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1. Introduction

This report represents the twelfth since June 2000 recording the results of monitoring events sponsored by Smartrivers in the Lower Balonne. Due to the continued drought and lack of cropping by Smartrivers members, funding available for this monitoring period was reduced. Eleven sites were sampled but data has been analysed and is presented for 7 sites. The remaining data will be analysed and reported when funding becomes available. Sampling took place in the last week of March.

In the twelve months prior to sampling, 26,842ML had passed Jack Taylor Weir from an annual average (of monthly flows) of 1,240, 578ML, that is, just 2% of average. Since the most recent sampling in October 2006, no flow occurred till the 29th of January 2007 then very low flows, not exceeding compensation flow levels of 780ML/d, continued through the sampling period. The level of flow rose and fell a few times in this period. The Culgoa at Whyenbah commenced flowing on 7 February and Woolerbilla commenced on 16 March. Both sites recorded continuous flow up to and throughout sampling. At the time of sampling, the flows had reached Cavalon but not Booligar on the Narran River, and the gauge, which is between the two sites, recorded low flows from 30 March to 10 April. Flows did reach the third bifurcation weir but not Koala on the Bokhara or Euraba on the Balandool.

The Moonie River at Nindigully did not flow between July 2006 and late January 2007, other than a few days in November but flows did not exceed 5ML/d. The river rose and fell three times from January to late March with a peak in mid-February of 2661ML/d.

2. Methods

Nine riverine and two floodplain sites were sampled in late March 2007. Sampling methods mirrored earlier events (Benson and Paton 2002) with respect to:

- Fish sampled by multiple gill and fyke nets, bait traps, seine and dip nets, with the actual nets deployed depending on site conditions, particularly the extent of water available.
- Water quality sampled by a multi-parameter data logging water quality meter (a Yeokal 611). This was used for depth stratified sampling and when recording overnight was set within 25cm of the surface. The conductivity probe failed throughout the sampling event.
- Macroinvertebrates sampled by replicated Surber samples in the edge habitat (dates varied due to flow as noted above). While samples were collected from some sites thought to be recently inundated, only samples from unaffected sites, or sites potentially effected but of relatively high comparative value were processed.
- Specialised habitats sampled for macroinvertebrates by qualitative dip netting.

No investigation of riparian zones was undertaken as these have been described previously for most sites (SKM June 2000 report and DNRM unpublished).

Macroinvertebrates were sorted by staff in the Hydrobiology laboratory and were identified and counted by staff of Applied Freshwater Science. The latter was performed on samples from four sites while the samples from recently inundated sites

have been stored in case they are of comparative use at a later date. The subsampling technique of Wrona *et al* (1982) was employed for larger samples.

3. Results

Results are initially presented by site. A regional appraisal is presented in the Discussion.

3.1 Balonne River at St George

Not sampled.

3.2 Balonne River at Mooramanna

Not sampled.

3.3 Balonne River at Whyenbah

This site is within the pool formed by the bifurcation weirs and is just upstream of the bridge, within a popular camping and fishing area. The right bank has a relatively gentle slope while the left is very steep for about 4 metres above the water line. The substrate is black soil or fine sand. Grass cover was significantly reduced and there was no evidence of recent grazing by cattle. Water level was high with the sand bar near the camping site completely submerged to the *Juncus* line, which itself was partially submerged. There was substantial flow over the weir.

3.3.1 Water quality

Overnight logging was undertaken at this site. There was little diurnal variation. The recorded ranges for each parameter were:

Temperature: 23.5 – 24.1°C

Dissolved oxygen: 117-126 % sat

pH: 7.5 – 7.5

Conductivity: NA µS/cm

Turbidity: >600NTU.

Results from spot water quality profiling are shown in **Table 3-3.1**. The water column was well mixed.

