

# COOK STRAIT SUBMARINE CABLE PROTECTION ZONE



An information brochure on the Submarine Cable Protection Zone across Cook Strait and how it affects mariners, fishers, divers and the public.

February 2011



**TRANSPower**



**Ministry of Transport**  
TE MANATŪ WAKA

## CONTENTS

Introduction	1
Background	2
The Submarine Cables	3
Risk of Damage to Cables	4
Consequences of Damage	6
Cook Strait Cable Protection Zone	7
Protection Officers	10
Prohibited Activities Fishing and Anchoring	11
Evidence and Breaches of the Act	11
Penalties	12
Notification of Violations	13
Exemptions for Specified Work in the Cable Protection Zone	13
Charts and Warning Notices	16
Further Information	16

A detailed nautical chart of Cook Strait and Wellington Harbour, New Zealand. The map shows depth contours, navigational markers, and geographical features. The text is overlaid on the map. The word 'COOK STRAIT' is written vertically in large letters across the top left. 'WELLINGTON HARBOUR (Port Nicholson)' is written diagonally in the bottom right. Various landmarks like 'Makara Hill', 'Luna Rock', and 'Karori Rock' are labeled. The map also shows the 'Cook Strait Cable' route.

## 1 Introduction

This booklet is a guide to a specially protected area of Cook Strait called the Cook Strait Cable Protection Zone (CPZ). The CPZ protects vital submarine electricity and telecommunication cable links between the North and South Islands.

There are severe restrictions on activities that can be carried out within the CPZ under the Submarine Cables and Pipelines Protection Act 1996. To deter illegal activity and to obtain evidence of any violations of the Act, Transpower New Zealand Limited (Transpower) operates sea and air patrols within the CPZ. Failure to comply with the law may lead to fines of up to \$250,000 and the forfeiture of vessels.

If you are a commercial operator or a recreational user of Cook Strait, you should read this booklet carefully.

