A REPORT ON THE OVENS RIVER (BRIGHT) WATER SUPPLY CATCHMENT

A Proposal for Proclamation Prepared for consideration by the Land Conservation Council

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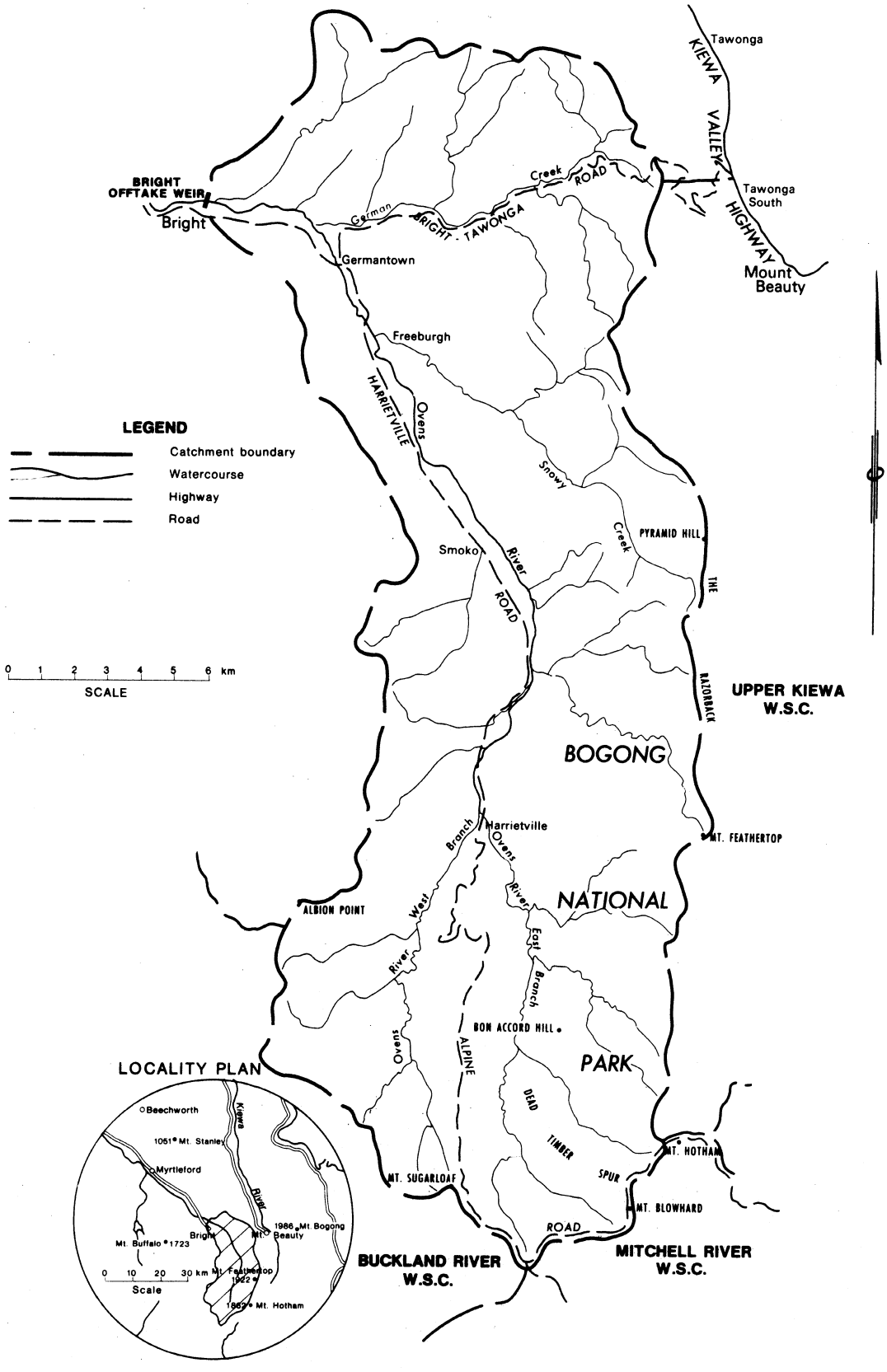

FIGURE 1

INTRODUCTION

The Land Conservation Council, in its final recommendations for the North-Eastern area, Districts 3, 4, and 5 has recommended that the Ovens River (Bright) catchment should be investigated by the Soil Conservation Authority and if appropriate the catchment should be recommended for proclamation under Section 22(1) of the *Soil Conservation and Land Utilization Act* 1958 and section 5(1)(b) of the *Land Conservation Act* 1970.

