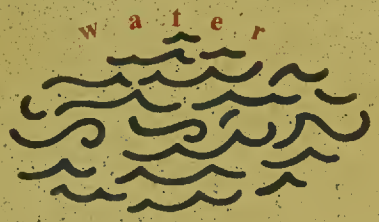
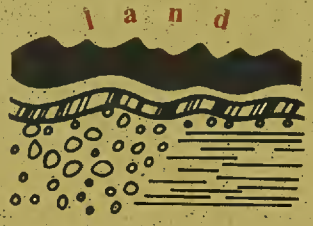
MARLBOROUGH RESOURCE MANAGEMENT PLAN

LAND DISTURBANCE CONTROL IMPLEMENTATION





VOLUME TWO

MARLBOROUGH RESOURCE MANAGEMENT PLAN

LAND DISTURBANCE CONTROL IMPLEMENTATION

VOLUME TWO

Marlborough District Council

June 1994

Resource Management Act 1991

PREFACE

Volume one presents the strategy for management of land disturbance in Marlborough.

Volume two details the rules controlling land disturbance and identifies the conditions attached to permitted activities and matters over which Council has retained control and discretion.

Therefore, Volume One explains what this Plan is seeking to achieve while Volume Two states how the Plan will achieve management of the effects of land disturbance.

RESOURCE MANAGEMENT ACT 1991

Marlborough Resource Management Plan
Land Disturbance Control

It is hearby certified that this is a correct copy of the Marlborough Resource Management Plan, Land Disturbance Control as approved by resolution of the Marlborough District Council on the 6th day of April 1995

The Council further resolved that the Plan shall become operative on 20 April 1995

R C PENINGTON
GENERAL MANAGER

The Common Seal of the Marlborough District Council was hereunto affixed this 19 day of April 1995 in the presence of:

THE MARLBOROUGH DISTRICT COUNCIL
THE Common Seal OF

L F McKENDRY
MAYOR

R C PENINGTON
GENERAL MANAGER

Date Operative
20 April 1995

Marlborough District Council, Seymour Square,
P.O. Box 443, Blenheim, New Zealand. © 1994

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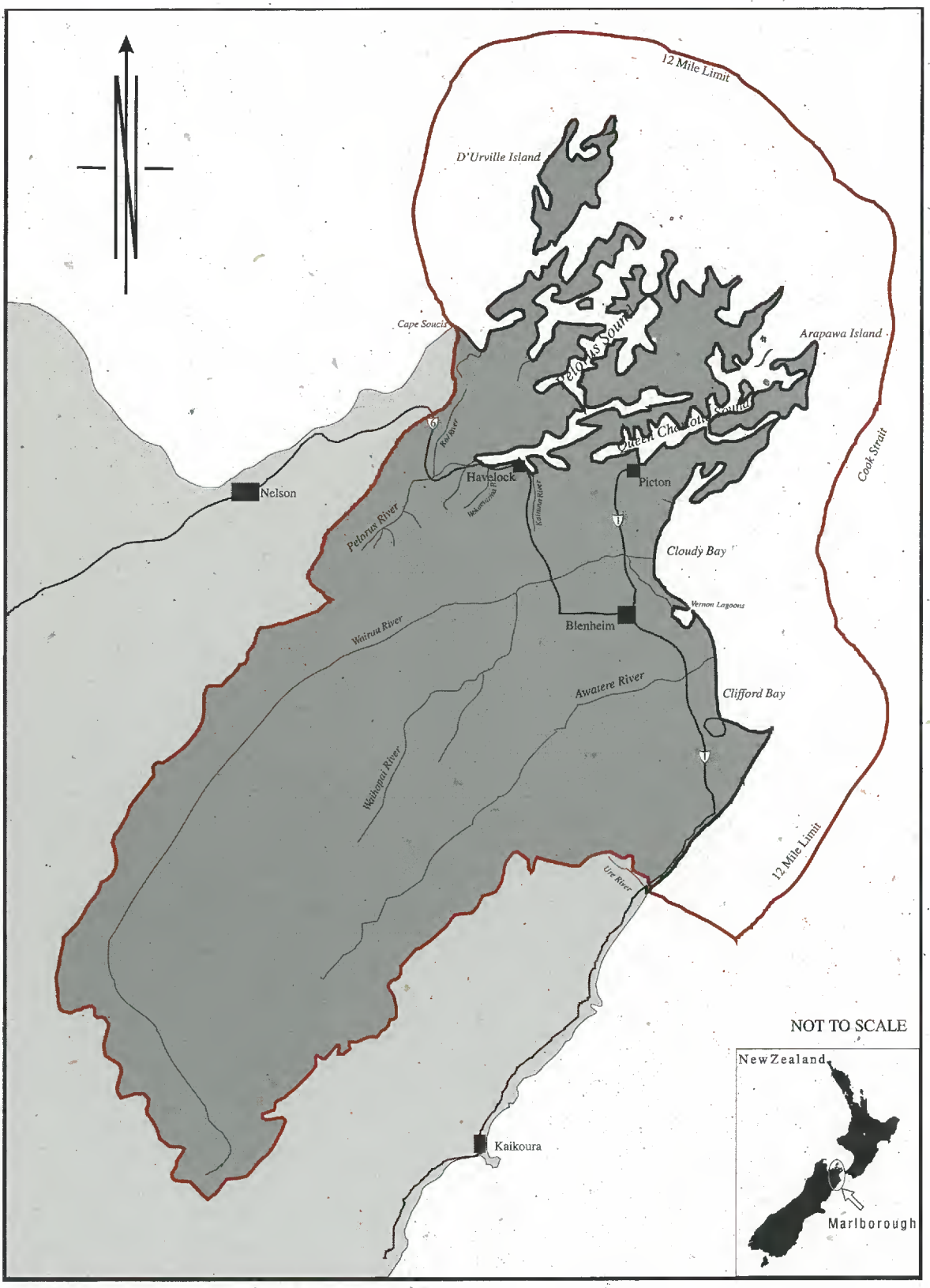


Map 1 : Marlborough District

Land Water Marlborough Resource Management Plan area - Land Disturbance Control

MARLBOROUGH DISTRICT COUNCIL

Resource Management Plan for Land Disturbance Control

IMPLEMENTATION

1. INTRODUCTION

1.1 PURPOSE OF THE IMPLEMENTATION PLAN

This section of the plan prescribes **rules** which Council will use to control the effects of land disturbance, and gives the **environmental performance standards** which resource users must meet when disturbing land.