■ **Table 3-3.1 Water quality depth profiling at Whyenbah in March 2007.**

Sample Time	Depth (m)	Temp (°C)	Dissolved Oxygen (%sat)	Conductivity (µS/cm)	Turbidity (NTU)	pH
1530	Surface	24.9	144	NA	>600	7.4
	1.0	23.3	137		>600	7.4
	2.0	23.1	135		>600	7.4
	2.7	23.1	130		>600	7.4

3.3.2 Macrophytes

Juncus, occurred in patches but the *Ludwigia* that was usually present in a certain location was not visible, possibly submerged.

3.3.3 Fish

All fishing nets were deployed at this site and the results are presented in **Table 3-3.1**. Six native species and two introduced were captured. Carp gudgeon and eel-tailed catfish had been captured in October but Rainbowfish, Hyrtl's tandan and Mosquitofish had not.

■ **Table 3-3.1 Results of fishing the Balonne River at Whyenbah in March 2007, by fishing method**

Species	Common name	Gill	Seine	Fyke	Bait	Total Numbers caught
<i>Maccullochella peeli</i>	Murray Cod	1				1
<i>Macquaria ambigua</i>	Yellowbelly	1		2		3
<i>Nematolosa erebi</i>	Bony Bream		84	1		85
<i>Melanotaenia fluviatilis</i>	Rainbowfish		2			2
<i>Retropinna semoni</i>	Smelt		93			93
<i>Neosilurus hyrtlilii</i>	Hyrtl's tandan			1		1
<i>Cyprinus carpio</i>	Carp	1				1
<i>Gambusia holbrooki</i>	Mosquitofish		3			3
Total Numbers		3	182	4		189

One broad-shelled tortoise and one short-necked tortoise were captured in a fyke net.

3.3.4 Macroinvertebrates

Surber samples were not collected due to the recent inundation. One hundred and one prawns were captured in bait traps and they were very common in the seine haul.

3.4 Culgoa River at Whyenbah

Not sampled.

3.5 Culgoa River at Cubbie

This site is about 1km below the Cubbie Weir. The western bank has a very thin riparian zone on the outer side of the meander and it is eroding. The banks are steep with little or no vegetation but reasonable grass cover now exists on the inside of the meander on the downstream part of the bend. The inner side of the meander has a much better riparian zone above the top bank but little or no understorey because of accumulated leaf, bark and branch litter. Snags are plentiful in the water but little other specialised habitat exists. A debris dam exists at the downstream bend in the site. The substrate tends to be very compact clay.

The river was flowing at the time of sampling, with the weir releasing through the low flow pipe. The water covered the baseflow channel and first bench in the area where the site is entered. The water level rose nearly 10cm overnight. The deepest part near the main snags would have reached over 3m at this level.

No tracks or disturbances of the edge were observed other than a line of fishing sticks at the current water level. This indicates some fishers had taken advantage of the flow to catch Yellowbelly.

3.5.1 Water quality

Results from spot water quality profiling are shown in **Table 3-5.1**. The water column was well mixed. Surface temperature was similar to October but bottom temperature was 5^oC warmer. Dissolved oxygen was again supersaturated and pH was nearly 1 unit higher than in October.

■ **Table 3-5.1 Water quality depth profiling, Culgoa River at Cubbie, March 2007**

Sample Time	Depth (m)	Temp (°C)	Dissolved Oxygen (%sat)	Conductivity (µS/cm)	Turbidity (NTU)	pH
1430	Surface	24.6	134	NA	>600	7.2
	1.0	24.5	127		>600	7.3

3.5.2 Macrophytes

No macrophytes or fringing aquatic plants were observed.

3.5.3 Fish

All nets were set at this site but as there is no boat access, the gill nets were walked in and at times did not extend far from the bank. Four native fish species and one introduced were identified in a catch of 15 individuals (**Table 3-5.2**). Mosquitofish was captured in October 2006 but Spangled perch was not. The Yellowbelly measured between 25 and 30mm and the Spangled perch 32 and 37mm. The Murray Cod measured 397mm while those captured in recent events had been over 430mm, showing that this is not the same individual.