Similarly, in the Final Recommendations for the Alpine Area, the Council recognises the particularly sensitive nature of land above 1200 metres and identifies the need for a standardised means of catchment protection, initially through the procedure of proclamation. This report is presented for consideration by the Land Conservation Council.

The report recommends that the Ovens River (Bright) Water Supply catchment be proclaimed.

1. The Catchment and Water Supply Systems

The Ovens River catchment to the offtake point at Bright covers an area of 350 km^2 and lies to the south-east of the town (Figure 1). The river rises in the mountains of the Great Dividing Range in the vicinity of Mounts Feathertop and Sugarloaf. The east and west branches of the river join at Harrietville; from that point to the offtake, the principal tributaries are the Stony, Snowy and German Creeks. The catchment is bound to the south and east by the proclaimed catchments of the Upper Kiewa River, the Mitchell River and the Buckland River. Bakers Gully, a proclaimed catchment, lies to the south of Bright but is not contiguous with the Ovens River (Bright) Catchment.

The original Bright town water supply was provided from two reservoirs in Bakers Gully, the lower constructed in 1900 and the higher in 1912. A pump on the Ovens River and rising main connecting into the town distribution system were installed in the early 1960s, to both offset and decrease in effective storage capacity in the Bakers Gully storages which had occurred through silting, and to satisfy the demand due to increases in the permanent and tourist peak populations of the town. The pumping facility at the offtake was subsequently expanded and is currently the sole source of water supply for the town.

The Bright Waterworks Trust is authorised under its Act to supply water to the Bright Urban District; this includes the Crown Township of Bright and some adjoining land, totalling 715 ha. Within the catchment, Water Supply Districts have also been constituted at Freeburgh and Harrietville, but reticulated water supplies are not provided at present. A proposal to supply Harrietville from an existing private holding tank on Simmons Creek, with the supply being supplemented by augmenting a reserve storage in the offtake area, is currently under consideration. Residents currently obtain their water from shallow bores, or from old mines in the neighbouring hills. There is no proposal at present to provide a reticulated supply for Freeburgh. From 1 July, 1984 the Bright Waterworks Trust will be replaced by the Bright District Water Board, which will control all constituted Water Supply Districts in Bright Shire.

Although the greater part of the catchment is forested, from Harrietville the river passes through residential areas, cultivated crops, grazing land and pine plantations before reaching the offtake site within Bright township. While private diversions for domestic purposes do not currently constitute a major use of water, the irrigation of crops, principally tobacco, does. From Harrietville to Myrtleford, irrigators are dependent on the dry-period unregulated flow of the Ovens and Buckland Rivers. The diversion of water for town water supply purposes at Bright must thus be seen as only one of several competing uses for water from the catchment.

Since the 1967/68 drought the Ovens River flow for the tobacco irrigation season, from December to the end of February, has been augmented by pumping from the Harrietville dredge hole. The pump, owned by the Tobacco Leaf Marketing Board operates at times determined by the Upper Ovens River Valley Diverters Trust. It was also used during the 1982/83 drought to maintain a flow in the river. The dredge hole has tapped the gravel sequence to a depth of 30 m. and has a daily maximum yield of 10 ML/day for successive days pumping using the present pump. Net increased flow in the Ovens River below Harrietville is some 8 ML/day, after allowances are made for losses by seepage from the Ovens River East Branch into the hole. During the 1982/3 drought, even with pumping from the dredge hole, it was necessary to impose restrictions which severely limited the availability of water for irrigation and restricted town water consumption to an average of 4.2 ML/day during the months of January and February 1983, in order to maintain a minimum flow in the river. In 1983/84, with a mild summer, the average metered daily usage of water in the Bright Urban District has been about 6 ML/day.

An increased demand for water within the Bright Urban District has been projected from the population figures below:

POPULATION OF BRIGHT URBAN DISTRICT						
Properties Services	**Fixed Population**	**Average* floating population (tourists)**	**Effective population**	**Peak tourist population**	**Design+ population**	**Future properties to be serviced**
882	1,500	3,700	5,200	8,000 plus	7,900	1,600

* Average floating population includes tourists and seasonal workers occupying flats, lodges, motels and caravan parks.