1.2 SCOPE OF THE PLAN

The plan applies everywhere within the boundaries of Marlborough District.

However, it does not apply for any land disturbance activity undertaken in the Coastal Marine Area, or for any land disturbance controlled by the Water and Soil Bylaws in the Council's Transitional Regional Plan (for as long as it has effect under the Act), or the Council's Wairau River Floodways Management Plan. In these cases, adverse effects of land disturbance will be controlled by requirements for Coastal Permits and River Surface or Bed Activity consents respectively.

1.3 DEFINITION OF LAND DISTURBANCE

Land disturbance controlled by this plan falls into three basic categories as shown in Figure 1.

Figure 1 - Types of Land Disturbance

Vegetation Clearance	Cultivation of the Soil	Excavation of Soil
e.g. spraying, burning, logging and handfelling, mechanical clearance.	e.g. deep ripping, ploughing/harrowing, discing, trenching and the laying of cable.	e.g. tracking, roading, building platforms, quarries and open cast mining, dams, logging landings.

Refer to the glossary (Appendix I) for the precise definitions of vegetation clearance, cultivation and excavation, which apply in this plan.

2. RULES CONTROLLING LAND DISTURBANCE

2.1 ENVIRONMENTAL PERFORMANCE STANDARDS: RULE 1

The following Environmental Performance Standards 2.1(a) to 2.1(d) shall apply to the effects of all land disturbance activities.

Any land disturbance activity which does not meet standards 2.1(a) to 2.1(d) is a discretionary activity, with no restriction on the exercise of Council's discretion.

(a) The natural clarity of any permanently flowing river, lake, wetland or the sea shall not be conspicuously reduced due to sediment or sediment laden discharge originating from the site of a land disturbance operation ;

AND

(b) No woody material of greater than 100mm diameter shall be left in any permanently flowing river, lake, wetland or the sea as a result of a land disturbance operation ;

AND

(c) (i) Land disturbance shall not damage or adversely affect any historical, cultural or archaeological artefact or site, unless expressly agreed to in writing by the iwi who have jurisdiction or manuwhenua over it ;

AND

(ii) Land disturbance shall not damage or adversely affect any historical, cultural or archaeological artefact or site, unless expressly agreed to in writing by the filekeeper of the New Zealand Archaeological Society ;

AND

(d) All land disturbance sites are to be stable when subject to a storm event of return frequency of 1 in 10 years or less.

JUSTIFICATION

(a) Sections 70 and 107 of the Resource Management Act 1991 require that visual clarity and colour of natural waters **not** be conspicuously reduced. Hence standard 2.1(a) is required to conform with the Act.

(b) Large woody material in waterways can block culverts, damage bridges and provide a hazard to navigation should it be flushed into waterways such as the Marlborough Sounds. As such, standard (b) ensures that the amount of woody debris entering waterways is not greater than that which would occur under an undisturbed land management regime.

(c) Standard (c) simply reinforces the provisions of the Historic Places Act and is in accord with the requirements of the Resource Management Act 1991 which states that the relationship of Maori to their waahi tapu is a matter of national importance.

(d) Any excavation which is likely to fail when subject to a storm with a return frequency of 1 in 10 years or less has an unacceptable risk of failure. Any excavation which is executed according to good standard engineering practice should not fail under such circumstances.

(e) Council should have the discretion to notify any activity which breaches standards set in a publicly notified plan, and to not grant the application for resource consent.

2.2 FURTHER CONDITIONS AND TERMS FOR LAND DISTURBANCE: RULE 2

For any land disturbance activity to be considered as either a permitted, or controlled, or discretionary activity (with Council's discretion restricted pursuant to Section 105 of the Act) it must comply with the further terms and conditions in Table 1 and Section 2.3 of this Plan. Otherwise, it is a discretionary activity, with no restriction on the exercise of Council's discretion.

2.3 CONDITIONS AND TERMS FOR LAND DISTURBANCE - HILL COUNTRY

These conditions and terms apply only for land disturbance on Class 6e, 6w, 7e and 7w land, and Class 6c, 6s, 7c and 7s land of slopes greater than 20°, and land disturbance on Class 8 or unstable land.

TABLE 1- Land Disturbance Rules - Marlborough District

*Criteria (Land use capability and slope)	ACTIVITY				
	Maintenance of Existing excavation	**Excavation and Filling of Soil**	**Cultivation of Soil**	**Vegetation Clearance (includes burning)**	**Building Sites**
Class 1, 2, 3 ,4 and 5 on all slopes; and 6c, 6s, 7c and 7s **and** less than 20° slope	**Permitted**	**Permitted**			**Permitted** provided the land disturbance is subject to a building consent pursuant to the Building Act 1991.
Class 6e, 6w, 7e, 7w on all slopes and 6c, 6s, 7c, 7s on slopes of greater than 20° existing profile and	**Permitted** provided the existing profile and gradient of the excavation are not altered, **and** the activity complies with the terms and conditions in Section 2.3.1 of this Plan.	**Permitted** provided the activity complies with the terms and conditions in 2.3.1 of this Plan **AND** the excavation/fill volume is less than 1000m³ per property in any continuous 2 year period, **Otherwise**, if the excavation exceeds 1000m³ but complies with the terms and conditions in 2.3.1 of this plan, then it is a **Controlled Activity** with Council restricting control to those matters in section 2.4 of this Plan.	**Permitted** provided the activity complies with the terms and conditions in Section 2.3.3 of this Plan.	**Permitted** provided the activity complies with the terms and conditions in Section 2.3.2 of this Plan.	
Class 8 **or** identified as **unstable** by Council Natural Hazard Register		Discretionary provided it complies with the terms and conditions in Section 2.3 of this plan, with the Council's discretion restricted to those matters in Section 2.5 of this plan. Permitted cable laying and trenching within road reserve provided the activity complies with the conditions in Rule 2.3.3.			

