



Carp Management Program

Annual Report

Lakes Crescent and Sorell

July 2004 - June 2005

The Program Objective:

“To eradicate carp from Tasmanian waters and in the meantime, to minimise the impact of carp on Tasmania from economic, recreational and ecological points of view”.

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For further information contact:

Inland Fisheries Service
PO Box 288
Moonah Tas 7009
Telephone: (03) 6233 4140
Facsimile: (03) 6233 4141
Email: infish@ifs.tas.gov.au

Find further information about Inland Fisheries Service (IFS) on the internet site <http://www.ifs.tas.gov.au>

This document is an annual report detailing carp management activities for the financial year July 2004 – June 2005 inclusive, as part of the Lakes Sorell and Crescent Carp Management Program.

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Executive Summary

A significant achievement has been the reduction of the carp population in Lake Crescent to a level that allowed the reopening of the lake to the public for the first time in a decade. A thorough risk assessment was undertaken using the collected data to enable this decision to be made.

During the past spawning season there were no mature female carp captured from Lake Crescent. Lake Sorell yielded only one mature female. Subsequent in-lake surveys have not located any new recruitment.

Bio-telemetry still plays a key role for the program. Carp movements have been followed now for eight years and a good understanding of the fish in the lake Crescent/Sorell environment now exists. This has enabled planning to focus effort and successfully target specific areas.

A major success has been the wire barriers and traps that were constructed and placed prior to spring. These have prevented carp entering prime spawning areas. The traps accounted for a large percentage of carp captured this past year. Due to the success of this method the program has purchased two kilometres of a purpose built barrier net that will be deployed in Lake Sorell in an attempt to take advantage of carp migrations and capture them in the process.

A survey downstream of the Lake Crescent screens was conducted in autumn of the Clyde River, off stream storages and Lake Meadowbank. This was the tenth year that this survey had been conducted and it appears that there is no breeding population of carp downstream of Lake Crescent.

The State Government funded Lake Sorell Outlet Duplication has been completed. This should minimise the risk from high water level management and continue to isolate the carp populations in each lake. It will also allow staff to work safely at this site.

The time, effort and commitment from staff cannot be underestimated. This has been the cornerstone of the program and continues the focus for the ultimate goal of total eradication.

The following report details work undertaken by the Carp Management Program (CMP) for the financial year of 2004-05.

Carp captures and Fishdown effort

Lake Crescent

Fishdown effort in Lake Crescent has revolved around removing as many carp out of the system as possible with the aim of catching the last female. It is known that the numbers of carp in the lake are extremely low. As the male carp mature at a faster rate than females they are caught out earlier. At the current rate of recapture of fish in the population estimate it should not be long before there are only male tracker fish and any remaining females to target.

In order to quantify the number of untagged carp remaining a conclusive population estimate was initiated in March 2004 (Carp Management Report 1995 – June 2004). Of the 161 double-tagged male carp released as part of this conclusive population estimate, 94 have been recaptured this financial year (bringing the total of these fish recaptured to 100). Twenty-four other fish were captured in this time, all of which were male, reinforcing our beliefs that the number of mature female fish is extremely low.

Population estimates derived from the data collected over the past year suggest that the number of mature females number less than ten, and could in fact be as low as zero. However females from the small cohort recruited into the population in 2000 will begin to mature this coming year. Estimates on the size of this cohort are based on CPUE data and conservative estimates suggest the number to be 130 in total, of which >55 have already been caught.

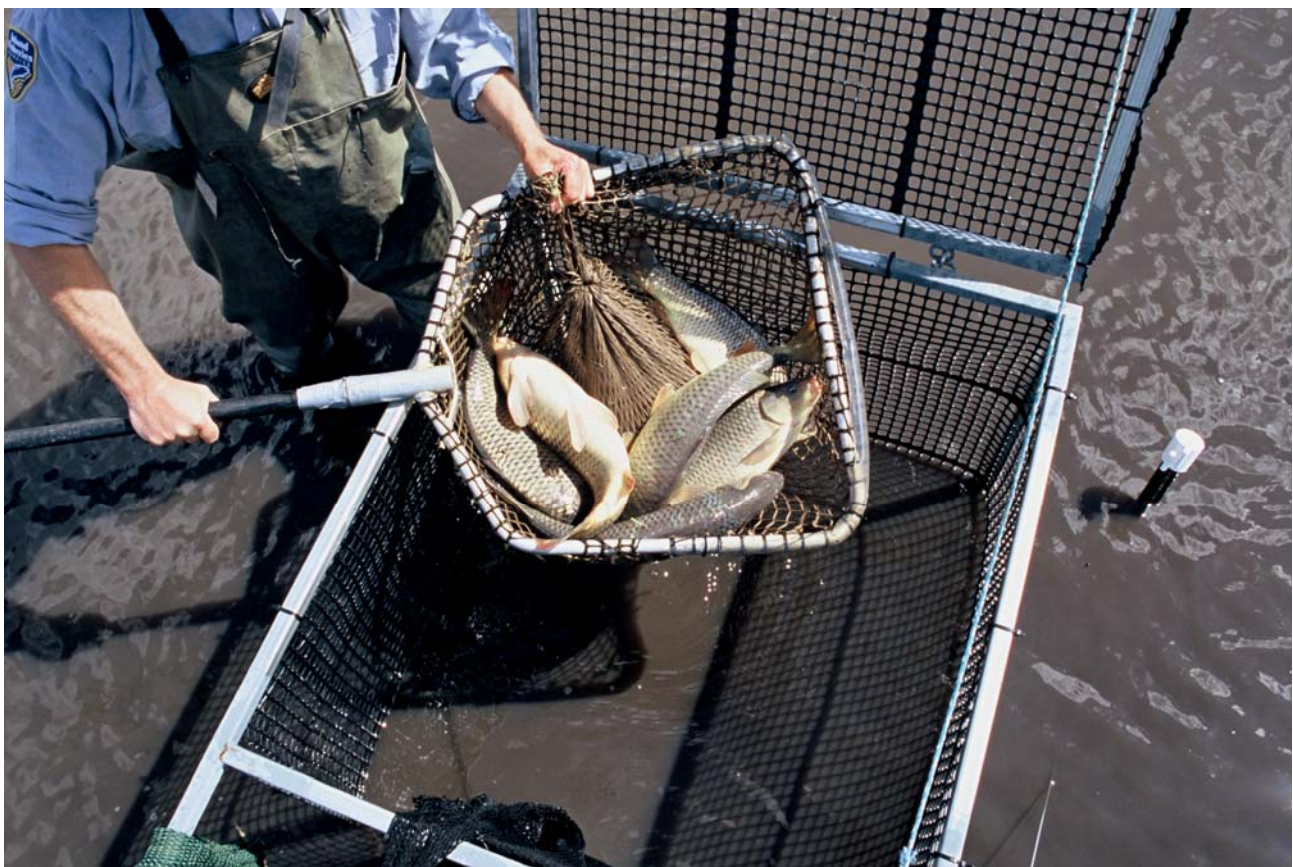
As expected the majority of fish caught this year were taken in the peak spawning period of October to January. Of the 115 carp caught for the year, 87 were taken in this period. Interestingly 72% of these fish were caught in our fish traps (Picture one and Picture two). Traps capture carp attempting to push into the marsh areas, preferred for spawning (Figure one). These traps have proven to be a major asset to the carp management program. Fish are not only prevented from accessing spawning habitat, but CMP staff have more time to concentrate on active fishdown efforts in Lake Sorell as less time is spent chasing Crescent fish in marsh areas. Table one details the fishing effort for the financial year showing effort type, carp and bycatch numbers taken. Note all bycatch was released unharmed where possible. In addition figure two shows the monthly carp captures in Lake Crescent since the inception of the carp program.



