	11
		Glenlyon 1: Bottom	10	202	217	235	10	0.02	0.04	0.14	10	0.87	0.91	1.72	10	2.2	3.8	10

- (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). N=No. of samples collected and analysed.
- (2) At the time this table was compiled not all the results from the sampling season (2009-2010) had been analysed. Consequently, the values shown here may change slightly when all the results for that sampling season have been analysed.

Table 18 - Stream gauging stations (Border Rivers)

AWRC No	Stream	Station	Equipment (see note)	Telemetry	Established date	Owned by	2008-09 Total Flow (MLx10 ³)	2009-10 Total Flow (MLx10 ³)	Historical Annual Totals & (Year) (MLx10 ³)		
									Min	Max	Median
416001	Barwon River	Mungindi	AR	Yes	1889	NOW	107	233	21 (1994-95)	3,131 (1950-51)	433
416002	Macintyre River	Boggabilla	AR	Yes	1895	NOW	294	214	29 (1919-20)	4490 (1950-51)	622
416003	Tenterfield Creek	Clifton	AR	Yes	1921	NOW	42	6	1 (2002-03)	235 (1949-50)	38
416006	Severn River	Ashford	AR	Yes	1934	NOW	81	115	17 (1941-42)	1,389 (1950-51)	181
416007	Dumaresq River	Bonshaw Weir	AR	Yes	1934	NOW	208	87	54 (1993-94)	1,327 (1975-76)	266
416008	Beardy River	Haystack	AR	Yes	1934	NOW	12	18	5 (1941-42)	149 (1974-75)	31
416010	Macintyre River	Wallangra	AR	Yes	1937	NOW	26	9	6 (1941-42)	667 (1970-71)	80
416011	Dumaresq River	Roseneath	AR	Yes	1937	NOW	218	73	36 (1993-94)	1,608 (1955-56)	281
416012	Macintyre River	Holdfast	AR	Yes	1951	NOW	137	140	49 (1957-58)	1,686 (1955-56)	280
416020	Ottleys Creek	Coolatai	AR	Yes	1967	NOW	3	2	1 (2006-07)	65 (2000-01)	10
416032	Mole River	Donaldson	AR	Yes	1969	NOW	88	36	13 (1993-94)	465 (1975-76)	72
416037	Boomi River	Offtake	AR	Yes	1973	NOW	18	8	3 (1994-95)	143 (1983-84)	29
416040	Dumaresq River	Glenarbon Weir	AR	Yes	1996	NOW	190	116	74 (2006-07)	871 (1998-99)	169
416043	Macintyre River	Boomi Weir	AR	Yes	1976	NOW	159	107	21 (1994-95)	460 (1998-99)	160
416047	Macintyre River	Terrewah	AR	Yes	1985	NOW	223	135	31 (1994-95)	1,144 (1998-99)	226
416048	Macintyre River	Kanowna	AR	Yes	1988	NOW	124	134	25 (1994-95)	727 (1998-99)	135
416201A	Macintyre River	Goondiwindi	AR	Yes	1950	DERM	290	193	61 (1994-95)	4,529 (1950-51)	679
416201B	Macintyre River	Goondiwindi Weir	AR	Yes	1997	DERM	262	189	158 (2006-07)	1,885 (1998-99)	279
416202A	Weir River	Talwood	AR	Yes	1949	DERM	43	182	0 (2006-07)	687 (1995-96)	60
416305B	Brush Creek	Beebo	AR	Yes	1950	DERM	0.3	1.8	0 (Several)	55 (1995-96)	3
416309B	Pike Creek	Glenlyon Dam Tailwater	AR	Yes	1973	DERM	29	16	4 (1976-77)	180 (1988-89)	53
416310A	Dumaresq River	Farnbro	AR	Yes	1962	DERM	32	3.6	0.9 (2002-03)	375 (1975-76)	53
416312A	Oakey Creek	Texas	AR	Yes	1969	DERM	1	6.7	0.01 (1973-74)	99 (1995-96)	6
416315A	Pike Creek	Glenlyon Dam Headwater	AR	Yes	1977	DERM	0	0	0 (Several)	100 (1984-85)	0
416402C	Macintyre Brook	Inglewood	AR	Yes	1953	DERM	40	30	6 (1994-95)	546 (1995-96)	37
416415A	Macintyre Brook	Booba Sands	AR	Yes	1987	DERM	35	28	4 (1994-95)	630 (1995-96)	35

(1) AR = automatic recorder; SG = staff gauge, Established date = commencement date of Hydstra data records, NOW = NSW Office of Water
DERM = Qld Department of Environment and Resource Management

Table 19 - Stream gauging stations (Intersecting Streams)