■ **Table 3-5.2 Results of fishing the Culgoa River at Cubbie in March 2007, by fishing method**

Species	Common name	Gill	Seine	Fyke	Bait	Total Numbers caught
<i>Maccullochella peelii</i>	Murray cod			1		1
<i>Macquaria ambigua</i>	Yellowbelly		1		3	4
<i>Retropinna semoni</i>	Smelt		4			4
<i>Leiopotherapon unicolor</i>	Spangled perch		2			2
<i>Cyprinus carpio</i>	Carp	4				4
Total Numbers		4	7	1	3	15

One long-necked tortoise was captured in a gill net and a broad shell was captured in a fyke net.

3.5.4 Macroinvertebrates

Surber samples were collected from compact recently inundated clay and were not processed. Bait traps collected 3 *Macrobrachium*.

3.6 Culgoa at Woolerbilla

This site was sampled but not reported.

3.7 Culgoa River at Balandool

Not sampled.

3.8 Balonne Minor River at Meigunyah

Water level was very high such that the riffle was flowing strongly and was 10-15m wide. At the lower end of the pool the water flowed on both sides of the central tea tree but only penetrated about 20m into Middle Ck. The water level appeared to be at the recent peak and did not alter overnight. There was no evidence of disturbance by stock or feral animals. A recent fire had burnt the Seton (western) side of the river from the weir almost to Middle Ck.

3.8.1 Water quality

Results from spot water quality profiling are shown in **Table 3-9.1**. Very strong vertical stratification had been noted in October but on this occasion the water column was well mixed. Dissolved oxygen was supersaturated throughout whereas in October it had become limiting from just below the surface.

■ **Table 3-9.1 Water quality profiling, Balonne Minor at Meigunyah, March 2007.**

Sample Time	Depth (m)	Temp (°C)	Dissolved Oxygen (%sat)	Conductivity (µS/cm)	Turbidity (NTU)	pH
1030	Surface	23.4	136	NA	>600	7.4
	1.0	23.2	135		>600	7.5
	2.0	23.2	135		>600	7.5
	3.0	23.2	136		>600	7.5
	4.0	23.2	135		>600	7.5

3.8.2 Macrophytes

No macrophytes and no fringing benthic algae were observed.

3.8.3 Fish

All nets were set. Three native fish species and three introduced were captured (**Table 3-8.1**). This was very different to October when Cod, Carp Gudgeon, Eel-tailed catfish and Hyrtl's tandan had been captured but Goldfish had not. Yellowbelly in the seine haul were all <36mm but in the fyke were between 158 and 304mm. The Goldfish and Carp were all large specimens.

■ **Table 3-8.1 Results of fishing the Balonne Minor at Meigunyah in March 2007.**

Species	Common name	Gill	Seine	Fyke	Bait	Total Numbers
<i>Macquaria ambigua</i>	Yellowbelly		7	4		11
<i>Nematolosa erebi</i>	Bony bream	1	24	6		31
<i>Retropinna semoni</i>	Smelt		29			29
<i>Cyprinus carpio</i>	Carp	1		2		3
<i>Carrasius auratus</i>	Goldfish			1		1
<i>Gambusia holbrooki</i>	Mosquitofish		17			17
Total Numbers		2	77	13	0	92

Two broad-shelled tortoises and one-short necked were captured in fyke nets.

3.8.4 Macroinvertebrates

Surber samples were not collected as the substrate was recently inundated. Twenty-four prawns and two yabbies were captured in bait traps and numerous prawns were noted in the seine haul.

3.9 Balonne Minor at Trafalgar

This site was sampled but not reported.

3.10 Donegri Ck (Narran River) at Dirranbandi

Not sampled.

3.11 Narran River at Clyde

The site was just flowing at the time of sampling and was generally about 15m wide with depths reaching 1.5m. There were signs that recent water levels had been about 40cm higher. The edges were clean and not disturbed by cattle or pigs.

3.11.1 Water quality

The results of spot measurements are shown in **Table 3-11.1**. Dissolved oxygen levels were very low and pH was 0.8 of a unit lower than in November. The water column was well mixed and carried a significant load of leaf litter.

