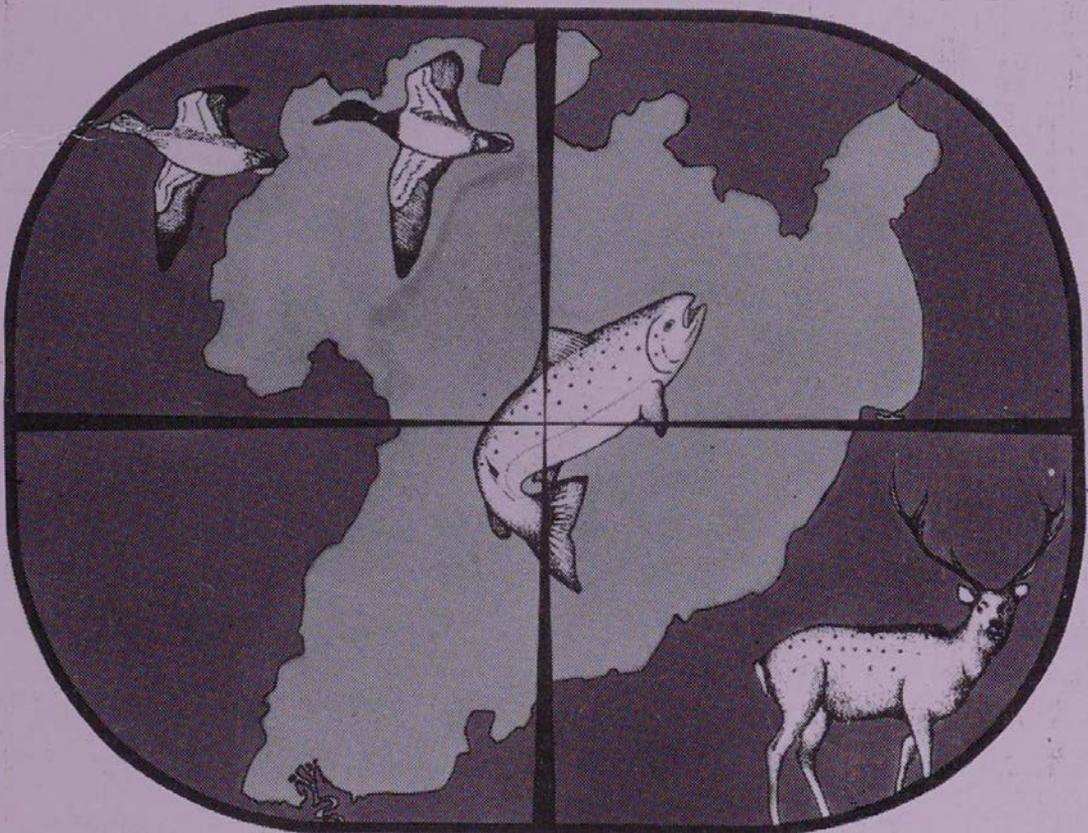


NOVEMBER 1991
Issue 8

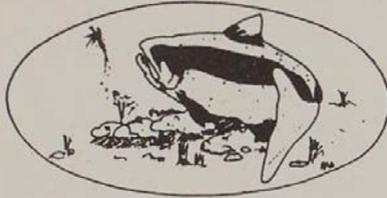
TARGET TAUPO

A Newsletter for Hunters and Anglers in the
Tongariro / Taupo Conservancy



CONSERVATION
TE PAPA ATAWHAI

SPORTING LIFE 86



FISHING OUTFITTERS

The complete Fly Fishing Shop, specialising in outfitting you for the Tongariro and Taupo lakes and rivers.

Extensive knowledge and practical experience of the area assures you of the very best attention. Professional guiding services offered and arranged for all rivers and lakes in the Tongariro region.

If you're coming our way, call in and chat to the team — or write — or phone us prior to your visit.

**P.O. Box 162, Tel. (07) 386 8996 TURANGI
GRAHAM WHYMAN and his professional team**

LAKELAND HELICOPTERS

Taupo Murupara

For your hunting trips into the Ureweras, Kaimanawas, Kawekas and surrounding State Forests or our popular Private Land.



- Hunters . . . hunt for Red Deer, Rusa Deer, Sika Deer and Pigs
- Fishermen . . . fish virgin waters for mighty Rainbow and Brown Trout
- Campers and Family Groups . . . travel right into the wilderness
- Over 40 huts and unlimited camping sites to choose from
- Professional guides available for all activities
- Book now for the Roar
- Fly in for as little as \$100 each

LAKELAND HELICOPTERS Taupo Airport, R.D.2 Taupo Ph: (07) 378 4532

TARGET TAUPO

**A Newsletter for Hunters and Anglers
in the Tongariro/Taupo Conservancy**

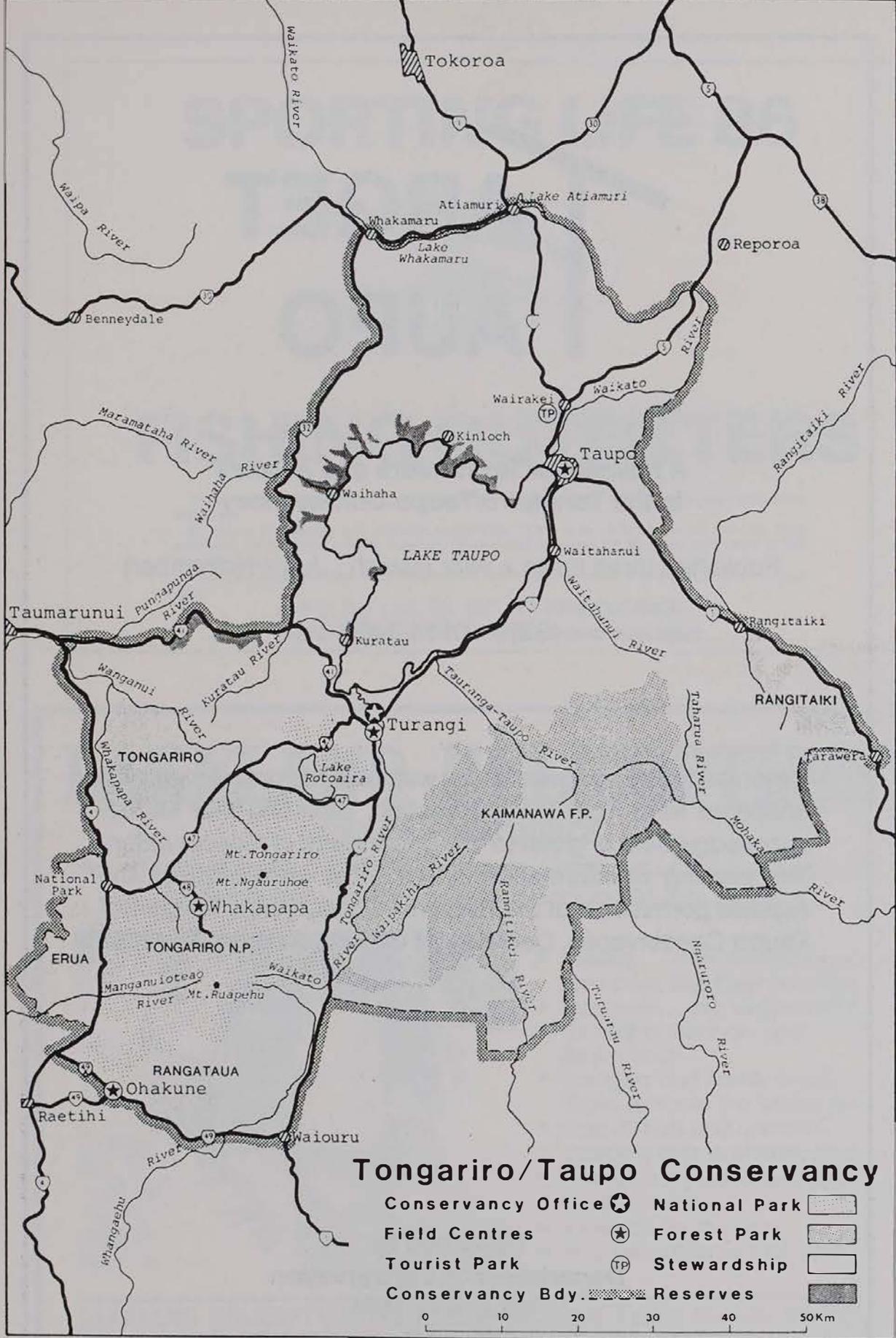
Published three times a year (March - July - November)

ISSN 0114-5185

Organisations and agencies are welcome to print articles in an unaltered form from this publication, provided that full acknowledgement is given to the Department of Conservation. The printing of information in any other form requires the express permission of the Regional Conservator, Tongariro/Taupo Conservancy, Department of Conservation, Turangi.

Published by
Department of Conservation
November 1991

Printed by Taupo Times Commercial Printing





**CONSERVATION
TE PAPA ATAWHAI**

Dear Readers,

The analysis of the year long angling harvest survey of the Taupo fishery is now complete. In the interests of circulating the results as widely as possible, we have prepared a separate special edition of **Target Taupo** which we have published along with this issue. The survey has confirmed that for last season, angling harvest accounted for a very high proportion of the available trout in the fishery. We, as anglers, need to accept that our activity can and does have a substantial impact on the trout population and that the ability to control this rests directly with each of us. We need to remember this each time we land a fish and make a conscious decision about whether we really need to kill that fish.

The good news is that the decline in trout numbers which led to the reduced bag limit last December has turned around and things are now improving. Experienced anglers report that the fishing in the lake during this last winter has been the best for many years. The spawning runs were very late due to the unseasonably dry autumn and winter but when the rain finally came in July, the fish poured in. As a result, the fishing all round has been very good in the last few months and herein lies a little danger.

Some anglers have already forgotten that only a year ago we had the lowest number of fish on record through our traps following a lengthy period of decline. Some anglers are reporting that the fishery is as good now as it ever was but, unfortunately, biology does not work quite that quickly. We must not fall into the trap of becoming complacent about the fishery simply because we may have enjoyed some recent success. A resurgence of the "she'll be right" attitudes of the past could see the fishery rapidly plunged back into decline.

The spring is now upon us and promises to be a productive one for hunters. The new growth is well underway and the deer are on the move and taking advantage of this. Hunters making the effort to get to those favourite clearings and bush edges at daylight or in the late evening should have every chance of success, particularly if the wind ever stops blowing.

Enjoy your sport.

Rob McLay
Co-Editor

DEPARTMENT OF CONSERVATION
TONGARIRO/TAUPO REGIONAL OFFICE
PRIVATE BAG, TURANGI, NEW ZEALAND.
TURANGA PLACE, TURANGI.
TELEPHONE (07) 386 8607
FAX (07) 386 7086

TAUPO TROUT FISHERY MANAGEMENT PLAN

In this issue of **Target Taupo**, considerable emphasis has been given to the effects of angling harvest on the Taupo trout population. This is quite appropriate given the new information that has recently come to light. However, as managers, we cannot afford to focus on this issue in isolation from all of the other factors which may have a bearing on the sustainability of the resource and on the satisfaction that anglers derive from it.

There is a need to integrate all of the key factors which influence the fishery into a single management plan which will provide a written direction for actions to be taken in the future. There is also a need to construct this plan in consultation with anglers and with other groups that have an interest in the welfare of the fishery.

As a first step in this process, the fishery managers are currently preparing a discussion document which highlights the whole range of perceived fishery management issues. This will be released in December and submissions on management policies and priorities will be invited from the public.

Following on from this, the draft management plan will be prepared, based on the marriage of the ecological needs of the resource and the aspirations of its users and beneficiaries.

