

Post Stocking Survey Report

Yarramalong and Cecil Plains Weirs

10/11 August 2000

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Cover Photo: Cecil Plains Weir

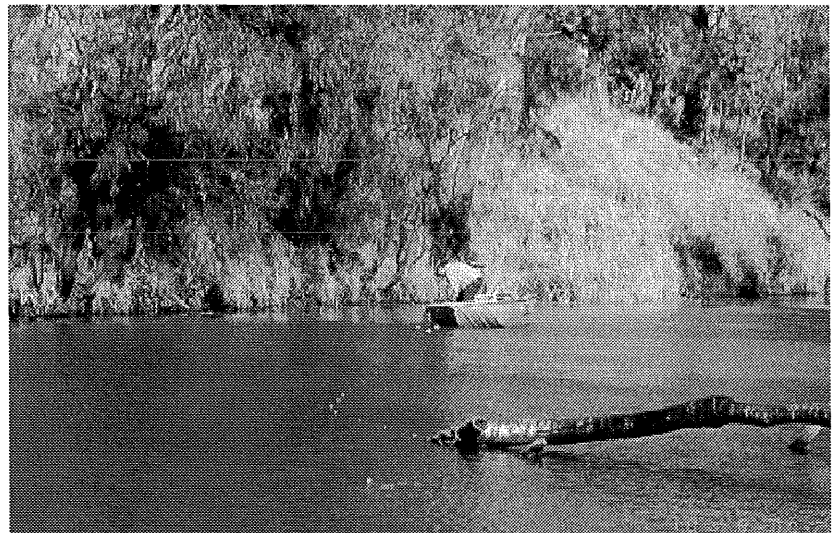
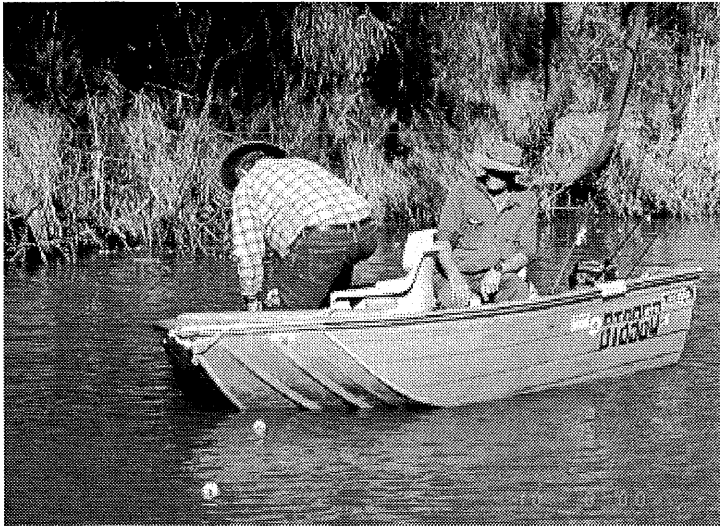
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ACKNOWLEDGEMENTS

Assistance from members of the Millmerran-Pittsworth District Fish Stocking Association with setting and clearing nets, recording data and participating in the electrofishing survey was greatly appreciated. The number and enthusiasm of members that arrived to assist our officers was very encouraging. Without this assistance the post stocking survey would not have been possible.

Members of the Millmerran-Pittsworth District Fish Stocking Association clearing a net



SUMMARY

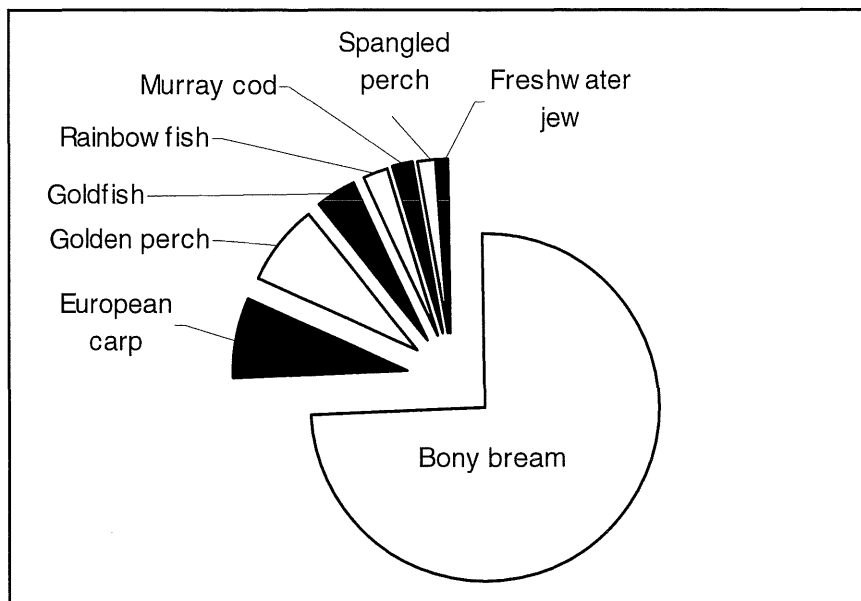
This report details the results of the post stocking survey conducted at Cecil Plains Weir on 10 August 2000 and Yarramalong Weir on 11 August 2000. Survey methods included electrofishing and netting.

The purpose of this survey was to

- Measure the relative abundance of angling and noxious fish species;
- Monitor the relative abundance and species composition of forage fish;
- Monitor growth of stocked species where stockings can be differentiated;
- Review and provide recommendations on management strategies for the fishery.

Results

Figure 1 Species composition of total catch.