Figure one: Lake Crescent carp captures by method (October 2004 – January 2005)



Picture one: View of a fish trap and its associated fence that prevents carp accessing the preferred spawning marsh in the background.



Picture Two: Top view of fish trap showing fish captured overnight as they tried to push into preferred spawning marsh.

Month	Effort Type	Total Net Length (m)	Number of nets	Shock/Soak Time (Hrs)	Carp	Brown trout	Rainbow trout	Platypus	Eels	Ducks
July	6" gillnet	300	4	1	1					
	Back Pack			1.67						
	Electro Boat			1	8					
August	5" gillnet	1160	10	6.58	4	16				
	6" gillnet	250	3	1.83	1	7				
	Back Pack			3.17	2	1				
September	5" gillnet	1800	11	6.83	3	39	25			
	6" gillnet	500	1	2.08	1	26	2			
	Back Pack			1.58	0		7		2	
	Electro Boat			1.08	0					
	Found Dead				1					
October	5" gillnet	800	6	4.17	6		3			
	6" gillnet	250	5	2.17	1					
	Back Pack	50	1	2.83	3					
	Traps				26				1	
	Fyke Net		58	96	2	61	317		92	1
November	5" gillnet	2530	26	11.33	8	17	3			
	6" gillnet	100	1	0.75						
	Back Pack		2	5.75	2	2				
	Electro Boat			0.67		4				
	Traps				31				4	
	Fyke Net		58	96		32	47		26	
December	5" gillnet	2930	16	12.33	2					
	6" gillnet	400	5	4.17						
	Back Pack		8	5.67					23	
	Traps				6					
January	Fyke Net		58	96		55	124	2	58	
	5" gillnet	700	4	2.5		3				
	Back Pack		3	1						
	Traps									
February	Fyke Net		58	96		22	1	1	3	2
	Fyke Net		58	96	2	18	8		34	
April	5" gillnet	510	2	4.08	5	120				
May	6" gillnet	10	1	0.25						

Table one: Fishdown effort per month in Lake Crescent showing carp and bycatch species caught.

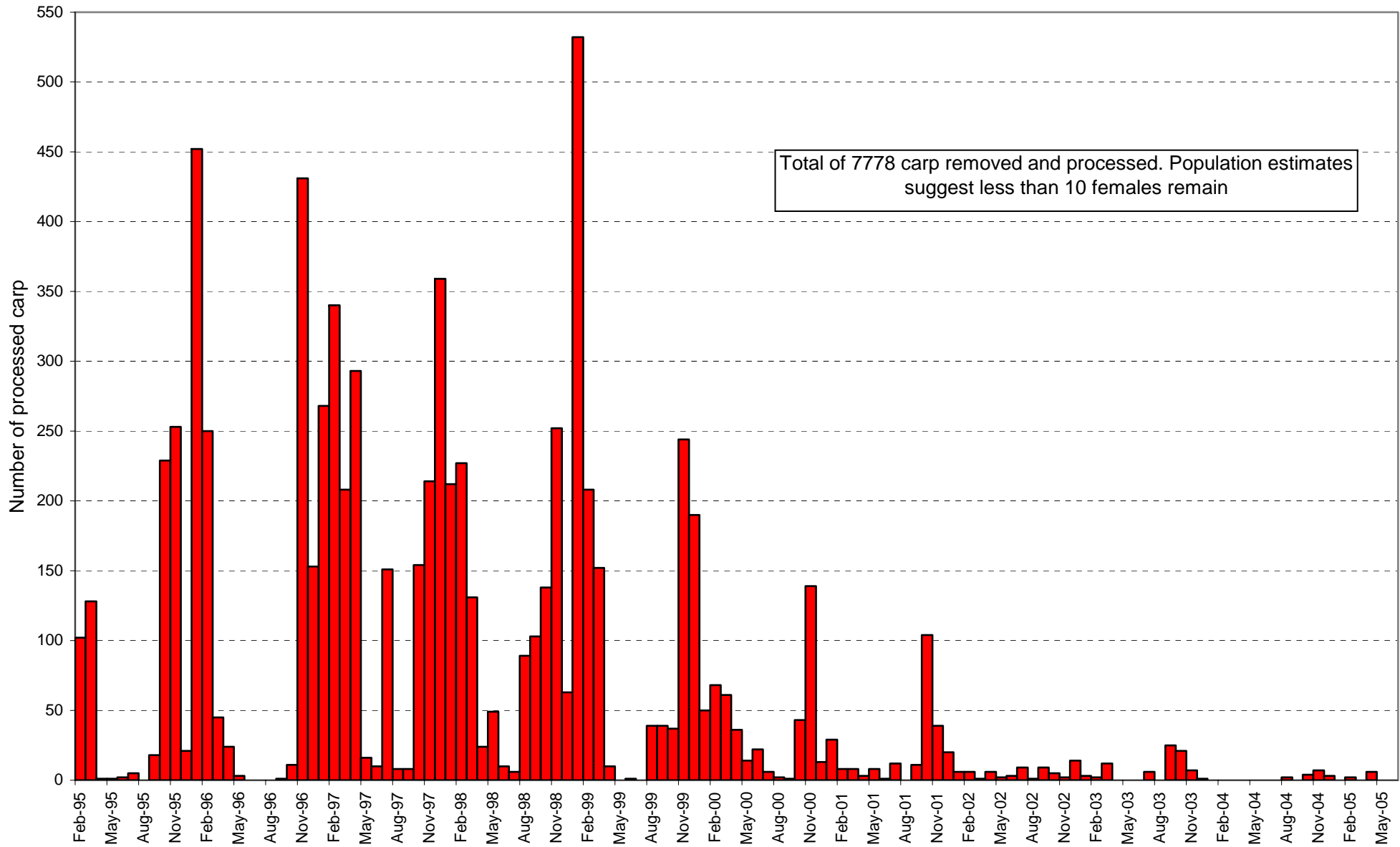


Figure Two: Monthly carp removals from Lake Crescent February 1995 - June 2005.

Lake Sorell

The presence of cohorts from 2000 and 2003 in the population makes the fishdown effort in Lake Sorell more complex and labour intensive than in Lake Crescent. CMP staff are required to set additional net mesh sizes around each aggregation in order to ensure they effectively fish for each cohort of carp present. Fish traps were also used extensively and proved highly effective at catching both adult fish and 2003 cohort sub-adults.

Sixty-nine carp were captured for the year and one other fish was found dead. Of these sixty-nine fish, only one running female was captured. This fish is thought to be the first of the 2000 cohort females to mature. This coming year will see more of the 2000 cohort females mature, however the majority are not expected to become reproductively active until the following season of 2006-2007.

Table two details effort employed. The number of carp captured and bycatch species recorded on a monthly basis over the past year. In addition figure four shows the monthly carp captures in Lake Sorell since the inception of the carp program. All but three of the carp captured for the year were taken during November 2004 – January 2005 period. Figure two details the carp captures by method showing the relative success of each.