* Refer to Section 2.6 for explanation of Land Use Capability categories.

2.3.1 Conditions and Terms for Excavation

(a) Gradients

The gradient of any side cut excavation must not exceed an average of 9.5° (1:6) and must not exceed 11.3° (1:5) along any length of more than 20 metres.

(b) Water control and culverts

Stormwater controls, water table cutoffs, and culverts are to be installed to ensure that erosion does not occur on the inside edge of the cut. No culvert size less than 300mm may be used to drain any side-cut excavation. Culverts for stream crossings where the contributing catchment to the stream above the culvert is greater than 120 hectares are to be designed and installed under the supervision of a Registered Engineer, and a certificate of compliance with good engineering practice and with the environmental performance standards of this plan is to be lodged with the Council by that Registered Engineer.

(c) Stabilisation

Batters and side castings are to be stabilised by appropriate measures such as seeding, compacting, drainage and/or other methods of revegetation.

(d) Run-off

Run-off from water tables or surfaces of side cut excavations is to be directed to stable land areas.

(e) Crossings

Stream crossings are to be stable and suitable for fish passage.

(f) Retaining walls

Retaining walls and other structures are to be designed in accordance with good engineering practice. Retaining walls of greater height than 1.5 metres for residential access are to be designed and installed by a Registered Engineer, and a certificate of compliance with good engineering practice and with the environmental performance standards of this plan is to be lodged with the Council by that Registered Engineer.

(g) Riparian areas

Except for direct approaches to bridges, crossings and fords, no excavation must take place within 8 metres of any permanently flowing river or any lake or the sea.

2.3.2 Conditions and Terms for Vegetation Clearance

(a) Mechanical clearing

Blading or rootraking by bulldozer shall not be used to clear vegetation on slopes of more than 20°.

(b) Burning period

Burning shall not be carried out on Class 7e or Class 8 land, when the Fire Weather Index Parameters for the burn are :

Drought Code: 200 or higher

Build Up Index: 40 or higher

as notified by the Rural Fire Authority for the burn area, pursuant to the Forest and Rural Fires Act 1977.

(c) Riparian areas

Woody vegetation (except for plantation trees and noxious plants under the Noxious Plants Act) shall not be removed by chemical, fire or mechanical means within 8 metres of any permanently flowing river, or any lake, wetland or the sea.

Plantation trees within 8 metres of any permanently flowing river, or the margin of any wetland, lake or the coast shall be directionally felled away from the waterbody, except edge woody vegetation, or woody vegetation leaning over a waterbody, which may be felled in accordance with safety practices.

Except as above no logs may be dragged through the bed of any flowing river, or through any lake or wetland.

No vehicle may be operated within 8 metres of any permanently flowing river, or the margin of any wetland, lake or the coast.

(d) Revegetation

The vegetation cover of a vegetation clearance site shall be restored within 24 months of the end of the operation, to a level where the amount of bare ground is no more than 20% greater than prior to the land disturbance taking place.

(e) Topsoil loss

Top soil shall not be removed to a depth greater than 20 mm over more than 15% of any vegetation clearance site.

2.3.3 Terms and Conditions For Cultivation

(a) Contour cultivation

Cultivation is to be parallel to the contour of the land, with the exception that on lands of land use capability 6 or 7 up to 15% of the cultivated area may be cultivated at an angle to the contour, and trenching or cable laying may be carried out at an angle to the contour on lands of land use capability 6 or 7.

(b) Riparian areas

No cultivation is to take place within 8 metres of any permanently flowing river, or any lake, wetland or the sea except trenching and cable laying

(c) Backfilling

All earth not required to be placed in a trench shall be removed from the land disturbance site, and placed in a stable location. Where a resource consent is required for placement of the fill, this shall be obtained prior to the start of work.

(d) Revegetation

The vegetation cover of a cultivation site shall be restored within 24 months of the end of the operation, to a level where the amount of bare ground is no more than 20% greater than prior to the land disturbance taking place.

2.4 MATTERS OVER WHICH COUNCIL RETAINS CONTROL IN RESPECT OF CONTROLLED ACTIVITIES

Council will retain control over any aspects of controlled land disturbance activities which may affect :

(a) The natural clarity of any permanently flowing river, lake, wetland or the sea, and the levels of suspended sediment in any discharge from a land disturbance site.

(b) The entry of any woody organic material into any permanently flowing river, lake, wetland or the sea.

(c) The restoration of vegetation cover on any vegetation clearance or cultivated site.

(d) The removal of topsoil on any vegetation clearance site.

(e) The need for protection of any historical, cultural or archaeological artefact or site.

(f) The stability of any excavation site when subject to storm events.

Council will consider all resource consent applications for controlled land disturbance activities on a non-notified basis.