■ **Table 3-11.1 Spot water quality readings – Narran River at Clyde**

Sample Time	Depth (m)	Temp (°C)	Dissolved Oxygen (%sat)	Conductivity (µS/cm)	Turbidity (NTU)	pH
1430	Surface	23.5	29	NA	>600	6.8
	1.0	22.8	24	NA	>600	6.9

3.11.2 Macrophytes

No macrophytes or benthic algae were recorded.

3.11.3 Fish

All nets were used at this site. The catch comprised of three native fish species and one introduced (**Table 3-11.2**). Carp gudgeon, Smelt and Goldfish had been recorded in November. Seven of the Yellowbelly caught in the seine were measured between 11 and 19mm and some still had yolk sacs. Identification was not certain.

■ **Table 3-11.2 Results of fishing the Narran River at Clyde in March 2007, by fishing method**

Species	Common name	Gill	Seine (2)	Fyke	Bait	Total number caught
<i>Macquaria ambigua</i>	Yellowbelly	1	8	3		12
<i>Nematolosa erebi</i>	Bony Bream	6	4			10
<i>Neosilurus hyrtlil</i>	Hyrtl's tandan			1		1
<i>Cyprinus carpio</i>	Carp	1	1	1		3
Total Numbers		8	13	5		26

3.11.4 Macroinvertebrates

No specialised habitats were available to sample at this site. Surbers were collected from firm clay with an overlying layer of silt. This may have been recently inundated. Eleven discrete taxa were recorded with microcrustaceans strongly dominating (**Table 3-11.3**). One prawn was captured in bait traps and *Caradina* were captured in the seine hauls.

■ **Table 3-11.3 Numbers of aquatic macroinvertebrates recorded from the Narran River at Clyde**

	Edge	Surber
	Mean	Stdev
Nematoda	5	7
Cladocera	579	372
Copepoda	446	344
Ostracoda	25	29
Dytiscidae	8	11
Chironominae	50	72
Tanypodinae	5	7
Baetidae	23	17
Corixidae	20	24
Anisoptera	15	34
Hydroptilidae	5	12
Taxa	7	2
Abundance	1183	731
Total Taxa	11	

3.12 Narran River at Booligar

This site was sampled but not reported in October 2006. At that time the main pool was the only water remaining but it still reached 1.5m deep in parts. On this occasion the pool had contracted to just 5m x 4m x <0.2m. The water was very green and the clay substrate was very soft. Very little litter was present and there were no signs of recent access by other than native animals.

3.12.1 Water quality

Spot water quality readings could not be collected because the water was too shallow.

3.12.2 Macrophytes

Filamentous alga was very poorly developed except on the one significant tree branch. A smear of algae was evident on the substrate.

3.12.3 Fish

Only seine netting was undertaken but was hampered because the base of the net rolled in the mud and allowed fish to escape. Many escaped, including several large Carp. The number of *Gambusia* is an estimate of what was in the net based on a subsample count. Two native fish species and one introduced were captured (**Table 3-12.2**). In October, Spangled perch, Smelt and Carp were also captured.

■ **Table 3-12.2 Results of fishing the Narran River at Booligar in March 2007.**

Species	Common name	Gill	Seine	Fyke	Bait	Total Number caught
<i>Macquaria ambigua</i>	Yellowbelly		2			2
<i>Nematolosa erebi</i>	Bony Bream		11			11
<i>Gambusia holbrooki</i>	Mosquitofish		200			200
Total Numbers		NA	213	NA	NA	213

3.12.4 Macroinvertebrates

Surbers were collected from soft silt with an algal smear. Ten taxa were recorded. The fauna was dominated by chironominae and cladocera (**Table 3-12.3**). Bait traps were not deployed as the water was too shallow. The seine haul collected some prawns.

