Form 3: Initial environmental assessment and sensitive environments contingency plan

Regulation 11(c), Exclusive Economic Zone and Continental Shelf (Environmental Effects–Permitted Activities) Regulations 2013

How to use this form:
This form should be completed by organisations planning to carry out marine scientific research, prospecting, or exploration. It fulfils the initial environmental assessment and contingency plan requirements of Schedule 2 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Permitted Activities) Regulations 2013.

This form must be provided to the Environmental Protection Authority (EPA) at least 5 working days before commencing the activity.

Note: Items marked in italics are non-compulsory fields; however, inclusion of this information will assist the EPA in processing this form.

Please note that this completed form, once received and processed by EPA, will be posted on the EPA website.

Submitting in hard copy:
If you wish to provide this form in hard copy, please post your completed form to: Environmental Protection Authority, Private Bag 63002, Wellington, 6140.

Submitting electronically:
If you wish to provide this form electronically, please email your form to: eez.compliance@epa.govt.nz

Any form submitted electronically should be attached to an email that sets out:
- The details of the person undertaking the permitted activity (the operator);
- The name of the person supplying the completed form; and
- A statement that the person is authorised to supply the form on behalf of the operator.

Note: there is an 8 MB limit on electronic files submitted via email.

All forms prescribed by the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Permitted Activities) Regulations 2013, as well as suggested templates for providing other information, may be viewed and downloaded from our website at www.epa.govt.nz or requested by contacting us:

Private Bag 63002, Wellington, 6140
Email info@epa.govt.nz
Ph +64 4 916 2426
Fax +64 4 914 0433
**Operation name:**

*Name used by operator to reference the activity described in this form:*

**Details of person undertaking permitted activity**

<table>
<thead>
<tr>
<th>Company name:</th>
<th>National Institute of Water &amp; Atmospheric Research Ltd</th>
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<tbody>
<tr>
<td>Contact person:</td>
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<td>Phone number:</td>
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<tr>
<td><strong>Mobile number:</strong></td>
<td>Fax number:</td>
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<tr>
<td>Physical address:</td>
<td>Postcode:</td>
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<tr>
<td><strong>Postal address (if different):</strong></td>
<td>Postcode:</td>
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<td>Email address:</td>
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**General description of permitted activity**

**Type of activity:**

*(e.g. marine scientific research, prospecting)*

Marine scientific research.

This notification is about the third and fourth in a series of marine scientific research voyages to study the marine ecology of the Chatham Rise. The aims of this research are to gather data to understand the role of middle trophic level species (MTLS) in the food-web of the Chatham Rise. These MTLS include:

- **Mesopelagics** (small animals living in the water column, especially small mesopelagic fish, zooplankton, gelatinous organisms, and small squids)
- **Hyperbenthics** (small animals living just above the seabed, e.g. prawns and shrimps, squat lobsters, amphipods, swimming worms)
- **Small/slender/cryptic demersal fish** (including small rattails, eels)
- **Benthics** (small animals living in or on the seabed, such as nematodes and infaunal crustaceans)

The research will enable a better understanding of the Chatham Rise food-web, to understand how human activities and environmental change might affect the ecosystem.

**Description of methods to be used to undertake the activity:**

Four main methods will be used, two of which include bottom contact:

**Acoustic sounding (echosounding):** Ship-based sonar will be used to measure the acoustic backscatter of organisms in the water column at different frequencies. This will allow us to study the vertical structure and biomasses of organisms in the water column. [No contact with seabed]

**Midwater research trawls:** Nets will be towed through the water column to identify the species present in different layers and obtain samples for laboratory analysis (including analysis of the diets of organisms). [No contact with seabed]
Fine-mesh bottom trawl: The NIWA “rat-catcher” trawl – this is a small mesh, small ground gear bottom trawl – will be used on short-duration (~20 minutes) tows at 3 kns. This will catch small (<20 cm), bottom-dwelling fish and invertebrates. The gear will catch small/slender/cryptic fish that are poorly caught by commercial or research bottom trawls but which feature in the diets of some commercially-important fish.