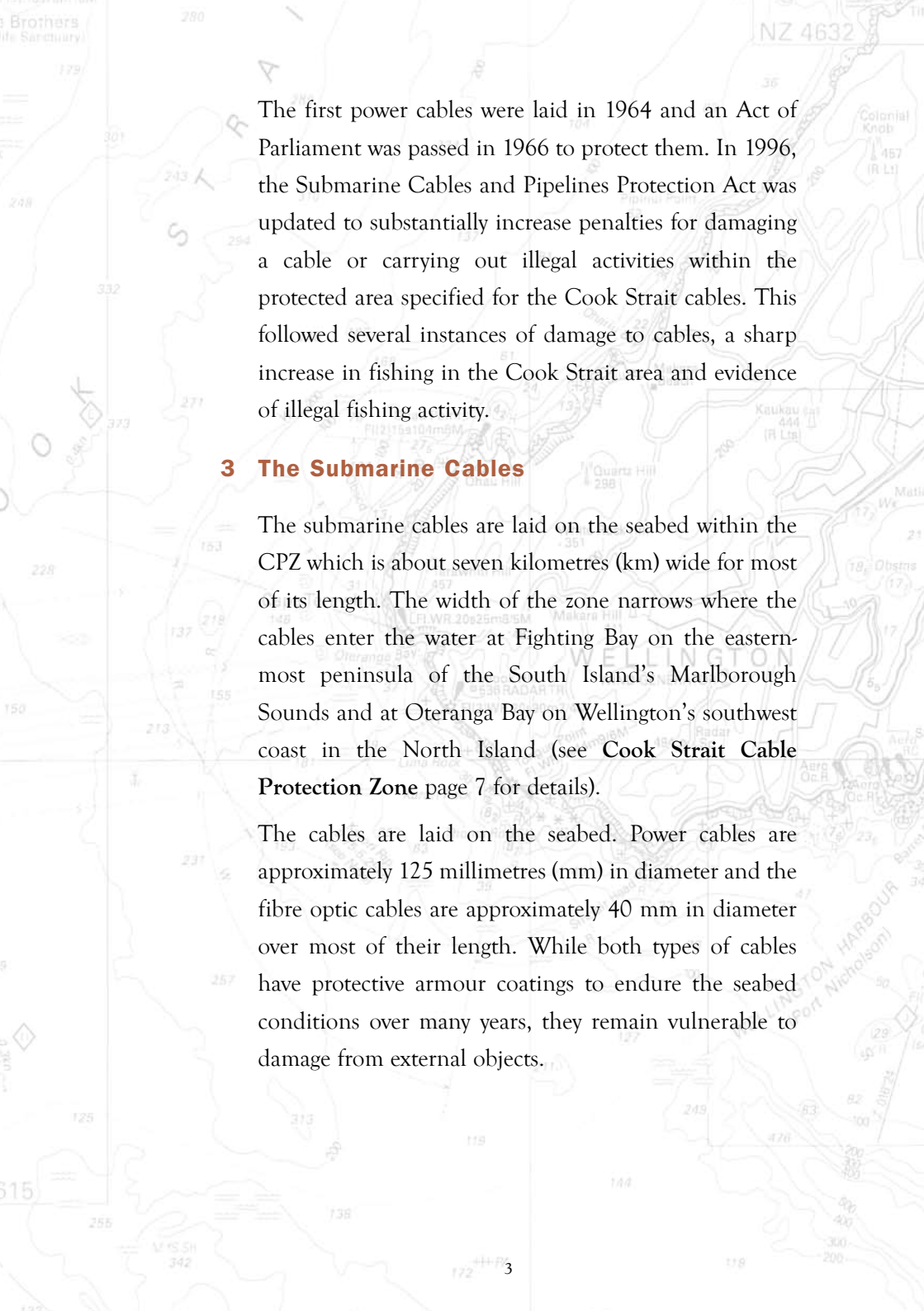
## 2 Background

Transpower is the owner and operator of the country's electricity transmission system or National Grid. As part of that system, Transpower has vital cable links in Cook Strait which consist of:

- High Voltage Direct Current (HVDC) cables that transmit power between Benmore in the South Island and Haywards in the Hutt Valley in the North Island.
- Fibre optic cables that carry telecommunications across Cook Strait, used by New Zealand's main telecommunication companies for domestic and commercial traffic and by Transpower for control of the HVDC link.

The Cook Strait cables are vital to New Zealand's electricity and communication systems. In a typical year, the HVDC link provides approximately 15% of the North Island electricity supply, but at certain times these cables can provide up to approximately 40% of the North Island load or an even greater portion of South Island load during periods when South Island lake levels are low. The fibre optic cables are a main inter-island telecommunication link.

Five new power and communication cables were laid in 1991 and a further two communications cables were laid in 2002. They lie unburied on the seabed across Cook Strait.



The first power cables were laid in 1964 and an Act of Parliament was passed in 1966 to protect them. In 1996, the Submarine Cables and Pipelines Protection Act was updated to substantially increase penalties for damaging a cable or carrying out illegal activities within the protected area specified for the Cook Strait cables. This followed several instances of damage to cables, a sharp increase in fishing in the Cook Strait area and evidence of illegal fishing activity.

### 3 The Submarine Cables

The submarine cables are laid on the seabed within the CPZ which is about seven kilometres (km) wide for most of its length. The width of the zone narrows where the cables enter the water at Fighting Bay on the easternmost peninsula of the South Island's Marlborough Sounds and at Oteranga Bay on Wellington's southwest coast in the North Island (see **Cook Strait Cable Protection Zone** page 7 for details).

The cables are laid on the seabed. Power cables are approximately 125 millimetres (mm) in diameter and the fibre optic cables are approximately 40 mm in diameter over most of their length. While both types of cables have protective armour coatings to endure the seabed conditions over many years, they remain vulnerable to damage from external objects.