A total of 240 fish were counted in this survey using electrofishing and gill netting as sampling methods. Bony bream dominated the catch (178 fish), followed by European carp (18), golden perch (18), goldfish (9), golden perch (8), rainbowfish (6) Murray cod (5), spangled perch (4) and freshwater jew (2).

Electrofishing: The electrofishing catch consisted of 173 fish with the total catch effort ratio of

1.55 fish/minute (1.5 fish were caught for each minute of 'power on' electrofishing time). Bony bream predominated in the catch with 115 fish, followed by, European carp 18, golden perch 14, goldfish 9, rainbowfish 6, spangled perch 4 and freshwater jew 2.

Netting: Four gill nets were set during the survey with a total of 67 fish caught, consisting of 63 bony bream and 4 golden perch. Stocking Association boats and crews assisted with the netting exercise.

Reservoir details Cecil Plains Weir was built in 1947 and is managed by Department of Natural Resources. The weir is situated 2 km East of Cecil Plains on the Condamine River. The weir height above the original bed is 3.7 m and the impounded waters surface area is 45 hectares.

Yarramalong Weir was built in 1989 and is managed by the Department of Natural Resources. Yarramalong Weir is situated 25km south east of Millmerran on the Condamine River. The weir height above the original bed is 2.7 m and impounds water with a surface area of 26 hectares.

Stocking The Millmerran Pittsworth Fish Stocking Association stock some 220 km of the Condamine River (From AMTD 840 to AMTD 1060). There are four major weirs in this stretch of the Condamine River these are Talgai, Yarramalong, Cecil Plains and Lemon Tree. Stocking data in this report applies only to fingerlings stocked directly into Yarramalong and Cecil Plains weirs. In reality these fingerlings are free to move downstream even in minor overflows, and upstream in major flood events.

Prior to stocking, endemic angling species in this section of the Condamine River would have included golden perch, Murray cod, silver perch, freshwater jew and spangled perch. However during the 1970s and 80s there was a decline in the number of these species to the extent that angler catches were dramatically reduced. Stocking was introduced in an attempt to improve returns to anglers.

Stocking in both weirs commenced in 1989 with the first release of golden perch two other species have since been released, silver perch and Murray cod. A total of 213,335 fingerlings have been released into Cecil Plains Weir made up of 88% golden perch, 6% silver perch and 6% Murray cod. In the last three years Cecil Plains Weir has been stocked with 99,665 fingerlings.

A total of 207,372 fingerlings have been released into Yarramalong Weir made up of 82% golden perch, 15% silver perch and 3% Murray cod.. In the past three years the stocking effort has concentrated on golden perch and Murray cod. The last three years have seen a total stocking of 58,450 fingerlings.

Recommendations The Millmerran-Pittsworth Fish District Fish Stocking Association have done an excellent job in maintaining high stocking levels over a long period. Anecdotal evidence from anglers and recent fishing competition results indicate that this high level of stocking has significantly improved the quality of the fishery since stocking began some 11 years ago.

No major changes need to be made to the present stocking plan except in the case of silver perch. Work is presently being carried out to develop a recovery plan for this species. It is suggested that in the meantime silver perch stockings cease in the Murray Darling Drainage Division. An amendment should also be made to remove silver perch from the stocking plan (see Appendix 6). The Murray cod component should be increased from 5% to 10%, and the golden perch component from 75% to 90% when silver perch have been removed from the stocking plan.

Following on from the above, and within stocking permit parameters, it is recommended that stocking of Murray cod be increased over the next few years with stockings conducted each and every year. Follow up surveys will check to see if this results in an overall increase in the Murray cod population.

INTRODUCTION

This document details results from this post stocking survey conducted on 10 and 11 August 2000. The purpose of this survey was to

- Measure the relative abundance of angling and noxious fish species;
- Monitor the relative abundance and species composition of forage fish;
- Monitor growth of stocked species where year classes can be differentiated;
- Review and provide recommendations on management strategies for the fishery.

Results for the different fishing methods used in this survey are given as catch per unit effort (CPUE). CPUE is the number of fish caught, divided by the amount of time spent fishing. In this survey, CPUE is expressed as:

electrofishing - effort is the number of minutes ('power on' time) spent electrofishing. Results are expressed as the number of fish caught per minute of 'power on' time;

netting - effort is the number of hours that the net was set. Results are expressed as the number of fish caught per net hour;

CPUE data are useful for examining changes in the fishery over time.