THE FLY & GUN SHOP



18 Heu Heu Street, Taupo
Phone (07) 378 4449

FOR ALL YOUR HUNTING AND FISHING NEEDS

CONTENTS

1. Down That Same Old Road?
Guest article by Peter Deakin
 2. Comparison of Two Strains of Rainbow Trout in the Whakapapa River and Lake Otamangakau
 3. Kaimanawa RHA Sika Deer Jaw Programme - 1990 Results
 4. Angler Satisfaction Survey
 5. Bitz 'n' Pieces
 7. Winter Hunting Summary 1991
 8. Something Fishy
 9. Manager Profile
- Reader Questionnaire
- Subscription Form

1. DOWN THAT SAME OLD ROAD?

Guest Article : PETER DEAKIN

Peter Deakin is the owner of the Creel Fishing Lodge in Turangi. He recently retired from the commercial marine fishing industry once it became apparent to him that over-harvest was having a major impact on fish stocks and, therefore, the long term welfare of the fishermen themselves. He is an avid trout fisherman with a genuine interest in the welfare of the Taupo trout fishery. The message he brings to the fishery, based on lessons learned in the marine arena, is one to which we all should perhaps give some thought.

After 20 odd years of commercial fishing I decided to sell up and head for Taupo to take life a little easier and to catch trout. It was a natural move for me as I have always been drawn to the area, since my first fishing adventure there in 1966.

I soon found that, like the coastal sea fisheries I had left, Taupo also had over-fishing problems. I heard all the arguments about what was wrong and how it should be fixed, but all the time I kept getting the feeling that I had been down this road before.

In the sea fisheries the lid was taken off in the mid-1960s and it became easy for anyone to get a licence and the old "kiwi mate" system took over, i.e., the word got out that there was a good 'buck' in fishing. The result was that too many fishermen were chasing too few fish.

The resultant quota system may not suit everyone and has some ironing out to be done to make it work properly but every commercial fisherman knew it was inevitable and necessary to safeguard the fishery.

All natural resources must be managed today, especially those that involve hunting, because of man's natural instinct to destroy and the threat from a growing demand for use of these resources.

At Taupo there are many things that affect the fishery, i.e., hydro development, forestry, poaching, etc., but the one thing that has the greatest impact is us and our attitudes to the fishery. So it follows that the answer to the future of the fishery lies with each and every angler who comes to Taupo.

It's a natural human failing to think that someone else is to blame. We are always slow to see that, in fact, we ourselves have an 'attitude problem', especially those of us who have a vested financial interest in anything.

The attitude problem in this case is that we look at Taupo as a place that is relatively easy for us to hunt to kill and fill our freezers and to impress our friends.

Ask yourself - how many times have you heard from friends or acquaintances of how they went to Taupo for Christmas or a holiday and came back with heaps of fish? These stories have been handed down from our fathers and forefathers in Taupo's heyday and have created in us an attitude problem which is now the single most dangerous threat to the Taupo fishery.

In our fathers' and forefathers' time they got away with killing trout the way they did because Taupo was a virgin fishery and there were comparatively few anglers. Today is very different and thousands of people fish this area each year.

I've heard people say that DOC should do something to fix the problem. DOC knows what the problem is and how to fix it, but they also know that nobody will want to pay the price.

So it is down to us, the anglers, to re-learn what trout fishing is really all about. We have to ask ourselves why it is that tourists will keep coming here from all over the world at great expense just to catch and then release a trout and still be over the moon about it. Because it's true, they rarely kill a fish.

We must realise that our teachers (our fathers or friends) were wrong when they taught us that trout fishing meant meat hunting. It is no longer appropriate for us to measure our success by the number of fish we can kill.

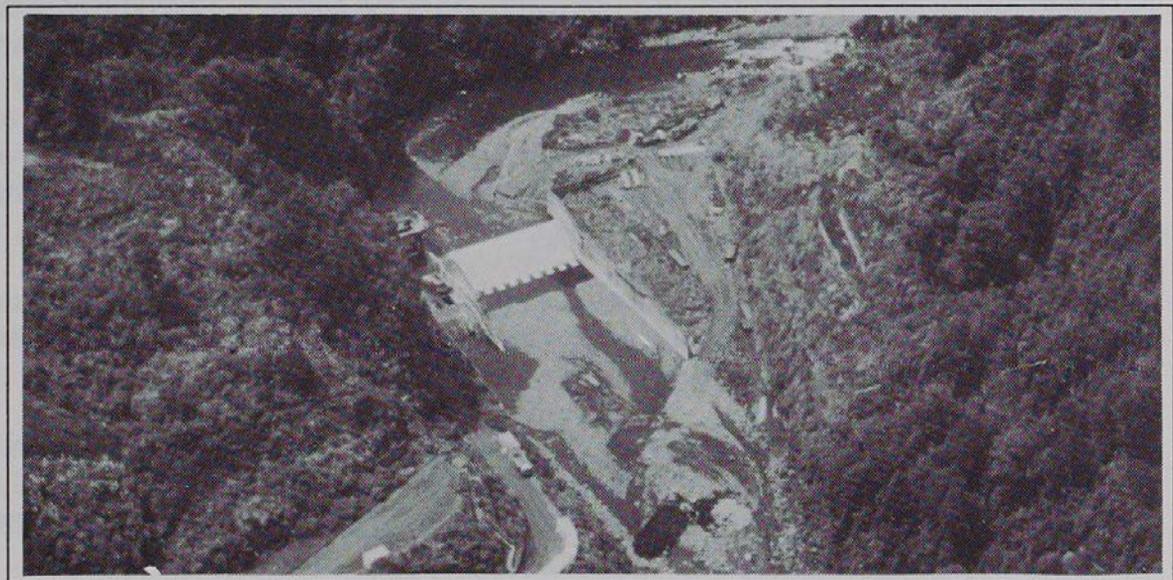
When we are out on the river and catch a fish we must realise that it's a privilege to do so, not a god given right, and that if we don't intend to eat the fish then we should release it. I am sure people will be happy with the feeling that they get from this and that it will help them learn what trout fishing is really all about.

2. COMPARISON OF TWO STRAINS OF RAINBOW TROUT IN THE WHAKAPAPA RIVER AND LAKE OTAMANGAKAU

In 1987 a study was undertaken to assess the value of using river resident (Ruakituri) rainbow trout stock versus migratory (Lake Taupo) stock to improve angling opportunities in the upper Whakapapa River. In the past the Whakapapa River had supported a significant trout fishery but it is now affected by the Tongariro Power Development Scheme which diverts a large volume of water from the upper river (typically between 12 and 30 cumecs) into Lake Otamangakau, allowing a normal residual flow of only 0.6 cumecs down the Whakapapa River. (The Wanganui Minimum Flows Tribunal has since set the minimum residual flow at 3 cumecs but this is under appeal by Electricorp).

As with other North Island rainbow trout headwater fisheries, juvenile trout move downstream as they grow. At the Whakapapa intake, most pass through the tunnel. However, the Whakapapa tunnel and intake structure prevents adult fish returning to the headwaters to spawn. It was speculated that juveniles from Ruakituri River stock might retain the sedentary characteristics of their parent stock which have remained in the upper Ruakituri River for 30 years despite several impassable waterfalls downstream. This implies that at least some of the offspring display a propensity to spend their whole life in a small section of the river. The Whakapapa tunnel drains into Lake Otamangakau, a shallow invertebrate-rich man-

made lake renowned for producing trophy rainbow trout in excess of 4.5kg. It is a closed system due to fish screens on the outlet canal designed to prevent the accidental transfer of brown trout and eels into Lake Rotoaira.



The Whakapapa intake structure.

If the juveniles which were placed in the upper Whakapapa migrate downstream they can be expected to appear in anglers' catches in Lake Otamangakau or in the lower Whakapapa or Wanganui rivers, into which the Whakapapa drains.

Ruakituri rainbow trout were originally from Taupo stock and grow to very large size on a solely invertebrate diet. It was also considered that Ruakituri stock might further enhance the trophy potential of Lake Otamangakau.

In October 1987, 600 individually tagged fingerlings of Ruakituri stock and 600 of Taupo stock were released into sites on the Whakapapanui, Whakapapiti and Mahuia streams. These are headwater streams of the Whakapapa River and a Hughes 500 helicopter and monsoon bucket was used to carry out the liberations. A further 600 fingerlings of each strain (average size 190-200mm) were released directly into Lake Otamangakau.

The project was widely publicised and anglers fishing the Whakapapa River above and below the intake and Lake Otamangakau were encouraged to return the details of any tagged fish caught. The upper Whakapapa system attracts little angling pressure but members of the Waimarino Ward of the then Central North Island Wildlife Conservancy Council individually contacted the small group of local anglers about the project and put in additional angling effort themselves in this area to try and maximise the chances of recovering any tags.

Only three tags, all of Ruakituri strain fish, were ever reported in the Whakapapa system. The upper Whakapapa was also drift dived in May 1988 and no tagged fish were observed. However, 104 tags were returned from Lake Otamangakau, a return of 5% and possibly a lot higher depending on how many fish actually migrated down the Whakapapa tunnel. The composition of these tags is shown in table 1.

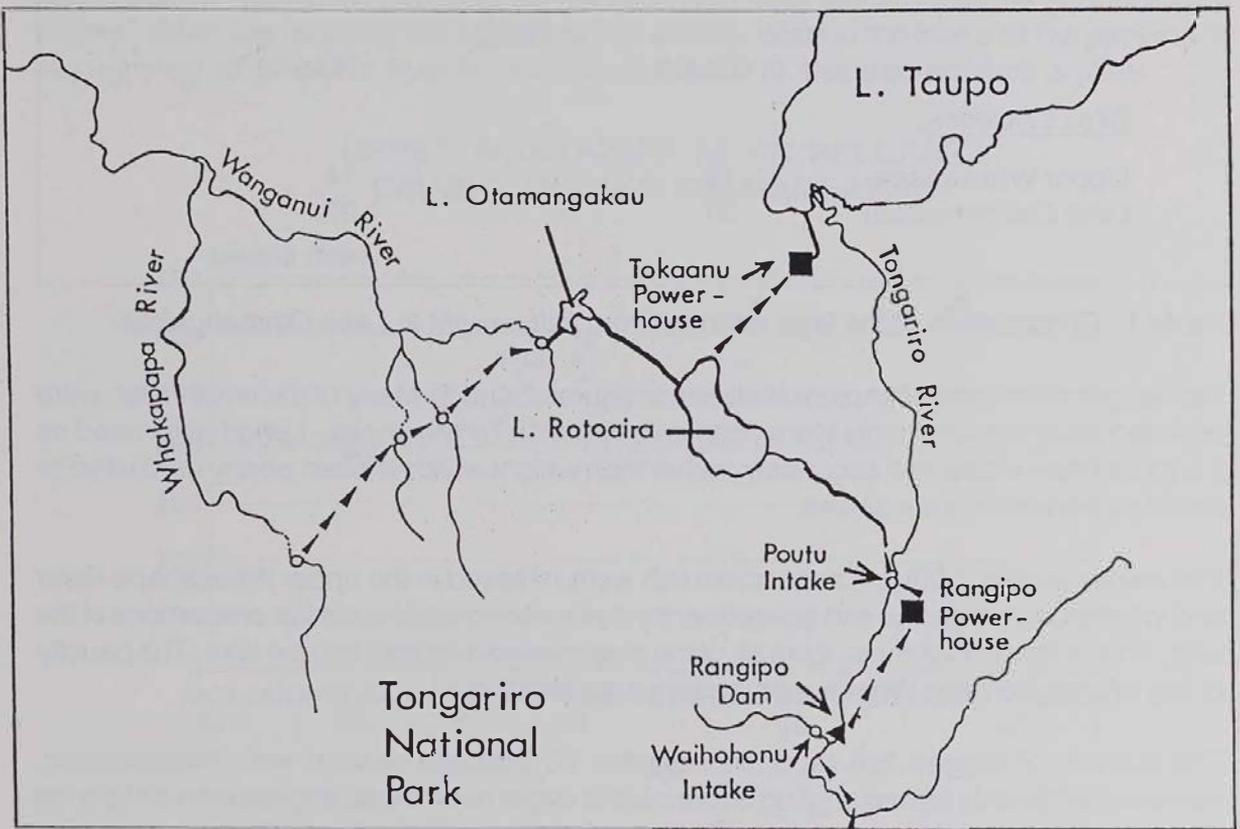


Figure 1: A map showing the location of the Whakapapa River and Lake Otamangakau. The arrows represent the diversion of the flow via the Whakapapa tunnel [redrawn from Stephens (1989)]



Lake Otamangakau

Site of Release	<u>Strain</u>	
	Taupo	Ruakituri
Upper Whakapapa	26	14
Lake Otamangakau	27	37

Table 1 : Composition of the tags returned from fish caught in Lake Otamangakau.

