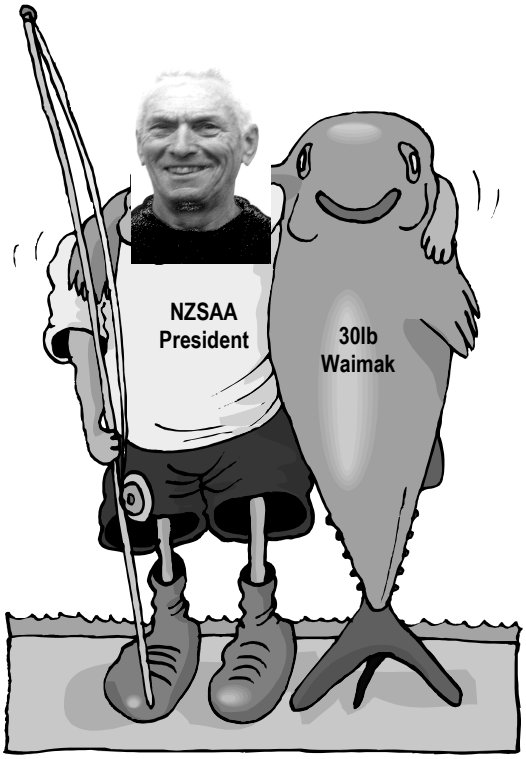
NZ Salmon Anglers Newsletter

DECEMBER 2009 Number 101



"All I want for Christmas is……."

Official Newsletter of the New Zealand Salmon Anglers Association Incorporated
P.O. Box 1113, Christchurch 8140

NEW ZEALAND SALMON ANGLERS ASSOCIATION (INC)
2009-10 OFFICE HOLDERS AND COMMITTEE

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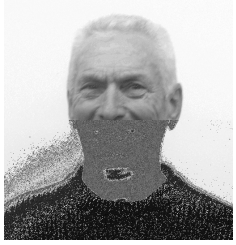
Committee Meetings: The Committee meets on the first Monday each month (except January) at 7.30 pm in the Fish & Game premises, 3 Horatio Street, Christchurch. Members and supporters are welcome to attend these meetings.

Honorary Auditor: Trevor Hayes

Life Members: Lindsay Dell, Pam Ellis, Tim Ellis, Brian Foley, Trevor Hayes, John Healy, Ken Hughey, Ross Lightfoot, Athol Price, Doug Roy, Stephen Sparrow



PRESIDENT'S EDITORIAL

The ova planting season come to its normal conclusion, with around 100 Scotty Boxes loaded and placed, along with 9 instream incubators and a couple of trial Streamside Alevinators, plus the planting carried out by Rakaia River Promotions. We are grateful to Dirk Barr and his team at Montrose for their dedication in the ova process of gathering, hatching, sorting and distribution to us and Rakaia River Promotions, close on one million ova. Also we have continued to have fantastic support from Silverstream Hatchery.

The combined salmon runs for Waimak, Rakaia and Rangitata have shown a steady increase since 2001 (except a slight drop off 2005/06 and this last season). A number of factors contribute towards the increased numbers of returning salmon, including abundance of food at sea, better enhancement practice, greater number of ova planted, ova planting site selection, the Salmon Catch at Sea Agreement and dedication of very enthusiastic volunteers. But our graph is on a positive upward trend overall.

As we move along Salmon Enhancement programmes we tend to get smarter or try new options and I would agree we are not at 100% efficiency, but I am encouraged at the expertise that has developed and the inspirational undertaking this season to bring out Don MacKinlay from Canada to view our fishery and give advice.

This was followed up by F&G sending Steve Terry to study enhancement options in Canada. In the scheme of world salmon numbers, New Zealand is small fry (pun), but the importance of our fishery surpasses all our expectations, so it is appropriate for these and similar investments.

Don MacKinlay identified a number of improvements or method techniques that we should employ to increase efficiency and gain better productivity out of our efforts. The highest priority is to keep stock out of the breeding streams and ensure good water quality. This will require good working relationships with farmers and other users of river resources. We as anglers also need to work on good education and behaviour practices to support this expectation.

The other significant change in the enhancement process is to hatchery rearing of ova to the fry stage (2-5 gms) and release developed fry into the traditional breeding waters.

MacKinlay comments that survival, hatch % success and the fact that the fry have been fed means they will survive better, leading to greater return of adult numbers, related to eggs stripped and fertilised. We do have interesting times ahead.

Of my experiences with matters since taking office as President is one of the more productive involvements of our

Association (along with others) with the Salmon at Sea Catch Agreement relating to the Salmon Conservation Area (SCA) off Banks Peninsula. This document has agreement between amateur and commercial interests relating to the catch of Chinook Salmon at sea by commercial fisherman. The agreement relates to closure of the SCA to large commercial trawlers from early December to mid-February, as this is the main area where salmon congregate before returning to East Coast South Island (ECSI) rivers to spawn. The agreement aims to minimise catch of the larger trawlers when they are targeting red cod and barracouta. In addition they encourage onboard volunteer verifiers to view catch landings from their trawlers.

Commercial vessels caught 0.7 tonnes of salmon off the ECSI between October 2008 and August 2009 (last salmon season). The size of salmon caught ranged from 1kg to 7.3kg.

Prior to the agreement trawlers were landing an average of 29 tonnes of salmon per season. Over the last five seasons average catch rate has been well below 1 tonne per season. An encouraging result and a contributor to our returning salmon numbers for catch by anglers and spawning.

Another bonus exists for our enhancement programmes in that a levy is paid by the commercial fishermen for fish landed which is passed to F&G to go towards the salmon enhancement.

The Fish & Game Councillor elections have been held and a team of robust Councillors elected, which should see a continuation of benefits to our salmon fishery. I am encouraged to see Martin Clements, Chair of the Council, re-elected with the greatest number of votes. His expertise and judgemental balance brings a foundation of good decisions to the table. Also amongst the re-elected are some strong salmon enhancement advocates who I am confident will lead to decisions of best interest for the fishery.

Recently I read through the decision of the Commissioners for the Resource Consent Hearing of CPW and their Minute 11 states some allocation of river run water from Waimakairiri and Rakaia Rivers will be allocated, given that farming and irrigation practices are not illegal and any effects from their decisions on individuals, fisherman, recreational users or persons directly affected are outweighed by the economic benefits and suitable alternatives or compensations can be negotiated.

We and other similar organisations have to accept this as fact and continue to work towards a sustainable foundation for our fishery. We do not have the financial resources to change what is already in place but, by negotiation, we can strive to make the best of what is available and just maybe we will have to change the way we enhance the fishery. This will involve more hatchery development work and, like farming practices have become factory farming enterprises, we may also need to take a factory approach to having a sustainable salmon fishery for recreation and natural support.