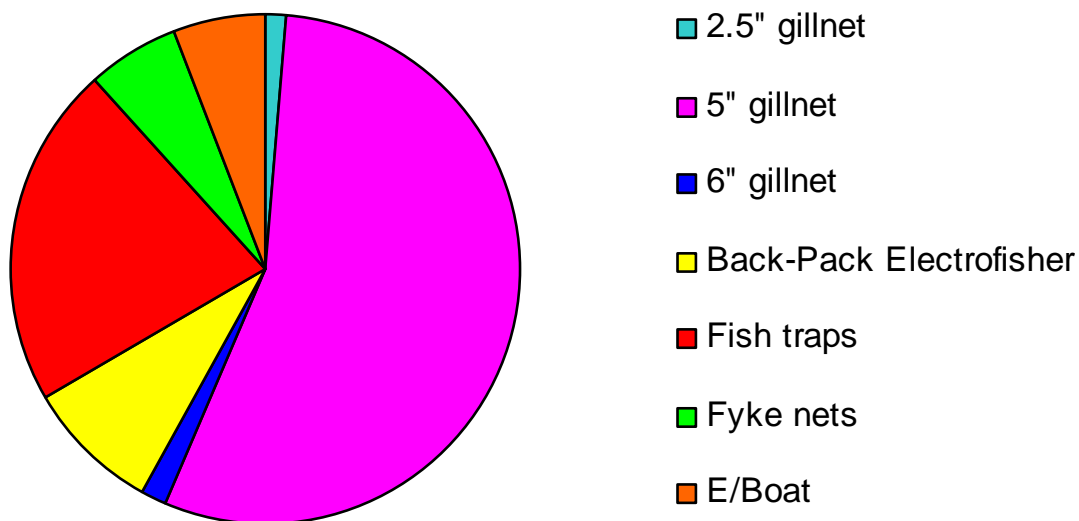


Figure three: Lake Sorell carp captures for the financial year 2004/2005.

Month	Effort Type	Total Net Length (m)	Number of nets	Shock/Soak Time (Hrs)	Carp	Brown trout	Rainbow trout	Platypus	Eels	Ducks
August	5" gillnet	500	1	0.83	1	8				
	Electro Boat			0.42	1	1				
September	5" gillnet	100	1	0.5						
	Back Pack			0.17						
	Double Fyke Net		6	96		54			3	
	Single Fyke Net		50	96		161	3	2	39	
	Traps								3	
October	5" gillnet	750	4	1.67		5	1	1		
	Back Pack			0.42						
	Double Fyke Net		6	96		7			1	
	Single Fyke Net		50	96		34			10	
	Traps				1	5	3		29	1
November	5" gillnet	4250	18	16.1	3	23	1			
	6" gillnet	1875	7	5.83	1					
	Back Pack		4	4.25		1			1	
	Electro boat			3.58	1			1		
	Fyke Net		60	96		112	11		81	5
	Traps					15			26	
	Found Dead				1					
December	2.5" gillnet	1650	24	6.75		5				
	5" gillnet	3250	22	10.75	34	17				
	6" gillnet	100	1	0.58						
	Back Pack		4	8.58	6	1			6	
	Electro boat			1.41	2	1				
	Fyke Net			96	2				83	
	Traps				12	8			4	3
January	2.5" gillnet	750	10	4.33	1	6			5	
	5" gillnet	675	4	3.58		4				
	Back Pack		7	1.75						
	Electro boat			0.42						
	Fyke Net		60	96	1	48		1	16	
	Traps				2					
February	Fyke Net		60	96	1	79	3		30	
	Traps									

Table two: Fishdown effort per month in Lake Sorell showing carp and bycatch species caught.

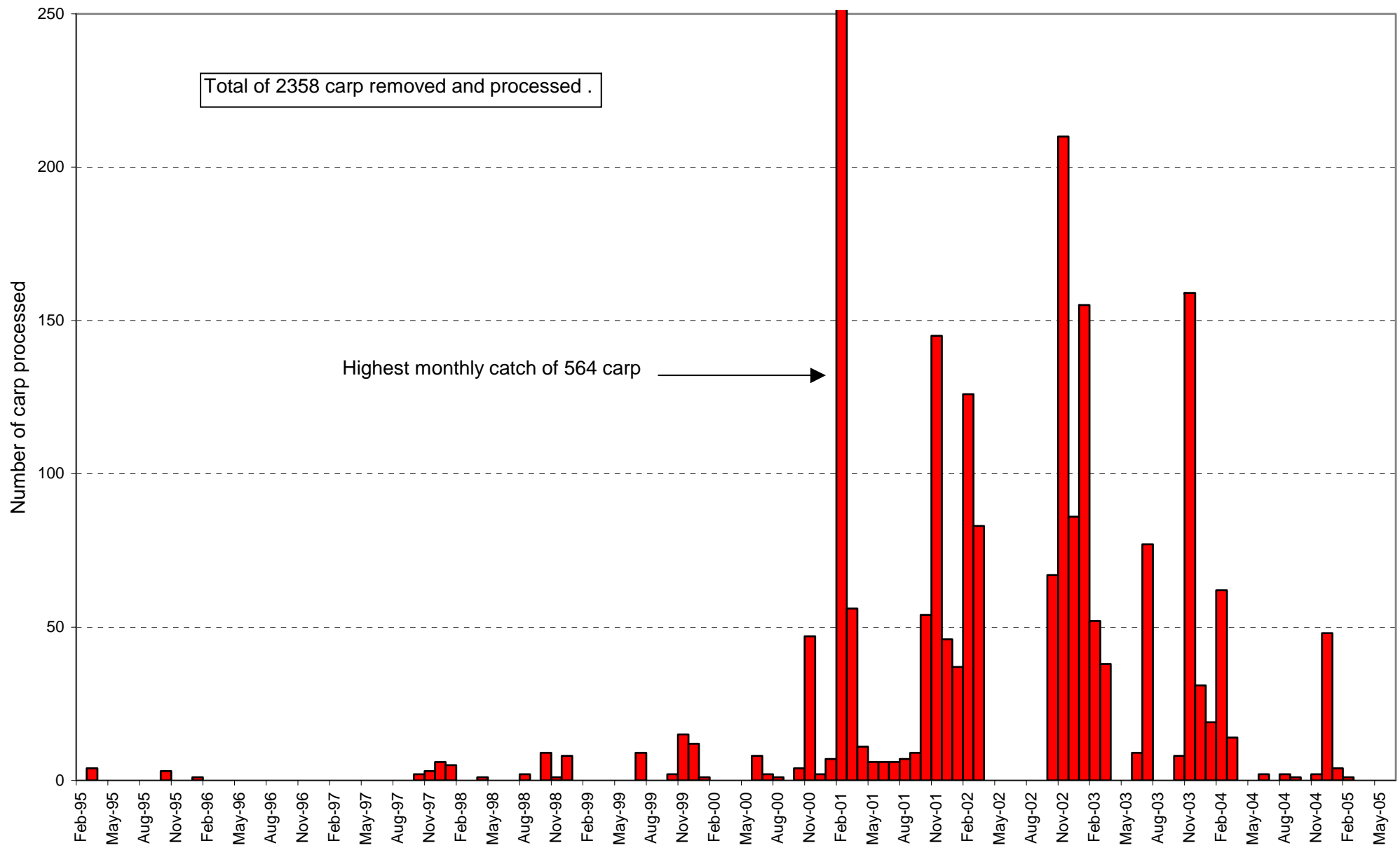


Figure Four: Monthly carp captures from Lake Sorell February 1995 - June 2005.

