Toitu te Land whenua Information New Zealand

Crown Pastoral Land Tenure Review

Lease name : Dome Hills II
Lease number : PO 261
Lease name : Dome Hills Station
Lease number : PO 170
Fish & Game report

As part of the process of tenure review advice on significant inherent values within the pastoral lease may be provided by Fish & Game councils, and the information may be incorporated in the conservation resources report. The advice is part of the information gathered and assessed for the development of a preliminary consultation document.

The report attached is released under the Official Information Act 1982.

Copied November 2002

Pc 170/1

Fish & Game NEW ZEALAND

24 November 1999

Knight FranK
PO Box 27
ALEXANDRA

Dear Sir

DOME HILLS

Fish and Game carried out an assessment of this property in 1995. We have nothing further to add at this stage and our submission dated 29 March 1995 (attached) is the current position of Fish and Game .

Yours faithfully

F. P. Scarf

Frank Scarf
Fish and Game Officer

6(c)
6

CENTRAL SOUTH ISLAND FISH AND GAME COUNCIL
32 Richard Pearse Drive, PO Box 150, Temuka. Phone (03) 615-8400. Fax (03) 615-8401

29 March 1995

Mr Rob Wardell
Landcorp Property Ltd
PO Box 27
ALEXANDRA

Dear Sir,

The following sets out our assessment of fish and game values to Dome Hills. If you would like further detail please give me a call.

SPORTSFISH AND GAME VALUE ASSESSMENT - DOME HILLS

1. INTRODUCTION:
Dome Hills is located in the headwaters of the Kakanui River catchment. The North Branch is the only river within the property boundary with sufficient flow to exhibit sports fishery value.

2. SPORTSFISH VALUES:
Attempts to establish a rainbow trout sports fishery during the late 1970's/early 1980's was notably unsuccessful. While the introduction of spawning fish produced large numbers of juveniles, the tagged adults and progeny soon disappeared.

Brown trout that remain in the North Branch are few in number but reportedly larger than average for the Kakanui River. Nursery habitat is sufficiently high to support good stocks of juvenile brown trout.

The most comprehensive study on the fisheries of the Kakanui is that recently completed by Jowett and Hayes (1994). They report:

a) that the upper sections of the Kakanui is confined by steep hillsides and has a steep slope with well developed pool-riffle sequences

b) a waterfall in the mainstem some 62 km from the sea (and within the boundary of Dome Hills) probably marks the upstream limit of brown trout

c) adult brown trout numbers recorded using drift diving techniques show low numbers (2-4 per km) in the upper sections, (the survey site being downstream of the Roaring Meg - North Branch confluence

d) spawning occurs in these upper reaches with 1-2 redds per kilometre of river

- that fry density in the middle to upper reaches of the Kakanui is comparatively high indicating abundant juvenile rearing habitat.

3. GAMEBIRD PRESENCE:
The steep gorgy nature of the riverine environment is reflected in the low numbers of gamebirds present in the area. The North Branch has little if any gamebird value.

4. MARGINAL STRIP PROVISIONS SOUGHT:
The North Branch is of interest to a limited number of anglers who obtain enjoyment from 'wilderness angling experience'. For this reason retention of a marginal strip along the North Branch up to the waterfall has merit..

5. REFERENCES:
Jowett I.J.; Hayes J (1994) Kakanui River: Movement, Structure and Annual (Temporal) Changes in Trout Population. NIWA, Christchurch.