AWRC No	Stream	Station	Equipment (see note)	Telemetry	Established date	Owned by	2008-09 Total Flow (MLx10 ³)	2009-10 Total Flow (MLx10 ³)	Historical Annual Totals & (Year) (MLx10 ³)		
									Min.	Max.	Median
417001	Moonie River	Gundablouie	AR	Yes	1945	NOW	59	397	0 (1951-52)	596 (1975-76)	61
417204A	Moonie River	Fenton	AR	Yes	1971	DERM	64	472	0.5	670 (1975-76)	68
422005	Bokhara River	Goodwin's	AR	Yes	1944	NOW	14	204	0 (Severall)	652 (1955-56)	22
422006	Culgoa River	Downstream Collerina (Kenebree)	SG	No	1944	NOW	22	1,184	7 (2001-02)	2,341 (1989-90)	294
422010	Birrie River	Talawanta	SG	No	1964	NOW	5	147	0 (Severall)	379 (1975-76)	26
422011	Culgoa River	Upstream Collerina (Mundiwa)	AR	Yes	1964	NOW	15	655	6 (2001-02)	1,002 (1970-71)	178
422012	Narran River	Angledool	Discontinued	No	1959	NOW	1	N.A.	0 (1992-93)	574 (1970-71)	106
422013	Birrie River	Near Goodooga	AR	No	1964	NOW	7	176	0 (1992-93)	441 (1982-83)	29
422014	Bokhara River	Goodooga	SG	No	1915	NOW	8	152	0 (Severall)	306 (1982-83)	15
422015	Culgoa River	Brenda	AR	Yes	1960	NOW	11	487	0 (1992-93)	1,619 (1970-71)	135
422016	Narran River	Wilby Wilby	AR	No	1964	NOW	1	N.A.	0 (2006-07)	519 (1983-84)	103
422017	Culgoa River	Weilmoringle	SG	No	1964	NOW	33	294	0 (1992-93)	999 (1983-84)	218
422204A	Culgoa River	Whyenbah	AR	Yes	1965	DERM	18	812	2.7 (1992-93)	1,614 (1970-71)	323
422206A	Narran River	Dirranbandi-Hebel Road	AR	Yes	1965	DERM	6	526	0.2 (1992-93)	826 (1970-71)	108
422207A	Ballandool River	Hebel-Bollon Road	AR	Yes	1965	DERM	2	138	0 (1992-93)	378 (1982-83)	15
422209A	Bokhara River	Hebel	AR	Yes	1967	DERM	6	121	0.5 (1992-93)	288 (1983-84)	21
422211A	Briarie Creek	Woolerbilla-Hebel Road	AR	Yes	1992	DERM	0	274	0 (several)	519 (1982-83)	7
423001	Warrego River	Fords Bridge	AR	Yes	1921	NOW	0	171	1 (Severall)	344 (1989-90)	7
423002	Warrego River	Fords Bridge (Bywash)	AR	Yes	1921	NOW	9	137	0 (1957-58)	249 (1955-56)	36
423202C	Warrego River	Cunnamulla Weir	AR	Yes	1992	DERM	44	1,837	34 (1999-00)	1,837 (2009-10)	218
424002	Paroo River	Willara Crossing	AR	Yes	1975	NOW	72	1420	26 (1979-80)	2,072 (1975-76)	185
424201A	Paroo River	Caiwarro	AR	Yes	1967	DERM	138	2,040	36 (2005-06)	2,040 (2009-10)	323
011202	Bulloo River	Autumnvale	AR	Yes	1967	DERM	182	3,126	19 (1976-77)	3,241 (1973-74)	411

(1) AR = automatic recorder; SG = staff gauge, Established date = commencement date of Hydrstra data records, NOW = NSW Office of Water
DERM = Qld Department of Environment and Resource Management; N.A. = Not available.