Fish length at the date of capture is shown in figures 2 and 3. Many of the smaller fish were released and measurements were often an estimation by the angler. Length was used as it is more often measured accurately, rather than weight which is often poorly estimated or measured on inaccurate scales.

The same number (600) of Taupo strain fish were released in the upper Whakapapa River and in Lake Otamangakau and subsequently these were caught in similar proportions in the lake. This indicates that most, if not all, of the river release migrated into the lake. The paucity of tag returns from the Whakapapa system supports this.

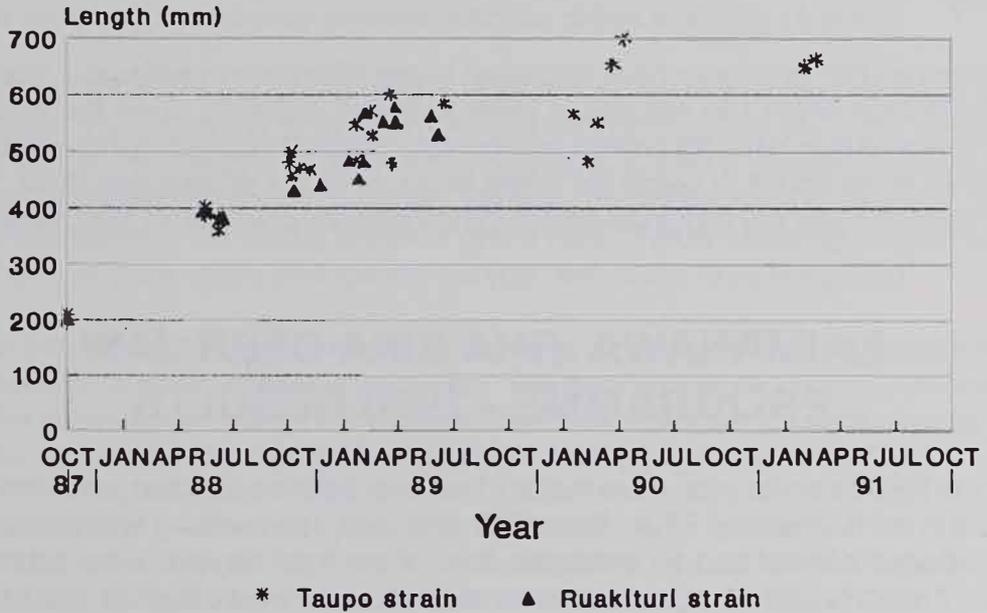
The number of tagged fish reported from the Whakapapa system was disappointing. However, while only limited angling occurs in the upper river, those anglers who do fish the Whakapapa and the Wanganui rivers, are on the whole, conscientious about reporting any tagged fish. A team of experienced drift divers also observed no tagged fish above the Whakapapa intake structure and it would seem very few tagged fish survived in the river. While it is apparent that the majority of Taupo strain juveniles passed down the Whakapapa tunnel which diverts on average 95 to 98% of the flow, it appears some of the Ruakituri juveniles remained in the river. Two of the tagged fish were recovered in 1990 and 1991 in tributaries of the Wanganui upstream of its confluence with the Whakapapa. Both were estimated to be approximately 2.5kgs. The third tag was returned from a fish caught in the Whakapapa in February 1989. Unfortunately we have been unable to trace the angler to determine whether it was taken above or below the intake structure.

That a smaller number of Ruakituri juveniles reached Lake Otamangakau is borne out by the disparity in the proportions of Ruakituri strain fish caught from each release in the lake. This is also supported by their disappearance in the catch after the 1988-89 fishing season, unlike the other groups which continued to be caught in the 1989-90 and 1990-91 seasons. This suggests the size of this cohort in the lake was smaller than those of the other groups. When subject to the same rates of mortality as the other groups fewer fish could be expected to survive through to age 3 and 4 and therefore be caught by anglers. However, if Ruakituri strain juveniles did remain in the river, either above the intake structure, or were swept over the spillway during large flood events, it seems most did not survive.

Analysis of length with age indicates no difference in growth rates between the two strains in Lake Otamangakau with fish reaching sizes of 60 to 70cm and up to 4.5kg at age 3+ and 4+. One of the characteristics of very large Lake Otamangakau rainbow trout is that they are relatively old (e.g. Ron Burgin's 76cm 8.33kg rainbow female caught in 1983 was six years old) and have continued to grow each year. Unless Ruakituri strain fish were to live longer on average in Lake Otamangakau than local strain fish and continue to grow, hence

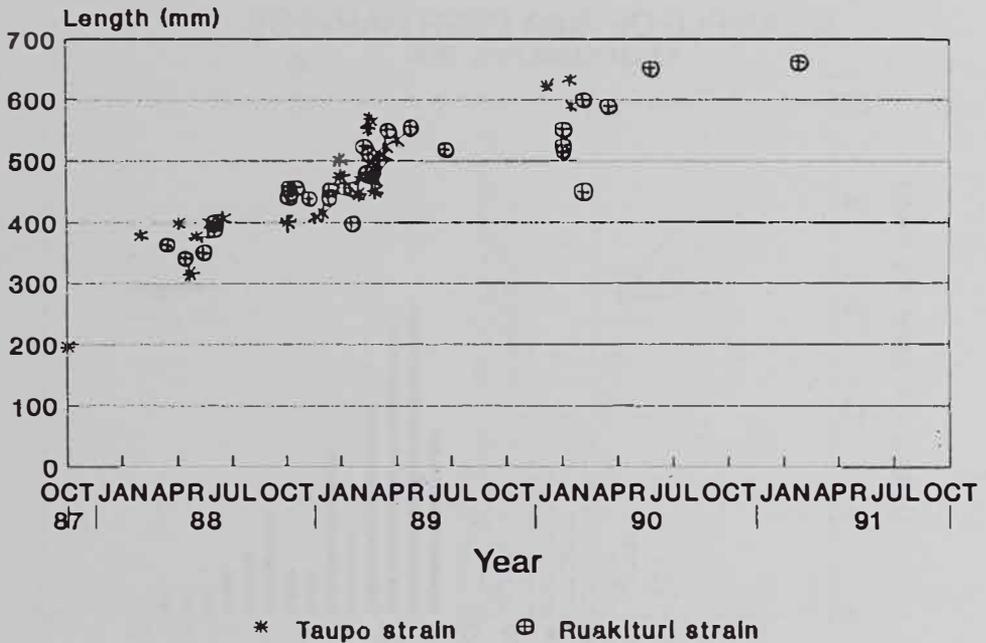
reach a larger maximum size, they do not appear to offer any advantages for the trophy fishery. Given the relatively old age some fish already attain in the lake and the patterns of tag recovery to date from Ruakituri fish (figures 2 and 3), this also appears unlikely.

UPPER WHAKAPAPA RIVER RELEASE CAUGHT IN LAKE OTAMANGAKAU



Released October 1987

LAKE OTAMANGAKAU RELEASE



Released October 1987

Figures 2 and 3

In Lake Taupo the energetic costs of feeding on a largely fish diet appear to limit trout growth much above 50 to 55cm, but the same fish growing in the invertebrate rich Lake Otamangakau demonstrate the ability to continue growing (figures 2 and 3). Clearly Taupo strain fish do have the genetic potential to reach very large size (greater than 4.5kg). Therefore it is not surprising that Ruakituri and 'wild' Lake Otamangakau fish which were derived from Lake Taupo stock also reach a very large size under suitable conditions.

Summary

Ruakituri strain fish appear to have displayed some difference in behaviour from Taupo strain fingerlings which has resulted in fewer juveniles migrating down the Whakapapa tunnel. However they have not proved any more successful in providing increased angling opportunity either above or below the intake structure on the Whakapapa River. Neither do they appear to offer any additional advantage to the trophy potential of Lake Otamangakau.

3. KAIMANAWA RHA SIKA DEER JAW PROGRAMME - 1990 RESULTS

During the 1990 calendar year, more hunters than ever before submitted jaws from animals they shot in the Kaimanawa RHA. Some 223 deer jaws, representing approximately 50% of the reported harvest and an estimated 35% of the total harvest, were submitted for analysis. From this sample, 188 usable records for sika deer were obtained, shedding more light on the impacts hunting is having on the population in this very popular area.

The usable sample of 188 sika deer jaws included 101 stags and 87 hinds and shows a similar sex ratio to previous years, with six stags being harvested for every five hinds taken.

A SAMPLE OF SIKA DEER HARVEST
KAIMANAWA RHA 1990

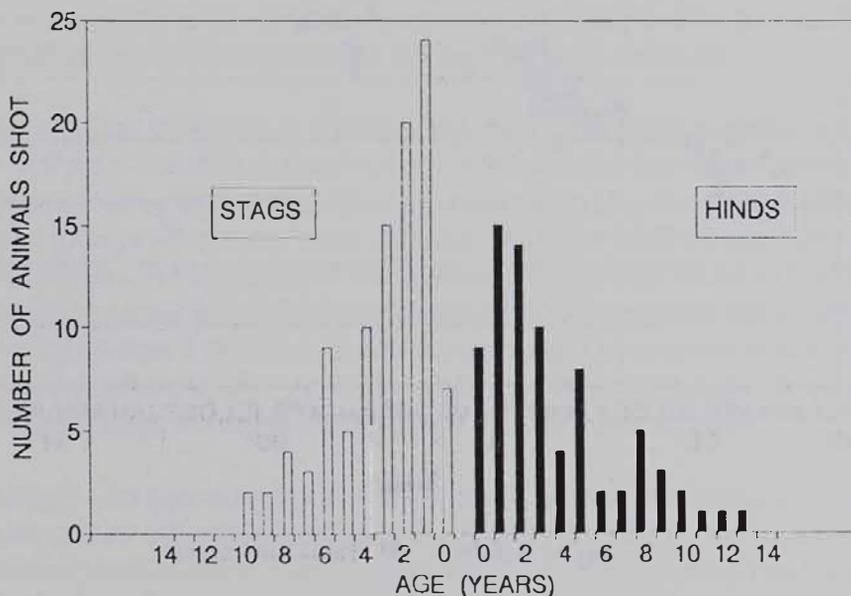


Figure 1: Age structure of sample

The graph, while showing many similarities to previous years, has two interesting differences. Firstly, fewer deer are now reaching the very old age classes. Only three hinds older than 10 years were harvested in 1990, the oldest being 13 years. This compares to 1987 when nine hinds older than 10 years were harvested with the oldest being 16 years. Jaws from hinds 17, 18 and even 21 years old have been aged since 1983. Stags also appear to be finding survival under such intense hunting pressure more difficult. The oldest stag harvested in 1990 was 10 years old. In previous years jaws from four or more stags over this age have been commonly provided with the oldest reaching 15 years.

The high harvest of spikers during 1990 is another indicator that hunting pressure is having a significant impact on the population. These young stags are the most vulnerable to hunting and an increased proportion in the harvest suggests a greater hunting impact on the herd. The larger the harvest of spikers, the fewer trophy stags will appear in subsequent years, thus reducing the trophy potential of the herd. Fewer breeding stags means less roaring activity (how much sika roaring did you hear in the RHA this year?)