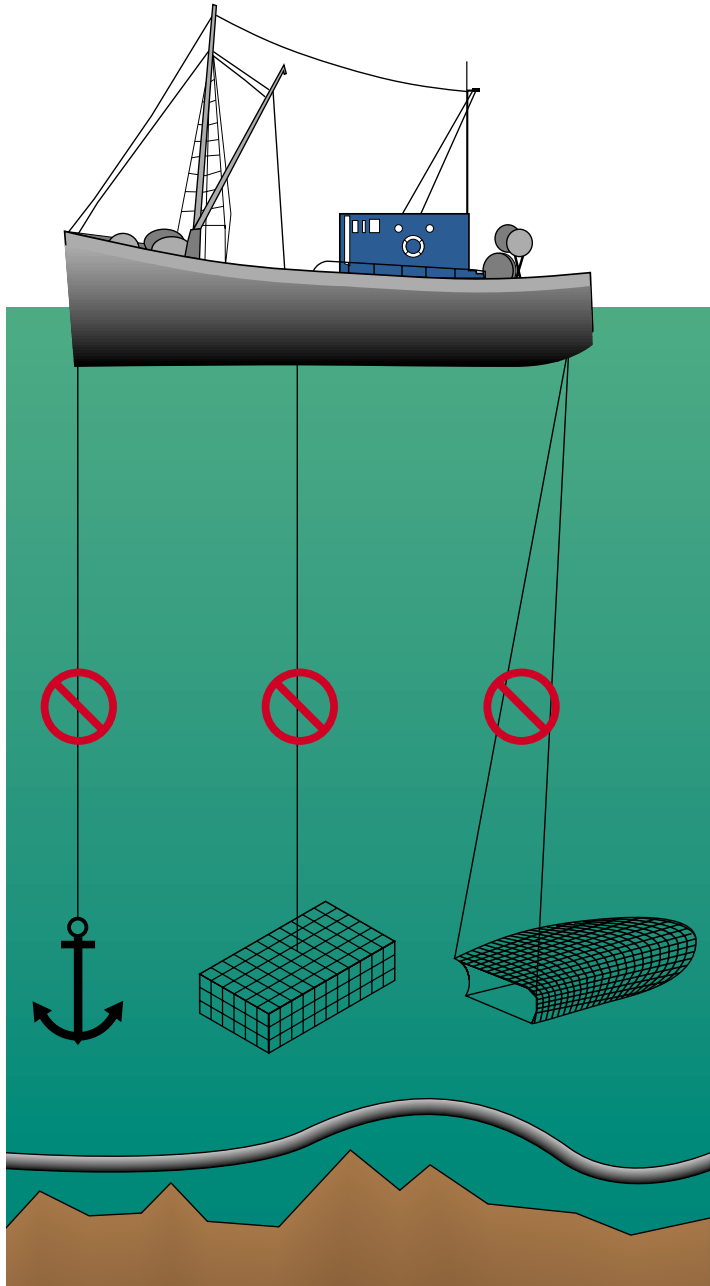
## 4 Risk of Damage to Cables

Submarine cables are only designed to withstand tidal and seabed conditions. Any vessel mooring, anchoring, trawling, crayfishing or line fishing is likely to cause damage to the cables if the equipment used contacts the cables. Power cables can also be damaged if a heavy weight is dropped onto them. Damage to power cables can cause electrical failure.

The cables are not always lying flat on the seabed. Due to the irregular profile of the seabed, the cables are suspended in some places. These suspensions increase the risk of fouling and damage from fishing equipment and anchors.

Experience has shown that even relatively small craft with lightweight anchors and other equipment can damage cables.

Firm evidence exists of significant damage to cables from illegal activity. One incident caused the failure of a 270kV power cable. In the early 1990's, a 9 km length of one of the fibre optic cables was dragged from its as-laid position, causing severe damage to its serving (outer protective covering) and crossovers with the adjacent 350kV power cable. In October 1998, another fibre optic cable was fouled and broken completely. In association with this incident, more than 12 km of the cable was displaced, in places being pulled south by over 600m, again resulting in severe serving damage and crossovers with another adjacent 350kV power cable. The subsequent repair operation cost many millions of dollars.



In 2000, the cable that had been displaced and damaged in the early 1990's was broken completely, again causing substantial cable displacements and crossovers with power cables, requiring an expensive repair.

Transpower also has evidence of power cable serving damage caused by small boat anchoring.

## **5 Consequences of Damage**

Repairs to cables are extremely expensive and take a considerable time to complete. For example, the cost of repairing a power cable would likely exceed \$30 million and as there are so few specialised vessels in the world capable of repairing cables, the work could take a year or more. If a new cable had to be laid, costs would exceed \$80 million.

Apart from the direct costs of damage to the cables, there would be consequential costs arising from the need to arrange replacement generation in the North Island. The extent of these costs would depend upon the number of cables that were unable to operate, the time of year and the levels of the South Island hydro storage lakes.