Cohorts

Lake Crescent

No new cohorts have been found since the 2000 cohort was discovered in 2001. The 15 untagged fish captured during 2004/2005 fit well within the length-frequency bell curve for the 2000 cohort. The largest fish, a male at 424mm-fork length could possibly be from the 1996 cohort and possibly a tag loss. The rate of total tag loss for double tagged fish is estimated to be approximately 5% per annum. A release of 161 tagged carp in March 2004 has provided a Petersen population estimate of between 15 and 25 females left (2000 cohort) in the lake and <10 older females.

Lake Sorell

There was no evidence of recruitment from the last spawning season. The latest cohort which was spawned in the spring of 2003 is small in number and CPUE based estimates indicate less than 100 fish after 55 were captured in 2004/05.

There are now predominantly two cohorts left in Lake Sorell as indicated by the length-frequency graphs shown in figure five.

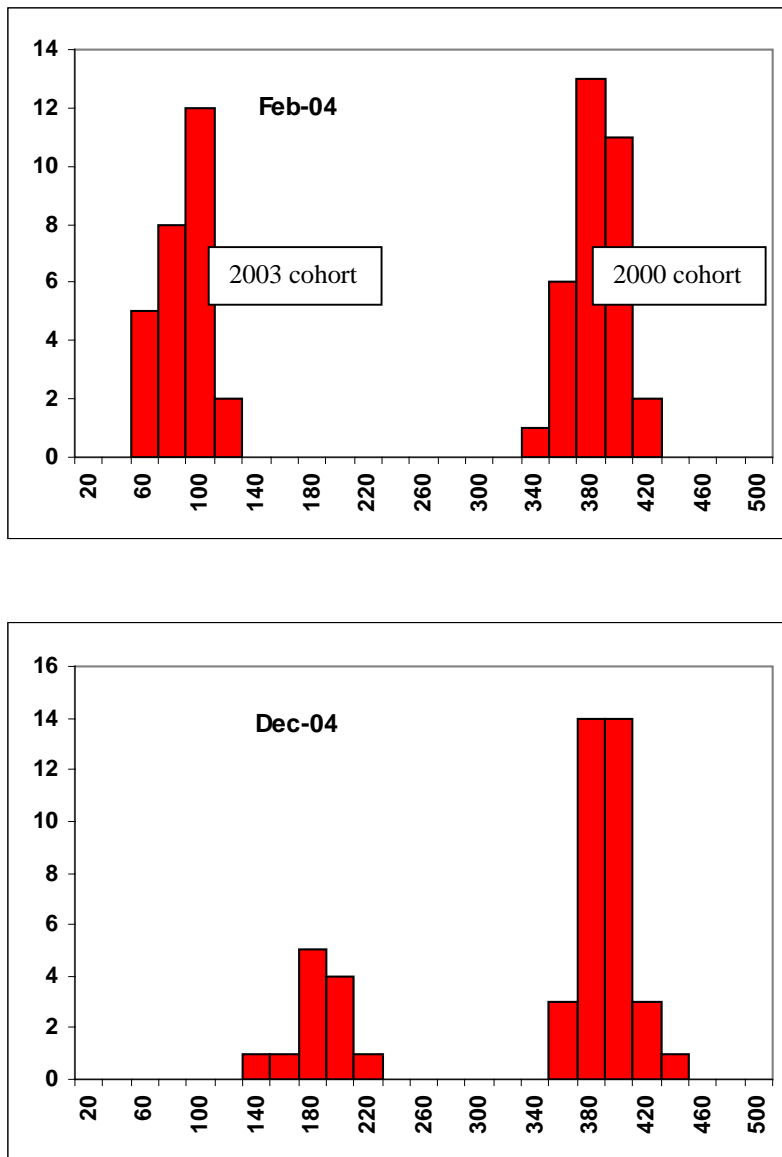


Figure five: Length frequency plots of carp captured from Lake Sorell during February and December 2004, showing the two dominant cohorts and the size ranges of each.

Fyke Netting Surveys

Week-long fyke netting surveys were conducted in both lakes Sorell and Crescent throughout the spring and summer of 2004-2005. These surveys are not only a method of carp fish-down, but more importantly they serve as an early detection method of juvenile carp recruited from the previous spawning season.

Nets are typically deployed on a Monday morning and retrieved on a Friday morning. This gives approximately 96 hours of continuous fishing. The nets are set in teams of between two and five, depending on water depth, substrate and weather conditions (Picture three). A total of five surveys were conducted in Lake Crescent during 2004 - 2005. These were conducted on a monthly basis between October 2004 and February 2005 inclusive. Five surveys were conducted in Lake Sorell, with monthly fyke netting conducted between September 2004 and November 2004 inclusive and January and February 2005 inclusive. A localised intensive survey was conducted in December 2004 at the southern end of Silver Plains shore in Lake Sorell.

Lake Crescent

The Lake Crescent fyke netting surveys consist of 58 single fyke nets, placed in sets of three or four at 16 locations around the lakeshore. The five surveys conducted in Lake Crescent resulted in the capture of 4 carp, 181 brown trout, 4 juvenile brown trout, 329 rainbow trout, 164 juvenile rainbow trout, 213 eels, 3 platypus and 3 ducks. Table three shows the five-fyke netting surveys and the fish/bycatch captured. All bycatch was released from the nets unharmed.

Month	Carp	Brown Trout	Juvenile Brown Trout	Rainbow Trout	Juvenile Rainbow Trout	Platypus	Ducks	Eels
October	2	61	0	235	82	0	1	92
November	0	27	2	28	15	0	0	26
December	0	55	0	60	64	2	0	58
January	0	22	0	1	0	1	2	3
February	2	16	2	5	3	0	0	34

Table three: Carp numbers and bycatch details from the five fyke netting surveys conducted in Lake Crescent during 2004 – 2005 financial year.

The four carp captured during these fyke-netting surveys consisted only of male fish. Three of the four were tagged, while the fourth was an untagged male of 1288g, which is consistent in size with a 2000 cohort fish. These surveys reinforced the carp management programs belief that no recruitment had taken place in the previous spawning season.

Lake Sorell

The Lake Sorell fyke-netting surveys conducted during September and October consisted of 50 single fyke nets and 6 double winged fyke nets set in teams at 16 locations around the shoreline. These two surveys showed that the double winged fyke nets had poor catch rates in comparison to the single fyke nets and their use was therefore discontinued. The remaining three fyke-netting surveys consisted of 60 single fyke nets set in teams of two to five at 16 locations around the shoreline.

The five monthly surveys conducted resulted in the capture of 2 carp, 407 brown trout, 88 juvenile brown trout, 2 rainbow trout, 15 juvenile rainbow trout, 3 platypus, 180 eels and 9 ducks. Table

four shows the five-fyke netting surveys and the fish/bycatch captured. All bycatch was released from the nets unharmed.

