

1914.
NEW ZEALAND.

FISHERIES AT LAKES ROTORUA AND TAUPU

(REPORT ON), FROM 1ST JUNE, 1913.

Presented to both Houses of the General Assembly by Command of His Excellency.

Department of Internal Affairs,
Wellington, 24th June, 1914.

Memorandum for the Hon. the Minister of Internal Affairs.

I HAVE the honour to submit herewith a report respecting the fisheries at Lakes Rotorua and Taupo since 1st June, 1913, the date this Department took charge.

J. HISLOP,
Under-Secretary.

WORK DURING THE PAST YEAR.

EARLY in 1913 the Government decided that the administration of the inland fisheries, which had until then been undertaken by the Marine Department, the Tourist and Health Resorts Department, and the Internal Affairs Department, should be transferred to the Internal Affairs Department, in order that a comprehensive policy might be inaugurated in respect to this valuable asset to the country under one Ministerial head. On the 1st June, 1913, this change was made.

While the Department has co-operated with acclimatization societies throughout the Dominion in order to assist the sport generally, it was recognized that the work of paramount importance to be undertaken was the improvement of the condition and size of the fish in Lakes Rotorua and Taupo, where the fish had greatly deteriorated. Prompt measures were therefore at once taken to reduce the numbers in the lakes as far as possible. The work undertaken to date in the thermal regions may be grouped under the following heads: (1) Destruction of ill-conditioned fish; (2) placing fresh and smoked trout on the market; (3) procuring fresh food-supplies for trout in Lakes Rotorua and Taupo; (4) study of the worm parasite in trout; (5) destruction of shags; (6) clearing mouths of streams running into Lake Rotorua of weeds.

(1.) *Destruction of Ill-conditioned Fish.*

The Tourist Department last year had killed off a very considerable number of ill-conditioned fish, and similar work was energetically pursued by this Department this past year. The procedure was as follows:—

Lake Rotorua: On Lake Rotorua the fish were taken by means of barriers in two of the larger rivers, and by netting-traps and drag-nets in the other streams.

Lake Taupo: The rivers running into this lake are not suitable for the erection of barriers; the fish were therefore caught by means of traps and drag-nets.

From June, 1913, to the 31st May, 1914, the total number of ill-conditioned fish taken on each lake and destroyed was as follows:—

		Number.	Weight. Tons cwt. qr. lb.
Rotorua	...	18,271	19 6 0 25
Taupo	...	2,830	4 13 1 6
Total	...	21,101	23 19 2 3

(2.) *Placing Smoked and Fresh Trout on the Market.*

Rotorua trout: With a view to reducing the number of trout in Lake Rotorua netting operations were carried out by the Department during the whole of the present fishing season, large hauls being made daily. Both the fresh and smoked fish have found a ready market in Auckland and Rotorua.

Taupo trout: With a view to reducing the number of fish in this lake also, netting has been carried on during the season with very successful results, a ready sale being found for the Taupo trout in Wellington, while several large orders from Christchurch and smaller orders from farther south have been dealt with with every success.

The trouble that in past seasons prevented Taupo smoked trout from becoming a commercial success—namely, the difficulty experienced in keeping the trout in their skins—was overcome this year, the fish forwarded from the Tokaanu depot and placed on the market in general being firm of flesh, and the delicacy of taste of the fresh trout being well preserved.

The following table shows the returns from Rotorua and Taupo of good fish sold for the period ending 31st May last :—

					Number.	Weight. Tons cwt. qr. lb.
Rotorua	...	...	...	...	25,851	15 18 2 7
Taupo	...	...	...	...	6,243	11 0 4 15
Total	...	...	...	...	32,094	26 18 6 22

This means that since the Department took charge the number of fish taken from the lakes, good and bad, number—

					Number.	Weight. Tons cwt. qr. lb.
Rotorua	...	...	...	...	44,122	35 4 3 4
Taupo	...	...	...	...	9,073	15 13 5 21
Total	...	...	...	...	53,195	50 19 0 25

(3.) *Procuring Fresh Food for Trout in Taupo and Rotorua Lakes.*

The question of importing fresh food-supplies for trout has been a live one from the time when it was first discovered that the trout in the hot lakes district had begun to deteriorate.