SAMPLING METHODS

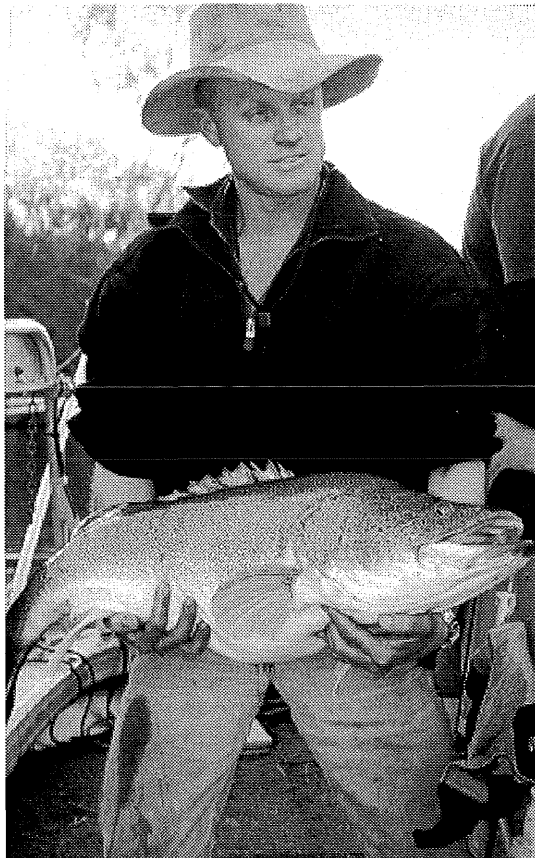
1 Electrofishing

Electrofishing was conducted using a Smith Root 7.5 kva unit mounted on a 4.3 m aluminium 'Edgetracker' vessel. The crew consisted of a skipper and two net operators. Electrofishing was conducted over 2 days. On the 10 August the electrofishing on Cecil Plains Weir commenced at 1:30pm and concluded at 8:00pm. Sampling at Yarramalong weir was conducted on 11 August and commenced at 2:45pm and concluded at 7:30pm. All species collected were recorded and representative samples weighed and measured. Results are expressed as number of fish per electrofishing minute ('power on' time).

2 Panel Nets

Two panel nets were set at each of the weirs surveyed for a total of 19.65 hours. Each panel net consisted of four 10 m sections of 1½, 2½, 3½ and 4½ inch mesh resulting in a total net length of 40 m, and a drop of 2.4 m. Each net was set perpendicular to the shoreline. Results are expressed as number of fish per panel net hour.

Murray cod caught at Yarramalong weir (937 mm)



RESULTS

During the survey a total of 240 fish were collected using electrofishing and netting methods. Bony bream dominated the catch (178 fish), followed by European carp (18), golden perch (18), goldfish (9), rainbowfish (6), Murray cod (5), spangled perch (4), and freshwater jew (2).

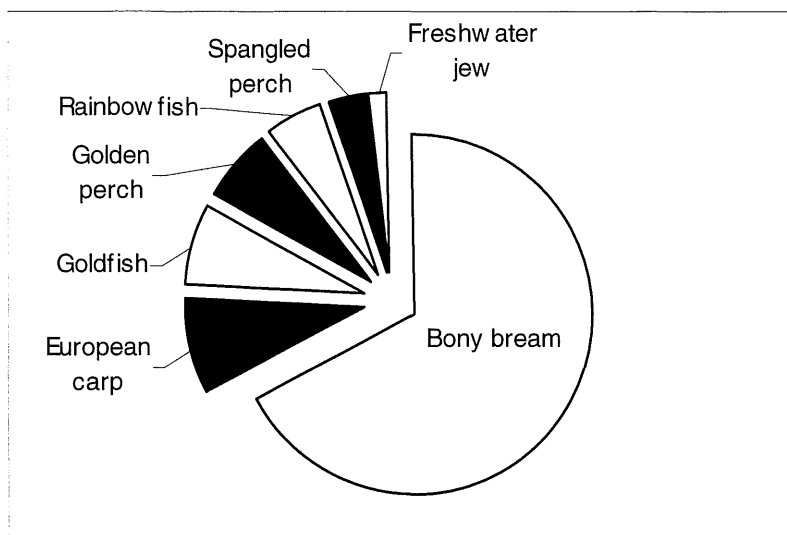
- Bony bream *Nematolosa erebi*
- European carp *Cyprinus carpio*
- Freshwater jew (eel-tailed catfish) *Tandanus tandanus*
- Golden perch *Macquaria ambigua*
- Goldfish *Carassius auratus*
- Murray Cod *Maccullochella peeli peeli*
- Rainbowfish *Melanotaeniidae sp.*
- Spangled perch *Leiopotherapon unicolor*

1 Electrofishing

Cecil Plains Weir

Sixty seven minutes of power on' time resulted in a total catch 118 fish. Bony bream predominated (79 fish), followed by European carp (10), goldfish (9) golden perch (8), rainbowfish (6), spangled perch (4) and freshwater jew (2) (see Figure 1). The CPUE ratio for electrofishing was 1.6 fish/minute.

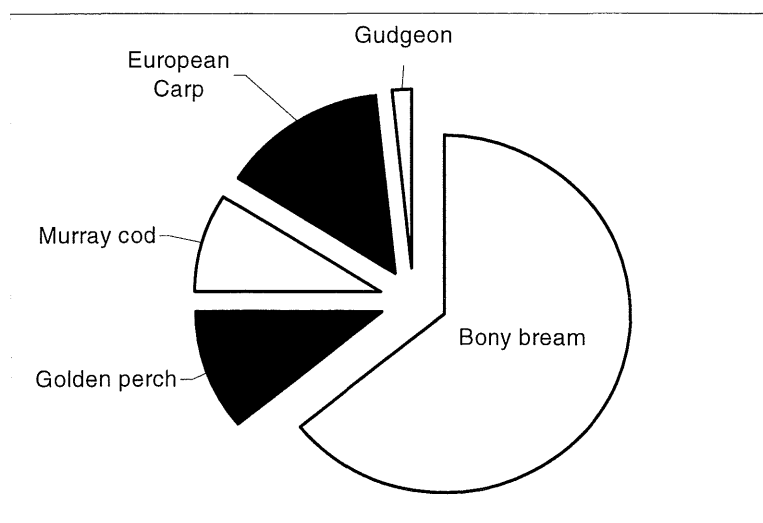
Figure 2 Species composition of electrofishing catch Cecil Plains Weir



Yarramalong Weir

Forty three minutes of power on' time resulted in a total catch 65 fish. Bony bream predominated (36 fish), followed by gold fish (10) European carp (8), golden perch (6), Murray cod (5) (see Figure 2). The CPUE ratio for electrofishing was 1.5 fish/minute.