Month	Carp	Brown Trout	Juvenile Brown Trout	Rainbow Trout	Juvenile Rainbow Trout	Platypus	Ducks	Eels
September	0	178	37	2	1	2	0	42
October	0	38	3	0	0	0	0	11
November	0	89	23	0	11	0	5	81
January	1	44	4	0	0	1	0	16
February	1	58	21	0	3	0	0	30

Table Four: Carp numbers and bycatch details from the six fyke netting surveys conducted in Lake Sorell during 2004 – 2005 financial year.

In addition to the five monthly fyke-netting surveys conducted between September and February an intensive fyke survey was conducted at the southern end of Silver Plains shore during December. This survey consisted of 12 single fyke nets set on the 9th December and removed on the 16th December. This survey replaced the monthly fyke netting survey planned for December as a small 2003 cohort fish had been caught during routine fishdown efforts on the 8th December at this location. This eight day survey resulted in the capture of 2 carp (both 2003 cohort) and 83 eels.



Picture three: Fyke nets placed in a multiple set, with wings overlapping with previous net to form one continuous barrier containing several traps

Downstream Survey 2005

The annual fish survey of the Clyde catchment downstream of the Crescent screens yielded no evidence of European carp. The survey was carried out between February and April 2005 and employed the use of backpack shockers, fyke-nets and the electroboat and resulted in the capture of over 500 native and introduced fish. The results of the survey are shown in the table five below:

Date	Personnel	Method	No. Nets/ FN	Effort (HRS)	Location	No. of Carp	Other
22/02/2005	PD RW	FN	19	24	Edgells Old Dam	0	1 eels, 14 redfin
22/02/2005	PD RC	EB		1.5	Edgells Old Dam	0	3 redfin
22/02/2005	PD RC	BP		0.25	Edgells Old Dam	0	2 redfin
25/02/2005	CW RC	BP		2HRS	Hazelwoods Lagoon to Dennistoun Road Bridge	0	60 brown trout 100 eels
28/02/2005	RW PD	BP		1.8333	Blacksnake Lane (2km downstream to bridge on lane)	0	16 eels, 7 brown trout
1/03/2005	CW RC	BP		2.25	Meadsfield	0	28 eels, 23 redfin, 3 brown trout
1/03/2005	CW RC	BP		1	Above Bothwell bridge at Ratho	0	12 brown trout, 12 eels, 3 redfin
1/03/2005	RW PD	EB		1.58	Bowdens Dam	0	62 brown trout, 16 juvenile trout, 3 tench
1/03/2005	RW PD	FN	20	24	Bowdens Dam	0	19 brown trout, 1 eel, 1 golden galaxia, 16 tench
2/03/2005	RW CW	BP		2	Clyde Walk at Hamilton	0	67 brown trout, 24 tench (plus large number of fry), 57 redfin, 47 eels
2/03/2005	RW CW	BP		1	Behind Hamilton Football Oval/Showgrounds	0	28 brown trout, 6 eels, 49 redfin, 1 tench
2/03/2005	PD RC	BP		1.5	Clyde at Bothwell Football Ground	0	9 brown trout, 12 eels
2/03/2005	PD RC	BP		2	Clyde river at Nant	0	53 redfin, 14 brown trout, 4 eels
7/04/2005	CW PD	EB		2.5	Lake Meadowbank	0	42 brown trout, 16 blackfish, 31 redfin, 18 tench, 3 Eels
8/04/2005	CW PD	SFN	30	24	Lake Meadowbank	0	20 tench, redfin, 7 eels

Table five: Sites visited, fishing effort deployed and fish captures made during the annual survey downstream of the Lake Crescent screens in the Clyde River, its off stream storage's and Lake Meadowbank.

Barrier Net

From the information that has been collected it is clear that Duck Day is the preferred spawning site in Lake Sorell. A wire mesh exclusion fence was constructed and has been maintained across the front of this marsh since 2001. This has been successful in preventing any spawning at the site since this time but has pushed the spawning carp to other locations. In the past two spawning seasons considerable effort has been put into fencing and placing traps to prevent access to numerous spawning sites around the lake. This has also been successful but further initiatives are needed to try and catch the remaining carp before they spawn.

Data collected from radio tracking over the past eight years has shown that there are clear movements of carp from the eastern to western side of Lake Sorell at different times of the year. All of the radio-transmitter carp do it. A topographic examination of the lake shows that for the fish to pass from either side of the lake they need to pass through the isthmus between St Georges Island and the mainland (750 metres) or between the Island and Murdochs Point (1.5km) through the Blowfly. This area is quite defined and becomes more so as the lake level drops. There are distinct channels through each of the areas.

For some time thought has been given to how this movement could be best exploited. Discussions with a local net manufacturer have been held and a plan devised to run barrier nets across both of these areas of the lake, effectively cutting Lake Sorell into two distinct sections. It is intended to place traps adjacent to these barriers to capture the carp as they attempt to travel through these areas in a similar manner to the work that has already been undertaken to block off the marshes.

The barrier net has been purchased (Picture four). It will be deployed as water levels rise in late winter to replace the wire barrier across the front of Duck Bay and will also be placed in the areas previously mentioned either side of St Georges Island.



Picture four: Two of the 250metre sections of barrier net transported to Lake Crescent Field Station for deployment in Lake Sorell

Capital Works:

Lake Sorell Outlet Duplication

This State Government CIP funded project was due to commence in August 2004 but rough weather and rising lake levels delayed the start. The work was postponed until March 2005 and was completed by June 2005 (Picture five).

Motivation

Due to active management the carp population dynamics had changed between lakes Crescent and Sorell. Previously carp numbers were greater in Lake Crescent but through concentrated effort they are now lower than in Lake Sorell. Lake Sorell is situated upstream from Lake Crescent.

In 2001 a new cohort of juvenile carp was discovered in Lake Sorell. In an effort to stop these fish infiltrating the small population known to exist in Lake Crescent 5mm horizontal screens were fitted inside the Lake Sorell Outlet Structure.

The 5mm horizontal screens have been successful in isolating the lakes Sorell and Crescent carp populations from each other.

The separation of these populations is very important strategically if carp are to be totally eradicated from these waters.

Problems

With the 5mm internal screens fitted the existing structure was too small and restricted water management versatility. Therefore this has the potential to compromise the management of carp in the lakes during times when large releases are required.

Proposal

It was proposed that the outlet structure at Lake Sorell should be duplicated. Sited on the eastern side of the present structure no major earthworks were required to the Interlaken Canal as it will be aligned with the works undertaken in 1996. The project will enable the flow of water between the lakes to be screened to 5mm and provide flows similar to the current structure without screens.

The canal is rated to handle 700 megalitres per day and did not require any further works.

The design criteria was as follows:-

- remove original outlet structure
- duplicate new outlet structure with a further 2 bays @ 1.6 metre wide
- duplicate structure to be fitted internally with 5mm horizontal screens
- the duplicated outlet would satisfy the following requirements:-
 - (i) the maximum combined flow, through 5mm screens, of the new outlet and its duplication being 640 megalitres per day
 - (ii) ability to discharge over 400 megalitres of 5mm screened water per day when both lakes are at full supply and in times of flood

The proposal also included a 20mm-inclined screen that would extend across the front of the completed structure to stop large debris and other items entering the internal 5mm screen (Picture five). This screen has a walkway and handrail along the top to enable safe access for cleaning that previously did not exist.

The works will allow increased outflows to be achieved from Lake Sorell resulting in better water level management. This will ensure that the demands for water downstream for both domestic and irrigation purposes are achieved without compromising the aims of carp containment and potential eradication.