The factors against today's fishery are being influenced by low river flows, pollution, chemical application run-offs, stock intensification, 1080 poison drop run-offs and many other contributions towards the unmeasured effect on our waterways and the natural habitat that support young salmon on their way to the oceans from their breeding grounds. Survival can only be based on a

conciliatory and current best practice approach as historical evidence was based on factors not now available to us

I'm starting to get itchy feet and cast a line in the water for a beautiful silver salmon. In fact, I've made some decisions so that I can have a crack before Christmas. Salmon catches at all river mouths have been reported so it's time to get into the serious mood of *Salmon Fever.* Many of you will be of like minds and it will be just fantastic to be out there again flogging the water. In the meantime we've got a bit of work to do organising a Salmon Fishing Competition for the Waimak in March and my project to build a Wheelchair Fishing Platform at McIntosh's requires serious involvement with District Council consent process. It's all onwards and upwards.

A very Merry Christmas and most Happy New Year to you all.

Cheers

Ron Stuart

PRESIDENT

Notices

New Competition

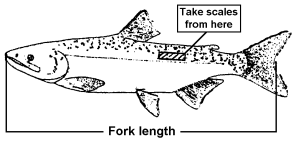
Waimakariri Fishing Competition, 6 March 2010. Organised by NZSAA and sponsored by New Brighton Sports and Kilwell. See notice and entry form on pages 6 and 7 of this newsletter.

NZSAA Annual Competition

Sponsored by Fisherman's Loft. For NZSAA members to enter their salmon catches during the 2009-10 season. Entry form on page 30.

Scale Samples

We are collecting scale samples again this season for statistical records. Please take a sample from fish that you or other anglers catch.



Two envelopes are enclosed with this newsletter for scale collection.

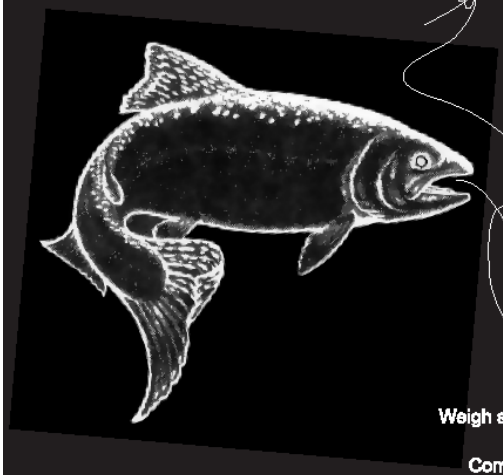
Subscriptions Reminder

Have you paid your subscription?

If not, subscription reminders are enclosed with this newsletter.

saturday 6 march 2010

WAIMAKARIRI SALMON FISHING COMPETITION



(optional day saturday 20 march if river conditions unfavorable)

COMPETITION AREA:
All river below Railway Bridge, excluding Kaiapoi River (refer competition rules)

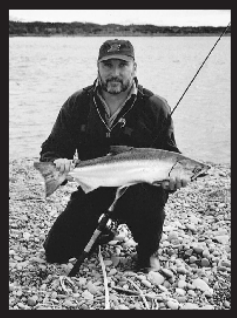
START TIME: First light
FINISH TIME: 4.00pm

Weigh stations located river mouth both sides and McIntosh's
Open 9:00am – close 4:15pm

Competition entry salmon must be presented for weighing
Immediately after being caught and landed

ENTRY FEE

$25	— per competitor
$15	— NZ Salmon Angler member competitors
free	— juniors 16 years or under
$40	— NZSAA membership and entry fee
$10	— late entry fee in addition to above
$35	— evening meal Kaiapoi Club



SOCIAL EVENT AND PRIZE GIVING
Partners and friends welcome.

5:00 pm social hour Kaiapoi Club
6:00 pm prize giving
7:00 pm evening meal restaurant Kaiapoi Club $35 per person
(bookings essential).

$5000 PRIZE POOL

ENTRY BY OFFICIAL ENTRY FORMS AVAILABLE FROM:

NEW BRIGHTON SPORTS: Pier Side, New Brighton
NZ SALMON ANGLERS ASSN.: Committee Members or contact
RON STUART: cquityron@xtra.co.nz Ph 021 216 3901
HEATHER SAUNDERS: lanandh.s@ihug.co.nz Ph 388 5718
FISH & GAME OFFICE: 3 Horatio Street, Christchurch
KAIRAKI BEACH CAMP OFFICE: Kairaki

ENTRIES CLOSE 24 FEBRUARY 2010
(Late Entry Fee applies after this date)

Project organised by NZ SALMON ANGLERS ASSN, PO Box 1113, CHRISTCHURCH 8140

KILWELL SPORTS

NEW BRIGHTON SPORTS

ENTRY FORM

(Entries close 24 February 2010)

NEW BRIGHTON SPORTS KILWELL

WAIMAKARIRI SALMON FISHING COMPETITION

WAIMAKARIRI - SATURDAY 6 MARCH 2010
(OPTIONAL DAY 20 MARCH)

NAME:…….

ADDRESS:……..

……..

PHONE:…….. ...CELL…….

EMAIL:……...…….

FISHING LICENCE No:……Expiry Date…….

JUNIOR ENTRY DATE OF BIRTH: …..…/…..…/……..

ENTRY FEE FOR CONTESTANTS;

Competitors	**$25**
NZ Salmon Anglers Association members	**$15**
Juniors - 16 years and under	**Free**
NZ Salmon Anglers Association Membership & Entry	**$40**
Late Entry Fee (after 24 February)	**$10**
Evening Meal for Pre-booking	**Number:……..@ $35 pp**

PAYMENT ENCLOSED $.....Cash/Cheque

Entry Form and Payment to: N Z SALMON ANGLERS ASSOCIATION (INC)
P O BOX 1113 CHRISTCHURCH 8140

I agree to abide by the Competition rules and conditions.

SIGNATURE…… Date……

ENTRY NUMBER

A True Story About a Threepenny Coin……..

Winter time, June 2008:

It was one of those cold mornings, waiting in the Yaldhurst Hotel carpark for the volunteers to arrive, before going eyed ova planting over Porters Pass. As the team had started to arrive, I left the warmth of the car and proceeded towards the group. In doing so, something shiny caught my eye in a pothole. "Lo and behold" a 1946 threepenny coin. It would be interesting to know how long it had been there.

That evening it was left on the work bench to be cleaned later but, later on, I could not find the coin. Needless to say, all the nearby shelves were cleaned and no result. After much searching, it seems that it must have gone down the gap between the bench top and the wall.

More than a year has passed by and still the coin had not been found. Each season my vegetable garden is trench-dug and amazingly this year, at 300mm depth, there was that coin. At some stage I must have put it in my overall pocket which of course has a hole in it.

The threepenny piece is now polished and will be presented to the management of the Yaldhurst Hotel.