Figure 3 Composition of electrofishing catch Yarramalong Weir



Catch details for the electrofishing operation for both Cecil plains and Yarramalong weirs are given in Tables 1 and 2. For interest, electrofishing results are compared with results from surveys performed on a number of other impoundments in Appendix 4. Electrofishing operations were conducted during the day and night, over a selection of habitats. Details of the data from the day and night electrofishing are contained in Appendix 2.

Table 1 Catch effort ratios for electrofishing (Cecil Plains Weir)

Species	Power on time (minute)	Number	Fish/minute
Bony Bream	66.5	79	1.19
European carp	66.5	10	0.15
Goldfish	66.5	9	0.13
Golden perch	66.5	8	0.12
Rainbowfish	66.5	6	0.09
Spangled perch	66.5	4	0.06
Freshwater jew	66.5	2	0.03
Total	66.5	118	1.62

Table 2 Catch effort ratios for electrofishing (Yarramalong Weir)

Species	Power on time (minute)	Number	Fish/minute
Bony Bream	43.3	36	0.83
Goldfish	43.3	10	0.23
European carp	43.3	8	0.18
Golden perch	43.3	6	0.14
Murray Cod	43.3	5	0.12
Total	43.3	65	1.5

2 Panel Nets

Panel netting at Cecil Plains Weir were set for 7.9 hours and provided a total catch of 42 bony bream and 2 golden perch, with a CPUE ratio of 5.3 fish per net hour. Netting at Yarramalong Weir resulted in a catch of 22 bony bream for 11.75 hr of net time with a CPUE of 1.9 fish per net hour.

Details of fish sampled from each panel net are given in Table 2. For interest, panel net results at Cecil Plains and Yarramalong Weirs are compared with results from surveys on a number of other impoundments in Appendix 4.

Table 3 Catch effort ratios for each panel net (Cecil Plains Weir)

Net 1

Species	Net hours	Number	Fish/net hour
Bony bream	3.9	42	10.7
Golden perch	3.9	4	1.02
Total	3.9	46	11.79

Net 2

Species	Net hours	Number	Fish/net hour
Bony bream	4.0	2	0.5
Golden perch	4.0	1	0.25
Total	4.0	3	0.75

Table 4 Catch effort ratios for each panel net (Yarramalong Weir)

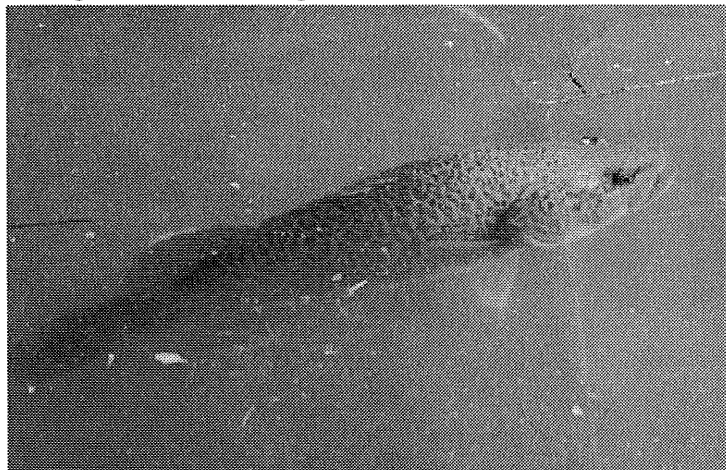
Net 1

Species	Net hours	Number	Fish/net hour
Bony bream	7.75	22	2.8
Total	7.75	22	2.8

Net 2

Species	Net hours	Number	Fish/net hour
Total	4.0	0	0

Juvenile Murray cod caught at Yarramalong Weir



DISCUSSION

1 Stocking history

The Millmerran Pittsworth Fish Stocking Association stock some 220 km of the Condamine River (From AMTD 840 to AMTD 1060). There are four major weirs in this stretch of the Condamine River these are Talgai, Yarramalong, Cecil Plains and Lemon Tree. Stocking data in this report applies only to fingerlings stocked directly into Yarramalong and Cecil Plains weirs. In reality these fingerlings are free to move downstream even in minor overflows, and upstream in major flood events.

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Stocking in both weirs commenced in 1989 with the first release of golden perch two other species have since been released, silver perch and Murray cod. A total of 213,335 fingerlings have been released into Cecil Plains Weir made up of 88% golden perch, 6% silver perch and 6% Murray cod. In the last three years Cecil Plains Weir has been stocked with 99,665 fingerlings.

A total of 207,372 fingerlings have been released into Yarramalong Weir made up of 82% golden perch, 15% silver perch and 3% Murray cod.. In the past three years the stocking effort has concentrated on golden perch and Murray cod. The last three years have seen a total socking of 58,450 fingerlings.

