

FRESHWATER FISHERIES ADVISORY SERVICE

MARINE DEPARTMENT

INVESTIGATION REPORT

JOB NO. 22

ACCLIMATISATION SOCIETY DISTRICT: Otago

TITLE OF JOB: A survey of the trout population of the Teviot River.

OBJECTIVES: To determine the reasons for the small size of trout in the Teviot River.

FINDINGS: The Teviot River has its source in tussock covered hills east of Roxburgh. It flows for a few miles in a southerly direction until it enters Lake Onslow, a large man-made lake. It then follows a winding south west course through a deep narrow valley, and gorges until it enters the Clutha River opposite Roxburgh. The dam which forms Lake Onslow is between 20 ft and 30 ft in height. There is no spillway, the water shooting with considerable force from the lake, through a 2 ft pipe at the foot of the dam. This dam would effectively block fish from the river from entering the lake.

For the purposes of this investigation, the river was divided into three sections, as follows -

SECTION I - STREAM SURVEY CARD 1972

This section extends from the bridge on the Roxburgh East-Hydro Road to about halfway to bridge huts. The valley is bounded by steep, often rocky slopes up to 500 ft in height. The vegetation on the banks is tussock, scrub and willows, except where the banks are bare rock. The stream itself is up to 10-15 yards wide, but averages about 5 yards. It is from 1-2 ft in depth, with pools up to 5 ft to 6 ft. There are several cascades, especially in the lower part of this section.

The stream bed consists of boulders, large stones and a little coarse gravel. Bottom animals are present in moderate numbers.

SECTION 2 - STREAM SURVEY CARD NO. 1973

This section extends from the top of section 1 to approximately 1½ miles upstream from bridge huts. Here the stream is not so confined, and the flow is not as swift, being characterised by long flats and pools, with little swift water. Bank vegetation is mainly rushes, with pasture grasses and

scrub and patches. The banks are also much lower and not as steep, though the valley sides are steep and up to 100 ft to 200 ft in height.

The stream averages 10 to 15 yards in width, and 1 to 2 ft in depth, with pools 5 or 6 ft in depth. The stream bed consists mainly of rock with small proportions of boulders, stones, shingle and sand. Bottom animals are present in moderate numbers, and there are thick weed and algae growths in places.

SECTION 3

This section extends from section 2 to the dam at Lake Onslow. It is the same as section 1, except that the bank vegetation consists mainly of tussock and that the valley is not quite so deep.

The Teviot River is 100% stable throughout.

BOTTOM FAUNA

Bottom fauna samples were taken by means of a square foot sampler. Difficulty was experienced in collecting samples in sections 1 and 3 owing to the turbulent nature of the stream.

A total of 72 samples were taken, 34 in section 1, 29 in section 2 and 9 in section 3. Results are set out in Table 1. It will be seen that the dominant group in the fauna is Mollusca, consisting almost entirely of the freshwater snail *Potamopyrgus*; Tricoptera (caddis) and Ephemeroidea (mayflies) also form appreciable percentages of the fauna. Other groups are present only in small numbers, except for Annelida in section 3.

The composition of the bottom fauna in the Teviot River is set out in Table 1.

In section 1, the density was 207 animals per square foot, 251 in section 2 and 145 in section 3.

TROUT POPULATION

An attempt was made to sample the trout population of the Teviot River by means of netting. However, the rocky nature of the stream bed made this impossible, so that the trout had to be sampled by means of angling. A total of 102 trout were recorded, ranging in size from 5" to 11". The average size of fish caught was 7.2". However, there are undoubtedly larger fish present. One was seen that was caught last year and weighed 10 lbs and a first-hand report was received of a fish estimated at 8 lb being seen. Also two fish between 1½ - 2 lb were seen during the investigation. All the fish examined were in fair condition.

SPAWNING CONDITIONS

Trout were able to spawn in parts of the Teviot itself, mainly in section 2 and in Pinelheugh Stream, and a small stream at the birdge huts (see map). Pinelheugh Stream provides patches of suitable gravel for about 1½ miles, after which it forks and becomes too rocky. The stream at the bridge huts provides about 150 yards of spawning gravel.

The value of the beds was assessed in the following manner. It was assumed that a mature trout of the size found in the Teviot River would make a redd 3 x 1 ft. The areas of the spawning beds was then divided by this to give the approximate number of redds that could be made there. However, the actual figure would probably be higher than those given below, as a certain amount of superimposition of redds generally takes place during spawning. Also, suitable patches of gravel would be missed in the Teviot, as the whole course of the stream was not walked over. The number of redds possible is:

Pinelheugh Creek	- 126
Bridge Huts Creek	- 38
Teviot section 2	- 163

CONCLUSIONS AND RECOMMENDATIONS

Spawning conditions are good; the Teviot River has good holding water but it appears there is insufficient food (bottom fauna) to support a head of large trout. Insufficient trout are removed, particularly by angling. The Teviot River has never been extensively fished; early in the century due to few anglers, and at the present time because access is difficult; the trout are small and better fishing is available elsewhere, a few hours run by car.