A further indicator of the significant impact hunting is having on the sika population of the Kaimanawa RHA is the increase in jaw length. The graphs in figure 2 below show the growth curves for sika hinds and stags in the Kaimanawa RHA. Each dot is a separate deer jaw and the curve represents the average jaw length for each age group.

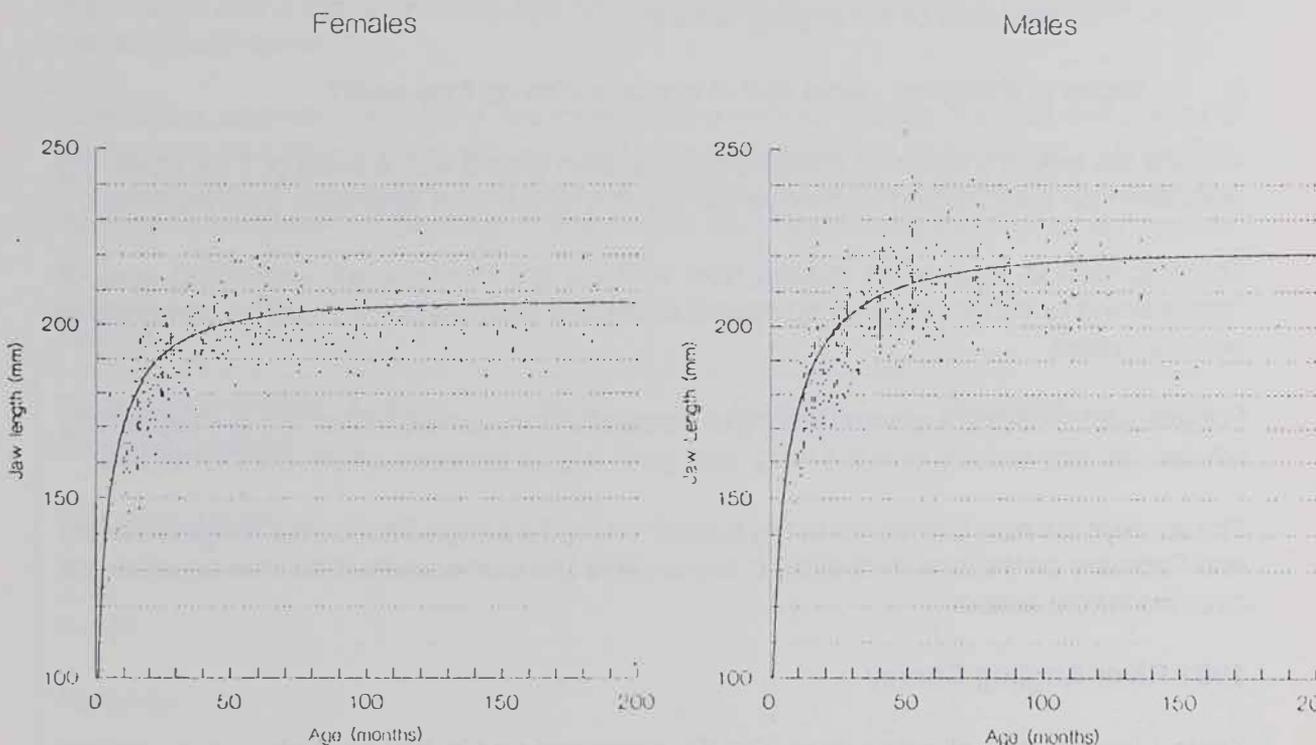


Figure 2: Growth curves for sika hinds and stags, Kaimanawa RHA

Statistical analysis of jaw lengths from animals born in different years (cohorts) shows a small but significant increase in sika deer size since 1974 (the first year that enough records exist for). This suggests that the nutrition available to the herd has increased over the last 17 years, presumably as a result of fewer deer and improving habitat quality.

This data shows that given the opportunity and good access, recreational hunters can offer an extremely high level of animal control to the Department of Conservation. This type of deer control is not driven by overseas markets or economic viability but by the desire of a large number of kiwi hunters to enjoy the outdoor opportunities that the central North Island provides.

4. ANGLER SATISFACTION SURVEY

This year the annual August river and December lake angling surveys have been altered to provide a means of measuring current levels of user satisfaction with the resource. As well as obtaining information on catch rates and characteristics of the anglers using the fishery as done previously, information is now also obtained on:

- 1 Anglers' satisfaction with the opportunities available
 - number and quality of fish
 - the experience offered
 - the state of the angling access

- 2 Angler preferences - what sort of opportunities do they seek?

Anglers are asked a series of questions and shown a card with a scale of 1 (terrible) to 5 (excellent) on it and asked to choose the number which best describes their response.

This information is used to assess how well we are meeting our underlying goal of "maintaining or enhancing angling opportunities and satisfaction" and will be comparable between years.

For example if there is a general feeling of dissatisfaction, can we explain it? Is it something we can remedy quickly or is it a long term goal, e.g. to increase catch rates in the river.

The surveys are now carried out in September on the Tauranga-Taupo and Tongariro rivers and February on the lake. Hopefully many anglers can then comment on their experiences over the whole season.

1991 River Angling Survey

Table 1 lists the overall catch rates (CPUE) measured on six half days chosen at random during September on the Tauranga-Taupo and Tongariro Rivers.

Table 1: Catch rate of anglers interviewed during the September angling survey

Method	Days this year angler fished this river	No. of anglers interviewed	Hours	Caught (includes large fish returned)	CPUE (fish/hour)
Tauranga-Taupo:					
Nymph	<10	15	41.5	14	0.34
Wetfly	<10	6	10	4	0.4
Nymph	>=10	13	35	38	1.09
Wetfly	>=10	4	10	8	0.8
Tongariro:					
Nymph	<10	39	95	18	0.19
Wetfly	<10	24	44.5	9	0.20
Nymph	>=10	54	141.75	49	0.35
Wetfly	>=10	25	55.25	14	0.25

It is very evident that those anglers familiar with a particular river do, on the whole, have the most success. Nevertheless the catch rates on the Tauranga-Taupo, in particular, highlight that despite all the talk, some fairly spectacular fishing did occur on the Taupo rivers when the rain finally came.

Table 2 is a summary of anglers' responses to the state of access, the size and quality of the fish they had seen and the success and enjoyment they had experienced. 1 is terrible, 3 is average and 5 is excellent. Numbers are rounded off but you may wish to see how your responses compare. It is pleasing to note that the majority still enjoy their Taupo experience.

Table 2

Days angler fished river this season	Access	Size	Quality	Success	Enjoy
Tauranga-Taupo:					
<10	3	3	4	3	4
>=10	3	3	3	4	5
Tongariro:					
<10	4	3	3	3	4
>=10	4	3	3	3	4

Responses to the question "what if anything detracts from your angling experience?" are listed in table 3.

Table 3: Factors which detracted from anglers' experience

	Tongariro	%	Tauranga-Taupo	%
Poor manners	8	(6)	2	(6)
Lack of fish	24	(19)	0	
Regulations	3	(2)	0	
Conflict between angling methods	4	(3)	0	
Overcrowding	14	(11)	4	(11)
Other	29	(23)	12	(34)
Nothing	45	(35)	17	(49)

'Other' includes all other comments, none of which occurred more than a very few times.

The final part of the questionnaire asked how important such things as solitude and ease of access were in influencing where an angler chose to go fishing.

Obviously anglers' opinions vary widely (they wouldn't be anglers if they didn't) but annual surveys like this provide us, the managers, with a better understanding of just what you, the angler, want in the Taupo fishery. After all it is you we are managing the resource for.

5. BITZ 'N' PIECES

Access Road 10 to Kaimanawa Forest Park

Access to Kaimanawa Forest Park via Access Road 10, is still available to the public. However there has been a charge of five dollars (\$5.00) per adult per day, placed on the use of the road by the Rotoaira Forest Trust. Permits can be obtained from the trust office in the town centre, Turangi, during normal office hours (telephone (07) 386 8831), or at weekends from the Turangi Information Centre. The only alternative route to this area is via a four-wheel-drive track some 5kms south along the Desert Road which gives access to the Pillars of Hercules, and by foot from there to the rest of Kaimanawa Road.

More helicopter access to Kaimanawa Forest Park

Restricted helicopter access for hunters to the remote Rangitikei River catchment has recently been approved for the period 20 March to 20 May 1992. A total of four sites, one in Ecology Stream, two in the Rangitikei River itself, and one in the Otamateanui Stream, will be available during the two month period next year. All holders of aerial ferry concessions will be able to take paying clients to these sites. The move is in response to findings of a report earlier this year that current deer numbers in the catchment are restricting forest recovery following canopy collapse. This resulted from cyclones in 1982 and 1988, and

the heavy snow falls of the past two winters. Increasing access for recreational hunters is in keeping with the department's local policy of utilising recreational hunting wherever possible to reduce animal numbers. The remoteness of this catchment has meant that recreational hunting has been less successful in controlling animal numbers here over the past few years than in the more accessible areas. It is hoped this small compromise to the catchment's "Remote Experience Zone" designation, which does not allow aerial access except for management purposes, will increase the hunting effort and the corresponding level of data available from hunters regarding encounter rates, harvest rates, species ratios and animal condition.

We ask that all hunters who make use of this opportunity ensure they return their hunting diaries at the end of the February to May permit period next year. A good sized jaw sample would also be useful (say 30-40 jaws!) and if you are able to take a gut sample, these would be appreciated. Sampling kits are available from most of the companies that can get you in there. Think about it! Helicopter access over the same period will again be available to the Tiraki, Waimarino, Waiotaka and Whiti-kau stream catchments to the north.

Kiwi sightings

Most of you will be aware that in many parts of the country, the kiwi is in decline. You may also be aware that sponsorship this year has been forthcoming from the Bank of New Zealand and the Royal Forest and Bird Protection Society to help the Department of Conservation stop this situation deteriorating further. Much of the initial effort which goes into managing a declining or rare species, goes into finding out where that species still survives. As a hunter and/or angler, you can play an integral part in the 'Kiwi Recovery Plan' by reporting any observations of kiwi or their sign (footprints, droppings, probeholes, feathers, calls, etc.) to the department. Hunters and anglers proved to be an invaluable source of information during the establishment of the blue duck database and we are hoping you will again be able to help us. This year you will receive wildlife observation forms with your hunting diaries. If you encounter kiwi, please fill out the form as best you can and return it with your hunting diary. We would also be happy to hear about kaka, bats, or any other interesting wildlife you encounter.

Your assistance in these types of projects is very important to the future management of many of New Zealand's rare and endangered species, so if you can help, please do! Your efforts will be very much appreciated and will further emphasise the importance of recreational hunters to the ecological management of New Zealand.

1080 poisoned possum carcasses

Please remember that 1080 poisoning of possums occurred in many parts of the Tongariro/Taupo Conservancy over the winter. This involved aerial poison drops, hand distribution of baits, and bait station work along pasture/forest margin boundary fences, to control Bovine TB.