Figure 4 Stocking history for Cecil Plains Weir

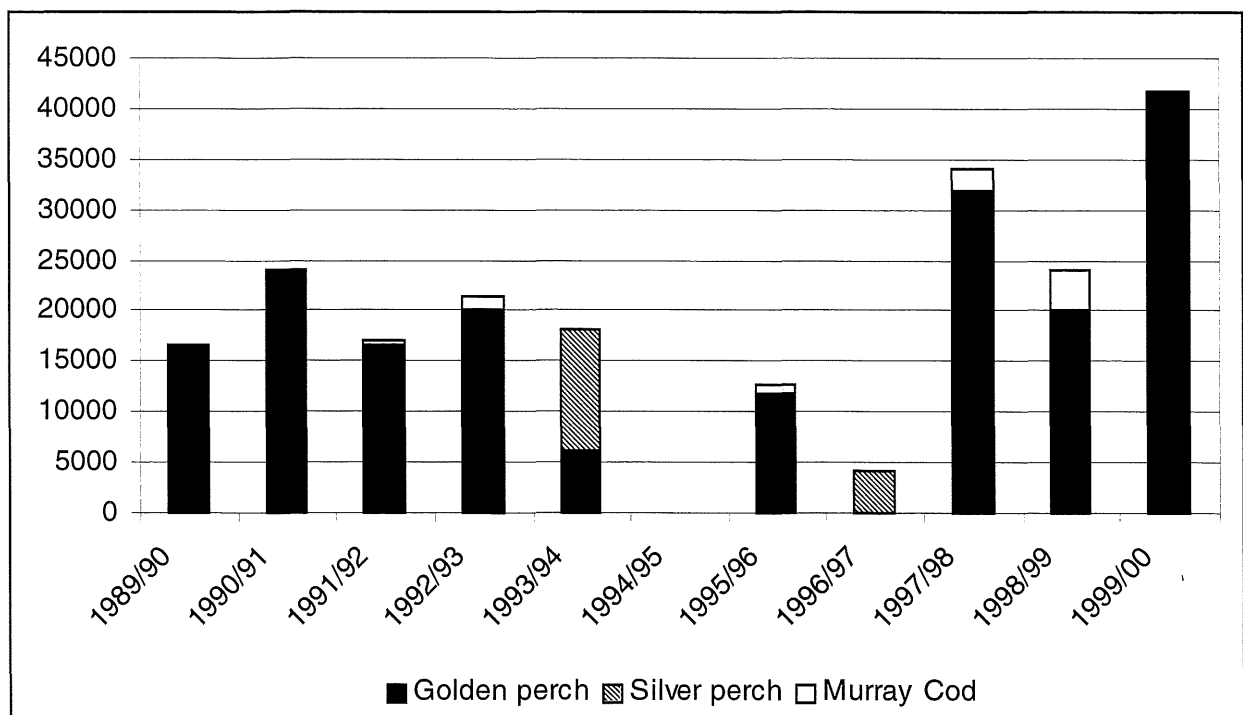
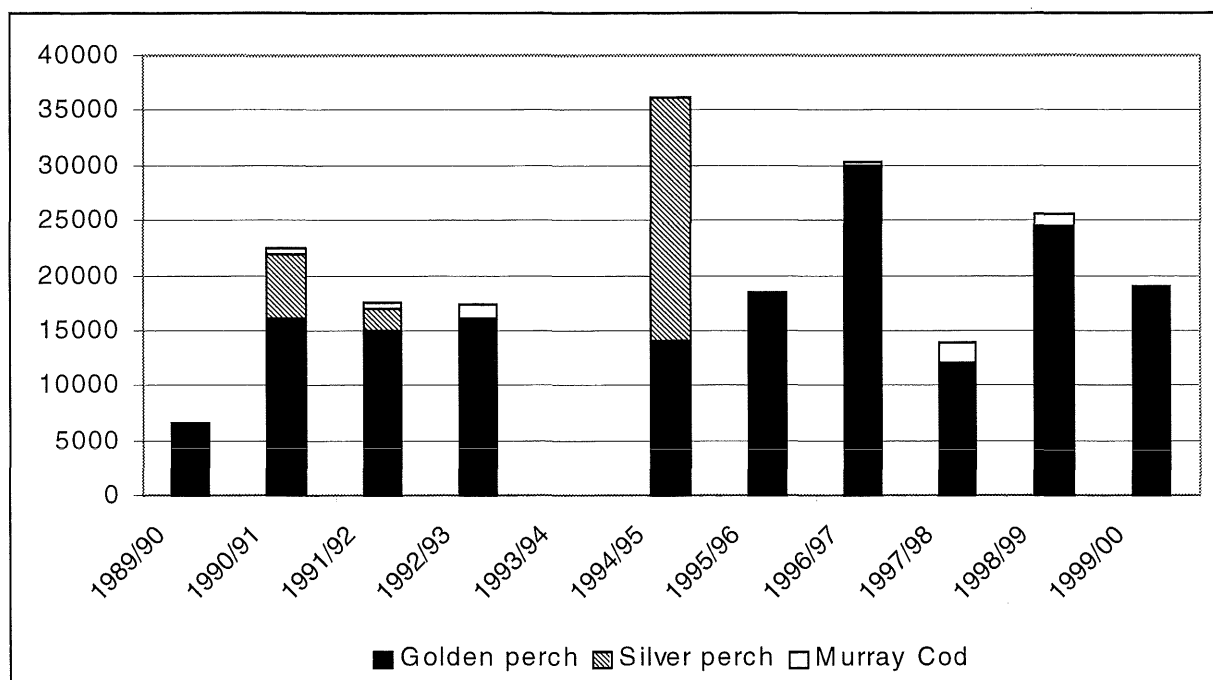


Figure 5 Stocking history for Yarramalong Weir



2 Survey results

a) Murray Cod While numbers were low, the range of year classes was encouraging with fish ranging from 178 mm(TL) to 937mm. All cod were collected from substantial snags, mainly log piles, indicating the importance of this type of structure to Murray cod.

b) Golden Perch This was the second most prolific species sampled (19 fish). The variation in size of these species indicate a fishery with a good spread of year classes this is a result of regular yearly stockings of this species.