+ The design population is the population for which the expansion program is designed and is based on a 25% increase in effective population.

Alternative sources of supply have been investigated. A new 200 ML storage was proposed for Bakers Gully. Construction was to have commenced in 1979 at a site at a higher elevation in the catchment than the two storages it was to replace, but was deferred indefinitely following geotechnical investigations which revealed deficiencies in the rock structure at the proposed site. A number of options for securing a water supply for Bright, including establishment of a storage or offtake at another location, are currently receiving preliminary consideration.

Water quality at the Bright offtake and from several points within the town reticulation system is monitored monthly by the Bright Waterworks Trust. Samples taken are analysed for bacteriological parameters. Physical and chemical parameters are monitored less frequently. Mostly testing for the bacterial indicator organism *Escherichia coli* indicates low counts for most of the year, with slightly higher counts occurring over summer. Dissolved salt, colour and turbidity values are low to very low. Quality overall is good for a river with a multiple-use catchment. The water supply s chlorinated at the pumping station.

2. Climate

The catchment has a cool temperate climate influenced by the highlands. Mean annual rainfall for Bright is 1103 mm and increases to more than 2000 mm, due to the influence of elevation and topography, as one ascends the catchment. During the winter months most of the catchment with elevations above 1500 m receives its precipitation as snow and, in a normal winter, snow accumulates from June until September. High intensity storms are of short duration and occur mainly in summer.

Because of the broad range in elevation, the temperature range for different locations varies considerably. However, the hottest months are January and February and July is the coldest. Mean monthly temperature in the Alpine environment can be below 0°C for June, July and August and frosts can occur at any time of the year, particularly above the treeline in areas subject to cold air drainage.

3. Physiography and Geology

The catchment lies at elevations between 300 m and 1,922 m, with Mounts Feathertop and Hotham being the dominant features. The river valley below Harrietville is mature, surrounded by a hilly and mountainous area of Ordovician mudstones, shales and sandstones, with Quaternary deposits of gravels and alluvium on the valley floor. The area shows mature dissection with long, sharp ridges. The streams have a dendritic drainage pattern. Hillwash deposits (colluvium) and stream alluvium have been extensively disturbed by gold-dredging.

4. Soils and Vegetation

Friable brown and red gradational soils are present on the Ordovician sediments. On the steep slopes and northern aspects, the soils are commonly red and stony red gradational types with shallow profiles - often skeletal. Friable brown gradational soils with loamy texture have developed on the moist mountain slopes. Shallow stony soils are common on steep slopes, exposed ridges and peaks such as Mount Hotham and Mount Feathertop. Alpine humus soils also occur at higher elevations.

On the colluvium and alluvium which is found mostly along the watercourses a number of different soils are found. Predominant soils are the red duplex types, friable gradational types and the weakly bleached red-brown and yellow gradational soils. The past operation of floating dredges in the Ovens Valley as far as Harrietville has resulted in a re-sorting of alluvium obtained from depths as great as 25m and more below the surface, and the deposition of stones and cobbles at the surface.

Native vegetation varies from alpine and sub-alpine complexes of heath and herbfield in the vicinity of Mounts Feathertop and Hotham, through snow gum and snow gum-candlebark, to alpine ash, with extensive pockets of predominantly broad-leaf peppermint at lower elevations and on drier aspects and narrow-leaf peppermint in sheltered basins and on moister aspects. Shrubs, grasses and herbs are found in the lower strata. A small area of long-leaf box occurs on a dry foothill aspect near Freeburgh.

Much of the land on the valley floor between Harrietville and Bright has been cleared and sown to pasture. The extensive dredged areas have, in the vicinity of Bright and Freeburgh, been planted to softwoods and elsewhere restored where possible. Limited areas have been used for growing tobacco, on the richer river flats, the establishment of an apple orchard and the growing of nuts. In the northern portion of the catchment some of the foothill country has been used to grow softwoods.