Table 20 - Groundwater monitoring network

Bore number	Location	State	Piezometer	Depth (m)	Automatic WL Recorder (Yes/No)	Year Installed	Depth to WL 2008-09		Depth to WL 2009-10	
							Max (m)	Min (m)	Max (m)	Min (m)
41640001	Keetah Crossing	Q	A	87.3	No	1985	-5.15	-5.00	-5.09	-4.92
41640001	Keetah Crossing	Q	B	46.8	No	1985	-6.50	-6.33	-6.52	-6.40
41640002	Keetah Crossing	Q	A	17.8	No	1985	Dry	Dry	Dry	Dry
41640003	Yelarbon Desert	Q	A	92.4	No	1985	-4.55	-4.23	-4.38	-4.21
41640003	Yelarbon Desert	Q	B	47.9	No	1985	-5.91	-5.83	-5.93	-5.84
41630009	Glenarbon	Q	A	93	No	1996	-35.30	-27.67	-38.31	-34.06
41630042	David Muggleton	Q	A	13.3	No	1959	-8.08	-7.97	-8.25	-8.10
41630039	'Eldorado'	Q	A	16.7	No	1959	Note (1)	Note (1)	Note (1)	Note (1)
41630072	Cunningham Weir	Q	A	90.4	Yes	1985	-47.65	-37.57	-48.54	-37.10
41630072	Cunningham Weir	Q	B	41.4	Yes	1985	-34.08	-32.03	-35.17	-32.24
41630072	Cunningham Weir	Q	C	10.4	Yes	1985	-6.29	-6.01	-6.31	-6.05
41630064	Texas	Q	A	52.5	No	1985	-21.10	-18.27	-23.76	-20.31
41630064	Texas	Q	B	28.5	No	1985	-17.48	-15.04	-17.51	-16.24
41630066	Bill & Tater	Q	A	90.4	Yes	1985	-39.08	-23.69	-40.13	-24.02
41630066	Bill & Tater	Q	B	45.9	Yes	1985	-32.51	-25.04	-35.41	-28.83
41630067	Bill & Tater	Q	A	12.2	Yes	1985	-6.09	-5.90	-6.14	-5.74
41630063	Finlay's	Q	A	100.6	No	1983	-31.77	-14.20	-32.25	-12.45
41630063	Finlay's	Q	B	64.6	No	1983	-32.8	-13.96	-33.24	-12.30
41630062	Finlay's	Q	A	17.4	No	1985	-8.12	-7.62	-8.79	-7.75
41630071	Finlay's	Q	A	48.2	No	1985	-15.54	-10.41	-16.94	-9.75
41630071	Finlay's	Q	B	41.2	No	1985	-14.47	-10.14	-16.09	-9.53
41630059	John Moore	Q	A	101.7	No	1985	-8.06	-7.89	-8.10	-7.92
41630069	John Moore	Q	A	92	No	1985	-19.82	-10.62	-25.53	-12.23
41630069	John Moore	Q	B	35.9	No	1985	-15.72	-9.18	-21.46	-9.84
41630069	John Moore	Q	C	15.4	No	1985	-8.11	-7.20	-9.66	-7.24
41630060	John Moore	Q	A	12.1	No	1985	-8.76	-7.78	-8.82	-8.59
41630058	John Moore	Q	A	10.6	No	1985	-8.81	-7.38	-7.68	-7.51
41630070	Phillip Harpham	Q	A	9.2	No	1985	-5.02	-4.35	-4.84	-4.01
41630004	V and E Sattolo	Q	A	11.8	No	1960	Dry	Dry	Dry	Dry
41630003	V and E Sattolo	Q	A	27.1	No	1961	-18.33	-16.29	-20.84	-15.41
41630002	V and E Sattolo	Q	A	29.9	No	1961	-15.23	-13.92	-15.79	-12.51
GW036697	Keetah Bridge	NSW	1	20	Yes	1987	-8.86	-8.82	-8.89	-8.85
GW036697	Keetah Bridge	NSW	2	64	Yes	1987	-6.70	-6.63	-6.81	-6.73
GW036697	Keetah Bridge	NSW	3	83.5	Yes	1987	-5.44	-5.15	-5.42	-5.09
GW040635	Smithfield Section	NSW	1	15.9	No	1960	-8.65	-7.93	-8.50	-8.2
GW040636	Smithfield Section	NSW	1	11.3	No	1960	-8.17	-7.99	-8.04	-7.84
GW040637	Smithfield Section	NSW	1	7.9	No	1960	-7.38	-7.26	7.16	6.90
GW040638	Smithfield Section	NSW	1	11.9	No	1960	Dry	Dry	Dry	Dry
GW40771	Smithfield Section	NSW	1	30	Yes	1994	-26.74	-22.06	-27.31	-26.79
GW40771	Smithfield Section	NSW	2	37	Yes	1994	-30.54	-29.68	-30.99	-30.49
GW40771	Smithfield Section	NSW	3	50	Yes	1994	-34.19	-33.25	-35.35	-34.31
GW040641	Riverstone Section	NSW	1	35	No	1960	-13.21	-10.3	-11.12	-9.97
GW040644	Riverstone Section	NSW	1	9.5	No	1960	-8.56	-8.09	-8.24	-7.79
GW040646	Riverstone Section	NSW	1	7.7	No	1960	-7.67	-7.0	-7.26	-6.40
GW040647	Hopwood Section	NSW	1	12.8	No	1959	-9.69	-9.43	-9.74	-9.68
GW040649	Hopwood Section	NSW	1	28.9	No	1959	-8.82	-8.21	-8.27	-8.03
GW040652	Hopwood Section	NSW	1	12.2	No	1959	-8.95	-8.85	-8.92	-8.67
GW40829	Lochiel Section	NSW	1	12	No	1996	-10.49	-10.36	-10.63	-10.45
GW40829	Lochiel Section	NSW	2	42	No	1996	-11.51	-10.38	-10.67	-10.47
GW40830	Lochiel Section	NSW	1	27	No	1996	-11.51	-11.19	-12.09	-11.85
GW40831	Lochiel Section	NSW	1	44	Yes	1996	37.36	-36.9	-37.06	-36.59
GW40831	Lochiel Section	NSW	2	96	Yes	1996	-40.72	-36.99	-42.74	-39.65

(1) Monitoring bore has no information available.