John Hodgson

September 2009

Salmon enhancement using the "Alevinator" streamside hatchery system

A report prepared by Peter Robinson for NZ Salmon Anglers Association and North Canterbury Fish & Game Council

Why not recycle that old kelvinator into an alevinator?!!

Summary

In 2009, Bruce Moody (NZSAA member) and Peter Robinson (North Canterbury Fish & Game councillor and NZSAA member) decided to trial a streamside incubator for raising salmon ova to the fry stage. The system used was based on a North American model. This model was developed by the Wyoming chapter of Trout Unlimited (TU) to successfully restock streams with trout. The concept involved adapting an old fridge as an incubation chamber for large numbers of eyed ova. Ova placed in the chamber hatched and alevins grew to the swim-up fry stage at which point they were able to self-release through a siphon into the adjacent stream where they continued their natural life cycle. It was Bruce and Peter's belief the same system could have potential to "seed" streams with salmon fry.

Bruce converted a fridge following the guidelines from TU. In May a prototype model was placed in Montrose stream, a tributary of the Rakaia River. This model was swept away by a flood a few days later! Undeterred Bruce constructed another fridge or "alevinator" and in June it was installed on Hacketts Creek, a tributary of the Waimakariri River, on the property of Kathy and Bevan Mehrtens. The site chosen had a history of salmon enhancement and successful spawning. It had a clean water supply and an instream environment that provided a suitable habitat for numbers of swim-up fry to continue their life cycle and for returning adults to spawn naturally. It also seemed less flood prone than the first choice!

The setup, included a screened water intake supplying stream water that upwelled through a filter barrel trapping most of the silt. The water was then piped into the "alevinator" and through a series of acrylic baffles, between which the ova were placed. Water then exited to the stream via a siphon.

In early June, 3000 eyed ova were placed in Scotty boxes and 1500 among stones in the alevinator. Ova began hatching into alevins in early July and swim-up fry began exiting by the last week of July. Observations showed the success rate from placement of the eyed ova hatched in Scotty boxes to escapement as swim-up fry to be 90%. Ova hatched in the stones had a higher mortality at 80% success. Very little mortality occurred after hatching. Overall of the 4500 ova planted, 3900 (86%) entered the stream naturally as swim-up fry. Escapement occurred by way of a siphon over a period of 30 days, starting on 24 July building to a peak on 10th, 11th and 12th August and declining to an end on 22 August, a period of 30 days.

Alevinator Construction

The alevinator is placed on its back. Water enters from the filter barrel to the right of picture. Water is directed by a series of baffles RTVed in place with gaps that allow water to pass either under or over the baffle. This disperses the flow throughout the hatching chamber. The water level is set by the height of the pipe inside the siphon (seen in the bottom left of the fridge in Fig 1). The siphon allows only swim-up fry to escape the alevinator. Water exits the fridge through the pipe in the siphon and flows to the stream.

Fig 1. The "alevinator", with freshly placed scotty boxes and ova in amongst stones.

3000 eggs are in the scotty boxes and 1500 in among the stones (if you look closely you will see ova between the top left Scotty box and the pile of stones to the right). Once the lid is closed a dark, predator, flood proof and insulated environment, that replicates a salmon redd, is created.

The Set-Up

Fig 2.
The set-up: blue filter barrel, alevinator and catch bucket.

Fig 3.

Water intake protected by gobyes, bucket with holes and mesh top.

The water intake is protected in the bucket to ensure a clean water supply. The 50mm pipe exits from the left side of the bucket. Approx 30 metres of pipe runs downhill to the alevinator.

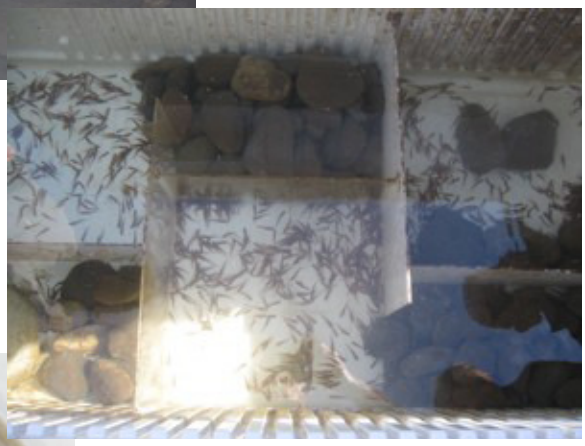
The alevinator is located on a level shelf adjacent to the stream. The location of the intake upstream provides enough head to give sufficient pressure to operate the system. The pipe feeds water into the bottom of the blue barrel filled with gravel. The flow then upwells through the gravel, which acts as a filter to remove silt, before the water is piped into the alevinator. The exit pipe can be seen entering the stream. For monitoring purposes a catch bucket is installed to see if any alevin are escaping and to monitor any losses including dead fry. This way rearing success can be determined. The siphon controls escapement and only swim-up fry exit.

A flood occurred shortly before swim up fry stage was reached. The water rose to the bottom of the cabinet and discoloured water passed through the alevinator, with little effect, clearing quickly.

In Operation

Fig

July 4: Hatched at last



Aug 1: Thousands of fry approaching swim-up

Aug 8: Fry gathering to leave by the siphon

A swim-up fry (35mm length) after exiting the alevinator

The Proof of Success - The Results

On 6 June, 4500 eyed ova from Montrose were planted. 3000 were placed in three Scotty boxes (1000 each box) and 1500 were placed in stones. Hatching occurred around 4 July. The Scotty boxes were opened on 19 July as it had been noticed that there were a large number of alevin present after 4 July, more than could have hatched just from the stones. There were no alevin in any boxes. It was evident that alevin exited the Scotty boxes soon after hatching. Dead eggs in the Scotty boxes were counted. The range was 4 to 40 per 200 at an average of 10% overall, leaving an estimated total of 2700 live alevin. Success in the stones was estimated at 80% leaving 1200 (3900 in total or 86% overall success).

On 19 July the catch bucket was placed on the receiving end of the exit pipe. A fresh on 24 July led to the first signs of any fry in the catch bucket. There were only 4 dead alevin/fry in the catch bucket over two weeks from 19 July to 1 August. There was no evidence of any dead fry/alevin in the alevinator during this time. At inspection on 1 August a number of fry were observed "swimming up" and taking air from the surface to fill swim bladders. By 8 August over 100 fry per day were leaving, only the odd dead fry had been seen, easily less than 1 in 100.

On 8/9 August, 333 fry exited in 24hrs and 12 were found dead on the mesh screen. It was decided to remove the catch bucket to prevent mortality from overcrowding. Bevan estimated the peak escapement occurred on the 10th, 11th and 12th Aug.