5. Land Tenure Use and Land Management

Some 26 km^2 or 7% of the catchment is freehold land, with the flatter areas predominantly cleared of native vegetation. The major use of this land, outside the residential areas of Bright and Harrietville, is grazing for beef production. Limited areas are used for tobacco production, an apple orchard and the growing of nuts (walnuts, hazelnuts, chestnuts).

The area is extremely attractive to tourists. Provision is made at a number of locations within the catchment for caravan parks and low-intensity camping. Guidelines for bush camping in the Shire of Bright have been issued, they relate principally to camping near streams, sanitation and the disposal of rubbish. As a fire protection measure, no camping is permitted in the Division of Forests pine plantations or adjoining frontage along the Ovens River near Bright between 15 November and 30 April.

The Department of Conservation, Forests and Lands is responsible for management of most of the public land in the catchment, according to its designated use (as park, State forest or other reservation). Part of the Mount Hotham Alpine Resort, whose management is being transferred to the Alpine Resorts Commission, falls within the catchment. The State forest in the catchment is primarily protection forest with a small quantity of timber products for posts and firewood being obtained. At the higher elevations, most recently in the early 1970's, stands of alpine ash and mixed species have been managed to yield sawlogs. The areas of softwood in the northern end of the catchment are managed to yield sawlogs, preservation timbers and pulpwood. The Department of Conservation, Forests and Lands prepares and administers detailed prescriptions for the management of harvesting and regeneration operations in the catchment.

Mining has played an important part in the history of the area. Gold was first discovered at Harrietville in 1952, with quartz-reef mining commencing in the 1860's. The operation of floating dredges in the valley was extensive and continued at Harrietville and Freeburgh until the late 1940's. Currently, mineral exploration licences are held over a number of areas in the vicinity of Harrietville. The Sambas gold mine continues to operate. A number of mining leases and miners right claims have been issued for areas within the catchment. In addition an exploration licence is held over an area in the vicinity of Harrietville which includes, in part, the West Branch of the Ovens River. If current testing proves successful, approval would be sought to dredge the area. In order that a marked effect on water quality did not occur, strict guidelines would have to be imposed on any such operation.

The catchment lies within the Shire of Bright. Development is regulated currently by an Interim Development Order made in 1972. Approval is required before any activity specified in the order may be permitted.

The Shire of Bright has prepared a planning scheme for the Ovens Valley which is currently under consideration by the Ministry for Planning and Environment. It is expected that all stages in the approval process will be completed by late 1984, at which time the planning scheme will replace the Interim Development Order.

The principal elements of the planning scheme which affect the catchment, are that residential and commercial development are restricted to the existing Crown Townships of Bright and Harrietville and certain limited adjoining areas. Provision is also made for low density residential development in both these locations. The balance of the freehold land is zoned Rural; the relevant provisions of this zone relate to minimum subdivision allotment size and density, the sub-division of land, the erection of buildings near streams and tree clearing. In addition, no intensive animal industry is permitted within 100m of a major watercourse. The purposes for which land within the Rural Zone may be developed under the proposed planning scheme are summarised in Appendix A.

Public land is exempted from Ordinance.

6. Land Conservation Council Recommendation

The northern portion of the catchment falls within the Land Conservation council's North-Eastern area, Districts 3, 4 and 5. Final recommendations were published fro this area in 1977 and have been accepted by government. A review of land within an area including this catchment and referred to as the Ovens Special Investigation, was completed in 1981 and Final Recommendations published. These recommendations did not change the use of any public land within the catchment from that recommended in 1977.

The southern portion of the catchment falls within the Council's Alpine Area, for which final recommendations on public land use were published in 1979; these were accepted with minor variation to the boundary of the Mount Hotham Alpine Resort and variation of the date by the grazing was to cease in the vicinity of Mount Little Feathertop, from 1988 to 1991, by the government. A subsequent review of landuse in the whole study area, known as the Alpine Special Investigation, was completed by 1983; these recommendations are currently under consideration by the government.

Final recommendations for the use of public land have been summarised and are presented in Figure 2.

7. Water Quality Hazards

Erosion from disturbed sites in or close to streams and the removal of ground-cover over extensive areas by wildfire are the greatest potential hazards to water quality. Disturbances may arise through farming activities, clearing, or forest operations (roading, logging). Turbidity and sedimentation of the water is not currently a problem, however, the impacts of disturbance being relatively short-lived. Mining activity, especially that associated with the exploitation of alluvial deposits of minerals, has the potential to severely affect water quality; specific measures to ensure that effects on water quality are minimised are included in licence conditions.