One of the first representations was made to the Government in 1905 by the Rotorua Rod and Gun Club. Again, on 2nd August, 1908, the secretary of the club wrote to the General Manager, Tourist Department, as follows: "We think it would be advisable to introduce into the district the shrimps that abound in the Waikato River. The English minnow would be a useful food and should be worth trying to introduce."

In March, 1910, Mr. Ayson, Chief Inspector of Fisheries, in a letter to the Secretary for Marine reported on the unsatisfactory condition of the fisheries at Rotorua, and, among other things, suggested the systematic introduction of natural food, such as some species of the coregonus, shrimps, &c., and the protection of the koura—the fresh-water crayfish.

The Rotorua Rod and Gun Club again took up the question, and at its annual meeting in 1912 the following appeared in the president's report: "We have also advocated the introduction of fresh fish food."

A petition was forwarded to the Minister of Marine in June, 1913, stating, among other things, that the reason for deterioration of trout in Lake Taupo is clearly that there are too many fish in the waters for the available food-supply.

After the taking-over by this Department of the Rotorua and Taupo fisheries, inquiry was made by the president of the Rod and Gun Club at an interview as to what was going to be done this year with respect to the supply of food for the trout, and when advised that it was proposed to obtain a large supply of shrimps from Mercer gratification was expressed at the action to be taken.

Subsequently at Taupo, at an interview with residents there, Captain Ryan, as spokesman, on behalf of the deputation, stated that they were exceedingly pleased to hear that the Department proposed to send supplies of shrimps to Taupo.

So far fresh-water shrimps have been the only food-supply introduced into both lakes.

In 1907 a shipment of Cisco-herring ova was imported, but was a complete failure, all of it being bad when opened up on landing.

When in England* in 1908 Mr. Ayson made inquiries respecting the minnow, but both English and Continental authorities advised against its introduction.

In the same year, acting on the representations made, a number of shrimps were caught in the Waikato River at Mercer, and were taken to the Rotorua Hatchery with a view to seeing by way of experiment whether they would thrive in the waters of the thermal regions. They did so well that it was decided to obtain a large consignment with a view to liberating them in the weeds growing in different parts of Lake Rotorua, where they would be adequately protected until they had a fair chance to increase. By December of that year some 250,000 shrimps had been liberated in suitable places. In 1909, 185,000 were liberated. Large quantities were liberated in 1912.

Since this Department took over these fisheries 280,000 shrimps have been brought from Mercer and placed in Lake Rotorua, and a further 110,000 in Lake Taupo; all these in sheltered places.

It has to be remembered that the shrimps were liberated in Lakes Rotorua and Taupo in places where they would be safe from the trout and would have an opportunity to breed. They are stated to be more prolific than the koura, and those anglers who know anything about the species are of opinion that what had been done regarding a fresh food-supply this season is a step in the right direction. With the visit of Professor Prince opportunity is being taken to ascertain what special foods should be introduced in order that a plentiful supply may be arranged for next season.

(4.) *Study of the Worm Parasite in Trout.*

Arrangements were made whereby the work in connection with the study of the worm parasite in trout should be continued by Veterinary Officers of the Department of Agriculture, Industries, and Commerce. To enable experiments to be carried out in the direction of testing the theory held by Dr. Reakes that an intermediate host existed between the shag and the trout, a fresh pond of fairly suitable size was constructed and trout procured from outside the thermal district. It was also necessary to secure supplies of small native fish affected with the parasite. Arrangements have, in addition, been made for a Veterinary Officer to proceed to the far north and south to dissect shags with a view to ascertain whether shags on the sea-coast are affected with the trout-parasite.

(5.) *Destruction of Shags.*

During the season 1,506 shags were destroyed at Taupo and Rotorua.

(6.) *Clearing Mouths of Streams running into Lake Rotorua of Weeds.*

Representations were made to the Minister by the Rotorua Rod and Gun Club early this year that it would be to the advantage of fly fishers if the mouths of a number of streams running into Lake Rotorua were cleared of weeds. This work has been carried out with satisfactory results.

ROTORUA HATCHERY.

Good work was also done at the Rotorua hatchery during the last spawning season. The following gives the rainbow ova and fry disposed of to various acclimatization societies:—

Rainbow ova	...	...	...	...	...	...	875,000
Trout-fry	...	...	...	...	...	...	354,000
Total production							1,229,000

In addition, large quantities of trout-fry were handed over to the officers of the Tourist Department for liberation in the rivers within the Rotorua Acclimatization District.

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