2.5 MATTERS OVER WHICH COUNCIL RETAINS DISCRETION IN RESPECT OF DISCRETIONARY ACTIVITIES

Where land disturbance meets the terms and conditions in Table 1 and section 2.3, the exercise of Council's discretion is restricted to any aspects of discretionary land disturbance activities which may affect :

(a) The natural clarity of any permanently flowing river, lake, wetland or the sea, and the levels of suspended sediment in any discharge from a land disturbance site.

(b) The entry of any woody organic material into any permanently flowing waterway, lake or the sea.

(c) The restoration of vegetation cover to its previous level on any vegetation clearance or cultivated site.

(d) The removal of topsoil on any vegetation clearance site.

(e) Protection of any historical, cultural or archaeological artefact or site.

(f) The effect of any excavation site on land stability.

Council will consider all such resource consent applications for discretionary land disturbance activities on a non-notified basis.

2.6 LAND USE CAPABILITY AND STABILITY

2.6.1 Land Use Capability

(a) The strictness of the rules in this Plan depends on the **land use capability** of the land being disturbed. Land use capability is defined on the Landcare Research NZ Ltd National Land Resource Inventory database.

(b) Each capability class is broken into subclasses depending on the main limitation to use. There are four such limitations: erosion (symbolised by e), wetness (w), soil eg stoniness, fertility (s) and climate (c). Usually, land disturbance only creates problems where erosion or wetness are the dominant limitations.

(c) Land use capability classes 1, 2, 3, and 4 are arable lands, and always on slopes less than 20°.

(d) Classes 5 and 6 are non-arable lands which have moderate limitations to productive use.

(e) Class 7 is non-arable land with severe limitations to productive use.

(f) Class 8 is land with extreme limitations, where productive land use of any form is not usually appropriate.

2.6.2 District Council Land Stability Hazard Register

(a) Areas shown as **unstable** on the Council Natural Hazard Register for Marlborough will be treated the same as Class 8 land i.e. all land disturbance on such land will be a discretionary activity

(b) The Council is required by both the Resource Management Act 1991 and the Building Act 1992 to record known natural hazards and to make those records available to the public.

(c) All areas where Council is aware of land stability hazards are depicted on maps available at the Council's Blenheim office. All such areas have been identified by persons with a recognised qualification in earth sciences, and all additions or changes to these maps must be adopted formally by the Council. Council will amend the Natural Hazard Register as it becomes aware of further information about land stability hazards, and will publicise such amendments.

2.6.3 Maps

The maps in Appendix I of this plan illustrate the broad pattern of land use capability over the whole of Marlborough. However, they are not at a sufficiently large scale to give an accurate indication of the land use capability classification or land stability for any individual property. This can be ascertained from land use capability maps and the Natural Hazard Register held at the Council office, Parker St, Blenheim.

2.7 JUSTIFICATION

2.7.1 The Need for Certainty

For less stable country, (i.e. Classes 6e, 6w, 7e, 7w and 8), the risk of land stability and erosion from excavation is high. Council must therefore control the effects of excavation with certainty. This certainty is best provided by the consent process, because Section 9 of the Resource Management Act 1991 governing land use activities is permissive i.e. unless there is a rule controlling a land use, then it is presumed to be permitted under the Resource Management Act. Enforcement provisions can be cost-effective, but have the disadvantage that they are usually invoked after the environment has already been damaged.

2.7.2 Cumulative Effects

Effects from cultivation and land clearing tend to be longer term and cumulative, and are best controlled by education together with policies aimed at long-term changes to land use patterns.

Cont. over

Continued from page 13

2.7.3 Waahi Tapu

Effects of all land disturbance tend to be negligible on Class 1, 2, 3 and 4 land, except for those in riverbeds, and burial grounds and other areas of cultural value (Waahi tapu).

Waahi tapu are mostly found on Class 1, 2, 3 and 4 lands in Marlborough. However, it would be unrealistic to subject excavation on such land to control by consent. Provided the excavation complies with the environmental performance standards, then adverse effects will be minimised.

2.7.4 Unstable Land

Risks from disturbing land mapped either as **Class 8**, or identified as **unstable** on the Council's Natural Hazard Register, are extreme. Council must reserve the right to say no to land disturbance proposals on these classes of land, therefore they are subject to a discretionary consent.

2.7.5 Topsoil Loss

Topsoil is defined in this Plan as the A horizon (but not the organic or litter horizons) of the soil. Within this A horizon are found the bulk of the nutrients and organic carbon in the soil. Removal of more than 2cm of this A horizon is likely to seriously affect subsequent plant growth and revegetation, and should thus be subject to Council's discretion

3.THE ASSESSMENT OF ENVIRONMENTAL EFFECTS

Appendix II of this plan contains the information that will be needed by the Council when considering an application for a resource consent for land disturbance. This information is specified in Fourth Schedule of the Act (Assessment of the Effects on the Environment). This is to ensure that applicants have fully considered the environmental effects of their land disturbance proposals, before starting work. It also ensures that they have adequately provided for controlling or mitigating any of those adverse effects, where necessary. Any application which does not contain the information required as shown in Appendix II of this Plan may be deferred by the Council pursuant to Section 92 of the Act, and will not be considered for processing until such time as the information is furnished by the applicant.

APPENDIX I

GLOSSARY

APPENDIX I

GLOSSARY

Any terms not defined in this glossary will have the same meaning as defined in S2 of the Resource Management Act 1991. If not defined in this glossary or the Act, the Concise Oxford Dictionary (8th edition) will be used to define the meanings of words.