Picture five: Completed Lake Sorell outlet screen duplication. This structure ensures all water released from Lake Sorell in passed through mesh screens to prevent carp being transferred between lakes.

Lake Yields and Deficits

The Lake Crescent field station received 463.6 millimetres of rain for the financial year 2004/05. This is just over half the long-term average rainfall expected for the Interlaken area. Table six details this rainfall on a monthly basis and also shows the water released from both lakes. The Lake Sorell figures show the water released from Lake Sorell into Lake Crescent and the Lake Crescent figures show water released into the Clyde River for irrigation and domestic purposes.

The CMP released the majority of allocated water from Lake Sorell over the peak carp-spawning period of October – January. This was done in an attempt to simulate a rise in the Lake Crescent water level or at least offset the water released down the Clyde River. This water release resulted in water rising from the edge of the marshes back into prime spawning habitat in October and November. This enabled four of our six carp traps to be opened and these caught 72% of the carp caught for the year. Figure six shows the combined lake level and deficits plot, with lake-levels since 1997.

Combined lake yields and deficits, with lake levels, 1997 to present

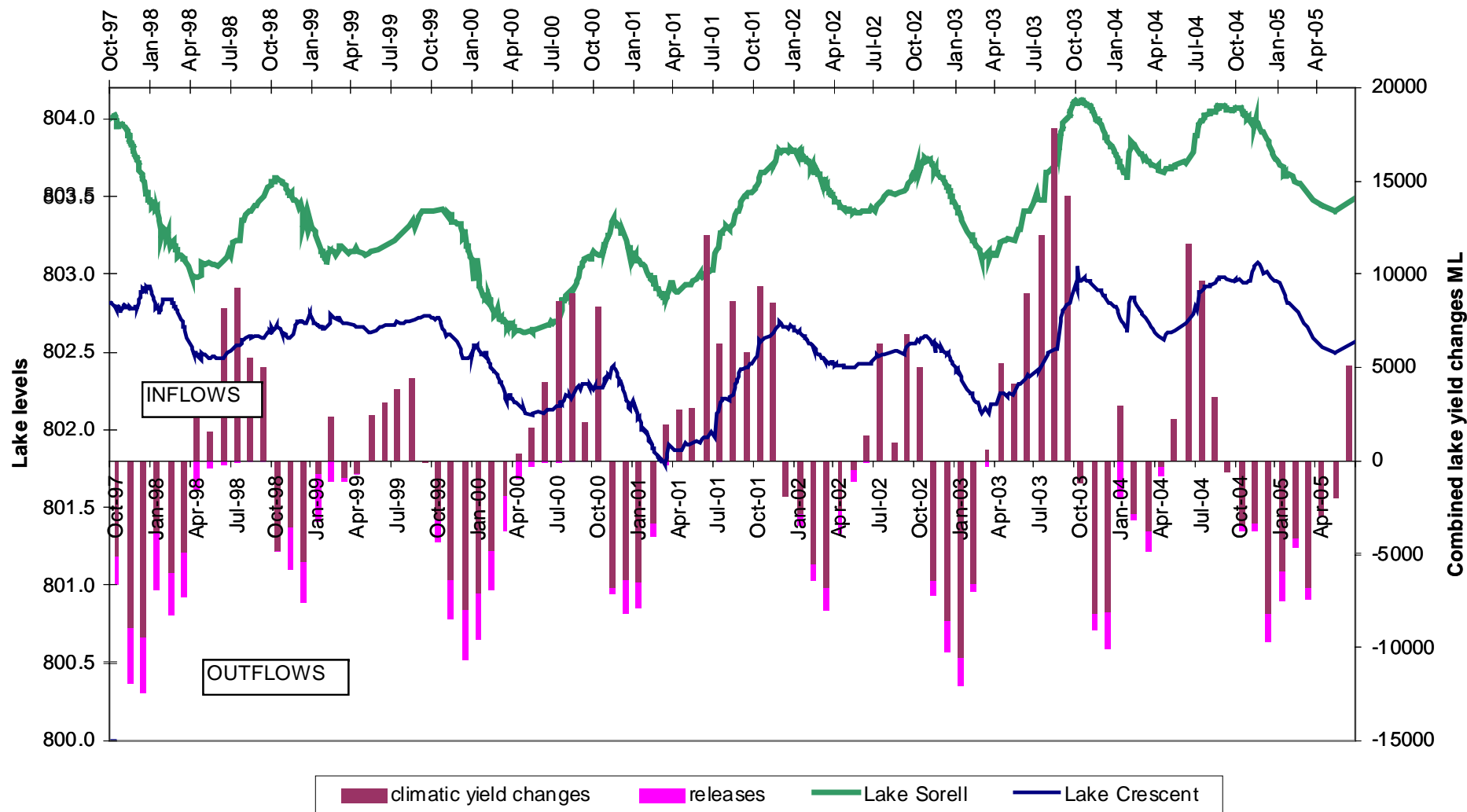


Figure six: Combined lake yields and deficit, with lake levels since 1997.

Month	Rainfall (mm)	Lake Sorell release (ML)	Lake Crescent release(ML)
July 04	84.0	0	0
August 04	34.5	0	0
September 04	21.1	0	0
October 04	41.0	1413.51	348
November 04	43.7	2472.59	424
December 04	26.0	2524.47	1480
January 05	40.5	405.46	1589
February 05	42.5	0	547
March 05	9.3	0	612
April 05	33.5	0	17.8
May 05	19.5	0	3.9
June 05	68.0	0	0
TOTAL	463.6	6816.03	5021.70

Table six: Monthly rainfall recorded at Lake Crescent Field station as well as water releases (Megalitres) from both Lake Crescent and Lake Sorell

By the end of December the water release from Lake Sorell was reduced, as the lake level was dropping rapidly and a considerable amount of the agreed irrigation allotment of 10 000ML had been transferred. With this reduction in flow from Lake Sorell combined with the draw-down in water from both evaporation and downstream demand, Lake Crescent level fell away rapidly and the traps had to be closed.

Lake Crescent Outlet Canal Desilt

Silt had built up to the point that it was impeding boat movement through the canal and would have affected water flows in the coming irrigation season.

In February, 2 days were spent with a 20 tonne excavator removing silt from this canal. A 12 tonne excavator was employed on the second day to assist the larger excavator reach the material by pushing the silt along the bed of the canal to vantage points for the larger machine. These machines were inadequate for the job and it was estimated that only one third of the silt was removed.

A further 4 days were spent in late June with a 25 tonne machine with an extension boom (16 metre reach). This machine removed all of the silt.

Transmitters 2004-05

Since initial trials in 2002, Advanced Telemetry Systems (ATS) transmitters have proven more effective than previously used transmitters. There is a higher retention rate after surgery, which can most likely be attributed to their smaller size and weight. The signal emitted is strong and clear and to date failure rates appear to be very low. For these reasons the CMP has continued to phase out the original bulkier and less reliable transmitters in favour of ATS.

In mid 2004, four of the eight trackers in Lake Crescent carried ATS transmitters. This proportion has now risen to eight out of eight. In Lake Sorell over the same period ATS's have gone from five out of ten to ten out of eleven.