Stock have access to substantial section of the major streams passing through freehold areas, with the potential for faecal contamination and streambank erosion to occur. Residential development has taken place within the catchment at Harrietville, Freeburgh and Bright, but is regulated there and replaced by a Planning Scheme. The river is a focus for recreational activity, including camping, through to Bright. The combined impacts of stock access, recreational activity and residential development within the catchment at lower elevations increase the likelihood of biological contamination of the water. The Bright Waterworks Trust chlorinates the water supply at the offtake.

Safeguarding water quality at the offtake will require continued attention to measures for the control of residential development and camping activity close to the river.

No camping is permitted in the Forests Commission pine plantations near Bright between 15 November and 30 April as a fire protection measure, with the additional benefit of reducing human impacts on water quality. The Bright Waterworks Trust prohibits camping in the immediate vicinity of the offtake at all times.

OVENS RIVER WATER SUPPLY CATCHMENT

LAND CONSERVATION COUNCIL FINAL RECOMMENDATIONS*

LEGEND

NORTH - EASTERN AREA - DISTRICTS 3, 4 & 5 (1977)

F1 Existing Softwood Plantation

G1 Forest Area

I1 Public Land Water Frontage Reserves (not shown)

J15, J20, J21 Streamside Reserves

N5 Tawonga Gap Scenic Reserve

Q1 Existing Powerlines

S1 Uncommitted Land

OVENS SOFTWOOD PLANTATION ZONE SPECIAL INVESTIGATION (1981)

Existing Softwood Plantation - No Land use changes proposed

ALPINE AREA (1979)

A2 Bogong National Park

No grazing - Area currently withdrawn from grazing

Grazing to be phased out by 1991

O2 Harrietville Recreation Reserve

O8 Mount Hotham Alpine Resort

S1 Existing Transmission Lines

ALPINE AREA - SPECIAL INVESTIGATION (1983)

I1 State Forest #

M7 Streamside Conservation - Natural Features Zone

*Some of these recommendations have been approved by the government. Refer to the text for status.

State Forest is a new concept which incorporates *Timber Production* and *Uncommitted* areas previously recommended