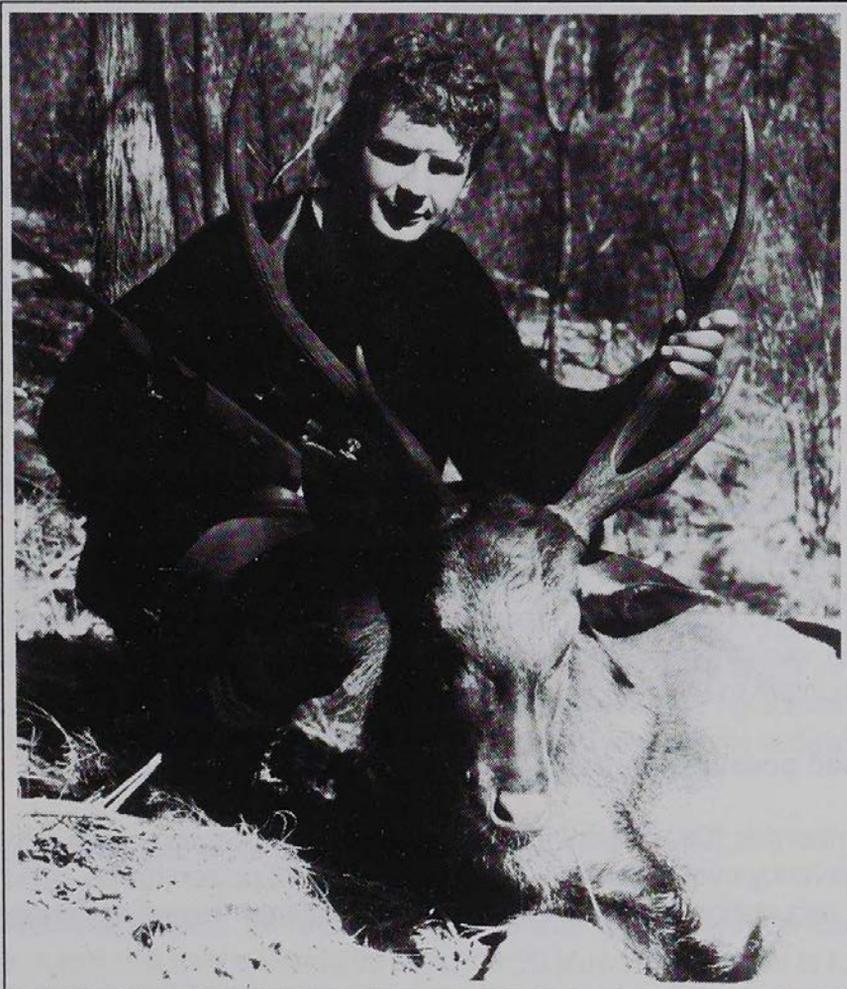
The baits from these operations will by now be long gone, but some possum carcasses may remain toxic to dogs until they have completely decayed. A map attached to your October to January hunting permit clearly shows where poisoning has occurred. For your dog's sake, please study this map and be aware! If you are unsure, contact the Turangi office.

Red deer and sika deer rumen samples

Only four gut samples were provided by hunters over the winter months. This is disappointing as it is for the winter months that we presently have the smallest sample, and yet it is perhaps the most important time of the year to have diet information. The diet study generally has not been well supported by hunters with only 160 samples provided so far. The collection phase of the study is due to be completed at the end of June 1992 and it was hoped that 100 sika gut samples could be obtained from each season (summer, autumn, winter, spring) to assess seasonal dietary preferences. 100 red deer gut samples are also sought to assess dietary differences between the two species.

Is it because gut sampling is a messy business, are the sample kits difficult to obtain or is there just not the interest from hunters?

Can you help answer some of these questions? Send us a note on your October-January hunting diary. A big effort is needed next June to lift the winter sample so anything you can suggest that might help would be welcomed.



Target Taupo co-editor Cam Speedy recently went to Australia to look at deer management in that country and to investigate the many issues which face Australian hunters in the 1990s. While he was there he got a bit lucky. Cam's first ever sambar stag scored a 163 5/8 Douglas score.

Southern Conservancy

Good snow for skiers has meant a bad winter for hunters with cold, wet days being the norm. Due to this weather, hunting pressure has not been great in the south of the conservancy.

Early winter saw the vehicle crossing of the Makara Stream in Erua Forest partially washed out. Some enterprising individuals have repaired it enough to enable light four-wheel drive vehicles to cross. If resources permit, this crossing may be repaired later in the current financial year.

Road maintenance will continue this spring on two roads used by hunters and other outdoor people. The Rangataua Forest access road will have many cubic metres of gravel laid over it to fill in the large holes which have the capability of engulfing even the most rugged four-wheel drive vehicle. The end result will hopefully be a road with a surface suitable for a family sedan to travel upon.

The Horopito access road will also have remedial work carried out on the worst sections.

Tongariro Forest News - Access Roads

Kapoors Road has a major washout 3km before its end. Hunters now have to walk the last 3km for access to the Otamawairua Stream area. The condition of the road as far as the washout is generally poor and is best accessed by 4WD or motorbike.

Pukehinau Road, which gives access to the lower Okupata and Pukehinau catchments is also in poor condition. However this road is scheduled for maintenance before the end of December.

Dominion Road, which starts at the Ohinetonga bridge near Owhango has been upgraded for 4.5km as has the Top Road for about 1km. These roads now provide 2WD access to good starting points for hunting trips in the north-western sector of Tongariro Forest.

Tongariro Forest Goat Shoot

Sunday 1 September 1991 saw the 3rd Annual Goat Shoot organised by the Taumarunui Rod Rifle and Gun Club in Tongariro Forest. A total of 30 hunters turned out on a day that could only be described as marginal due to the wet windy weather so typical this year.

Despite the bad weather though, a total of 46 goats were destroyed by club members and friends.

The 'Sporting Life Trophy' donated by Graham Whyman and his team at Turangi for best billy goat was not claimed this year. It appears that most billies shot were considered too small to have a chance at the trophy and hence were left on the hill. This perhaps suggests the age structure of the herd has now shifted significantly as a result of control operations by the club, and that very few older animals survive. This year's hunt was the least productive of the events held each year since September 1989, an indication of the success

the club is having in controlling goats in the area. Eight hunters took home vouchers for sports goods sponsored by the Department of Conservation.

Well done guys, and keep up the good work!

Ever wondered where the broken tips of antlers get to from those otherwise trophy stags? This 8 point sika stag shot by co-editor Glenn Maclean in April this year had an inch of someone else's antler embedded in his forehead. Testimony to the fury of some of those autumn encounters!



6. FINDING YOUR WAY

Although not particularly difficult to find, Lake Kuratau is a fishery overlooked by many anglers. The lake is a small hydro-electric impoundment on the Kuratau River and is located in the hills above the south-western shoreline of Lake Taupo. If anglers refer to the map on the back of a Taupo District fishing licence, Lake Kuratau is coloured green and located close to the intersection of SH 41 and SH 32. Access to the lake is via Kuratau Hydro Road (also goes to Whareroa Village) which turns off SH 32 approximately two kilometres north of the SH 32/SH 41 intersection.

The lake is surrounded by farmland and a considerable proportion of the margin is swampy, making foot access along the shoreline difficult to impossible in some places. The water body contains a considerable amount of submerged and partially submerged vegetation which remains from when this part of the valley was flooded. The lake may look unappealing to many anglers but this belies the quality of angling that it can provide.



Low water conditions at Lake Kuratau. Note the amount of dead vegetation within the lake.

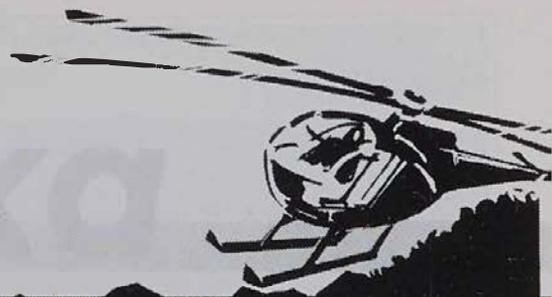
The fishery is dominated by rainbows but also contains a significant population of brown trout. In spite of the frequent fluctuations in lake level due to the power station operation, the fish are generally in excellent condition, particularly after Christmas through to the end of the season. The lake is open to fishing from October the 1st through to the end of June in the following year and anglers require a Taupo licence to fish there.

Fishing the lake requires a similar approach to that for Lake Otamangakau. Anglers using standard Lake Taupo hardware will quickly become frustrated with the amount of gear left on the bottom and will be guaranteed to catch more snags than fish.

The most successful methods include fly fishing from an anchored or drifting boat, harling with light gear and fly fishing from the shoreline. A small dinghy or canoe is an ideal way of accessing the weed beds and fishing among the “sticks”, particularly around the upstream end of the lake. The fish will take a range of lures or wet flies but anglers will enhance their chances of success if they use small flies which represent the predominant trout food items in the lake. These items include midge pupae, damsel and dragon fly larvae, snails and terrestrial insects such as green beetle and cicadas when these are in season. On warm summer evenings the fish can be expected to rise freely to sedges.

The lake contains a large number of trout for its size and the action can often be fast and furious. The fish are not as big as their counterparts in Otamangakau but the chance of a “good one” is always there. So if you seek a quiet secluded fishing possie or just feel like exploring some different water, Lake Kuratau is certainly worth a look.

Heli-Sika



Offers a new specialised service providing clients with excellent hunting for both red and sika deer and mountain river fishing for brown and rainbow trout. We operate from Taupo airport and Poronui, in the heart of the Kaimanawa, to the forest parks and our exclusive private land.



Heli-Sika

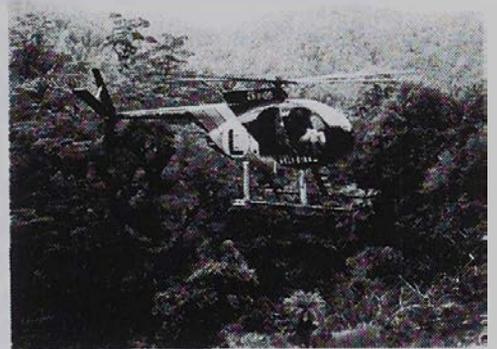
Heli-Sika combine to provide scenic flights, general aerial work, photography and private charter, Lake Taupo fishing, jet boat trips, white water rafting and wilderness horse trekking.

HUNTING

- Kaimanawas
- Kawekas
- Ureweras
- Pureora
- Te Matai
- Tarawera

FISHING

- Mohaka
- Ngaruroro
- Rangitikei
- Ripia
- Taharua
- Rangitaiki



For bookings, brochures and current prices please contact:

Taupo Shamus (07) 38 42816

Auckland Greg (09) 537 1231

or Write: *Heli-Sika*

Poronui, R.D. 3, Taupo, New Zealand

7. WINTER HUNTING SUMMARY 1991

Just under 1800 hunters obtained permits for the June-September period this year, slightly above the number issued in 1990. However, hunting effort appears well down this winter with a massive 35% of hunting diaries returned "No hunting done". The main reason given by hunters for abandoning their hunting trips was the bad weather which seemed to persist from mid-July right through August and September. In fact, as this issue of **Target Taupo** goes to press it's still rough with numerous and frequent snow showers, regular rain at lower altitudes and seemingly endless westerlies! So much for the greenhouse effect!

The current state of the economy may also have something to do with the lower hunting effort, with many of the local air transport companies reporting a very quiet winter. Perhaps the thought of some easy spring venison will encourage a few more hunters as the weather warms up. Certainly our receptionist has been busy these last few weeks answering hunting enquiries.

A total of 454 hunting diaries went into the prize draw on 25 October, representing a reasonable sample of 25% of permits issued. Winners of the prize draw were as follows:

Air transport with Helisika:	B J Badmin, Morrinsville
Air transport with Lakeland Helicopters:	R J McQuitty, Waiouru
Air transport with Air Charter, Taupo:	R Englebretsen, Rotorua
100 rounds of ammo from NZ Ammunition Co:	Peter Anich, Warkworth
Sporting goods from Fly and Gun Shop, Taupo:	P J Carter, Taupo
Accommodation at Sika Lodge, Clements Road:	R Bailey, Hastings

Ten hunters also receive free copies of **Target Taupo**. Thanks once again to all hunters who returned hunting diaries and congratulations to prize winners.