■ **Table 3-11.3 Numbers of aquatic macroinvertebrates recorded from the Narran River at Booligar**

	Edge Surber	
	Mean	Stdev
Nematoda	7	11
Oligochaeta	10	11
Cladocera	207	199
Copepoda	2	5
Ostracoda	13	22
Ceratopogonidae	3	6
Chironominae	617	375
Tanypodinae	67	33
Corixidae	5	7
Hydridae	5	7
Taxa	6	2
Abundance	935	425
Total Taxa	10	

3.13 Balandool River at Cubbie

Not sampled.

3.14 Balandool River at Euraba

Dry.

3.15 Bokhara River at Kirrima

While the river was flowing and the normal site was available, as it was only very recently inundated, the site sampled in October 2006 was again sampled. This was within the weir pool. There was a considerable amount of snag habitat and some tea tree roots reached the water. The weir was overflowing at the time of sampling and a solid line of *Azolla* was stranded about 10cm above the waterline, indicating that the flow was receding. The surrounding area was very dry and the ground cover consisted of dry Lignum and roly-poly. Feral goats frequent this area.

3.15.1 Water quality

Spot water quality measurements were taken from the centre of the channel and results are shown in **Table 3-15.1**. The water column was well mixed with low dissolved oxygen.

■ **Table 3-15.1 Spot water quality readings – Bokhara River at Kirrima (US)**

Sample Time	Depth (m)	Temp (°C)	Dissolved Oxygen (%sat)	Conductivity (µS/cm)	Turbidity (NTU)	pH
0800	Surface	23.0	31	NA	544	7.0
	1.0	23.0	31		544	7.0
	1.8	23.0	32		544	6.9

Overnight logging of water quality parameters produced the following range of results:

Temperature: 22.9 – 26.4°C

Dissolved oxygen: 24.5 - 64.2% sat; 2.1 – 5.2mg/l

pH: 6.9 – 7.0

Conductivity: NA µS/cm

Turbidity: 539 - 548 NTU.

These results indicate greater variation over time than with depth.

3.15.2 Macrophytes

Azolla was represented by a thin line along the waters edge and occasional patches in open water. No filamentous algae were observed.

3.15.3 Fish

All nets were used at this site. Two native species of fish plus three introduced were captured (**Table 3-15.2**). In October, Rainbowfish, Smelt and Hyrtl's tandan had been captured as single specimens and Mosquitofish were not recorded. The Yellowbelly in the seine hauls were all very small juveniles. Numerous tadpoles were captured in bait traps and seine hauls.

■ **Table 3-15.2 Results of fishing the Bokhara River at Kirrima in March 2007.**

Species	Common name	Gill	Seine	Fyke	Bait	Total Numbers caught
<i>Macquaria ambigua</i>	Yellowbelly		7	1		8
<i>Nematolosa erebi</i>	Bony Bream	1				1
<i>Cyprinus carpio</i>	Carp			1		1
<i>Carrasius auratus</i>	Goldfish	1				1
<i>Gambusia holbrooki</i>	Mosquitofish		35			35
Total Numbers		2	42	2		46

3.15.4 Macroinvertebrates

Surber samples were collected from soft clay with *Azolla* and may have been recently inundated so were not processed. Bait traps returned 4 prawns and 1 yabby, along with several tadpoles.

3.16 Bokhara River at Koala

DRY.

3.17 Warrego River at Shannonvale

Not sampled.

3.18 Warrego River at Tinnenburra

Not sampled.

3.19 Moonie River at Nindigully

The water level at this site was relatively high and the river was flowing. The downstream riffle was generally about 10m wide and 1m deep. The water level had apparently fluctuated over about a 3 week period with the current flow representing a second event in that period. The earlier flow had been at least 1m higher. The water level receded approximately 5cm overnight. No macrophytes were present. A smear of filamentous alga was present just above and near the waterline. The only disturbance to the edge appeared to be caused by birds.

3.19.1 Water quality

Results of spot water quality samples are shown in **Table 3-19.1**. Conductivity and pH have continued to rise since November 2005.