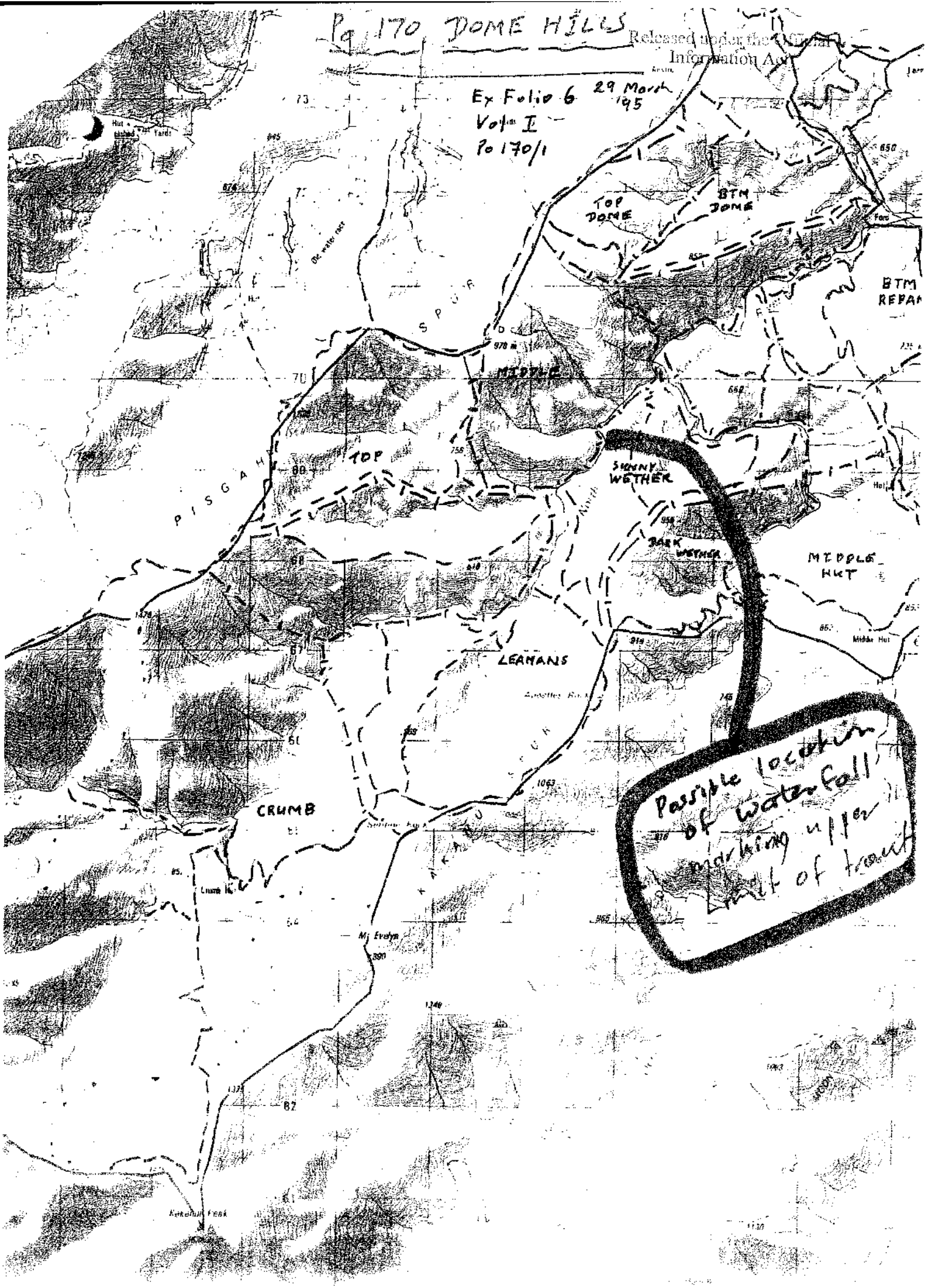
Yours faithfully

Frank Scarf
Fish and Game Officer

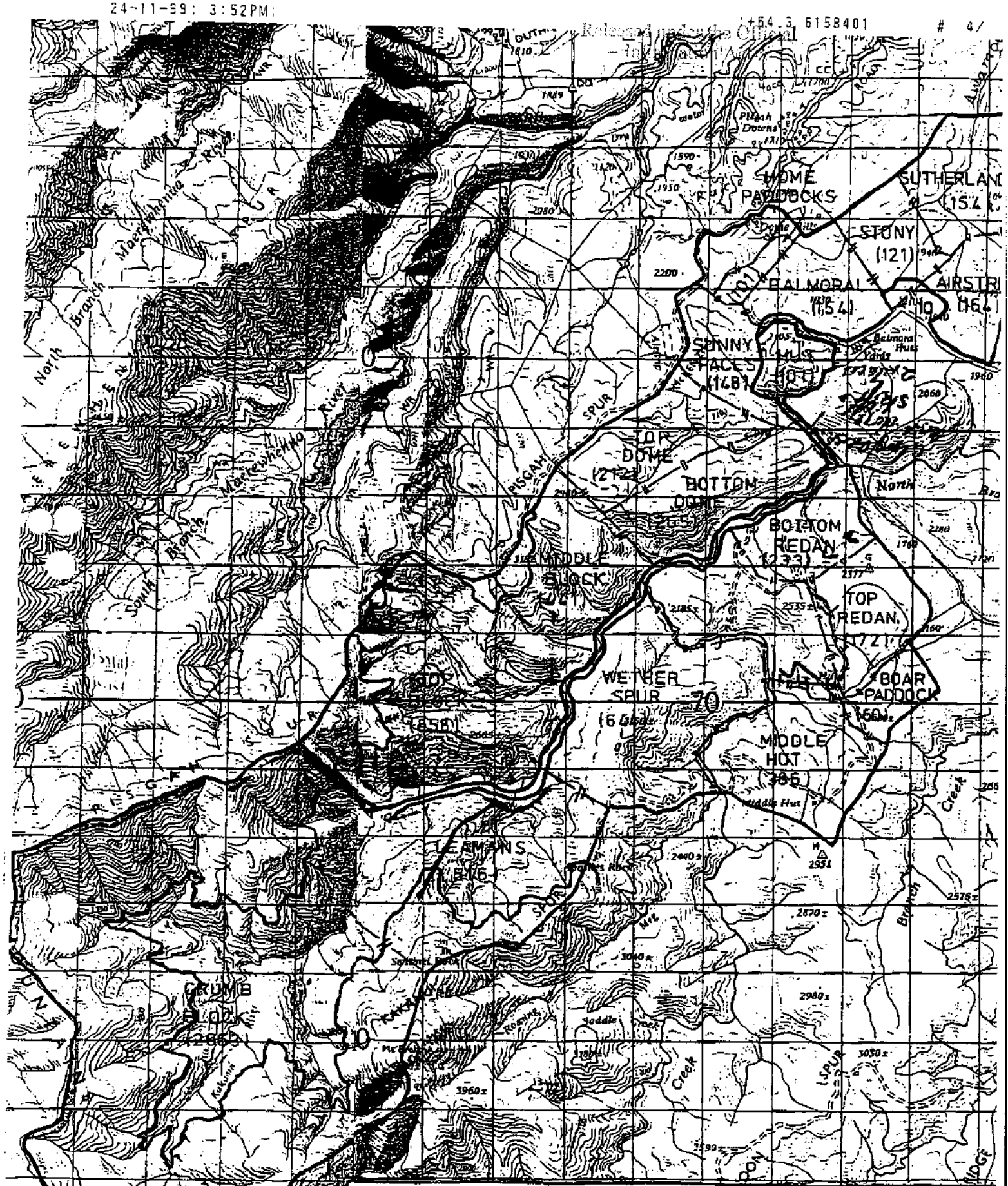
Refer attached paper Jowett/Hayes plus map with possible site of waterfall referred to in 2 b)
GMH

Pg 170 DOME HILLS

Ex Folio 6
Vol I
Po 170/1
29 March 95



SHEET 1 of NZMS 260



Locality Map ..

DOME HILLS I P 170

DOME HILLS II P 261

WAITAKI COUNTY

OTAGO LAND DISTRICT

SCALE ; 1: 63 360

PREPARED BY	DATE	CHECKED BY	FILE	
W.P.	MAR 1979		P261 P170	SHEET 135 & 136

Property Dome Hills Date 21/3/95

Location LIVINGSTON Area NORTH OTAGO Landholder DOUGLAS

INITIAL ASSESSMENT OF SPORTS FISH & GAME VALUES

1) SPORT FISHERY ASSESSEMENT

RIVER/STREAM	NORTH BRANCH KAKANUI RIVER														
Sports Fish Present	(Br)	Rb	Sa			Br	Rb	Sa			Br	Rb	Sa		
Value Assess	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Fish Stocks	✓														
Nursery Value			✓												
Spawning Value		(✓)													
Angler Popularity	✓														

Comment Rainbows introduced in late 70's early 80's to establish a fishery where Browns were few. Introductions of spawning fish produced good numbers of juveniles (E.F.M. operations) tagged adults and progeny soon disappeared. A few solitary Browns remain - always brown fingerlings present, also Galaxias [illegible] numbers

2) GAME BIRD PRESENCE

SPECIES	AREA								
Mallard duck	✓								
Grey duck	✓								
Paradise duck	✓								
Canada goose									
Chukar									
Quail									
Pheasant									

Comment Steep gorgy country, waterfowl numbers are low. Not an area targetted by hunters.