OVENS RIVER (BRIGHT) WATER SUPPLY CATCHMENT

PLAN No. S-1371A

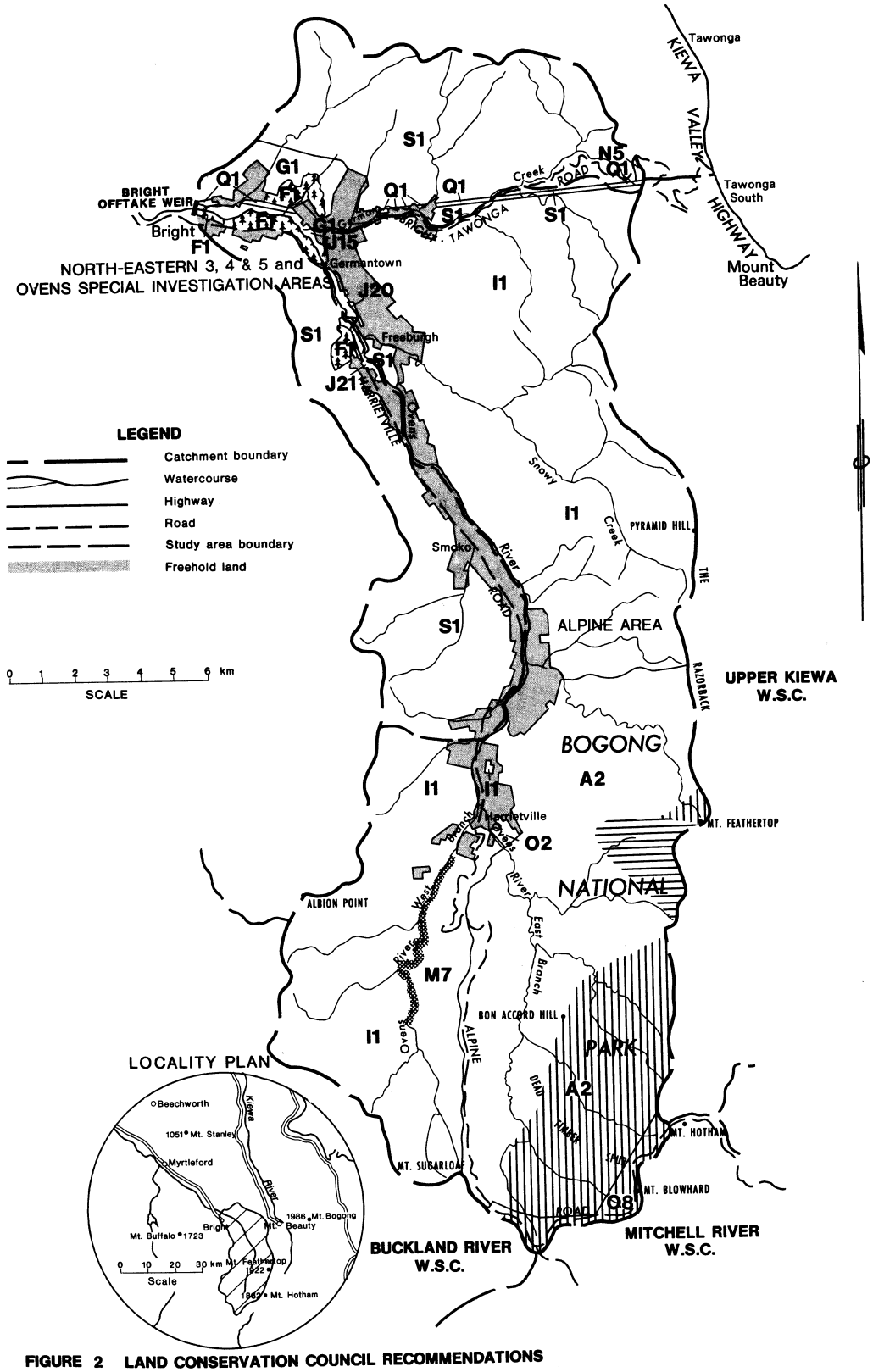

FIGURE 2 LAND CONSERVATION COUNCIL RECOMMENDATIONS

RECOMMENDATIONS

As a result of these investigations, it is recommended that:

The Land Conservation Council recommend to the Governor-in-Council under section 5(1)(b) of the *Land Conservation Act* 1970, that the catchment be proclaimed under section 22(1) of the *Soil Conservation and Land Utilization Act* 1958:

> The Ovens River (Bright) Catchment, as shown on
> Plan No. S-1371 (Figure 3).