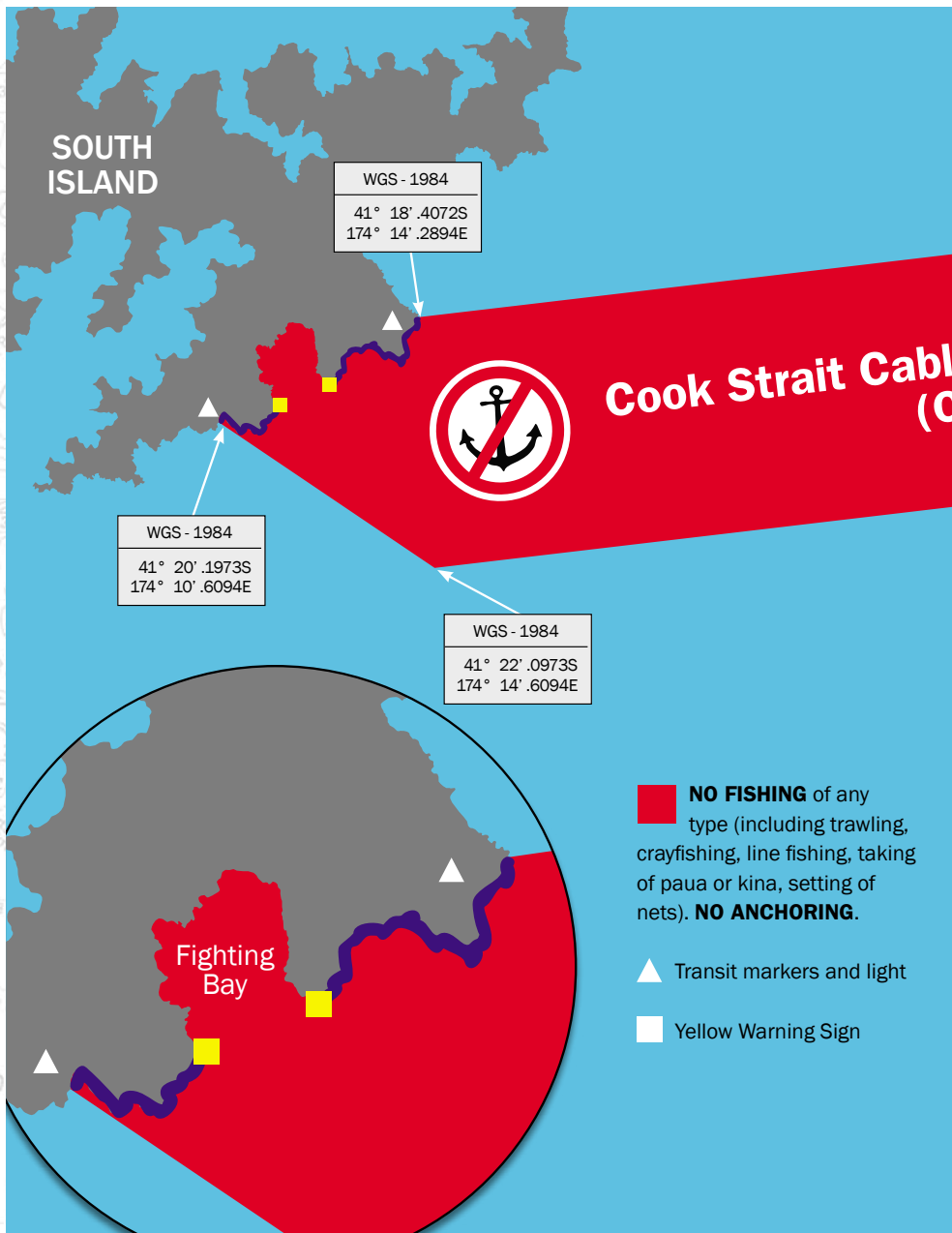
Under some circumstances, power cuts would have to be imposed throughout the North Island until the cables could be repaired. Damage to the fibre optic cables can lead to lesser, but still significant costs and disruptions to telecommunication services.