Sixteen implant operations were carried out in 2004-05. Of the 12 ATS implants, 11 were successful and one resulted in a dropped transmitter (152.164). This was recovered from Lake

Sorell and successfully placed in another carp. Of the four non-ATS implants three were unsuccessful. Only one of the resulting droppers was recoverable (the others being in deep water). The accessible transmitter (151.298) was duly recovered and implanted in a new fish only to later have a signal failure. These developments have further justified the move to ATS transmitters. Table seven outlines Transmitters, which operated in the lakes during 2004/05.

Type	Frequency Mhz	Implant Date	Life Expectancy	Results
LAKE CRESCENT				
Titely	152.217	9/7/03	18 months	Operating 14.5 months then removed
Biotel	151.217	19/5/04	12 months	Operated 13 months
Biotel	151.259	2/10/04	12 months	Operated 14.5 months
Biotel	151.428	27/11/04	12 months	Operated 15 months
ATS	151.103	7/9/04	30 months	Still operating (as at 30/6/05)
ATS	151.474	23/10/04	18 months	Still operating (as at 30/6/05)
ATS	151.504	23/10/04	30 months	Still operating (as at 30/6/05)
ATS	152.042	22/7/03	30 months	Still operating (as at 30/6/05)
ATS	152.074	22/7/03	30 months	Still operating (as at 30/6/05)
ATS	152.223	2/9/03	30 months	Still operating (as at 30/6/05)
ATS	152.313	7/9/04	54 months	Still operating (as at 30/6/05)
ATS	152.344	2/9/03	54 months	Still operating (as at 30/6/05)
LAKE SORELL				
Titely	150.640	28/3/03	18 months	Operated 21 months
Titely	150.721	18/6/03	18 months	Operated 19 months
Biotel	151.018	19/7/04	12 months	Dropped in deep water
Biotel	151.039	19/7/04	12 months	Dropped in deep water
Biotel	151.138	22/7/03	12 months	Operated 17 months
Biotel	151.239	22/7/03	12 months	Operated 18 months
Biotel	151.298	19/7/04	12 months	Dropped and recovered
Biotel	As above	9/11/04	8 months	Reimplanted then signal failed
Biotel	151.606	23/10/04	12 months	Still operating (as at 30/6/05)
ATS	151.453	2/5/03	30 months	Still operating (as at 30/6/05)
ATS	151.534	22/9/04	30 months	Still operating (as at 30/6/05)
ATS	152.136	27/11/03	30 months	Still operating (as at 30/6/05)
ATS	152.164	1/12/04	30 months	Dropped and recovered
ATS	As above	19/5/05	30 months	Still operating (as at 30/6/05)
ATS	152.193	22/7/03	30 months	Still operating (as at 30/6/05)
ATS	152.253	2/9/03	30 months	Operated 18 months then recovered
ATS	As above	23/10/04	12 months	Still operating (as at 30/6/05)
ATS	152.282	27/11/03	54 months	Still operating (as at 30/6/05)
ATS	152.375	23/10/04	54 months	Still operating (as at 30/6/05)
ATS	152.403	12/10/04	54 months	Still operating (as at 30/6/05)
ATS	152.434	19/5/05	54 months	Still operating (as at 30/6/05)

Table seven: Transmitters that operated in lakes Crescent and Sorell during 2004/05.

Compliance

For the first time since 17 February 1995 Lake Crescent was reopened to the public. A series of stringent regulations were put in place as part of the risk assessment to prevent the capture and transfer of carp.

These included:

- designated as artificial lures only water
- closed for fishing from 1 hour after sunset to 1 hour before sunrise
- no fishing within 100 metres of a Inland Fisheries Service trap or structure
- the Director of Inland Fisheries may, at his discretion, close Lake Crescent and/or to protect or secure this water without notice.

During the first months of the season the lake was well patronised by anglers and a high compliance level was maintained but as the lake level dropped and the fishing waned the compliance effort was matched to suit. The media coverage prior to the lake opening payed dividends and along with signage anglers appeared to be well informed on the issues. They stayed well clear of the carp traps and barriers and had no measurable impact on CMP activities. No breaches of the regulations were found for the entire season.

Staffing

The CMP has maintained a stable workforce for the past three years and the benefits of this are now starting to pay off. The present team members have gained skills and are confident in all aspects of the program.

The following is a list of staff and their position for the past financial year.

Field Officers	Robert Cordwell (1fte), Terry Byard (0.5fte)
Technical officer	Alasdair Macdonald (0.5fte)
Senior Technical Officer	Paul Donkers (0.8fte)
Scientific Officer	Rodney Walker (1fte)
Senior Inspector	Chris Wisniewski (1fte)

The program also so had the support of IFS staff for 61-week days and 8 weekend days.

Budget

Over the past twelve months, as has been with previous years, a large percentage of the budget was spent salaries an on costs. The program employed three full time employees (fte), one employee @ 0.8fte and two employees @ 0.5. Vehicle and boat fuel was down slightly on previous years but vehicle maintenance was up due to problems with the Landrover.

The major purchase of a barrier net for \$40486.00 was also included as was the publishing of the 10 year carp report. The Landrover was sold for \$22 155.00 and not replaced.