OVENS RIVER (BRIGHT) WATER SUPPLY CATCHMENT

PLAN No. S-1371

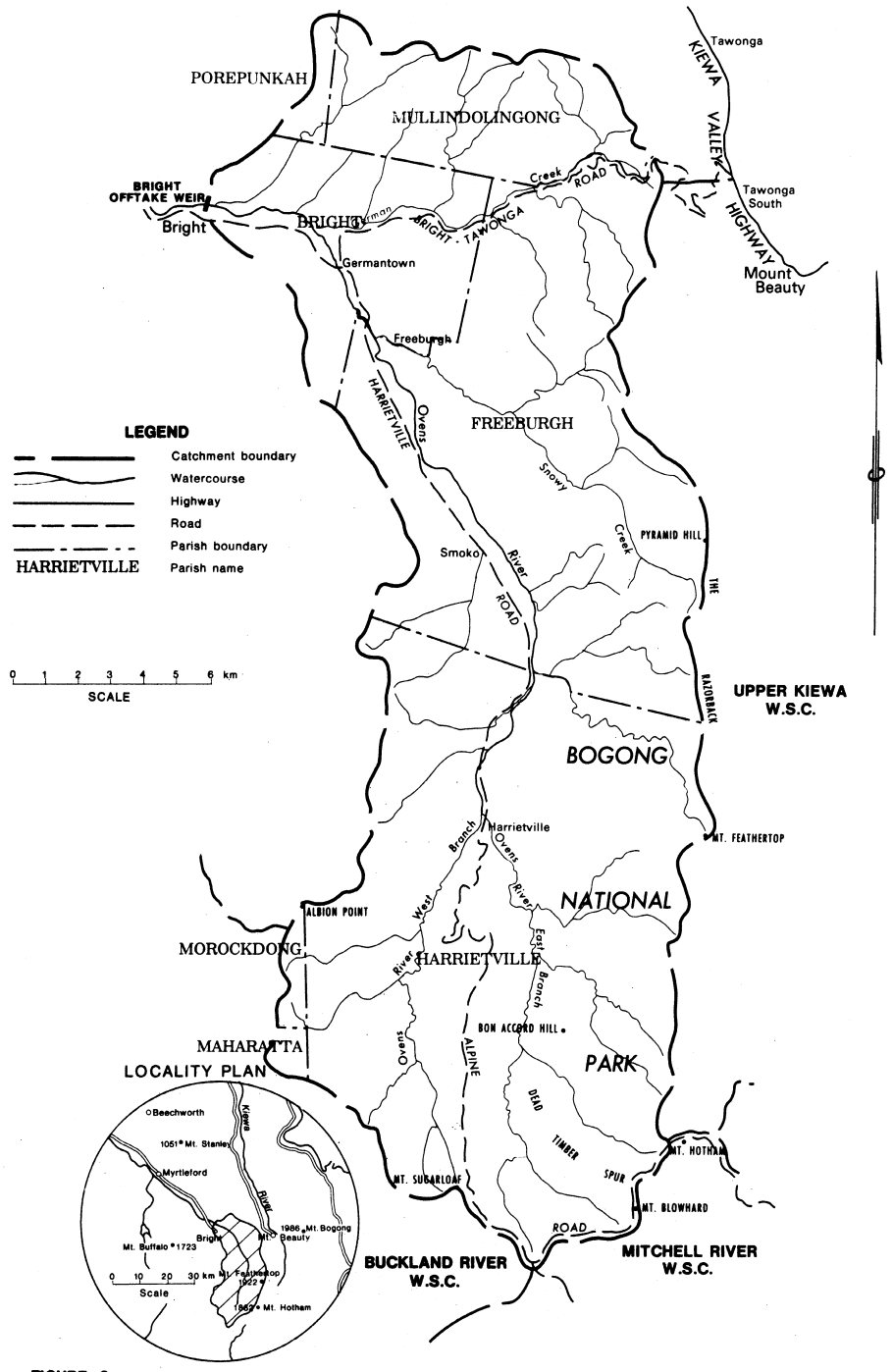

FIGURE 3

APPENDIX A
SHIRE OF BRIGHT (OVENS VALLEY) PLANNING SCHEME
TABLE TO CLAUSE 2.2
SECTION 1 - RURAL ZONE

Column 1	Column 2	Column 3		Column 4	Column 5
Name of Zone	**Purpose for which land may be used or developed**	**Purposes for which land may be used or developed subject to specified conditions**		**Purposes for which land my in accordance with a permit be used or developed**	**Purposes for which land may not be used or developed**
		Purpose	**Conditions**		
Rural	Agriculture Aquaculture Animal Husbandry Car Park Minor road Minor Public Utility Public Open Space Stables	Farm Building Home Occupation	Provided the floor area of the building does not exceed 100m^2 As set forth in Clause 8.3	Airfield Animal Boarding Establishment* Art Gallery Cattle Feed Lot$^+$ Clinic Club Consulting Rooms Dependent Relative Unit* Educational Establishment Exploration Development* Forestry Greyhound training Holiday Farm House Major Road Major Public Utility Mineral Prospecting* Piggery* Place of Assembly Place of Worship Poultry Farm Rural Industry	Any purpose not specified or included in any other column of this Table

Column 1	Column 2	Column 3		Column 4	Column 5
Name of Zone	**Purpose for which land may be used or developed**	**Purposes for which land may be used or developed subject to specified conditions**		**Purposes for which land my in accordance with a permit be used or developed**	**Purposes for which land may not be used or developed**
		Purpose	**Conditions**		
				Soil Removal Sports Ground Tourist Establishment*+ Veterinary Surgery Any purpose specified in Column 3 of this Table if the condition or conditions set forth opposite such purpose are not complied with	

+ Council requires notice to be given (i.e. the application to be advertised) for all applications for these uses. See 5th Schedule (page 88) for details

* See additional provisions in Part 8 in relation to these uses.