Date and Recorded Numbers of Fry Leaving Alevinator

Date	Number of Fry	Temp. Creek	Temp. Alv
24/7/09	20		
25/7/09	8		
26/7/09	10		
27/7/09	5		
28/7/09	8	10.1	10.3
29/7/09	22		
30/7/09	21		
31/7/09	15		
1/8/09	44	10.1	10.3
2/8/09	52		
3/8/09	40		
4/8/09	75		
5/8/09	80+		
6/8/09	100+		
7/8/09	100+		
8/8/09	205	8.8	9.3
9/8/09	128 (am only)		

August 9: total escapement 945 + approx 15 dead = 960

Approximately 1500 ova were placed in the stones. The mortality was estimated at 300 (80% success). Silting and associated fungus on ova touching each other appeared to be the culprit. If the ova had been placed in the alevinator within 10 days of hatching this fungal problem may not have been such an issue as the fungus would not have had a chance to get established.

The last fry, numbering about 70, were released on 22 August.

Recommendations for 2010

The alevinator has proven a successful and simple method of raising salmon to the unfed fry stage. This method has replicated the natural process very closely with the advantage of increasing success from 42% in a natural redd (Gebhards, Idaho Fish and Game) to 86% escapement from the alevinator. The method has proven inexpensive and requiring minimal management or maintenance. The removal of the Scotty boxes after hatching has been the only intervention necessary.

The following recommendations are made for the next season to develop the potential for this method to be used to introduce larger numbers of fry naturally into streams.

- Continue with the original alevinator as a control but using two more Scotty boxes instead of stones.
- Set up two new alevinators, both with upwelling systems. Aim to have as many ova as possible accommodated in each alevinator to determine the maximum limit possible.
- Either set up one alevinator with ova planted in trays over stones. The trays to be able to keep the ova separated to avoid fungus growth due to contact, OR plant ova directly into stones but within 10 days of hatching. If this proved successful, with no fungus, the latter method would mean large numbers of ova could be planted and subsequently large numbers of fry raised with minimal effort.
- The other alevinator to have no baffles and be filled with Scotty boxes placed over stones with an upwelling water supply.
- Plant ova closer to hatching, less time as ova in the alevinator will mean less chance of fungus (less than 10 days is desirable).
- Take ova nearer the end of the spawning run to ensure hatching is as late as possible. This will mean better conditions for fry in spring with more insect activity meaning more food in the creek and river.
- Carry out a count of all redds in Hacketts Creek in 2010 ready to compare returns in 2011 to see if there is any increase in returns generally, or returns to sites closer to the release site where imprinting began.
-

Peter Robinson

August 2009

Fish & Game News

North Canterbury Fish and Game Council 2009 Election Results

The results of the election held on 17 November 2009 for the election of twelve Council members for the North Canterbury Fish and Game Region were as follows:

Martin Clements, Rusty Russ, Ian McCrory, Trevor Isitt, Peter Robinson, Steve McNeill, Bob Stanton, Brian Smart, Paul Farrow, Bruce Kelly, Serve Bonnafoux and Peter Jackson.

Hurunui River Water Conservation Order

Fish & Game has submitted an appeal against parts of the decision made by the Special Tribunal in respect of the WCO for the Hurunui River. The appeal seeks to have the WCO apply also to the South Branch of the Hurunui and for prescriptive fish screen requirements to be imposed rather than the proposed purposive clause.

2008/09 Salmon Management Report (abridged) *by Steve Terry*

Returns to North Canterbury salmon rivers were less than average last year. There were no standout wild spawning streams in either the Waimakariri or Rakaia Rivers and both the angler catch and total run were down from the previous season although at a proportionately high level of the overall run.

As part of the ongoing effort to improve the salmon fishery in Canterbury, expert fisheries biologist Don MacKinlay from Fisheries & Oceans Canada was invited to New Zealand in May 2009 to review the salmon enhancement program. The aim of Don MacKinlay's visit was to suggest improvements to our salmon stocking program.

The salmon monitoring program in North Canterbury involves assessing the number of salmon entering rivers to spawn which are then either caught by anglers or continue upriver to spawn. The sum of angler catch and spawning salmon therefore provides an estimate of the total run of salmon returning to fresh water. There are some salmon that are not seen in our surveys either by spawning in areas unknown to us or outside the monitored areas but the number of these is believed to be minor and the reliability of our total run estimates is more significantly effected by the accuracy of our angler catch survey and spawning estimates rather than a failure to count every last salmon that spawns. All of the key spawning streams were intensively monitored and a number of secondary streams had one off spawning counts carried out at the peak of the spawning run. Research into spawning stream residency time continued in the Hydra Waters in the Rakaia River headwaters with a Didson sonar installed to count the spawning population trap installed at the beginning of April.

Estimates of annual salmon returns consist of combining the number of salmon that reach their spawning streams (spawning escapement), angler catch, and returns to hatchery facilities such as Silverstream and the Fish & Game managed Montrose Salmon Farm.

Results

Residency Research

Residency research was undertaken in the Hydra Waters in the upper Rakaia River in 2009 with a recently released technique which uses a high tech sonar camera to record a cross sectional image of the river 8 times every second and then analyses the data later to record every movement of fish through the sonar beam. The aim was to count every salmon that entered the Hydra Waters to spawn and compare this to helicopter counts carried out fortnightly over the same period. From the Didson we would have a total spawning run estimate and the residency time in the area under the curve computer model could be altered to match aerial survey counts with the total observed run. The Hydra Waters contribute up to 70% of the salmon returning to the Rakaia River some years and therefore establishing an accurate residency time is important.

An aerial spawning count was carried out on the Hydra Waters a day after installing the Didson sonar camera to establish how many salmon were already in the stream. 149 salmon were already above the sonar site with no spent carcasses visible and many were congregating in pools. Unfortunately during the Didson research period there were a number of large unseasonable nor-west floods up to 3,300 cumecs which forced the equipment to be removed and thereby stopping the Didson gathering a complete record of spawning numbers. The area where the Didson was installed had not seen a flood for 5 months and prior to that 10 years so thought to be a relatively risk free site for the intended 10 week trap period. A report on the Didson findings will be prepared soon.