Description	Total Prds	Total Comm	Cfwd 30-6-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Total
Revenue																
3503 Sales - Motor Vehicles	-22155.45	0	0	0	0	0	0	0	0	0	0	0	0	0	-22155.45	-22155.45
3807 Refunds - Insurance	-2052.82	0	0	0	0	0	0	0	0	0	0	-2052.82	0	0	0	-2052.82
3902 Miscellaneous Revenue (GST)	-283.69	0	0	0	0	0	0	0	-283.69	0	0	0	0	0	0	-283.69
	-24491.96	0	0	0	0	0	0	0	-283.69	0	0	-2052.82	0	0	-22155.45	-24491.96
Expenditure																
5011 Salaries	204211.99	0	0	7416.66	22834.91	14457.52	14457.52	16818.84	23917.27	16504.2	16790.92	14969.82	14969.82	24872.54	16201.97	204211.99
5013 Overtime & Penalties	3479.99	0	0	0	0	0	0	597.8	851.87	1084.9	325.47	185.98	0	185.99	247.98	3479.99
5015 Allowances	34336.63	0	0	1314.3	3823.72	2592.21	2592.6	2592.6	3979.62	2683.32	2683.32	2683.32	2683.32	4024.98	2683.32	34336.63
5021 Superannuation	25615.41	0	0	931.02	2834.97	1824.98	1825.02	2091.33	3030.65	2122.53	2080	1903.54	1886.8	3064.55	2020.02	25615.41
5022 Payroll Tax	9911.91	0	0	22.36	33.37	19.94	72.47	268.09	300.54	50.15	94.29	81.04	115.03	40.87	8813.76	9911.91
5025 Workers Comp Premiums	1416	0	0	0	0	0	0	0	0	0	0	0	0	0	1416	1416
5028 Training	150	0	0	0	0	0	0	0	0	0	0	0	0	150	0	150
5103 Property Repairs & Maintenance	69.37	69.37	0	0	0	0	0	0	0	0	0	0	0	0	69.37	138.74
5107 Gas and Non Vehicle Fuels	1103.48	174.64	0	0	18.15	0	0	249.23	0	219.64	0	174.64	0	0	441.82	1278.12
5212 Intrastate Travel	14409.19	0	0	785.38	-1736.24	319.6	1161.35	2549.05	4283.05	870.15	1511.1	1298.8	1859.05	655.05	852.85	14409.19
5216 Vehicle Fuel	16632.43	95.45	0	857.68	865.79	1257.13	886.18	2311.11	2597.8	2530.83	1301.21	1557.7	659.86	954.94	852.2	16727.88
5217 Vehicle Hire	19.73	0	0	0	0	0	0	0	0	0	0	0	19.73	0	0	19.73
5301 Office Telephones & Facsimiles	4643	0	0	355.18	142.25	394.03	374.1	611.62	512.32	376.29	219.39	177.86	574.33	119.61	786.02	4643
5302 Mobile Phones & Radios	2682.78	0	0	472.34	0	224.86	301.95	335.65	205.4	167.09	297.04	0	267.52	0	410.93	2682.78
5303 Postage/Freight	394.9	11.27	0	0	25.45	5.45	307.28	45.45	0	0	0	0	0	0	11.27	406.17
5403 Computer Software Costs	118.78	0	0	0	0	0	0	0	0	0	0	118.78	0	0	0	118.78
5511 Equipment Hire/Leases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5512 Equipment Maintenance	3365.5	451.87	0	1114.82	0	439.72	0	416.2	0	83.8	0	135.51	75	159.09	941.36	3817.37
5513 Equipment Purchases	46885.51	40576.69	0	0	672.68	1854.65	279	2801.45	0	0	0	701.04	0	90	40486.69	46885.51
5522 Vehicle Maintenance & Other Costs	7025.38	1531.57	0	0	0	358.91	273	501.91	2148.32	439.32	1152.17	1410.62	669.54	57.95	13.64	8556.95
5532 Seacraft Costs	3577.54	793.34	0	0	400	190.91	1295.83	0	309.78	409.5	0	178.18	309.78	0	483.56	4370.88
5613 Development Works & Council Fees	63.55	63.55	0	0	0	0	0	0	0	0	0	0	0	63.55	0	127.1
5621 Protective Clothing & Uniforms	1474.13	1188.45	0	168.59	267.94	126.56	230.78	0	0	140.91	0	126.45	0	181.75	231.15	2662.58
5631 Operating Supplies	5175.42	1212.27	0	428.69	731.84	883.53	538.62	92.88	0	1228.66	0	343.13	316.87	110.65	500.55	6387.69
5633 Contract Services	204.55	0	0	0	0	0	0	0	0	204.55	0	0	0	0	0	204.55
5634 Advertising/Promotion & Marketing	409.09	224.72	0	72.37	0	0	0	0	0	0	0	11.81	0	112	212.91	633.81
5711 Office Requisites	11.36	11.36	0	0	0	0	0	0	0	0	0	11.36	0	0	0	22.72
5714 Bank Charges	18.3	6.45	0	1.95	0.75	2.1	1.05	0.6	0	3.75	0	3.15	0.75	1.05	3.15	24.75
5724 Meetings & Conferences	203.02	0	0	0	0	0	0	0	0	165.63	37.39	0	0	0	0	203.02
5725 Entertainment - Food & Catering (FBT)	98	0	0	0	0	0	0	0	98	0	0	0	0	0	0	98
5727 Miscellaneous Expenditure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5731 Printing/Pubs: Printing/Publications	2687.45	0	0	785.68	0	0	316.27	1530	0	55.5	0	0	0	0	0	2687.45
TOTALS	396228.7	46411	0	14727.02	30915.58	24952.1	24913.02	33813.81	42234.62	29340.72	26492.3	26072.73	24407.4	34844.57	77680.52	396228.7
																371736.74
2003-2004 RECORD																
1413 Lake Sorell Out: Lake Sorell Outlet Duplication			0	0	0	0	0	0	0	0	0		7672.5	44418	51782.75	-74496
																29377.25

Table Seven: Annual budget and spending for the financial year.

**Staff Requirements as per Industrial Agreement:
2004/05 financial year.**

Staff are required to undertake weekend work and hours beyond general condition of service as part of the IFS industrial agreement. The following table outlines the work undertaken by CMP staff for the past twelve months.

Staff Member	Saturdays	Sundays	Public Holidays	Extra Hours
Rodney Walker	3	3	0	110.20
Alasdair Macdonald	2	2	0	50 (Sept – Dec 2005)
Paul Donkers	3	3	0	106.24
Rob Cordwell	3	3	0	100
Chris Wisniewski	10	10	2	217.12

Public Awareness Presentations

CMP staff have attended the following venues to give presentations:

2004-05

4 August	Ulverstone Anglers Club
30 November	Van Dieman Fly Fishers
5 April	Glenorchy Probus Club
21-22 May	Liawenee Open Weekend

Time Line of Major Events

2004-05

August	
7	Lake Crescent is re-opened to the public after being closed since 1995
September	
27-1 Oct	Lake Sorell fyke survey
October	
4-8	Lake Crescent fyke survey
November	
8-12	Lake Sorell fyke survey
28-3 December	Lake Crescent fyke survey
30	Ripe female carp captured at Boathouse Bay, Lake Sorell
January	
10-14	Lake Sorell fyke survey
31-4 Feb	Lake Crescent fyke survey
February	
7-11	Lake Sorell fyke survey
21	Excavations for Lake Sorell Outlet duplication commence
24-25	Partial de-silt of Lake Crescent Canal
25	Downstream survey commences
March	
1	Concrete works at Lake Sorell Outlet duplication commence
15	Concrete works at Lake Sorell Outlet duplication completed
22	Downstream survey completed
May	
11	Complete wire fence at Isthmus and Blowfly in Lake Sorell
June	
28	Steel work and screens at Lake Sorell Outlet duplication completed
24-29	Lake Crescent Canal de-silt with 16m boom excavator

Appendix - Media Articles

Articles detailing the CMP, its activities and progress have been published in a range of print media and interviews are regularly broadcast on radio, TV and electronic media outlets.

27 July 2004	The Advocate (Anglers put on notice for opening)
30 July 2004	The Examiner (Carp infestation (letters to the editor))
3 August 2004	ABC Radio Country Hour
3 August 2004	The Advocate (European Carp Curbed)
7 August 2004	The ABC TV News
9 August 2004	The Examiner (Lake Crescent and trout season open)
12 August 2004	The Mercury (Carp campaign close to an end)
October 2004	Angler News (Carp Update)
18 November 2004	The Mercury (Carp traps success)
24 November 2004	Derwent Valley Gazette (Good carp news from Lake Crescent)
1 February 2005	ABC Radio – Sally Dakis
April 2005	Angler News (New strategy implemented to combat carp in Lake Sorell)
19 April 2005	ABC Radio News
20 April 2005	ABC Radio Morning Show
22 April 2005	The Examiner (Pest fish targeted with new strategy)
12 May 2005	The Mercury (Carp war not won)
June–July 2005	Tasmanian Fishing and Boating News (New strategy implemented to combat carp in Lake Sorell)

Along with the interest in carp there was also great interest by the media in the reopening of Lake Crescent to anglers on the 7 August 2004 after being closed for almost 10 years.

References

Inland Fisheries Service (2004). Carp Management Program Report, Lakes Crescent and Sorell (1995 – June 2004). Inland Fisheries Service, Hobart.

Walker, R.M. (2003). An Examination of the Selectivity of Fishing Equipment in Relation to Controlling Carp (*Cyprinus carpio*) in Lakes Crescent and Sorell. Inland Fisheries Service, Hobart.