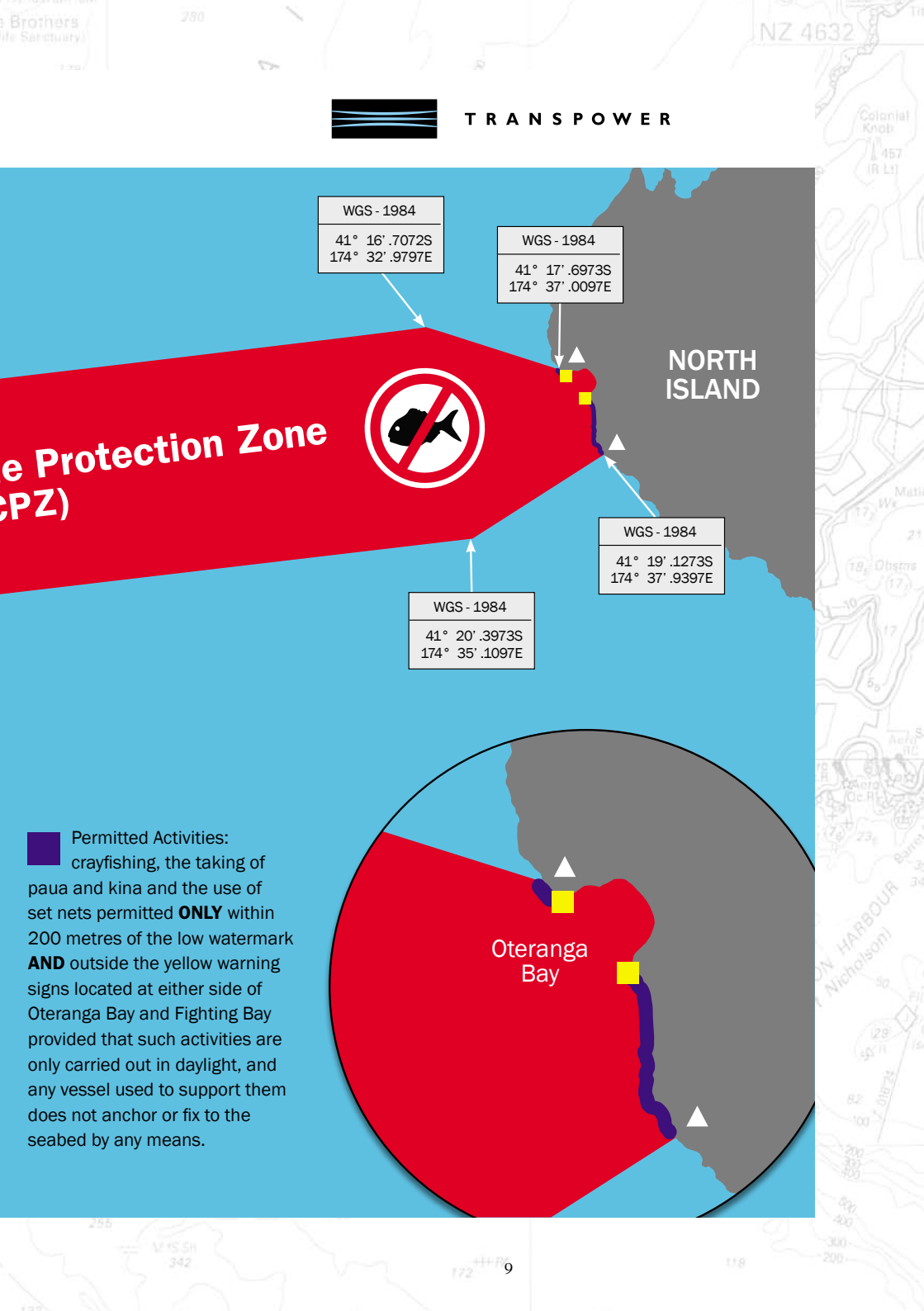
## 6 Cook Strait Cable Protection Zone

The Submarine Cables and Pipelines Protection Act 1996, the associated Submarine Cables and Pipeline Protection Order 1992, and Submarine Cables and Pipelines Protection Amendment Order 1999, and any subsequent amendments, legally protect the submarine cables laid within the CPZ.

The Cook Strait Cable Protection Zone is presently defined in the Submarine Cables and Pipelines Protection Order 1992 and is in terms of New Zealand Geodetic Datum (NZGD) 1949. However, with the increasing use of Global Positioning Systems (GPS) the World Geodetic System (WGS) 1984 datum is becoming more important. WGS 1984 is now the datum used on the current marine charts of the area. **The two datums do not give the same position on the earth for any given coordinate and use of the wrong datum risks unplanned entry into the Cable Protection Zone. The unplanned nature of any such entry into the zone while fishing or anchoring is not a defence against a prosecution under the Submarine Cables and Pipelines Protection Act 1996.** The Cable Protection Zone is therefore given below using both datums.

***New Zealand Geodetic Datum 1949*** ▶ The Cook Strait Cable Protection Zone is described in the Submarine Cables and Pipelines Protection Order 1992 as: - all that area bounded by straight lines commencing at the low water mark at position 41° 18'.51 S, 174° 14'.28 E, then to position 41° 16'.81 S, 174° 32'.97 E, then to the low water mark in position 41° 17'.80 S, 174° 37'.00 E, then





by the line of low water to position 41° 19'.23 S, 174° 37'.93 E, then by straight lines to position 41° 20'.50 S, 174° 35'.10 E, then to position 41° 22'.20 S, 174° 14'.60 E, then to the low water mark in position 41° 20'.30 S, 174° 10'.60 E, then by the line of low water to the position of commencement.