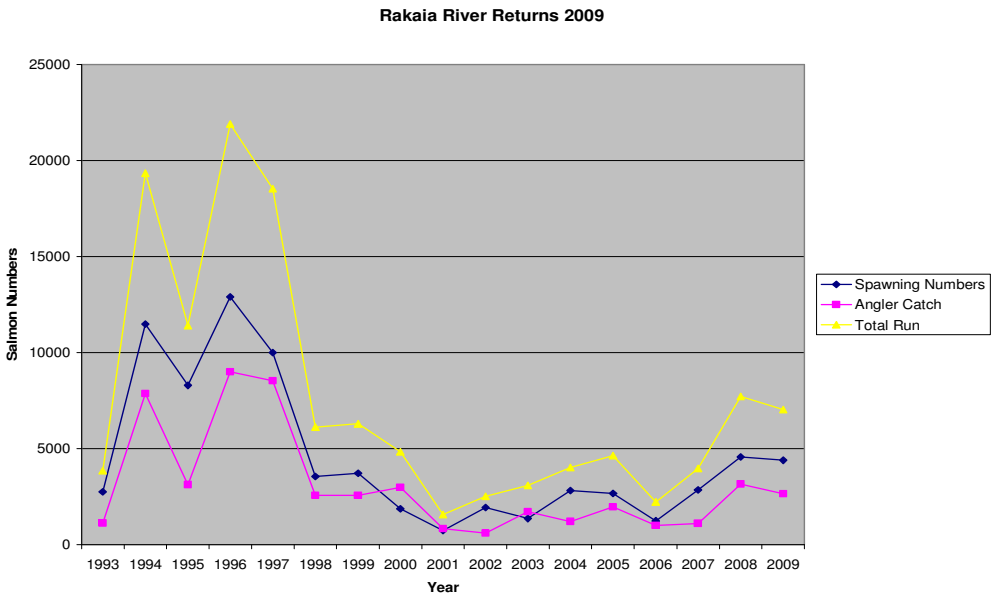
A trap was not installed in conjunction with the Didson as concerns have been raised in the past that salmon behave differently when they are required to enter a trap and they display avoidance characteristics, often approaching the trap but dropping back downstream to holding water.

Two Area Under the Curve (AUC) graphs were prepared each using the same aerial count data but each using a different residency period. The first graph uses a residency time of 14.67 days which was obtained more than 10 years ago when a trap was installed in the Hydra Waters. The second uses an estimated residency time of 30 days to show how the spawning number can change significantly if the residency time is different from that obtained using the traditional trap/tag/carcass recover method. The area under the curve model works very well but as with all models is only as good as the data fed into it.

Fisheries managers worldwide struggle with the issue of measuring spawning escapement and in order to get accurate residency times for this model to be reliable, there is need for ongoing research into residency times and more intensive angler catch surveys to establish when and where the salmon are being caught. The Didson is the most up to date method of carrying out the residency research required.

Rakaia River

The total run in the Rakaia was down slightly from the previous season but better than the ten years prior to that. Angler catch and spawning escapement showed similar proportions. The total catch was not given a boast by the Montrose hatchery returns with the hatchery conservatively accounting for around 10% of the returns to the river.

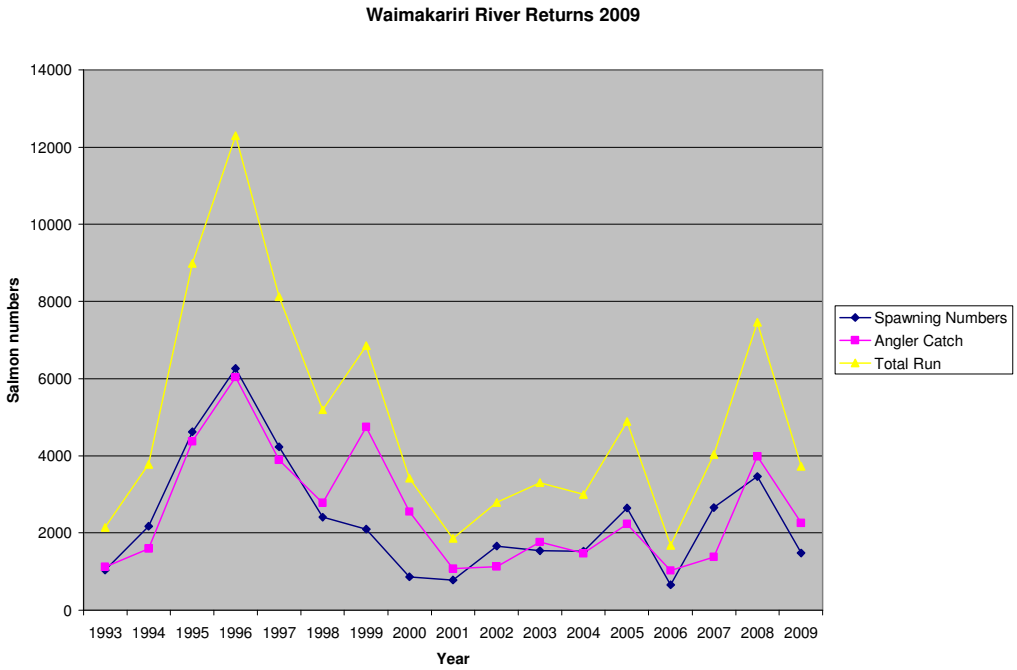


Waimakariri River

Waimakariri angler catch was down on the previous year and never really showed signs of improving during the season with anglers general perceptions of a poor season well justified with hatchery excluded spawning numbers totaling only 1117 salmon.. The Poulter River again accounted for 50% of these salmon. Returns to the Silverstream hatchery were equally to the previous season with 360 salmon returning to the trap.

Angler Catch

Angler catch has been calculated for both the Rakaia and Waimakariri Rivers. Both these rivers had significant decreases in angler catch over the previous season to sit close to long term low levels of angler catch for each river. The angler catch as a percentage of the total run was 37% in the Rakaia and 61% in the Waimakariri. If longer residency times are found in the future the percentage of salmon caught by anglers is likely to increase to over 50% in the Rakaia but will not increase significantly in the Waimakariri River as angler catch is already a very high proportion of the run and the residency time is already 21 days in the Poulter, thereby increasing this has less impact on increasing the percentage of the run caught by anglers in the Waimakariri.

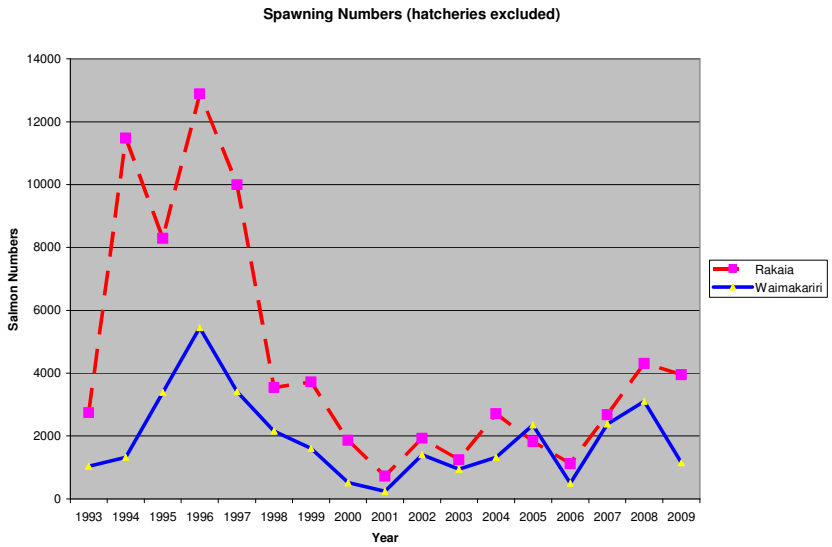


Angler Catch as Percentage of Total Run

Season	Rakaia	Waimakariri
92-93	29	52
93-94	41	42
94-95	27	49
95-96	41	49
96-97	46	48
97-98	42	54
98-99	41	69
99-00	62	75
00-01	53	58
01-02	23	40
02-O3	56	53
03-O4	30	49
04-05	42	46
05-06	45	61
06-07	28	34
07-08	41	52
08-09	**38**	**61**

Natural Spawning

Wild returns to the Rakaia headwaters were close to that of the previous season which were the highest seen in over a decade at 3945. However the Waimakariri spawning numbers dropped sharply to only 1117.