3) MARGINAL STRIP/PROVISIONS SOUGHT

The fish (browns) which remain are usually larger than average and so create an interest amongst a very small number of anglers. Access should be considered, "catch & release" fishing would be appropriate.

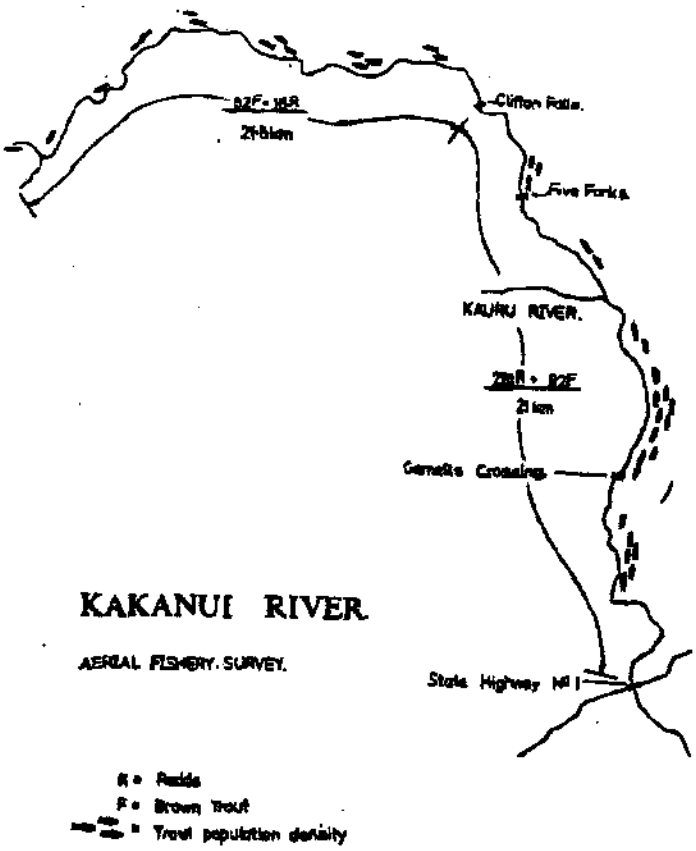
GENERAL COMMENT

Wilderness type area has a special appeal to many.

Frank note

area in question

REPORT ON AERIAL SURVEY OF KAKANUI RIVER



To obtain information on the Kakanui River fishery an aerial survey was undertaken on the 3rd June, 1980, from the Main Road Bridge on State Highway No. 1 to a point above the confluence of the north and south branches of the Kakanui River in the Kakanui Mountains.

Travelling upstream from the State Highway bridge the water velocity is slow and banks are lined by heavy stands of Crack Willow, the branches of which enshroud the river. No fish were seen in this lower area. The willows begin to thin as the river widens and riffles and movement of water becomes obvious. In this area a school of approximately 150 trout were seen. These fish appeared identical in size, probably about 30cm in length. Mature fish and redds become more numerous as Gemmells Crossing is reached. Approaching the crossing a second school of approximately 100 fish was seen. The fish in this school were larger, ranging up to 50cm. Having flown past Gemmells Crossing it became obvious that the greatest fish population and highest redd count occurred 4 or 5km either side of the crossing. A third school of mature "browns" approximately 50, was observed in the upper reaches of this productive area. The riverbed gradually takes on a silted appearance with the holes and pools acting as large sediment bowls, only the rapids and riffles showing clean gravels. The silting increases as the Five Forks bridge is approached, although cause is not obvious. Having passed the bridge the riverbed abruptly takes on a clean healthy appearance but fish are still scarce with only an occasional redd visible. Clifton Falls bridge is reached without an encouraging number of fish observed. The Kakanui River begins to carve its way into the countryside and takes on a new appearance. The braided nature disappears and the river assumes a distinct mountain stream character. An interesting variety of pools, runs, rapids and riffles are observed as progress is made into the Kakanui Mountains. Pairs of spawning trout on redds appear scattered over the next 10km of river. Fish numbers dwindle and redds are non existant as the confluence of the north and south branches are approached. A short flight up the south branch revealed a discolouration of the water and no fish were observed. The north branch remained clear but only 2 fish were seen in the next 2 or 3km.