**World Geodetic System (WGS) 1984 Datum** ▶ Using the WGS 1984 datum, the above description of the Cook Strait Cable Protection Zone converts to: - all that area bounded by straight lines commencing at the low water mark at position 41° 18'.4072 S, 174° 14'.2894 E, then to position 41° 16'.7072 S, 174° 32'.9797 E, then to the low water mark in position 41° 17'.6973 S, 174° 37'.0097 E, then by the line of low water to position 41° 19'.1273 S, 174° 37'.9397 E, then by straight lines to position 41° 20'.3973 S, 174° 35'.1097 E, then to position 41° 22'.0973 S, 174° 14'.6094 E, then to the low water mark in position 41° 20'.1973 S, 174° 10'.6094 E, then by the line of low water to the position of commencement.

## 7 Protection Officers

Protection officers were created by the 1996 Act. They have authority to:

- take evidence of an infringement of the Act;
- instruct a vessel, where they believe an offence is being committed, to leave the CPZ and require its crew to provide details of the vessel and the names of the owner and master;
- seize fishing equipment which is left in the CPZ - this includes equipment which has been set and left

(ie cray pots and set nets) and equipment which has been abandoned.

Transpower operates both a patrol vessel and a helicopter patrol in the CPZ. The vessel and helicopter patrol crews are protection officers.

## 8 Prohibited Activities – Fishing and Anchoring

With one minor exception, all fishing and anchoring is illegal within the Cook Strait CPZ. The exception is that crayfishing, the taking of paua and kina (subject of course to fisheries regulations as to quota and permitted areas) and the use of set nets are permitted **ONLY** within 200 metres (m) of the shore (low water mark) **AND** outside the yellow warning signs located at either side of Oteranga Bay and Fighting Bay. This exception requires that:

- such activities are only carried out in daylight; and
- any vessel used to support them does not anchor or directly or indirectly attach itself to the seabed by any other means.

Whether anchored or not, the above fishing activities are not legal within Fighting Bay or Oteranga Bay, or between the warning signs at any distance from shore or further than 200 m from shore anywhere in the Cable Protection Zone.

## 9 Evidence and Breaches of the Act

A vessel within the CPZ with any equipment in the water that may be used for fishing or anchoring (whether or not such equipment is fully deployed) is considered to be

fishing or anchoring and is committing an offence under the Act.

Examples of activities that are considered to be illegal include having a partly deployed net in the water in the CPZ (whether or not the trawl doors are in the water) or loading a net onto a vessel within the CPZ. Some vessels on occasion have drifted into the CPZ with the tide, with equipment still at least partly deployed. Under the Act, this is clearly not permitted. Court decisions have confirmed this and have also stated that drifting into the CPZ on the tide is no defence.

Fishing vessel operators are expected to make whatever allowance is necessary to keep deployed equipment out of the CPZ.

Upon production of evidence that equipment was deployed from a vessel, the onus is now on the vessel operator to prove fishing or anchoring was not taking place, rather than on the prosecution to prove that it was. This is a reversal of the normal onus of proof that applies in law. It sends a very strong signal about the importance of the CPZ and the submarine cables.

## 10 Penalties

The Submarine Cables and Pipelines Protection Act 1996 provides severe penalties for breaches of the Act. These include:

- \$100,000 maximum fine for fishing or anchoring in the CPZ (\$20,000 for non-commercial operators).

- \$250,000 maximum fine for damaging a cable, whether wilfully or negligently.
- Forfeiture of a vessel or other property used in an offence may, upon conviction, be ordered by the Court.
- Fines of up to \$5,000 and \$10,000 respectively may be imposed for:
  - (i) failing to identify to a protection officer a vessel, its master and owner; and
  - (ii) failing to leave the CPZ when instructed to do so by a protection officer where there is reason to believe an offence is being committed.