Hurunui / Waiau River Salmon Returns

The total run is not calculated for the Hurunui or Waiau Rivers as the area under the curve model cannot be used when only one aerial count in conducted. The aerial trend count of these rivers was conducted on the 12th May, where 319 salmon were counted in the upper Waiau and 109 in the Hurunui. These figure are average and in line with those seen in the Rakaia and Waimakariri Rivers. However the Hurunui count showed very poor returns considering the positive reports from anglers who had fished this river throughout the season.

The angler catch survey seemed to confirm the positive reports anglers had for the Hurunui, with an estimated 219 salmon caught, while only 24 were calculated to have been caught in the Waiau. Unfortunately, due to the relatively low number of anglers who successfully fished these rivers that were contacted during the phone survey, there is a large degree of error associated with these calculations.

Central South Island Region Salmon Returns

Salmon returns for the Rangitata and Waitaki Rivers showed very similar characteristics to the North Canterbury Rivers with average returns last season. The newly established hatchery at McKinnon's Creek in the lower Rangitata had around 800 salmon return from their first significant release two years ago. The North Canterbury angler catch survey calculated that North Canterbury anglers caught an estimated 657 salmon in the Rangitata River.

Discussion

After seventeen years of monitoring angler catch and spawning escapement using current methods, we still have very little ability to predict future returns. We are consistently seeing anglers catching more than half the returning salmon stock to the Waimakariri River which is of concern to fisheries managers in North America, but as yet we are unsure how to address this. This is likely in part due to persistent angling pressure in the lower reaches of the river and relatively few freshes which prevent salmon from heading upstream. These prolonged periods with low flows encourage the salmon to congregate in the lower reaches of the river for long periods of time allowing anglers plenty of opportunity to catch them. If we are consistently catching a larger than sustainable proportion of the returning salmon run, how do we reduce angler harvest significantly enough when most anglers catch no salmon for the season with the next most common catch level of one? Given that the old analogy that 10% of anglers catch 90% of the fish is also probably true, regulation changes such as reducing the daily bag limit from two to one will likely have little impact on reducing the overall harvest.

Anglers reported catching fin-clipped salmon in all the main East Coast salmon rivers last season. A salvage operation at the Highbank tailrace early in the season also confirmed a significant portion of the salmon present in the river at the time were of hatchery origin. Many anglers may not have noticed whether the salmon they caught was fin clipped, therefore specific questioning about fin clipped salmon in the angler survey was thought to be of no use to calculate total angler catch of these fish, however Central South Island Fish & Game phone surveys indicate that many anglers do recall if the salmon they caught was fin-clipped or not. This question will be included in future North Canterbury surveys.

It can be assumed that proportion of salmon caught will be the same for Montrose fish as wild run Rakaia fish and therefore 38 percent of the Montrose salmon returning to the Rakaia River will have been captured. This brings the angler catch of Montrose salmon to 275 and the total return of Montrose salmon to the Rakaia River to around 1.2 percent (725) of the initial 60,000 released. A significant number of Montrose salmon are likely to have been caught further south in the Rangitata and Opihi Rivers however with the McKinnon's Creek hatchery also releasing fin-clipped salmon these are indistinguishable and are assumed to be from their hatchery for management purposes.

Don MacKinlay from Fisheries & Oceans Canada gave some great advice on future enhancement strategies, however his greatest concern for the salmon fishery was that of habitat loss in our key spawning streams as a result of the intensification of land use in the high country. During aerial flights around the high country spawning streams, Don expressed concern that some of our key streams were at a catastrophic level of degradation and even our best streams were in less than ideal condition which is likely to be a major reason for the decline in the salmon fishery over time.

In the last few years we have seen a rapid increase in land development in the high country. We are also seeing the cumulative effects from many years of stock accessing our key spawning streams and grazing along the stream margins. As a result of this intensive farming, reaches of some of these streams now have beds unsuitable for

unsuitable for spawning and substandard rearing habitat along the stream margins for salmon fry and smolt. These factors also limit the attractiveness of these streams to returning adult salmon and could thereby force the salmon to spawn in unsuitable habitat in the mainstem rivers, where their redds would be destroyed during the next high-rainfall event. This is especially true of the upper Waimakariri catchment.

Restoring, and then preserving our spawning streams to a pristine state, is critical to the ongoing sustainability of our nationally significant salmon fishery. ECan's proposed Natural Resources Regional Plan is looking to address the issue of stock in waterways, but there are no guarantees this will improve the habitat around spawning streams. This is a major cause for concern, however there is good reason to believe the problem can be worked through. Fish & Game has established a High Country Stream Restoration Committee and are looking at directing significant resources towards protecting and restoring the key salmon spawning habitats. This will involve working collaboratively with high country farmers, local government and fishery stakeholders to find solutions that protect and restore these critical habitats. Finding common ground is fundamental in any restoration project as a first step in developing consensus about how to restore stream health, whether the problem is declining salmon runs, stream habitat degradation or water quality. The solutions will likely include fencing marginal strips along some of the spring creeks, replanting these marginal strips and stocking the headwaters of these fisheries with salmon fry.

Creating riparian areas around streams is often an appropriate starting point for improving stream conditions. These areas critically influence stream conditions by buffering upslope impacts such as erosion, provide shade and cover, and reduce flood intensity. In similar projects overseas, improved riparian management has been found to significantly improve aquatic habitats and included such methods as changing livestock grazing regimes, constructing fencing for livestock control, the re-vegetation of riparian areas, and relocating stock water sources away from streams. Ongoing monitoring of restoration work by ECan should determine whether or not the restoration plan has been designed and implemented correctly, the expected results are being achieved, and what if any modifications to the plan are needed to achieve the goals set. Monitoring also provides a valuable opportunity to involve locals or other stakeholders in gathering data, so that long term data sets can be collected for greater understanding of the issues so that changes may be implemented as required. The involvement of help by clubs and volunteers also reinforces and maintains the essential "ownership" and long term values of the restoration project. These projects are likely to take some time to complete are more likely to be an ongoing process rather than a quick fix and in order to succeed with habitat restoration, we need to maintain a long-term perspective.