In this plan, unless otherwise specified, words used will have the following meanings:

Act	means Resource Management Act 1991
bare ground	ground which is visible when a site is viewed vertically from a point higher than the tallest vegetation on the site,
batter	means a slope immediately above or below a track, road or other excavation
coastal marine area	has the same meaning as the Act
conditions	has the same meaning as in the Act
controlled activity	has the same meaning as in the Act
Council	means the Marlborough District Council
crossfall	is the slope of a road, track or other excavation from the base of the cut batter to the edge of the excavation
cultivation	the act of breaking up or turning the soil with a cultivator, such that the surface contour of the land is not altered. It includes cable laying or trenching, provided the displaced soil or rock is reinstated and compacted to the bulk density of the surrounding material
cutoff	means a construction for the purpose of carrying surface runoff water into stable areas or into rivers or drains
dam	means a device or structure placed in the bed of a river for the purpose of impeding the flow of water
discharge	has the same meaning as in the Act
discretionary activity	has the same meaning as in the Act
effect	has the same meaning as in the Act
end hauling	means the technique of track, road or landing construction that requires the transport of fill to a disposal area away from the site of construction
environment	has the same meaning as in the Act

erosion	any particulate or mass movement of soil, under the influence of wind, water or gravity
excavation	means to dig out soil from the ground such that the surface contour of the land is permanently altered and to erect, construct, or lay paving, drainage, stabilisation structures or other works necessary to the management of the excavation
fill	is a deposit of cut material from excavation
ford or crossing	means a point along the river where vehicular crossings of the bed and banks may be made without the use of structures or alteration to the river
ground cover	means vegetation covering the ground as measured in a vertical view from a pont higher than the tallest vegetation on a site
iwi	means a unit of Maori social and economic organisation comprised of many sub groupings. A purpose orientated confederation based on genealogical ties
land disturbance operation	any activity which includes excavation, cultivation or vegetation clearance as defined in this glossary.
land stability hazard	any area where there is a strong likelihood of soil movement in a mass - as identified on the Council's Natural Hazard Register
logging	vegetation removal with the purpose of producing industrial wood or logs
manu whenua	means customary authority excercised by an iwi or taapu in an identified area
natural clarity	Natural clarity shall be measured by using accepted scientific methods, and shall be taken to be the clarity of a water body immediately upstream of any discharge from a land disturbance site, or in the case of lakes or the sea, the clarity of water beyond the sediment "plume" in the water. Reduction in clarity due to the discharge shall be measured at a point 50 m downstream or offshore from the point of discharge, or two river widths, whichever is the greater
nutrient	means an element or compound required in the soil or water for the growth and development of life forms
organic matter	any material of biological origin, excluding petrochemicals and their derivatives.
permitted activity	has the same meaning as in the Act ie it is an activity which does not require a resource consent
property	means all adjoining titles held by one land occupier.

resource consent	has the same meaning as in the Act
riparian vegetation	means vegetation on land immediately adjacent to any wetland, river, lake or the coastal marine area (as defined in the Act)
river	has the same meaning as in the Act ie a continually or intermittently flowing body of fresh water, but **not** including any artificial watercourse
road	means any formed road as defined by the Transit NZ Act 1989
rule	has the same meaning as in the Act
runoff	is water moving over the ground surface and/or into a river, lake or the sea
sediment	particulate soil or oganic matter
sidecasting	means a technique of road, track or a landing construction that requires the placing of spoil immediately to the side of the site of construction
sidecutting	excavation cuts across the side of a hill
slope	means the angle of a hillslope from the horizontal, measured at right angles to the contour.
soil	any rock or weathered rock or soil material
topsoil	the soil forming the A horizon of a soil profile. i.e. the dark soil layer between the top layer of humus and subsoil
track	means any constructed pathway or trail where the formation construction is to a standard capable of carrying a crawler or wheel tractor or a light vehicle
vegetation	includes any trees, shrubs, plants or grasses
vegetation clearance	cutting, destruction or the removal of vegetation so that more than 20 m^2 of bare ground is exposed within any 100 m^2 square of land except clearance that which takes place as a result of excavation or cultivation.
waahi tapu	a place which is particularly sacred or spiritually meaningful to local iwi. It includes burial grounds and places where significant events have taken place
water supply	means a river or lake that is used to supply water for any domestic, industrial, or rural purpose
watertable	is a surface drainage channel, parallel and on the inside of a track or road
wetland	has the same meaning as in the Act

APPENDIX II

INFORMATION UNDER THE FOURTH SCHEDULE OF THE RESOURCE MANAGEMENT ACT 1991

APPENDIX II

INFORMATION UNDER THE FOURTH SCHEDULE OF THE RESOURCE MANAGEMENT ACT 1991

GUIDELINE ASSESSMENTS OF ENVIRONMENTAL EFFECTS FOR ALL LAND DISTURBANCE CONSENTS APPLICATIONS

1. DESCRIPTION OF THE ACTIVITY

Where

- Location - a good location map is a help and applications must include a clear aerial photo or large scale map showing details of the proposal.
- Soil types
- Climate (e.g. rainfall)
- Erosion risk
- Steepness
- Watercourses which flow year round should be marked on the map.

What

- Roads: lengths, grades, method of construction e.g. sidecast, end haul
- Landings and platforms: area, method of construction
- Firebreaks/fencelines: length and width
- Land Clearance and Logging: area, method, method of revegetation or replanting.

When

- Starting time
- Estimated finishing time.

2. ACTUAL OR POTENTIAL EFFECTS

For land disturbance only the following need to be considered:

Erosion - can be caused by removing or weakening the vegetation, or by earthworks which collapse or are eroded by rain and running water.

Debris and slash, vegetation, soil or rock which falls or is pushed or washed into watercourses and clogs them up.

In looking at effects, ask the following questions:

- Are they temporary or permanent?
- If permanent, are they ones which build up and worsen over time?
- Are they certain to occur, probable, or only a possibility?
- Are they likely to be major or minor in scale?

3. ALTERNATIVES TO PROPOSAL

If your proposal is likely to have a major harmful effect on the environment, you should describe alternatives (if any) to your proposal which may be less destructive.