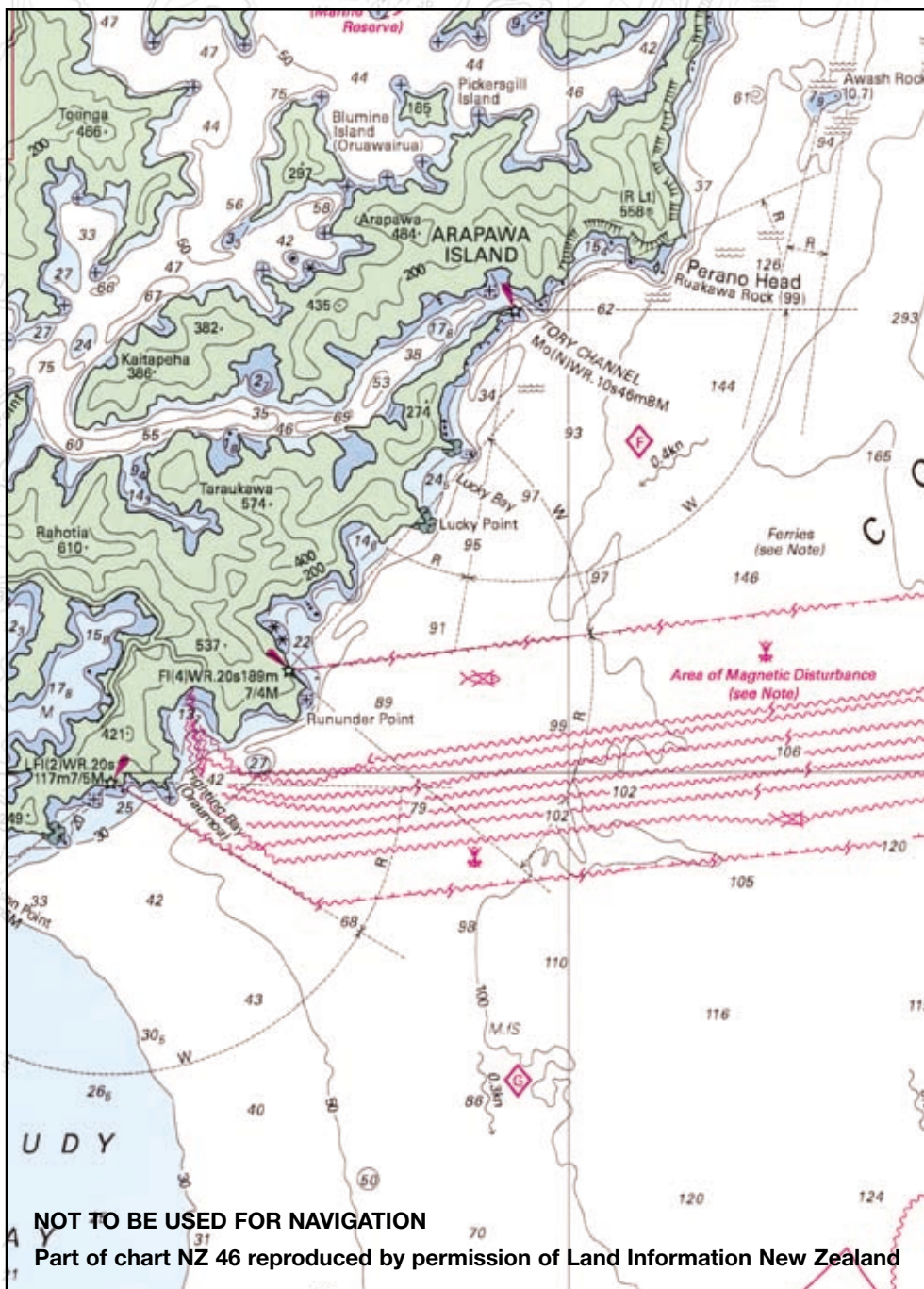
## **11 Notification of Violations**

Violations of the Submarine Cables and Pipelines Protection Act 1996 will be reported to and investigated by the Ministry of Transport.