Recommendations

1. North Canterbury Fish & Game Council allocate significant staff time and financial resources into habitat restoration of key spawning streams.
2. Staff continue with research into residency time in the Poulter River in 2010.

Steve Terry, Fish & Game Officer *August 2009*

From Overseas

Canada: Fraser River Sockeye Salmon Fishery Closed Again

Thursday, 13 August 2009, CBC News

Scientists and others are scrambling to determine what happened to millions of sockeye salmon that defied their predictions and failed to return to the Fraser River this summer, leading to the closure of all the sockeye fishing on the river for the third year in a row. After two of the leanest years on record, scientists had predicted a healthy return of sockeye in 2009. But the most recent numbers show this year's Fraser River sockeye run is only expected to be 600,000 fish, about seven per cent of the original prediction of 8.7 million, making it perhaps the worst return on record.

The original prediction was largely based the strong spawning year in 2005 and the salmon's four-year life cycle, but was considered to be accurate only 50 % of the time.

Ecologist Craig Orr, who studies sockeye as the executive director of Watershed Watch Salmon Society, said the cause of what is now three years of low returns is unclear. "Whether it's as juveniles leaving the system, or as adults returning, they are not getting the food in the high seas. Canada needs to get its act together and get some real investigation going on what's happening to these fish," said Orr.

Some experts blame warmer ocean and river temperatures, and declining food supplies in the open oceans for the failing salmon runs.

But warmer water temperatures can't fully explain the demise of so many fish, said Orr, who is calling for a full investigation of the impact of fish farming and sea lice on wild stocks.

Scientists, environmentalists, politicians and fish farmers have been arguing for years about the impact salmon farms are having on young salmon fry, with many opponents of fish farms predicting sea lice from the industrial operations would decimate wild salmon stocks.

Klamath Dam Removal, Salmon Aid

Jeff Barnard, Gazette Times, 30 September 2009

The turning point toward removing four Klamath River dams in Oregon and California to restore struggling salmon runs came in the little Shenandoah Valley town of Shepherdstown, W.Va.

Michael Bogert, an aide to then-Interior Secretary Dirk Kempthorn, summoned representatives of PacifiCorp and the governors of Oregon and California to the U.S. Fish and Wildlife Service National Conservation Training Center there in May 2008. They would find a way to peace in the Klamath after decades of battling over water, fish, power and farming.

PacifiCorp has agreed to terms for removing four hydroelectric dams on the Klamath that produce enough power for 70,000 customers. If they actually come out sometime after 2020, it will open some 300 miles of river to salmon for the first time in a century. Conservation groups have characterized it as the biggest river restoration effort ever.

PacifiCorp has agreed to spend $500,000 a year for the next 10 years on restoration of coho salmon habitat in California tributaries of the Klamath River.

The focus now shifts to getting farmers, American Indian tribes, salmon fishermen, conservation groups and others to sign onto a $1 billion proposal for restoring the Klamath Basin.

The draft agreement includes water and power assurances for irrigators in the upper basin, as well as continued farming on the Tule Lake and Lower Klamath national wildlife refuges - terms that have angered some conservation groups worried that they will limit water for fish and block the restoration of wetlands critical to improving water quality.

Federal marshals had to be called to Klamath Falls in 2001 to keep farmers from opening floodgates to the Klamath Reclamation Project, which had been closed so scarce water could be devoted to threatened salmon during a drought.

When the Bush administration restored irrigation the next year, tens of thousands of adult salmon died in the lower river, stranded by low water in warm pools where they were vulnerable to disease.

In 2006, poor returns to the Klamath forced authorities to practically shut down salmon fishing in the ocean off California and Oregon, triggering appropriations from Congress for millions of dollars in disaster assistance to fishermen.

Not all tribes and conservation groups are happy with the way things are going.

"The (agreement) allows PacifiCorp to stall dam removal until a date when all naturally spawning salmon in the river could be dead," Hoopa Tribal Chairman Leonard Master said in a statement. "We cannot afford to wait that long."

Oregon Wild is fighting the deal's link to assurances of steady water supplies for a federal irrigation project and continued farming on two national wildlife refuges.

France: Cleaner Seine Sees Return of Salmon

Otago Daily Times by Emmanuel Angleys, Paris, August 2009

After an absence of about 70 years, Atlantic salmon have returned to France's Seine River. Hundreds have swum past the Eiffel Tower and the Notre Dame cathedral this year alone, researchers say.

The reappearance of salmon and other species chased from these waters by dams and pollution is all the more remarkable because no efforts have been made to reintroduce them. They came back on their own. Officials estimate over 1000 have returned this year.

Historically the Seine hosted a flourishing population of salmon. But the construction of dams, and especially the fouling of the Seine with chemical runoff from industry and agriculture, along with organic pollution, led to their local extinction sometime between World War 1 and World War 2.

Imagine the surprise, then, of the weekend angler who reeled in a 6kg specimen just downstream from Paris at the end of July. Or, the dozing fisherman in Suresnes, also downstream from the city gates, who snagged an even bigger one last October, the first such catch in more than seven decades.

Salmon are not the only fish in the Seine making a comeback. In 1995, just four species were known to swim its waters - eels, redeye, bream and carp - and at least one of these is invasive. Today, at least 32 fish species are present, according to the water purification authority for the larger Paris region. The lamprey eel, sea trout and shad have all joined salmon in the Seine in the past few years.

The reason, say scientists, is simple: cleaner water. In the mid-1990s between 300 and 500 tones of fish died in the Seine upriver from Paris every year because of pollution. But massive efforts in the past 15 years, including a new water-purification plant, have removed much of the river's pollutants. The results suggest that when it comes to conservation, restoring an ecosystem is probably a better strategy than restocking depleted waters.

Scientists who track salmon say it is a "bellwether species", a living indicator of its habitat's state of health. To find out more about how Atlantic salmon are recolonising their ancient river haunt, the scientists recently caught and released seven adults in the Seine. Four had spent less than two years at sea before returning to fresh water, two had returned in the northern spring after two years in open water, and one had waited three years before leaving the ocean.

DNA analysis showed thefish came from several different rivers, in France and elsewhere in Europe. It also suggested a new "embryo" population specific to the Seine might be forming, probably southeast of Paris at the headwaters of the Yonne River in the region of Morvan.

Salmon Catch at Sea
Extracts from the 2008-09 Season Report

Compiled by Ray Voller, Fisheries Analyst, Ministry of Fisheries

This 2009 Salmon Season Report provides information on salmon catch at sea to support the Salmon Agreement between amateur and commercial interests. The Agreement provides rules for conditional access to the SCA by large trawlers, or their replacements, that historically fished the area prior to the closure. At present, the Agreement provides for seven large trawlers - the *Austro Carina*, *Resolution II*, *Galatea II*, *Ocean Pioneer*, *Ikawai*, *Tengawai*, and *Hans* to fish in the SCA. When fishing in the SCA during the period 7 December to 14 February, the Agreement provides for a verification program to collect information and to validate salmon catch of the large trawlers.