Spawning gravels are abundant throughout the upper reaches. In places are found, peculiar to this area, runs where the riverbed is studded with smooth, black, round "plum pudding" like boulders. These are about the only non productive areas observed as the water tended to be swift and shallow providing little cover or food production. A total of 343 fish and 108 redds were counted.

Foot access would be an arduous chore, (but a challenge!)

In this preliminary study of the river it would appear to the writer that:

(a) The upper reaches should have had more fish when considering the habitat that is available.
(b) A more accurate redd count may have been possible had the survey been delayed by several days. Many fish were observed on redds, and the schools of fish indicated spawning territories had not been taken up by ripe adults.
(c) Fauna sampling in the upper reaches would provide interesting information, and comparisons with sampling at present being carried out on stations at Five Forks, Gemmells Crossing and at the State Highway bridge.
(d) Electric fishing operations in the upper reaches would provide important information on trout production and populations of native fishes.
(e) Access to the upper reaches is limited, transporting heavy equipment such as the E.F.M. and accessories would be a major operation.

G. HUGHES

RANGING COMMITTEE

The Ranging committee has been active throughout the year, honorary rangers and Field staff alike have attended to a few complaints. Main complaints being pre-season shooting also set nets, these seem to create a problem in Kakanui and Waituki river mouth areas. Another problem confronting Field staff and the council is the setting of fyke nets in the various lakes and rivers of our district. These nets are catching a lot of trout, flounders, ducks etc.

A Rangers course was held in the Kurow Hall on 21st September, 1980, a very poor attendance of Honorary Rangers turned out to this excellent lecture and discussion on Ranging matters. Our thanks to Graeme Hughes and his able assistant Mace Ward for the way the course was organised, a pity a few more people hadn't taken advantage of it.

Licence checks on the Waitaki River were carried out in conjunction with the river surveys. It was found that a lot of anglers still fail to carry their licences with them. As has been said before in these reports that it is an offence and is an inconvenience to both Angler and Ranger.

The coming year will create a few problems for Rangers, with the rise in price of the licence a few fishermen and shooters will try and run the gauntlet, but the cost of a licence is a small price to pay for two great sports.

The Ranging committee would like to thank the field staff for their dedicated work during the year, also like to welcome Mace Ward to our ranks. Our thanks also to the many patient anglers who were interviewed and asked for their licences during our surveys on the Waitaki river. Without their assistance these surveys would not have been such a success.

KEN McCALLUM.

6(c)
6

CENTRAL SOUTH ISLAND FISH AND GAME COUNCIL
32 Richard Pearse Drive, PO Box 150, Temuka. Phone (03) 615-8400. Fax (03) 615-8401

29 March 1995

Mr Rob Wardell
Landcorp Property Ltd
PO Box 27
ALEXANDRA

Dear Sir,

The following sets out our assessment of fish and game values to Dome Hills. If you would like further detail please give me a call.

SPORTSFISH AND GAME VALUE ASSESSMENT - DOME HILLS

1. INTRODUCTION:
Dome Hills is located in the headwaters of the Kakanui River catchment. The North Branch is the only river within the property boundary with sufficient flow to exhibit sports fishery value.

2. SPORTSFISH VALUES:
Attempts to establish a rainbow trout sports fishery during the late 1970's/early 1980's was notably unsuccessful. While the introduction of spawning fish produced large numbers of juveniles, the tagged adults and progeny soon disappeared.

Brown trout that remain in the North Branch are few in number but reportedly larger than average for the Kakanui River. Nursery habitat is sufficiently high to support good stocks of juvenile brown trout.

The most comprehensive study on the fisheries of the Kakanui is that recently completed by Jowett and Hayes (1994). They report:

a) that the upper sections of the Kakanui is confined by steep hillsides and has a steep slope with well developed pool-riffle sequences

b) a waterfall in the mainstem some 62 km from the sea (and within the boundary of Dome Hills) probably marks the upstream limit of brown trout

c) adult brown trout numbers recorded using drift diving techniques show low numbers (2-4 per km) in the upper sections, (the survey site being downstream of the Roaring Meg - North Branch confluence

d) spawning occurs in these upper reaches with 1-2 redds per kilometre of river

- that fry density in the middle to upper reaches of the Kakanui is comparatively high indicating abundant juvenile rearing habitat.