A summary of the data received for the winter so far is provided for your information in table 1. Overall, harvest continues to remain relatively stable, however some local variance is apparent. Figures for the RHA continue to suggest that the herds in this area are under severe pressure. Other herd data collected from hunters supports this observation (see article on Kaimanawa RHA Jaw Sample for 1990 in this issue). Despite a lower success rate from the Kaimanawa RHA, its good access and facilities, attractive forest and perhaps its history, seem to attract more hunters than anywhere else in the conservancy. As a result, recreational hunters have deer well under control in this area.

Erua and Tongariro forests don't appear to have produced particularly well over the winter this year either. Perhaps the publicity regarding goat numbers has resulted in increased deer harvests as well, although some nice red deer have been seen from the chopper while staff have been clearing wildling pines from Tongariro Forest. Goat numbers appear to be

TABLE 1 - TONGARIRO/TAUPO CONSERVANCY RECREATIONAL HUNTING SUMMARY

JUNE - SEPTEMBER 1991

AREA	BLOCK	DAYS HUNTED			ENCOUNTERS			KILLS			DAYS/ENCOUNTER			DAYS/KILL
		SIKA	RED	PIG	SIKA	RED	PIG	SIKA	RED	PIG	SIKA	RED	PIG	
KAIMANAWA RECREATIONAL HUNTING AREA	Clements	246.0	4	5	137	4	5	23	1	2	1.7	5.5		
	Hinematiaia	12.5			12						1.0			
	Ceacade	28.0			15						1.9			
	Kaipō	28.5			25			3			1.1	9.3		
	Oamaru	60.0			53			15			1.1	4.0		
	Tikitiki	2.0			3			1			0.7	2.0		
	Te hinga	10.0			11			1			1.0	10.0		
	Jep Creek	28.0			21			5			1.3	5.6		
	Upper Oamaru	486.0	4	5	327	4	5	55	1	2	1.5	8.4		
	ALL	571.5	26	4	476	26	4	82	7	1	1.3	6.3		
	1990 FIGURES													
	KAIMANAWA FOREST PARK (excluding RHA)	Waipakahi	60.0	18		40	18		12	6		1.0	3.3	
		Desert Road	10.0	8	2	8	2		3	1		1.0	2.5	
		Access 10	5.5			5						1.1		
Umukarikeri														
Mount Uchin		15.0	16	15	15	16	15	6	7	2	0.3	1.0		
Waioteka/Whitika		11.5	9	1	9	1		3			1.1	3.8		
Waimarino		64.0	49	10	49	10		13	5		1.1	3.6		
Kiko Road/Tauranga-Taupo		11.0	8		8			5			1.4	2.2		
Tiraki		1.0	1		1			1			1.0	1.0		
Rangitikei		4.0	2		6	2		1	1		0.5	2.0		
Ecology														
Ngaruroro		261.5	64	15	185	64	15	57	26	2	1.0	3.0		
ALL		435.0	133	8	278	133	8	75	56	1	1.0	3.2		
1990 FIGURES														
TONGARIRO NATIONAL PARK	Rangataua	34.0	34	1	34	34	1		10		1.0	3.0		
	Ohakune	12.0	4		4				1		2.0	12.0		
	Southwest	13.0	6		6				2		2.1	6.5		
	Heuhanga/ahi	2.0												
	Whakapapa	5.5	4		4				2		2.4	2.8		
	Pihenga/Thia	5.0	4	1	4		1		3	1	1.0	1.3		
	Desert Road	21.5	8		8			4	3		1.7	3.0		
	ALL	153.0	94	2	5	94	2	4	34	1	1.3	3.2		
	1990 FIGURES	269.0	19	11	19	175	11	9	6	67	2	1.3	3.2*	
	TONGARIRO FOREST	ALL	106.5	34	5		34	5	65	15	1	2.7	6.6*	
		1990 FIGURES	191.5	50	14		50	14	173	20	10	1.62	6.3*	
	ERUA FOREST	ALL	31.5	17	3		17	3	39	6		1.6	5.2*	
		1990 FIGURES	52.5	47			47		68	18		1.1	3.0*	
	RANGITIKI FOREST	ALL	22	19	2	19	2	1		6	1	1.00	3.0	
1990 FIGURES		18	4		4	4					2.25	6.0		
LAKESHORE RESERVES	ALL													
UNSPECIFIED RETURNS	WHOLE CONSERVANCY	175							16	23	52	4.5*		
TOTALS	WHOLE CONSERVANCY	1237.5							138	105	7	103	4.9*	
	1990 FIGURES	1734.5							174	186	14	229	4.6*	

No Hunting Reported

* Deer and Pig Only

Table 1

down and that's encouraging. Let's hope we can keep it that way. Except for a few problems with continued farm escapes, departmental goat control operations have been almost non-existent over the winter. Finance has been approved for further operations during the 1991/92 financial year to capitalise on the reductions achieved last year. The Taumarunui Rod Rifle and Gun Club are still doing a great job in Tongariro Forest (see Bitz 'n' Pieces in this issue) and by June 1992 it is hoped numbers will be at an all-time low.

The closure of Access Road 10 by the Rotoaira Forest Trust appears to have had a major effect on the hunting effort going into areas such as Umukarikari, Urchin and Kaimanawa Road. The data shows a 90% reduction in the reported hunting effort for these areas compared to the same period in 1990. The \$5 per person per day charge to use the road is obviously more than most hunters are prepared to pay.

The most productive blocks over winter were the Waitotaka and Whiti kau catchments of Kaimanawa Forest Park. Access is very limited to these areas due to Justice Department restrictions, but the prison officers enjoy productive hunting for red and sika deer and pigs. Comments were that the area was especially productive through June and early July.

We trust you will have a successful spring and summer period and look forward to receiving your hunting diaries in early February. Until then, 'Safe Hunting and Hot Barrels'.

FLY — IN HUNTING & FISHING HOLIDAYS AEROPLANE & HELICOPTER TRIPS



INTO KAIMANAWA & KAWEKA RANGES
and UREWERA NATIONAL PARK

HUNT: ★ SIKA DEER ★ RED DEER

FISH: ★ RAINBOW TROUT ★ BROWN TROUT

15 Private Blocks available.

Fly by Aeroplane to Boyd or Oamaru Huts

or

Fly by Helicopter to all other D.O.C.
huts and helipads.

*We fly rafting parties
into the head-waters of the Mohaka & Ngairoro Rivers*



Write to

**AIR CHARTER
TAUPO**

R.D.2, Taupo

PHONE (07) 378 5467

FAX (07) 378 5468

AIR CHARTER TAUPO

SWAROVSKI HABICHT

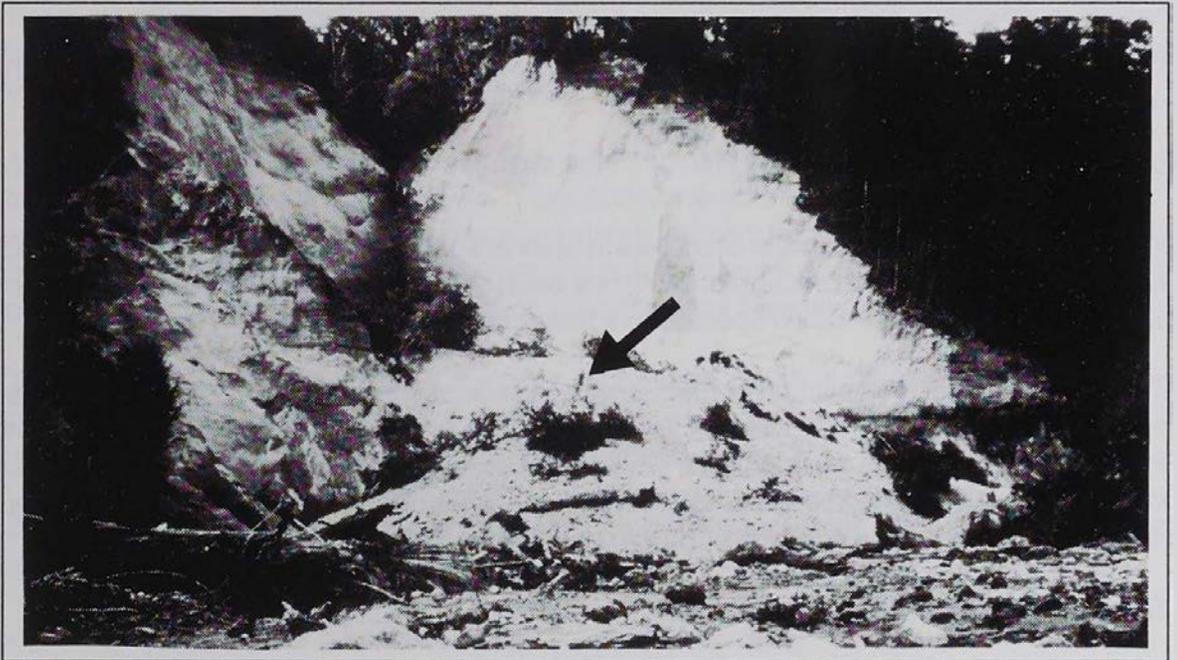


Federal * Hart * Sierra * Swarovski

Imported and Distributed by New Zealand Ammunition Company
PO Box 31 096, Lower Hutt, Telephone (04) 567 0641

Waimarino River changes course

Those of you who have fished the lower Waimarino River in the last couple of months will have noticed the river has been slow to clear after a fresh. During the slightly higher than normal flows which predominated in September the river was carrying a mass of fine pumice which was covering many areas of otherwise suitable spawning cobbles. This sediment was continually on the move, often creating a milky cloud as a new vagary of the current picked it up. As we grew concerned about the unusual manner in which the sediment persisted, the river level fell further. Fortunately the movement of sediment ceased and the spawning cobbles scoured clean again. On inspection, our suspicions of an unusually large slip in the headwaters proved well founded. In an area which has been active for sometime, a huge slip has completely blocked the old river bed. Behind this earth dam approximately 4-5 metres high, the water had dammed up a metre in height before finding a new channel through the beech forest. The water now flows 400 metres through the forest before re-entering the old channel. It is likely that in the next large flood, the river may again cut through the soft pumice and return to its original bed.



Looking up the old river bed at the slip. The arrow points to the tiny figure of co-editor Cam Speedy.

It is unlikely the period of high sediment load will have affected this year's reproduction. Since the river cleared we have observed large numbers of fresh fish going about their business in the upper river.

Opening day at Lake Otamangakau

October 1st was another typical Lake Otamangakau opening day with a cold bleak wind and occasional rain. 17 anglers were checked by Bryan Taylor of DOC between 9 a.m. and 2.30 p.m. He weighed and measured eight fish, one brown jack and seven rainbow trout, with an average weight of 2.2kg. The heaviest fish was the brown jack of 3.6kg taken by Tich Todd, who along with Harry Brown never misses opening day.

Fishery managers Rob McLay and Glenn Maclean had less success, each catching an undersized rainbow trout before the cold blustery wind persuaded them to seek a warmer, more conducive climate.

Rob Pitkethley departs

Fisheries staff were sad to farewell Rob Pitkethley in late September. Rob was contracted for a year to carry out the harvest study while Glenn Maclean was overseas. With his relaxed manner he quickly became a valuable member of the team. During his time at Turangi he finally shot his first deer despite all the advice he got and his first duck, but it was at fishing he excelled (even if his 'pink snake' didn't revolutionise the Taupo fishery). His lime green Datsun 120Y was a familiar sight parked on the banks of the Tongariro and once the rains came in July it was a rare morning when Rob didn't catch (and usually release) his limit before work.

Rob is currently teaching English in Japan before moving to a position as a charter yacht skipper in Europe in the new year.

Willow eradication

With an ever-increasing number of willows in reserves and on privately owned land around Lake Taupo, the fisheries section of DOC has been allocated money from the department to try and reduce these exotic species to a manageable level.

The largest infestation is around the eastern shores with scattered areas in the western bays. It is our intention to eradicate willows on crown land and then liaise with private land owners to eradicate the willows on their land. This programme will continue through the summer of this year, with a start already being made in Halletts Bay and from the Oruatua boat ramp down to the Tauranga-Taupo River mouth.