c) European Carp For many years European carp only inhabited the Condamine River down stream of the Chinchilla Weir. Unfortunately a major flood event some 5 years ago allowed carp by pass the Chinchilla Weir and reach watera upstream. While carp were the third most prolific species sampled (18 fish), numbers in comparison to other parts of the Murray Darling Drainage Division appear toto have remained relatively low. Continued stocking with native predatory fish may help to control the carp population, although the interaction between European carp and native fish is not well understood. Killing all carp caught and including a carp section in the annual fishing competition, while having only a minor overall impact on the carp population, is still better than nothing. Interestingly no juvenile carp were collected, the smallest being 352mm(TL) this maybe a result of unfavourable breeding conditions in the past few years.

d) Freshwater Jew While only two freshwater jew were collected during this survey, anecdotal evidence from anglers and recent fishing competition results indicate that there are still a healthy freshwater jew in this part of the Condamine River. It is worth noting however that recent surveys in NSW and Victoria indicated freshwater jew to be in serious decline in these parts of the Murray Darling Drainage Division. It will be important to keep monitoring freshwater jew populations in this section of the system in order a identify whether a decline is apparent in this part of the Murray Darling.

e) Silver Perch In spite of the fact that this species is endemic and has also been stocked (46,400 fingerlings since 1989/90), no silver perch were collected during this survey. For some reason silver perch do not appear to thrive in the Condamine River. Surveys in NSW also indicate that silver perch are in serious decline.

f) Bony Bream Bony bream were the most prolific of all species caught. These fish play an important role in the fishery and are a valuable fodder species for both Murray cod and golden perch.

RECOMMENDATIONS

Barriers, siltation, de-snagging, removal of bank side vegetation, water extraction, and the arrival of European carp are some of the negative factors that have had an impact on our native angling species in this area. Obviously over the long term these need to be addressed. In the short term stocking serves to add angling species to a depleted population and help to maintain a viable fishery.

The Millmerran-Pittsworth Fish District Fish Stocking Association have done an excellent job in maintaining high stocking levels over a long period. Anecdotal evidence from anglers and recent fishing competition results indicate that this high level of stocking has significantly improved the quality of the fishery since stocking began some 11 years ago.

No major changes need to be made to the present stocking plan except in the case of silver perch. Work is presently being carried out to develop a recovery plan for this species. It is suggested that in the meantime silver perch stockings cease in the Murray Darling Drainage Division. An amendment should also be made to remove silver perch from the stocking plan (see Appendix 6). The Murray cod component should be increased from 5% to 10%, and the golden perch component from 75% to 90% when silver perch have been removed from the stocking plan.

Following on from the above, and within stocking permit parameters, it is recommended that stocking of Murray cod be increased over the next few years with stockings conducted each and every year. Follow up surveys will check to see if this results in an overall increase in the Murray cod population.

APPENDICES

1 Length and weight data Cecil Plains

Bony Bream

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
349	499	140	15
350	600	200	40
220	250	250	160
310	450	297	300
220	300	350	471
315	300	165	48
400	500	73	
310	324	146	40
320	323	75	
55		70	
55		60	
55			

	Length (mm)
Average	208
Min	55
Max	400

European carp

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
585	3049	695	5000+
670	4534	650	3891
610	3006	540	2292
560	2301	520	1195
470	1484	500	1775

	Length (mm)
Average	580
Min	470
Max	695

Goldfish

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
209	161	202	165
220	189	269	405
223	181	204	133
175	93	209	155
156	69		

	Length (mm)
Average	207
Min	156
Max	269

Golden perch

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
360	593	210	127
380		312	435
375		135	33
357	620		

	Length (mm)
Average	304
Min	135
Max	380

Rainbowfish

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
50		20	
45		30	

Spangled perch

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
145	44	156	51
103	17	135	99

Freshwater jew

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
245	111	410	633

2 Length and weight data Yarramalong Weir

Bony Bream

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
203	92	332	391
200	88	237	145
217	103	219	107
227	123	228	131
118	14	315	358
440	855	220	150
250	250	290	300
310	425	270	350
300	300	240	200
320	350	230	195
320	450	390	420
250	210	180	100
280	250	230	150
330	400	330	450
350	300	430	800
220	200	150	50

	Length (mm)
Average	269.5
Min	118
Max	440

European carp

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
524	1815	352	604
450	1270	388	630
589	2834	517	1640

	Length (mm)
Average	470
Min	352
Max	589

Golden perch

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
280		385	775
213	118	398	864
162	89	159	50

	Length (mm)
Average	266
Min	159
Max	398

Murray Cod

LENGTH (mm)	WEIGHT (g)	LENGTH (mm)	WEIGHT (g)
205	92	178	71
290	219	937	5000+
402	782		

3 Day and night electrofishing operations

Cecil Plains

Day operation

Species	Power on time (minutes)	Number	Fish/minute
Bony bream	36.1	59	1.63
Golden perch	36.1	4	0.11
Rainbow	36.1	6	0.16
European carp	36.1	9	0.2
Freshwater jew	36.1	1	0.02
Total	36.1	79	2.18

Night operation

Species	Power on time (minutes)	Number	Fish/minute
Bony Bream	30.4	20	0.65
European carp	30.4	1	0.03
Golden perch	30.4	4	0.13
Goldfish	30.4	9	0.29
Freshwater jew	30.4	1	0.03
Spangled perch	30.4	4	0.13
Total	30.4	39	1.28

Yarramalong

Day operation

Species	Power on time (minutes)	Number	Fish/minute
Bony bream	21.9	10	0.45
European carp	21.9	6	0.27
Golden perch	21.9	5	0.22
Murray Cod	21.9	5	0.22
Gudgeon	21.9	1	0.04
Goldfish	21.9	1	0.04
Total	21.9	28	1.27