3. GAMEBIRD PRESENCE:
The steep gorgy nature of the riverine environment is reflected in the low numbers of gamebirds present in the area. The North Branch has little if any gamebird value.

4. MARGINAL STRIP PROVISIONS SOUGHT:
The North Branch is of interest to a limited number of anglers who obtain enjoyment from 'wilderness angling experience'. For this reason retention of a marginal strip along the North Branch up to the waterfall has merit..

5. REFERENCES:
Jowett I.J.; Hayes J (1994) Kakanui River: Movement, Structure and Annual (Temporal) Changes in Trout Population. NIWA, Christchurch.

Yours faithfully

Frank Scarf
Fish and Game Officer

Refer attached paper Jowett/Hayes plus map with possible site of waterfall referred to in 2 b)
GMH

Fish & Game NEW ZEALAND

Date 11.7.97 Re DOME HILLS

To CEOF HOWARD Facsimile Number 03) 4489099

From FRANK SCARF Number of pages including coversheet

Please advise if transmission is incomplete or unreadable

Comment about Brown Trout limit for Kakanui River comes from report by Jowett & Hayes 1994. Appears waterfall is at about M.R. I41:1276; but I cannot be totally certain. Jowett & Hayes found Brown Trout about 2km below the Loerys Mtg NK Branch Kakanui Confluence

Central South Island Region
32 Richard Pearse Drive, PO Box 150, Temuka, New Zealand. Telephone (03) 615 8400 Facsimile (03) 615 8401

KAKANUI RIVER: MOVEMENT, STRUCTURE, AND ANNUAL (TEMPORAL) CHANGES IN A TROUT POPULATION

Ian Jowett and John Hayes
NIWA
Christchurch
15 October 1994

The Kakanui River

Physical description

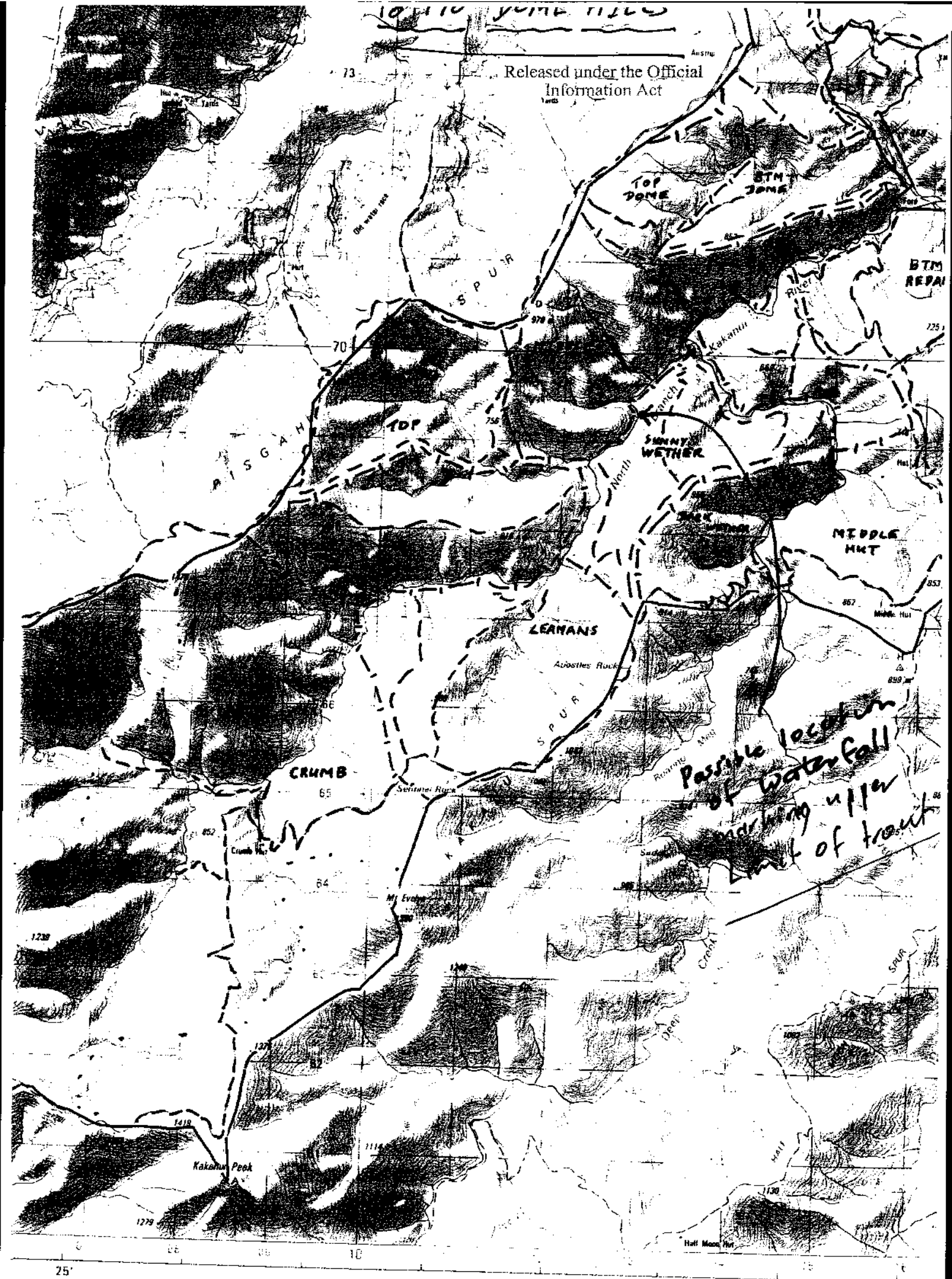
The Kakanui River is a small river at 44.5°S in North Otago, just south of Oamaru. From its source at 1600 m in the Kakanui mountains, it flows north east for about 40 km through partially developed tussock grassland before emerging onto plains at Clifton Falls. It then flows south-eastwards through highly developed pastures for a further 30 km to the sea. Very little of the catchment is forested. In the high country, the steep sides of the gorge are covered in low scrub with some trees and in the lower reaches much of the stream bank is lined with willows, presumably planted as a protection against river erosion.