Signs

Winter season upstream limit signs have been placed in the following areas:

- the Korohe crossing on the true right bank;
- the Hautu Ford on the true right bank;
- the road entrance to the Hinemaiaia River immediately south of the SH 1 bridge; and
- 300m below the lower powerhouse on the Hinemaiaia River, on the true left bank.

In the July issue of **Target Taupo** we mentioned that the signs were in the process of being erected, but since then the signs at the Hautu Ford and the Korohe crossing have been removed. The sign at the Korohe crossing has since been replaced and again destroyed.

These signs are expensive and we cannot afford to continually replace them when they are vandalised or stolen. They are your signs so if you see anyone damaging them, please report this so that we can take the appropriate action.

We are also currently considering the placement of new markers to identify the 300m trolling limit at river mouths. It is intended that these will be in place by the end of the year.

Enforcement and Compliance this winter

Compliance and enforcement activities over the winter period were concentrated on the closed and prohibited waters.

Routine patrols and surveillance duties were stepped up to cover vulnerable spawning streams which in the past have attracted poaching activity. Poaching activity was unusually low during this last winter with many of the traditional problem areas rarely being disturbed. This is pleasing to note and it would be nice to think that the trend may continue but this is probably too much to hope for.

The main offences detected were fishing without a licence, fishing closed waters, providing false information, fishing with more than one rod, continuing to fish after having kept three fish, and spinning in a fly fishing only area.

Acting on information received from the public, two nets were lifted from the lake and one from the mouth of the Waiotaka River. Fortunately the nets were detected before any fish were caught. In addition, wire netting cages were lifted from two of the main rivers and again no fish were involved. Information from the public is essential if we are to successfully combat illegal activity and we appreciate your continued assistance in this regard.

The summer period will soon be upon us, along with an influx of visitors, adding to the pressure upon our fishery. This is traditionally a busy time for our officers on the lake and with your help we can be that much more effective.

If you have any information regarding compliance and enforcement matters, please contact any one of the following officers:

- | | | | |
|---|-------------------------|-----------|--------------------------------------|
| - | Wayne Boness
Taupo | Telephone | 377 0112 (Home)
378 5450 (Office) |
| - | Bryan Taylor
Turangi | Telephone | 386 6549 (Home)
386 8607 (Office) |
| - | Sid Puia
Turangi | Telephone | 386 6700 (Home)
386 8607 (Office) |

No reira
Kia Ora, Koutou Katoa

The trap runs this year

Figure 1 shows there has been a slight increase in the number of fish through the Tokaanu and Waihukahuka (hatchery) fish traps this year though numbers are still low.

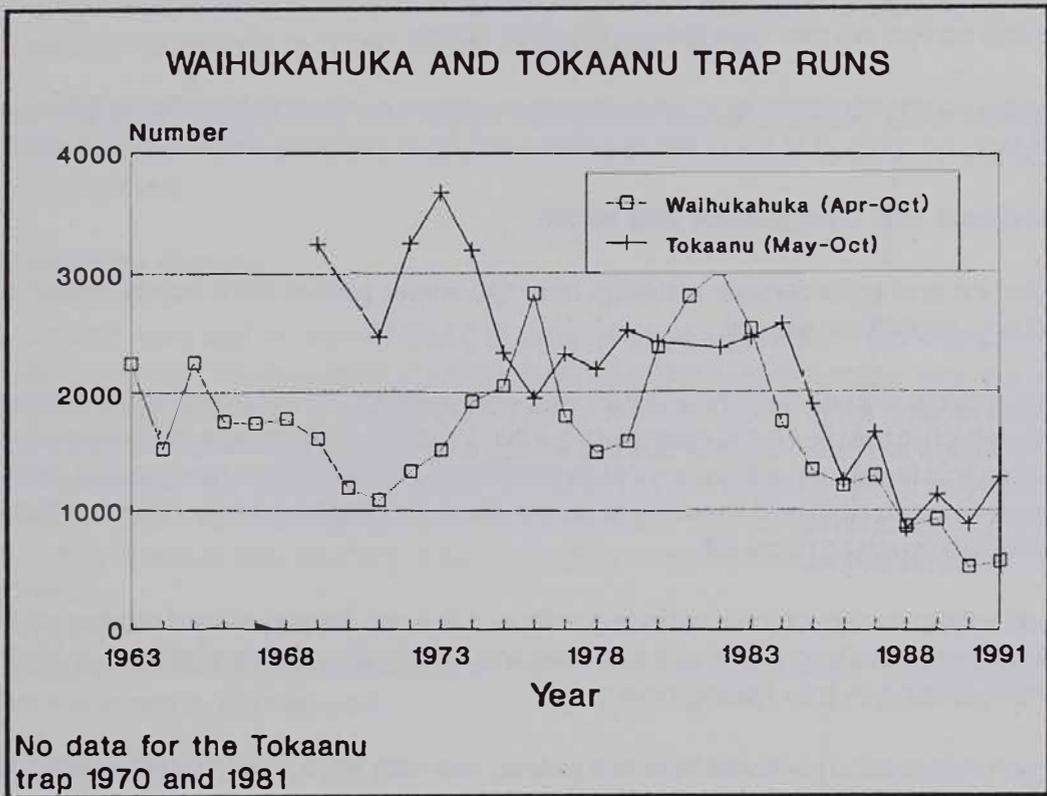


Figure 1: The number of fish through the Waihukahuka (April-October) and Tokaanu (May-October) traps since 1963 and 1969 respectively.

Most pleasing is the increase in the number of maiden fish (table 2).

Table 2

	Hatchery Trap			Tokaanu Trap		
	All fish	Maiden	% increase in maiden fish	All fish	Maiden	% increase in maiden fish
1991	566	492	16%	1266	1196	21%
1990	532	424		1063	987	

This year the average size of maiden fish has fallen from 51.4cm in 1990 to 48.8cm for fish through the hatchery trap and 52.6cm to 50.2cm for fish in the Tokaanu trap. In some circumstances this could be a disturbing trend but we believe it is an indication of a population dominated by an unusually high proportion of young fish and as such, is a good sign.

In a typical year there are two readily apparent size classes of mature maiden fish early in the season (fish of approximately 45cm and 53cm) which become indistinguishable later in the winter. This year, the number of fish in the larger size class was much reduced which enabled managers to follow the smaller cohort through the winter. Fish in this group which were approximately 45cm long in April/May, had grown to approximately 50cm by September/October, due to the extra period feeding in the lake. This suggests that conditions are still suitable for trout growth and the relatively absent larger fish are older trout (see the special issue of **Target Taupo** which discusses the harvest report for more detailed comment).

That the population is dominated by young fish does not on its own mean the fishery is recovering but taken with other trends the signs are encouraging. Hopefully next year we will see greater numbers of the larger maiden fish which are the remainder of the year class which dominated this year's trap runs.

Favourable river conditions this year for juvenile rearing suggest that another strong year class should also start to appear in next seasons' runs.

Juvenile Trapping

It has become evident this year that we need to have a better understanding of the age structure of the trout population returning to spawn. Taupo trout are notoriously difficult to age. The normal technique of scale reading is ineffective because their growth through the winter in the lake is little different to that over the rest of the year, and there is no easily recognised annual check in the scale pattern. In the past we have used the results from the return of fin clipped adults which were reared in the hatchery and released into the Taupo fishery as juveniles. One feature though, that has always jarred slightly, is that the proportion of precocious males (early maturers) amongst these fish is much higher than in the wild population. We now believe that the start in the hatchery which sees these fish larger than many of their wild brethren of the same age, may alter the age at which they may mature.

In order to monitor changes in the age structure of the spawning population we have decided to tag wild juvenile trout as they leave the hatchery stream. Mortality amongst juveniles is large so it will be necessary to trap and mark a large number of fish. Each will be fin clipped, the clip used depending on the size of the juvenile and when it is trapped. The key information we seek, we will obtain ourselves as the fish return to the hatchery stream to spawn in several years time. However it is likely fin clipped fish will appear in anglers catches and we encourage anglers to forward the following details to us:

- 1 date and site of capture;
- 2 length and weight;
- 3 whether it had previously spawned (if apparent);
- 4 which fins are clipped.

All sorts of other information could come out of this project. For example, perhaps all the fish clipped in the hatchery stream will turn up in anglers' bags in the Western Bays.

Topomaps

YOUR PASSPORT
TO THE SAFE
OUTDOORS

think adventure

think safety

think maps

topomaps

Available from all
Department of
Survey and Land
Information offices and
good map retailers.

The New Zealand Map Collection



Infomap
Department of
SURVEY AND LAND INFORMATION
TE PUNA KORERO WHENUA

How many trout can a stream produce?

Research into trout production in the Tongariro River by Dr Theo Stephens suggested that juvenile trout numbers were largely limited by the amount of juvenile rearing habitat available. When the fry first emerge from the gravels they form shoals in amongst the weed and debris in the stream, but as they grow they become territorial. Each fish, now 60-100mm long, occupies its own little area which it actively defends from intruders. Within any stream there are only so many territories which fulfil their requirements for food, water velocity, cover, sediment type and so on. Once all these territories are full any other juvenile trout must make do in less optimum areas and it appears very few of these fish survive. Therefore even if greater numbers of fish are hatched than there are territories to support them, no more may survive to enter the lake.

If you drop in to the National Trout Centre just south of Turangi in the next couple of months you will be able to see this concept very clearly in the underwater viewing chamber. Nearest the glass are rising one year old fingerlings, each in its own little space. In the background amongst the weed are shoals of this year's fry.

Taupo District fishing licence sales

Licence sales in all categories fell during the 1990/91 season and the pattern looks as though it is repeating itself for this season. It is difficult to gauge at this stage whether sales have gone down quite so drastically, as some licence agents do not submit their monthly returns as is required. If we had these returns it would make a vast difference to the accuracy of our sales figures.

Sales for the 1990/91 season were:

Adult Season	11,591
Child Season	5,321
Adult Month	1,231
Adult Week	10,601
Adult Day	39,664
Child Day	7,359

an overall total of 75,767 licences sold and a revenue of approximately \$1,000,000, less the 7.5% commission that licence agents receive.

Catfish Harvest Proposal

A local resident of Turangi has applied to the department for a permit to harvest catfish from Lake Taupo on a commercial basis. The applicant wishes to trial capture techniques and obtain sufficient fish to be able to test whether a market exists for the fish before embarking on a full scale harvest operation.

Following consultation with the Taupo Fishery Advisory Committee, we have agreed to issue the applicant with a permit for a twelve month trial period subject to a range of conditions which will protect trout from becoming a by-catch of the operation.

In making its recommendations to the department, the Advisory Committee considered that any proposal for removal of catfish from the trout fishery had to be good news.

Spring Fishing

This is the traditional time when "smelting" gets underway and this, in fact, has already commenced in Lake Taupo as this issue goes to press. Some activity has been reported from all of the key smelt spawning areas with the emphasis so far being given to the southern end around the tailrace and Tongariro delta. The trout will feed on spawning smelt right through to February and anglers can expect good results harling or fly fishing with smelt patterns. Note that when the hot days of summer arrive, early morning and late evening are the most productive times to fish.

Every year at about this time we receive complaints from lake anglers who tell us that the fish they catch are either very small or in poor condition and that there must be something wrong with the fishery. These anglers' observations about the fish are quite correct and are actually what we expect to see through the late spring and early summer. This has nothing to do with the health or growth rate of the fish but is a normal function of fish behaviour and age structure in our type of fishery.