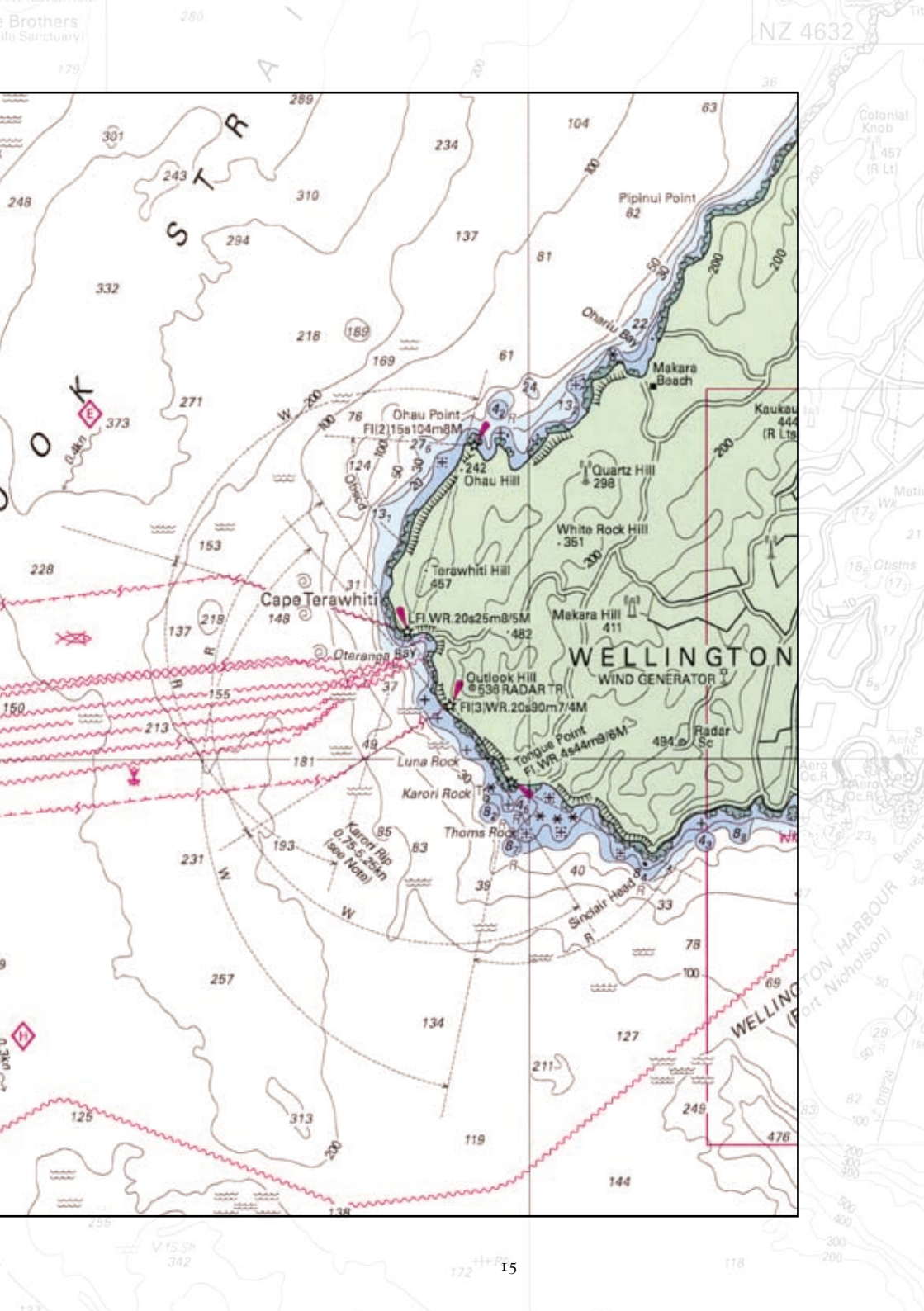
Staff employed by or contracted to Transpower have authority as protection officers under the Act and may order a vessel to leave the CPZ or seize fishing equipment left in the CPZ.

## **12 Exemptions for Specified Work in the Cable Protection Zone**

From time-to-time special exemptions are allowed for specified work to be undertaken in a protected zone. A special approval for authority to carry out work must be obtained from Maritime New Zealand before any operations can start in a protected zone for a defined period.



**NOT TO BE USED FOR NAVIGATION**  
 Part of chart NZ 46 reproduced by permission of Land Information New Zealand



NZ 4632

WELLINGTON  
WIND GENERATOR

WELLINGTON HARBOUR  
(PORT NICHOLSON)

Examples of work covered by this sort of exemption are submarine cable surveys and cable repair operations.

### **13 Charts and Warning Notices**

- Navigation charts show the protected zones to warn mariners. For the Cook Strait CPZ, the correct chart is the most up-to-date version of chart NZ463 and NZ6212.
- Notices warning of the protected area are displayed at the mouths of Oteranga Bay and Fighting Bay and at trailer boat launching ramps.
- There are navigation lights and transit marks at the approaches to the CPZ boundaries.

Please take notice of this information and help to protect the submarine cables which are vital to the country's electricity and telecommunication systems.

### **14 Further Information**

Further information on the Submarine Cables and Pipelines Protection Act 1996 can be obtained from the:

Ministry of Transport

PO Box 3175

WELLINGTON

Telephone (04) 472-1253

Fax (04) 473-3697

or

Transpower New Zealand Limited

PO Box 21154, Edgware

CHRISTCHURCH

Telephone (03) 365-6948 (business hours) or

0800 THE GRID (24 hours)

Fax (03) 379-1525