Night operation

Species	Power on time (minutes)	Number	Fish/minute
Bony Bream	21.3	17	0.79
Goldfish	21.3	10	0.46
European carp	21.3	2	0.09
Golden perch	21.3	1	0.04
Total	21.3	30	1.4

4 Catch effort results: comparisons

Electrofishing results: comparisons with other impoundments

Impoundment	Date	Power on time (min)	Golden perch	Silver perch	Australian bass	Cod	Saratoga	Other	Total Stocked Species	Stocked Fish per min.
Yarramalong Weir	11/08/00	43.3	6	0	NP	5	NP	54	11	0.25
Cecil Plains Weir	10/8/00	66.5	8	0	NP	0	NP	110	8	0.12
Bjelke-Petersen Dam	10/12/99	123.4	12	0	9	NP	0	1239	12	0.16
Monduran Dam	18/11/99	59	0	0	1	NP	0	56	1	0.01
Dawson River	9/11/99	62.7	16	NP	NPP	-	8	453	16	0.26
Cania Dam	6/8/99	40.7	20	6	24	NP	4	28	54	1.32
Wuruma Dam	9/7/99	56.6	1	0	2	NP	0	1	4	0.07
Monduran Dam	17/5/99	60.28	0	0	0	NP	0	2.59	0	0
T Pukallus Weir	22/4/99	33.82	2	0	2	NP	NP	8	4	0.12
Connolly Dam	9/12/98	50.60	7	9	NP	0	NP	45	16	0.32
Leslie Dam	15/3/99	52.2	25	41	NP	4	NP	42	70	1.34
Leslie Dam	8/12/98	8.2	3	1	NP	0	NP	39	4	0.49
Lake Dyer	20/5/98	6.3	-	-	-	-	-	12	12	1.9
Cressbrook Dam	16/12/97	41.7	30	-	6	10	-	-	46	1.10
Cressbrook Dam	2/4/96	78.7	21	-	8	-	-	-	29	0.37
Cooby Dam	13/12/95	53.1	44	71	NP	4	NP	-	119	2.24
Baroon Pocket Dam	14/12/95	60.3	-	-	-	1	-	-	1	0.02
Cressbrook Dam	21/11/94	52.9	15	-	3	-	-	-	18	0.34
Hinze Dam	12/10/94	63.9	11	25	52	1	-	-	89	1.39
Leslie Dam	18/5/94	43.1	58	4	NP	1	NP	-	63	1.46
Cania Dam	18/4/94	35.2	3	16	4	NP	1	-	24	0.68

NP: Not present either as stocked species or naturally.

Panel net results: comparisons with other impoundments

Impoundment	Date	net hours	GP	SP	Bass	Cod	Sar	Total stocked species	Bony bream	Jew	Other	Total all species
Yarramalong Weir	11/8/00	11.75	5	0	NP	0	NP	5	44	0	0	6.2
Cecil Plains Weir	10/8/00	7.9	0	0	NP	0	NP	0	22	0	0	1.87
Dawson River	3/08/00	31	26	NP	NP	NP	0	0.83	49	2	1	2.51
Bjelke-Petersen Dam	10/12/99	2.25	1.33	0	2.22	NP	0	3.55	66.22	0.89	3.11	73.77
Monduran Dam	18/11/99	8.3	0	0	0	NP	0	0	115	0	31	9.5
Cania Dam	6/8/99	4.25	17	2	99	NP	2	28.2	NP	22	9	35.2
Wuruma Dam	9/7/99	10.35	2.42	0	1.64	NP	NP	4.06	NP	0.97	2.52	7.54
T Pukallus Weir	22/4/99	13.67	0.37	0	0	NP	NP	0.37	NP	0.29	0.51	1.17
Connolly Dam	9/12/98	11.25	1.87	0.44	NP	0	NP	2.31	NP	0.89	0	3.20
Leslie Dam	8/12/98	13.25	1.51	3.70	NP	-	NP	5.21	NP	0.91	0.08	6.20
Lake Dyer	20/5/98	3.75	0.53	1.33	-	-	-	5.61	-	16.53	8.80	30.94
Cressbrook Dam	2/4/96	8.2	0.2	0.1	9.3	-	-	9.6	-	2.6	4.4	16.6
Baroon Pocket Dam	14/12/95	9.75	-	-	2.15	-	-	2.15	-	-	15.08	17.23
Cressbrook Dam	21/11/94	11.75	-	-	0.25	-	-	0.25	-	0.85	17.45	18.6
Hinze Dam	12/10/94	7.7	-	1.83	8.76	-	-	10.6	-	-	-	10.6
Claude Wharton Weir	20/4/94	8.6	-	-	-	NP	0.12	0.12	29.2	-	5.1	34.5
Cania Dam	18/4/94	16.8	0.30	0.30	2.92	NP	0.18	3.69	NP	0.18	0.06	3.93
Cressbrook Dam	26/10/93	15.8	0.19	0.51	0.25	-	-	0.95	-	0.06	3.61	4.62
Bjelke Petersen Dam	19/10/93	8.5	0.4	0.6	-	NP	-	0.9	115.5	0.4	0.7	117.5
Yarramalong Weir	20/7/93	6.2	0.8	-	NP	-	NP	0.8	18.1	-	-	18.9
Cooby Dam	21/7/93	10.8	2.5	0.1	NP	-	NP	2.6	NP	3	-	2.9
Lenthalls Dam	22/2/93	12.7	0	0.6	NP	NP	0	0.6	17.9	0	0.47	18.82