4. MITIGATION MEASURES

It is up to you to avoid significant or permanent negative effects on the environment. Your assessment should say how you are going to do this e.g. riparian strips and protected areas can be marked in green on your map.

Your report should also say how you will monitor the effects of your proposal, to ensure they are minimal and/or temporary.

Council staff can give you a general idea of the methods you can use. But if in doubt, employ a professional to help you design your proposal in an environmentally friendly way.

5. PERSONS AFFECTED

You must identify those people or groups who might suffer or benefit from the environmental effects of your proposal.

Again, Council staff can give you an indication of who the affected parties are likely to be. But in the end, it is your responsibility to identify and contact them and to document the consultation process.

APPENDIX III

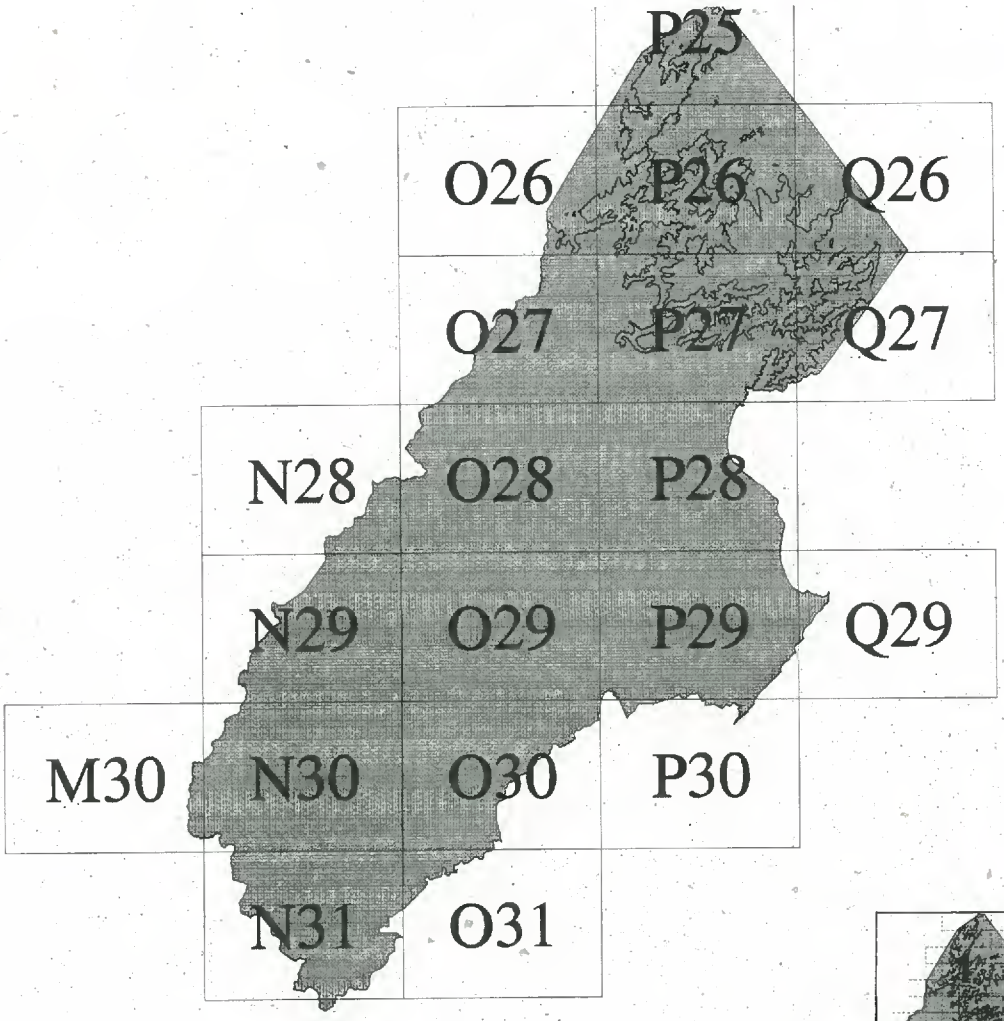
Land Use

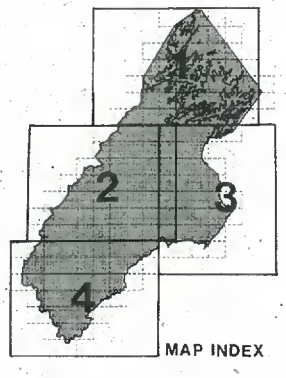
Capability Maps 1 - 4

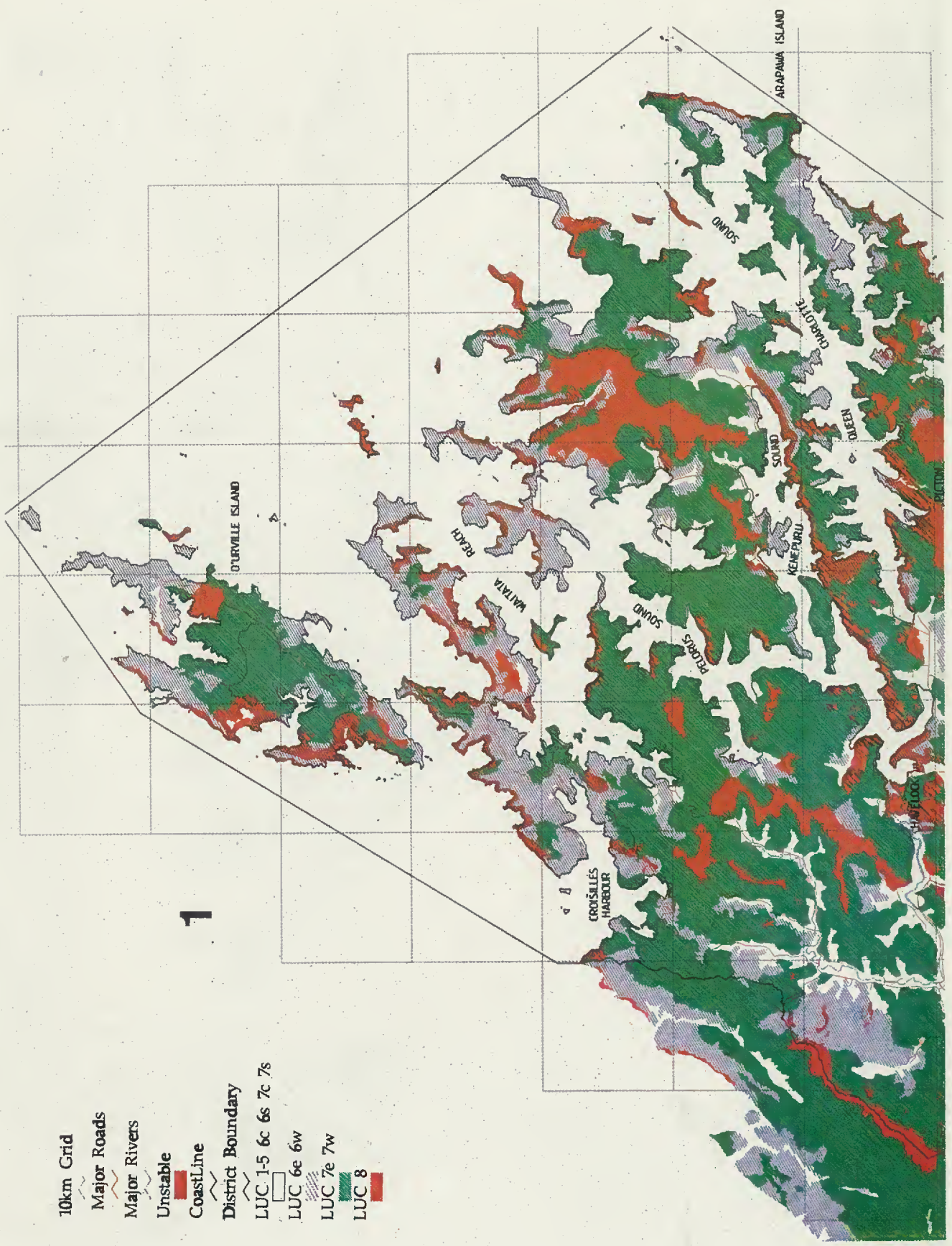
Marlborough

MARLBOROUGH DISTRICT COUNCIL

LAND USE CLASSES MAPS






10km Grid
Major Roads
Major Rivers
Unstable
CoastLine
District Boundary
LUC 1-5 6c 6s 7c 7s
LUC 6e 6w
LUC 7e 7w
LUC 8
1
D'URVILLE ISLAND
WAITATA REACH
CROISILLES HARBOUR
PELORUS SOUND
KENEPURU SOUND
QUEEN CHARLOTTE SOUND
ARAPAWA ISLAND
HAVELOCK
PICTON