The river has a mean flow of 4.9 m^3/s (1982-1994) at Pringles near the estuary. The coefficient of variation of flow is 2.07 which classifies the flow variability as medium to high in comparison with other New Zealand rivers (Jowett and Duncan 1990), and in common with other east coast rivers, regularly experiences low flow events because of the combined effect of low rainfall and irrigation demand.

The river can be divided into three sections of different character. The lower 9 km of river is low gradient (1.2 m/km) and willow-lined on at least one bank, with long pools and short cobble riffles. Many of the pools contain large macrophyte beds. The average width in the lower section is 20 m and decreases to 14 m further upstream. The gradient increases to 3.6 m/km in the 19 km middle section and there is generally less willow, macrophytes and pools than in the lower river, with correspondingly more run and riffle habitat. The upper section of river is generally steep (10 m/km), confined by steep hillsides, and contains well-developed pool-riffle sequences. In places, rapids are formed by old landslides, but these would not be a barrier to trout. There is a waterfall on the mainstem about 62 km from the sea which probably marks the upstream limit of brown trout.

The Kakanui River was selected as a study river because it had a good network of water level recorders. There was good access along most of its length and water clarity was suitable for underwater observation. It is also a relatively simple river system flowing directly into the sea with few major tributaries. Jowett (1990) classified the river as a brown trout river containing moderate numbers of trout in the lower section and low numbers in the upper section. Rainbow trout are present in low numbers (less than 2% of the total trout population) and salmon (*Oncorhynchus tshawytscha*) occasionally stray into the river. Reconnaissance surveys of the tributaries showed that they contained few trout, both in summer and winter.

Continuous water temperature records maintained by the Otago Regional Council showed that maximum summer daily mean water temperatures at a site 3 km upstream of the estuary were about 18°C. Winter temperatures averaged 5°C in the lower reaches and reached a minimum of 3°C. Minimum and mean temperatures were generally about 1°C lower 20 km further upstream at Clifton Falls, but maximum temperatures were about the same.



SHEET I 41 NZMS 260

E Long 170°30'