It is recommended that no change be made in present bag and size limits.

Executed by: R. Boud
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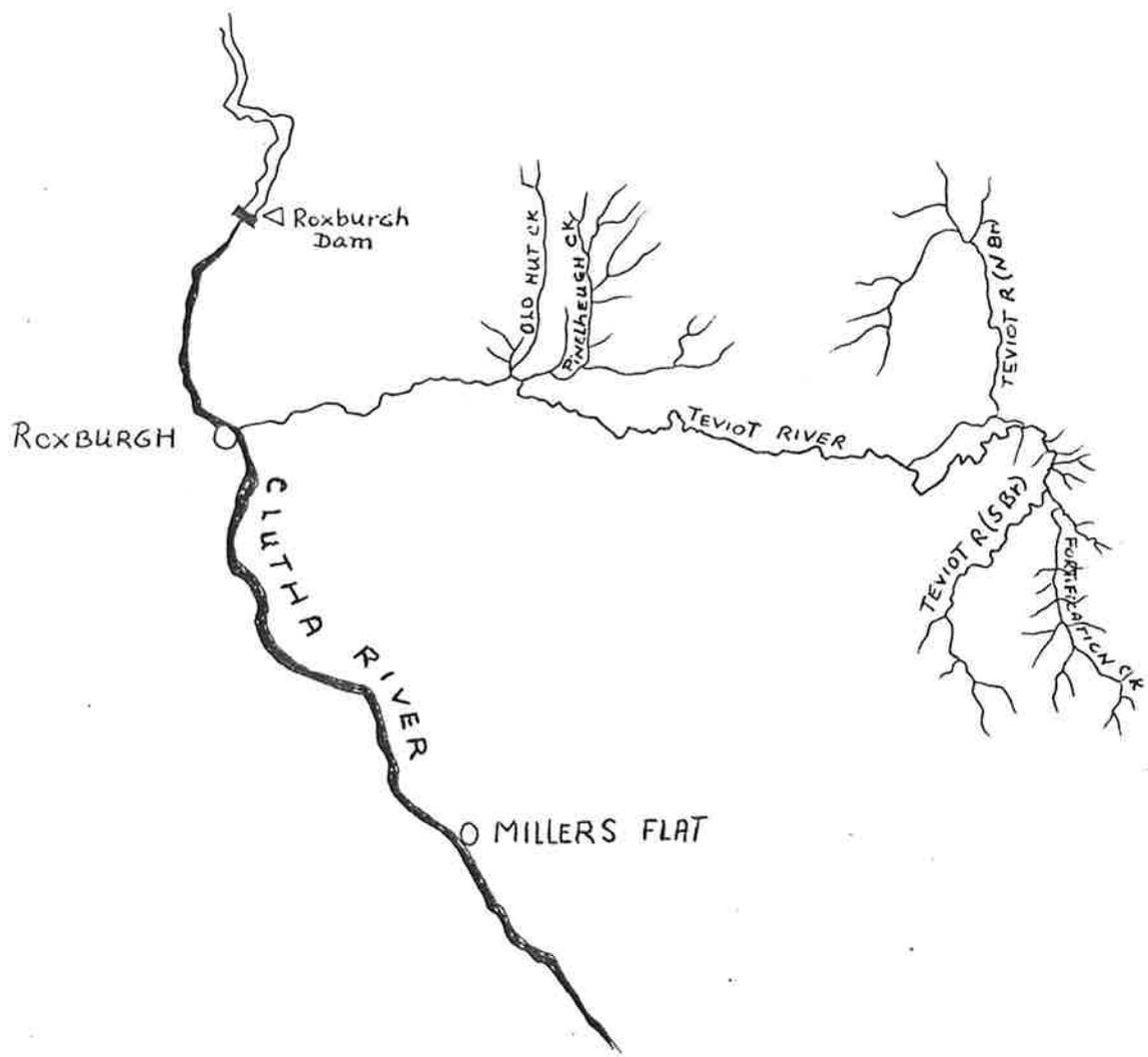


TABLE 1. Teviot River - approximate percentage of groups in bottom fauna.

Section No.	No. of samples	Av number/ sq. ft	Trichoptera	Ephermeridae	Diptera	Coleoptera	Mollusca	Neuroptera	Annelida
1	34	207	23.5	10.2	2.7	> 1	42.3	> 1	4.3
2	29	251	20.1	33.3	7.8	> 1	47.3	> 1	4.1
3	9	145	15.7	29.2	7.4	> 1	46.3	> 1	20.4