■ **Table 3-19.1 Spot water quality readings – Moonie River at Nindigully**

Sample time	Depth (m)	Temp (°C)	Dissolved Oxygen (%sat)	Conductivity (µS/cm)	Turbidity (NTU)	pH
1500	Surface	24.1	130	NA	>600	7.2
	1.0	22.3	118		>600	7.2
	2.0	21.8	109		>600	7.1

Overnight logging of water quality parameters produced the following range of results:

Temperature: 21.0 – 23.6°C

Dissolved oxygen: 100 - 114% sat; 8.8 – 9.7mg/l

pH: 7.2 – 7.3

Conductivity: NA µS/cm

Turbidity: >600 NTU.

3.19.2 Macrophytes

No macrophytes were observed but occasional *Juncus* was at or just below the waterline and the *Schoenoplectus* near the gauge was surrounded by water.

3.19.3 Fish

Two native fish species and two introduced were recorded (**Table 3-19.2**). Ten of the Yellowbelly in the seine hauls were between 20 and 46mm. A large proportion of the Bony Bream were also very small (<28mm).

■ **Table 3-19.2 Results of fishing the Moonie River at Nindigully in March 2007.**

Species	Common name	Gill	Seine (2)	Fyke	Bait	Total Numbers caught
<i>Macquaria ambigua</i>	Yellowbelly	6	11	1		18
<i>Nematolosa erebi</i>	Bony Bream	8	30	4	1	43
<i>Cyprinus carpio</i>	Carp	3				3
<i>Gambusia holbrooki</i>	Mosquitofish		8			8
Total Numbers		17	49	5	1	72

3.19.4 Macroinvertebrates

Surber samples were collected from clay which had been inundated to some depth then slowly approached the edge as the water level receded. The samples were not processed. Twenty-four *Macrobrachium* and one *Cherax* were captured in bait traps.

3.20 Moonie River at Fenton

Not sampled.

3.21 Police Lagoon

DRY

3.22 Belah Waterhole

Not sampled

3.23 Clyde Lagoon

This site was sampled but not reported.

3.24 Chinaman Creek

This site was sampled but not reported.

4. Discussion

The discussion will necessarily be less general or speculative than normal, given the low number of sites sampled relative to earlier sampling events.

4.1 Water quality

Table 4-1.1 summarises the results from all sites sampled in autumn 2007. Note that the time series data represents overnight recordings rather than 24 hr recordings hence often does not include the middle of the day. Spot recordings on the other hand tend to be taken when logged data is not recorded.

The water column was well mixed at most sites as a result of the flow with little diurnal variation. Most sites showed supersaturated oxygen levels with the exception of Kirrima and Clyde. In the case of Kirrima it may be that the flow had only recently reached the weir pool so the old deoxygenated water had not yet been flushed. This would not be true at Clyde.

Turbidity exceeded the range of the meter at most sites.

■ **Table 4-1.1 Summary Water Quality Data for autumn 2007.**

	Temperature °C	Dissolved O ₂ % sat	Conductivity µS/cm	Turbidity NTU	pH
Balonne at Whyenbah	23.5 – 24.1	117-126	NA	>600	7.5 – 7.5
Culgoa at Cubbie	24.6	134	NA	>600	7.2
Balonne Minor - Meigunyah	23.4	136	NA	>600	7.4
Bokhara at Kirrima	23.0	31	NA	544	7.0
Narran at Clyde	23.5	29	NA	>600	6.8
Narran at Booligar			NA		
Moonie at Nindigully	24.1	130	NA	>600	7.2

Note: Ranges are from overnight logged data. Single data points are surface recordings from stratification data.

4.2 Macrophytes

Macrophytes were very limited in their distribution though *Ludwigia* was probably present but submerged therefore not visible. *Azolla* was seen at one site only. The fringe of benthic filamentous green alga was not evident. *Juncus* was common though patchy and generally sparse.

4.3 Fish

In a total catch of 653 individuals, seven native species of fish were identified from six river sites in the Lower Balonne, and two from the single reference site. Three introduced species were captured at test sites and two at the reference site.