5 Stocking data-1989/90 to 1999/00

Cecil Plains

Season	Golden perch	Silver perch	Murray Cod	Total	Fingerlings/hectare
1989/90	16,500 0	0 0	0 0	16500 0	366
1990/91	24,000 0	0 0	0 0	24000	533
1991/92	16,500 0	0 0	500 0	17000 0	377
1992/93	15,000 5,000	0 0	500 800	15500 5800	473
1993/94	0 6,060	12,000 0	0 0	12000 6060	401
1994/95	0 0	0 0	0 0	0 0	0
1995/96	3,200 8,510	0 0	900 0	4100 8510	280
1996/97	0 0	4,200 0	0 0	4200 0	93
1997/98	20,000 12,000	0 0	2,000 0	22000 12000	755
1998/99	20,000 0	0 0	4,000 0	24000 0	533
1999/00	0 41,665	0 0	0 0	0 41665	925
Grand total	188,435	16,200	12,900	213335	
Annual average	17,130	1,472	1,173	19394	430
Average stocking rate	380	33	26	430	
3 year totals	93665	0	6000	99665	
3 year annual average	31221	0	2000	33221	738
3 year average stocking rate (fingerlings/ha/year at FSL)	694	0	44	738	

FSL:

Full Supply Level 45 ha

Top line:

Stocking funded by Millmerran-Pittsworth District Fish Stocking Association

Bottom line:

Stocking funded by Queensland Government Recreational Fishing Enhancement Program

Yarramalong

Season	Golden perch	Silver perch	Murray Cod	Total	Fingerlings/hectare
1989/90	6,500 0	0 0	0 0	6,500 0	250
1990/91	16,000 0	6,000 0	500	22,500	865
1991/92	15,000 0	2,000 0	500 0	17,500 0	673
1992/93	12,000 4,000	0 0	500 800	12,500 4,800	665
1993/94	0 0	0 0	0 0	0 0	0
1994/95	0 14,000	0 22,222	0 0	0 36,222	1,393
1995/96	18,400 0	0 0	100 0	18,500 0	711
1996/97	10,000 20,000	0 0	400	10,400 20,000	1,169
1997/98	0 12,000	0 0	1900 0	1,900 12,000	534
1998/99	12,000 12,500	0 0	1000 0	13,000 12,500	980
1999/00	0 19,050	0 0	0 0	0 19,050	732
Grand total	171,450	30,222	5,700	207,372	
Annual average	15586	2747	518	18852	725
Average stocking rate	599	105	20	725	
3 year totals	55,550	0	2,900	58,450	
3 year annual average	18,516	0	966	19,482	749
3 year average stocking rate (fingerlings/ha/year at FSL)	712	0	37	749	

FSL: Full Supply Level 26 ha

Top line: Stocking funded by Millmerran-Pittsworth District Fish Stocking Association

Bottom line: Stocking funded by Queensland Government Recreational Fishing Enhancement Program

6 Stocking Plan

PREAMBLE

The purpose of this plan is to set maximum stocking levels within the parameters of the limited data we have available at this time based on creel survey data. This data suggests that maximum stocking levels are about 500 fingerlings per hectare or between 100 to 200 fingerlings per hectare per year. For the purpose of this recommendation the maximum stocking level is based on 200 fingerlings per hectare per year.

(1) Estimated Surface Area To Be Stocked

The stocking group stock the Condamine river from approximately AMTD 840km to AMTD 1060km. There are 4 impoundments in this section, ie Talgai, Yarramalong, Lemon Tree, and Cecil Plains weirs.

Estimated Surface Area

Condamine River. 220 km x 15 m (x2 for tributaries)	=	660 Ha
Talgai Weir	=	28 Ha
Yarramalong	=	26 Ha
Cecil Plains(Tipton)	=	34 Ha
Lemon Tree	=	18 Ha
<hr/> Total		<hr/> 766 Ha

(3) Fingerling Numbers

At a recommended stocking level of 200 fingerlings per hectare per year the estimated maximum stocking level is approximately 153,000 fingerlings per hectare per year or 765,000 fingerlings over a 5 year period.

(2) Species Composition

As an approximate guide it is recommended that the group stock at a ratio of 75% golden perch, 20% silver perch and 5% cod. These ratios could be readjusted as the returns from these stockings become clear.

(4) Permit to Stock

A permit is required to stock. Applications should be made through the QFMA. It is recommend that your group apply for a 5 year permit based on the maximum permissible number of 765,000 fingerlings over the next 5 years (see table attached).

Signed Stocking Group Representative...../...../96.

Signed DPIFF Representative...../...../96.

Table 1. Maximum Permissible Stocking Levels

Species	96/97	97/98	98/99	99/2000	00/01
GP	114,750	114,750	114,750	114,750	114,750
SP	30,600	30,600	30,600	30,600	30,600
Cod	7,650	7,650	7,650	7,650	7,650
Total	153,000	153,000	153,000	153,000	153,000

- *Where possible each species should be stocked each year to prevent gaps in year classes.*
- *Shortfalls one year can be made up the following year.*
- *Species composition in stockings is a guide only. It is acknowledged that species composition will depend to some extent on the availability from commercial hatcheries. Historically species availability fluctuates considerably from season to season.*
- *Species composition may need to be adjusted two or three years down the line when productivity trends become clearer.*

MANAGEMENT GROUP DETAILS

Group Title: Millmerran and Pittsworth District Fish Stocking Assn Inc.
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