Before the 2005-06 fishing season all trawling operations by the seven large vessels within the SCA had to have verifiers on board from 7 December to 14 February. Since then an "as needed" verification program has operated in the SCA. Verifier coverage for fishing in the SCA is decided by Fish and Game New Zealand in consultation with the skippers of the larger vessels. In addition, Government observers of the interaction of trawlers and Hector's dolphins sometimes act as verifiers when they are in the SCA. This season, the *Austro Carina* based at Lyttelton and the *Tengawai* based at Timaru, had verifier coverage in the SCA.

Salmon Landings

Commercial vessels caught 0.7 tonne of salmon off the ECSI between October 2008 and August 2009. Of this total, 0.1 tonne of salmon was reported by verifiers from the SCA.

Reported commercial salmon season landings from ECSI and the SCA (by the larger trawlers) from 1991-92 to 2008-09 season are shown in Table 1.

In the six years prior to 1991-02, salmon catch by commercial fishing vessels off the ECSI, averaged 29 tonnes per season. Following the Agreement salmon catch was significantly lower. Between 1991-92 and 1997-98 salmon catch averaged around three tonnes per season before dropping to less than one tonne for the next five seasons. Salmon catch increased in 2002-03 to 2.7 tonnes for two seasons and then declined to around 0.6 tonnes for each the last four seasons.

Salmon catch by the larger vessels in the SCA this season was similar at around 0.1 tonne to that landed over the last 11 seasons, apart from the 1.3 tonne landed in the 2004-05 season. The size of salmon caught was smaller than last fishing season, ranging from ~ 0 1 to 7.3 kg. This year most salmon were caught off the ECSI and in the SCA in December, one month earlier than last year (refer Appendix 1).

The total salmon catch by commercial fishing vessels off the ECSI has ranged from 0.5 to 4.9 tonnes, averaging 1.7 tonnes per season since the Agreement started in 1991. In the 18 fishing seasons since implementation of the Agreement, an average of 18% of the total salmon landed by large trawlers off the ECSI has come from the SCA. This figure has ranged annually from a high of 58% in 2004-05 to a low of zero% in 2001–02.

Salmon Runs along the East Coast of the South Island

Each season since 1993, the size of the ECSI run of salmon return to freshwater has been estimated by summing angler catch and spawning numbers (salmon that escaped being caught by anglers as they made their way up river to the spawning grounds).

During NIWA investigations into capture of salmon at sea by trawlers in the late 1980's, recapture of salmon tagged as juveniles in their rivers of origin indicated most of the fish caught at sea along the ECSI came from the Waimakariri, Rakaia and Rangitata Rivers.

The combined season return of salmon to these three rivers in the 2008-09 season was estimated to have been around 15,400 fish (Figure 1). The return was 22% down on 2007-08 with almost all of that attributable to a reduction in returns to the Waimakariri River of about 4,000 fish. Return of adult salmon released as juveniles from the Fish and Game salmon hatcheries at Montrose on the Rakaia and McKinnons Stream on the Rangitata River contributed about 1,600 fish to returns to these two rivers.

The ECSI salmon runs peaked in 1995-96 at around 46,000 salmon, and then declined sharply to stabilise around 15,000 salmon during the late 1990's, before declining to 4,000 salmon for the 2000-01 season. Between 2000-01 and 2005-06 salmon runs steadily increased but were at their lowest levels (around 10,000 salmon) of the last 40 seasons. During the last three seasons, salmon runs have improved and stabilised around the levels of the late 1990's.

Discussion

Salmon runs in ECSI Rivers have been increasing since the 2000-01 season from around 4,000 salmon and now appear to have stabilised at the level of the late 1990's of 15, 000 salmon. Levels of salmon caught at sea by commercial fishing have been stable over this period at around 250 salmon or less than 2% of those returning.

NZSAA ANNUAL SALMON FISHING COMPETITION

The NZSAA Annual Salmon Fishing Competition will be run for the current 2009-10 season. The Fisherman's Loft have again kindly agreed to sponsor the contest and a $50 voucher will be awarded to the winner of each of the following categories (one trophy per person):

- Heaviest Salmon Overall - Aquarius Trophy
- Heaviest Salmon Rakaia - Alty Roscoe Trophy
- Heaviest Salmon Waimakariri - Cromb & Merritt/Fisherman's Loft Trophy
- Lucky Draw from Remainder of Entries

Trophies and prizes will be awarded at the NZSAA AGM in May 2010.

COMPETITION RULES

1. Entrants must be financial members of NZSAA and hold a current sport fishing licence.
2. Fish must be caught in accordance with current Fish & Game regulations.
3. A scale sample must be provided.
4. All fish must be gutted and gilled with the head on. Frozen fish not permitted.
5. Fish must be weighed at premises where Government tested scales are in use.
6. Declaration form must be completed and forwarded to reach the Secretary, NZSAA, P O Box 1113, Christchurch 8140, no later than 7 May 2010.
7. All panels on the entry form must be completed and the declaration signed.
8. In the event of a dispute the final arbitrators will be the NZSAA Committee. No correspondence will be entered into regarding the results.

ENTRY FORM AND DECLARATION

Name…….

Angler's Address……...

Licence Number……Date Fish Caught……

Weight of Fish (Gutted and Gilled with Head On)……..kg……..gms

River and Location where Caught…….

Premises Where Weighed…….

Name and Signature of Person Weighing……

I certify that all the above information is correct,
and that I am the Angler who caught this fish
A scale sample is attached. ... …….……

Signature of Angler

YOU'RE INVITED
JOIN

NZ Salmon Anglers Association (Inc)

- YOUR SUPPORT WILL ENSURE CONTINUATION OF OUR SALMON FISHERY.
- PROTECT OUR WATER RESOURCES
- ENSURE APPROPRIATE LICENSING REGULATIONS
- ASSIST BREEDING PROGRAMS

Post To: N.Z. Salmon Anglers Association (Inc)
P. O. Box 1113 Christchurch 8140 New Zealand

I wish to become a member of the NZ Salmon Anglers Association Inc and agree to be bound by the Rules and Constitution of the Association

Name _____

Address _____

Contact details _____ Email _____

Available to assist with volunteer work weekdays/weekends?

Subscription enclosed

- ❒ Adult membership $25pa
- ❒ Family membership $30pa
- ❒ Junior membership (under 18yrs) $10pa

Signature of Applicant _____

NEW ZEALAND SALMON ANGLERS ASSOCIATION INCORPORATED