Table 4-3.1 summarises the fish catch across all sites. Shading in the table marks each river and sites are placed from upstream to downstream within each river. The number of native species recorded at river test sites varied between 2 and 6 and the number of introduced species varied from 1 to 3. The number of individuals captured varied from 15 to 213 at test river sites and was 72 at the reference site. The use of the different fishing nets varied somewhat among sites on this sampling occasion.

The most abundant species at test sites was Mosquitofish followed by Bony bream, Smelt and Yellowbelly.

Introduced species contributed 42.9% of the catch at test river sites, which is higher than has been the case in recent times. This was largely due to the number of Mosquitofish captured in the seine net at Booligar, a site that was nearly dry. The number of Carp and Goldfish was actually markedly lower than from the November 2006 samples.

■ **Table 4-3.1. Summary of fish catch by site; March 2007**

Site	<i>Maccullochella peellii peellii</i>	<i>Maquaria ambigua</i>	<i>Leiopotherapon unicolor</i>	<i>Bidayanus bidyanus</i>	<i>Nematalosa erebi</i>	<i>Hypseleotris</i> spp	<i>Melanotaenia fluviatilis</i>	<i>Retropinna semoni</i>	<i>Tandanus tandanus</i>	<i>Neosilurus hyrtlilii</i>	<i>Porochilus rendahlii</i>	<i>Cuprinus carpio</i>	<i>Carrasius auratus</i>	<i>Gambusia holbrooki</i>	Total count	Natives	Introduced
Whyenbah	1	3			85		2	93		1		1		3	189	6	2
Meigunyah		11			31			29				3	1	17	92	3	3
Culgoa at Cubbie	1	4	2					4				4			15	4	1
Bokhara at Kirrima		8			1							1	1	35	46	2	3
Narran at Clyde		12			10					1		3			26	3	1
Narran at Booligar		2			11									200	213	2	1
Nindigully		18			43							3		8	72	2	2
SUM	2	58	2	0	186	0	2	126	0	2	0	15	2	263	653	7	3

Carp gudgeons were not captured at the reported or unreported sites, which is unusual. They had been reported from three of the seven sites sampled in October.

Eel-tailed catfish was recorded in October. No further species were recorded from the four unreported sites.

An interesting feature of the data was the large number of very small Yellowbelly, presumably produced in response to the flow.

4.4 Macroinvertebrates

Macroinvertebrate data was processed and presented for only two sites as recent inundation precluded use of data from most sites. The only site sampled and processed on the last two sampling occasions was the Narran River at Clyde and it showed very similar diversity but greater abundance on this occasion. Microcrustacea (either cladocerans or copepods) dominated with chironominae also common.

The number of *Macrobrachium* and *Cherax* recorded in bait traps was substantial at Whyenbah and Meigunyah but was otherwise low to moderate.

4.5 Current Status

Drought conditions continued prior to the sampling period with a low flow passing through during sampling. The flow had passed the third bifurcation but apparently not reached far beyond that. The flow basically served to fill weirs which do not have low flow release valves and re-fill natural pools throughout the lengths of watercourse reached. The flow was sufficient to fill Clyde Lagoon, which was sampled but not reported. It did not however reach Chinaman Lagoon, which was also sampled but not reported.

Water quality results reflected the recent low flows or lack of flow, depending on the site.

The fish species complement was in line with historical results given the sites sampled. While not reported, Clyde Lagoon was sampled and this site characteristically returns a relatively high catch of Hyrtl's tandan, as it did on this occasion. While Bony bream numbers were noted as relatively low in the October 2006 samples, they are now at expected levels. The low diversity and abundance at Nindigully is also in agreement with historic sampling.

Macroinvertebrate data is most affected by the relatively low sampling effort as the number of taxa varies significantly with the number of sites and number of habitats sampled. Lack of sustained flow may be affecting total diversity or it may be linked to the extended lack of water on floodplains, as a potential link between riverine diversity and floodplain diversity has previously been noted.

5. References

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