In Taupo, trout exist in very clearly defined age or year class groups. Although there are exceptions, trout typically enter the lake from their natal rivers as fingerlings around February each year. They grow rapidly so that by the following summer, they are around or just under the legal size limit. These are the small fish that anglers catch although it is perhaps more appropriate to call them young fish. Many fish in the next year class up, have matured during the preceding winter and those that survive spawning are re-entering the lake in the late spring. These fish are in poor condition and take a couple of months to recover. At this time of the year most of the fish that anglers catch will fall within one of these two categories and the distinction is quite obvious and striking. However, by autumn the big fish have recovered condition and the young "maiden" fish have continued to grow and the apparent summer malaise in the fish has disappeared.

Expect large numbers of the young fish this spring. One of the features of the recovery in the fishery, mentioned elsewhere in this issue, is a strong (i.e. large number) age class coming through the population. Many anglers have already commented to us that the fish are getting smaller but what is really happening is that anglers are getting a much larger proportion of young fish in their catch than normal. This is a very good sign.

Don't overlook the rivers in the spring. There are still reasonable numbers of fresh fish entering the rivers in November. Dry fly fishing on calm evenings in the Tongariro as the warmer weather arrives can also be extremely productive.

Lake Otamangakau, as always, will reward the patient and careful angler with some high quality fish during the spring and summer. Have special regard for potential impacts of harvest in this lake. Angling pressure appears to have increased on the lake over recent years, particularly in the summer. The lake can only continue to produce the trophy fish if these fish are allowed to live and grow over a number of years.

Tight lines.

Spawning Habitat Restored

Over last winter fishery staff carried out regular monthly counts of spawning trout on selected reaches of Lake Taupo tributaries.

During the August survey of the Whiti kau Stream - the main spawning branch of the Tongariro River - a large matai log was found to be lodged in a small waterfall. Normally trout don't have too much trouble getting over this fall but the log had created a complete blockage to their passage.

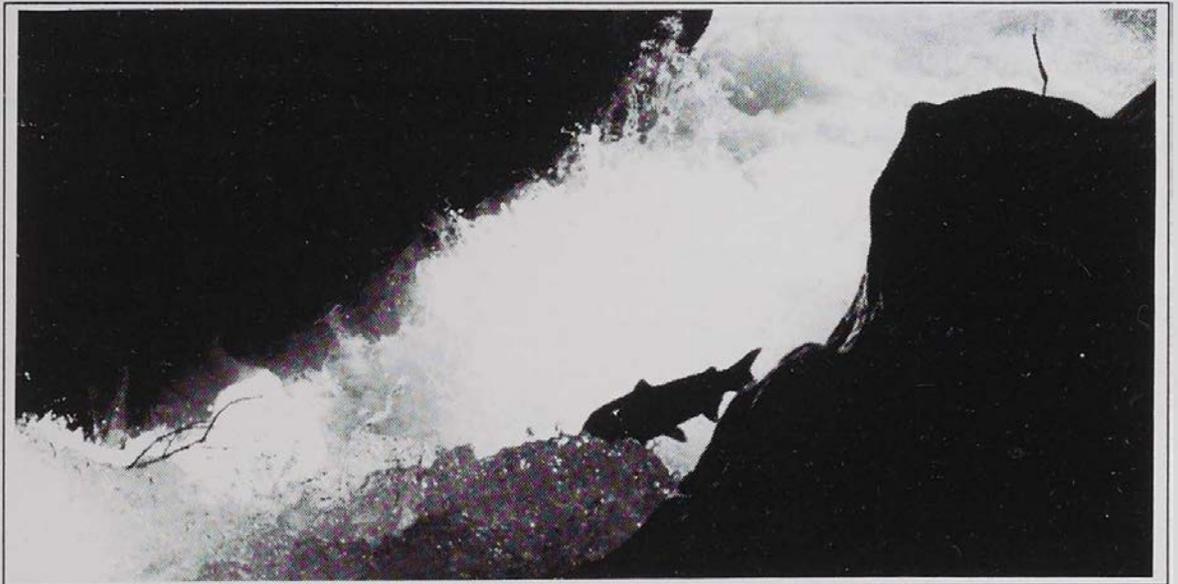
Several hundred trout were held up in the pool below the fall and this made it impossible to use explosives to remove the log, as was done in the Waiotaka River before the spawning season.

First attempts to haul the obstruction out from upstream using our log skidder were unsuccessful as the log was securely wedged in the bedrock gorge. Access through the gorge from the downstream end was impossible and the raging current at the fall made it dangerous for staff to work close in to the problem.

Eventually we managed to lower Rob McLay down-current on a rope - much to his discomfort and our delight! After a pretty harrowing time Rob fixed a wire strop around the log. Meanwhile, Gordon McKenzie manoeuvred the skidder to the lip of the cliff above the log and it was finally pulled free.

Observations after showed trout once again leaping and swimming up through the fall within a few minutes of the log being cleared.

Counts of spawning trout two weeks later revealed an increase from 85 to 913 fish in the section above the fall. A total of 10km of potential spawning and rearing water had been re-opened to Tongariro trout.



The log lying in the plunge pool caused the trout to jump from too far back to make the top of the falls.

TAUPO, NEW ZEALAND



Situated right on the boundary of Kaimanawa Recreational Hunting Area and Kaimanawa State Forest Park, Sika Lodge provides budget accommodation with hot showers, full toilet facilities and well equipped communal cooking area. Your own sleeping bag will be necessary.

Vehicle security services can be offered.

SIKA LODGE

Phone Brent or Val Keightley
Taupo
for reservations

PLEASE BOOK EARLY

Trout Genes Studied

A year ago Canadian scientist Marvin Rosenau completed his Ph.D. research comparing trout from the Hinemaiaia and Waimarino rivers and Tokaanu Stream populations.

Dr Rosenau found a number of subtle differences in the size and shape of trout from the different sources. Until now it hasn't been possible to show whether or not these differences are the result of genetic distinctions between sub-populations.

Rod Snowdon of Waikato University has now begun a study, using a new DNA finger printing technique, which should answer these questions. Use of a tiny piece of tissue clipped from the adipose fin of the trout means that samples can now be obtained without first killing the fish.

DOC is supporting this study by providing assistance with tissue sample collection and 50 specimens of each have now been obtained from the Tokaanu and Waimarino rivers.

This work could be of significant benefit in understanding the dynamics of the Taupo fishery. Confirmation of the existence of genetically distinct sub-populations of trout from the various spawning tributaries would give strong direction to the way in which the overall fishery should be managed.

9.

MANAGER PROFILE

SHIRLEY OATES (Used to be WEIR, so you're not confused!)

Shirley is based in Turangi and has been part of the fisheries team for nearly two years. She is responsible for the administration of approximately 135 agents throughout the North Island who sell Taupo District fishing licences.

Shirley does all word processing and typing for the section and looks after the administration of **Target Taupo**. Any mistakes with your subscriptions are all her fault!!

She also keeps the rest of the fisheries team in line.

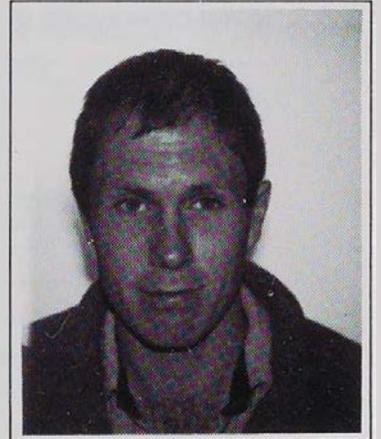


JOHN LUFF

John is based at Ohakune and is responsible for the maintenance of recreational facilities and the protection of DOC estate, including weed and wild animal control, in the southern sector of the Tongariro/Taupo Conservancy.

Since 1979 John has worked in and around Tongariro National Park, initially at Whakapapa and more recently at Ohakune. John likes to class himself as a "Jack of some trades and a master of none".

Most of John's spare time is used to pursue deer within the conservancy. And when he is not hunting he is planning where to go for his next hunt!



TARGET TAUPO READER QUESTIONNAIRE

As a reader of **Target Taupo** you are invited to formally have an input into the type of information you would like to read about in this newsletter. By answering the few questions below you will also give us a clearer picture of how we can best circulate the newsletter to ensure that all who are or might be interested can get a hold of it. Your contributions and comments are appreciated.

1. How did you get to read **Target Taupo**?
 - a) Subscriber
 - b) Through your club
 - c) Purchased from sports shop
 - d) Other (please specify).....

2. Is the newsletter useful to you as a hunter/angler or does it just have interest value?
.....

3. What other types of information would you like to see included?
.....
.....
.....

4. General comments:
.....
.....
.....
.....
.....
.....

A complimentary copy of each issue will be sent to your club or organisation and further copies are available at a cost of \$2.25 each (GST inclusive.) Individuals are also welcome to purchase copies. Please complete the form below and return before 28.02.91.

Copies of earlier issues are available on request.

NAME OF PERSON/CLUB/ORGANISATION _____

POSTAL ADDRESS _____

PHONE NUMBER _____

Please send _____ copies of issue number _____ at cost of \$2.25 per copy.
Enclosed is the sum of \$_____ (cheque/money order)

OR

1 year's subscription (3 issues) beginning issue number _____
Enclosed is \$6.75 (cheque/money order).

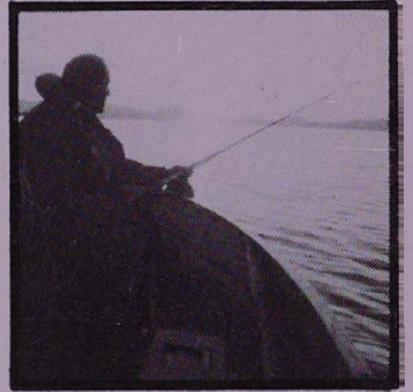
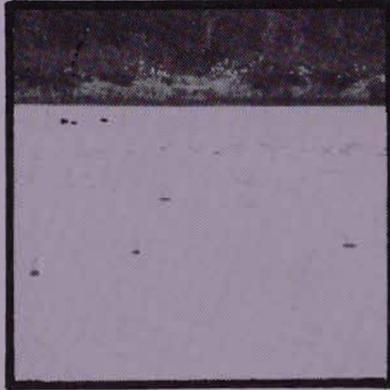
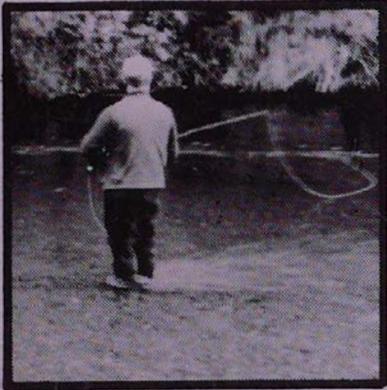
Copies additional to the complimentary will not be forwarded unless payment is received.

POST TO:

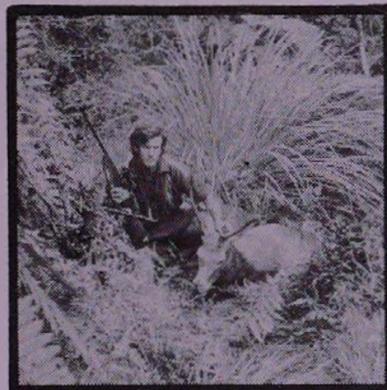
**Department of Conservation
Private Bag
TURANGI**

Attention: Shirley Oates

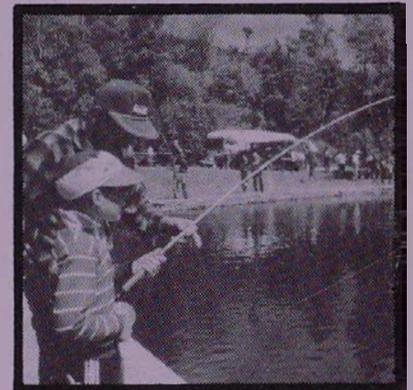
TAUPO



CONSERVATION
TE PAPA ATAWHAI



WORKING
FOR
YOUR
SPORT



A Sporting Paradise