10km Grid
Major Roads
Major Rivers
Unstable
CoastLine
District Boundary
LUC 1-5 6c 6s 7c 7s
LUC 6e 6w
LUC 7e 7w
LUC 8
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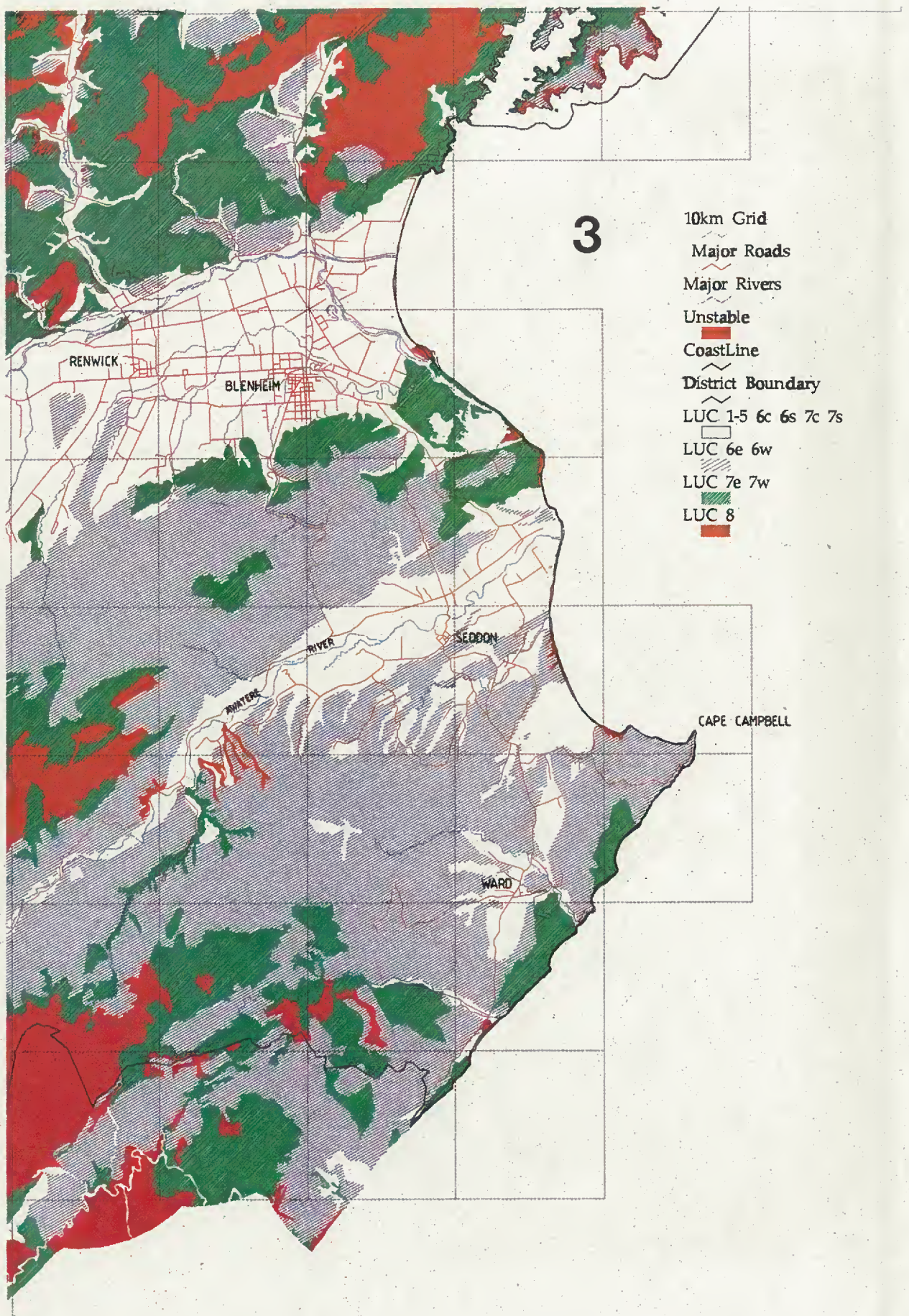
STATE HIGHWAY 63
WAIRAU RIVER
WAIHOPAI RIVER
RIVER
2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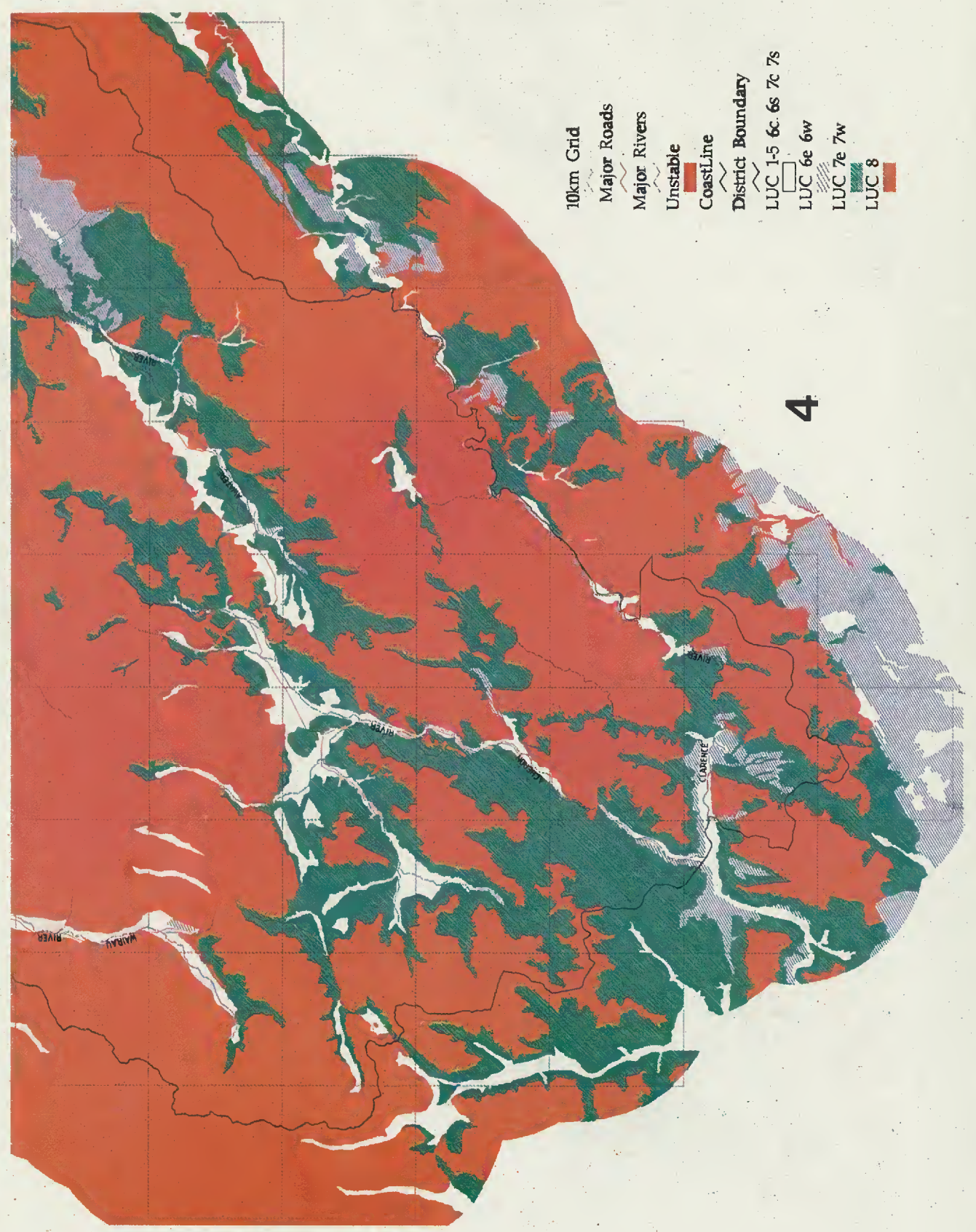
LUC 6e 6w
LUC 7e 7w
LUC 8
RENWICK
BLENHEIM
SEDDON
AWATERE
RIVER
CAPE CAMPBELL
WARD


10km Grid
Major Roads
Major Rivers
Unstable
CoastLine
District Boundary
LUC 1-5 6c 6s 7c 7s
LUC 6e 6w
LUC 7e 7w
LUC 8
4
CLARENCE
RIVER
MURRAY
RIVER

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