Multicoring: Seabed sediment samples will be collected via multicoring (4 x 10cm diameter samples) at selected stations. Multicoring can only be used when the seabed is composed of soft sediment and will not be carried out in areas with structured seabed habitats (such as coral).

In addition, water samples will be collected for on-board experiments (for example, for primary production by phytoplankton).

Location of permitted activity

| Co-ordinates of area where activity will be undertaken: | 42.5°S to 45°S  
| (latitude and longitude) | 173°E to 176°W |

Description of the current state of the area and the surrounding environment, including any known sensitive environments:

The Chatham Rise is a broad submarine ridge about 800 km long and 300 km wide that extends eastwards from New Zealand landmass into the southwest Pacific Ocean. Phytoplankton abundance in this region is unusually high, attributed to the presence of the Subtropical Front leading to mixing of subtropical and subantarctic water masses. Elevated oceanic productivity over the Chatham Rise is responsible for supporting the complex and valuable Chatham Rise ecosystem, including deep-water fisheries (e.g. hoki, ling, orange roughy, oreo), benthic ecosystems, seabird and marine mammal populations.

Most of the seabed of the Chatham Rise is comprised of soft-sediment habitats. The ecology of soft-sediment habitats may be modified by trawling (Thrush & Dayton 2002) but these are not generally considered as “sensitive habitats”. However, there are areas of hard, structure-forming benthos, including corals, on the Chatham Rise. These areas of hard benthos are considered to be sensitive habitats in that they are easily damaged by fishing gear and unlikely to recover from large-scale damage in the medium to long term. Sensitive habitats on the Chatham Rise are generally confined to the mid-Chatham Benthic Protection Area (BPA) but are not present over the whole of the BPA region. We propose a very few (3) short tows with the ratcatcher trawl in the BPA. Because of the type of gear, the ratcatcher trawl cannot be towed over areas of hard benthos, such as corals; this will destroy the net. Hence, prior to carrying out any bottom trawls in areas that are not known to have soft-sediment benthos, acoustic surveying will be used to assess the type of seabed, and tows will only be made on soft-sediment seabed. By avoiding the areas of hard benthos, no damage to sensitive benthic habitats of the Chatham Rise will occur during these voyages.

References


Description of the likely effects of the activity on the environment:

**Minimal.**

Several of the activities are non-invasive in that no instruments touch the seafloor. These are acoustic, midwater trawling methods and water collection.

The multicorer will only be used in areas with soft-sediment, and the area impacted by each event will be very small (less than 1 m² per sampling). This will have no effect of ecological significance.

The benthic trawls will only be used in areas of soft-sediment so no sensitive (structure forming) benthic habitat (such as coral) will be affected. Extensive areas of the Chatham Rise are commercially fished every year, with benthic trawling on soft-sediment the predominant method. The combined footprint of all potential trawling sampling is estimated to be less than a few km², much less than the annual impact on the seabed of commercial fishing on the Chatham Rise. This small level of disturbance will have an insignificant impact on benthic environments of the Chatham Rise.

Each tow of the benthic trawls is likely to catch <1000 kg of animals. This is tiny compared to the annual commercial fishing catch. A proportion of the material caught on the research voyage will be brought back to shore; the rest will be returned to the marine environment at sea.

No gear will remain on the seabed after the end of the voyage.

Identification of sensitive environments

**Describe any sensitive environments likely to exist in the area where the activity will be undertaken:**

There are areas of hard, structure-forming benthos, including corals, on the Chatham Rise within the area that the proposed research will be carried out. These areas of hard benthos are considered to be sensitive habitats in that they are easily damaged by fishing gear and unlikely to recover from large-scale damage in the medium to long term. Sensitive habitats on the Chatham Rise are generally confined to the mid-Chatham Benthic Protection Area (BPA) and are not present over the whole of the BPA region.
Contingency plan

Specify measures that could be taken to avoid, remedy, or mitigate the adverse effects of the activity on sensitive environments:

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<table>
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<tbody>
<tr>
<td>a) Can the activity be undertaken in another place?</td>
<td>No</td>
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<tr>
<td>Explain: The research aims to provide information on the food-web structure of the Chatham Rise, and sampling over a range of environmental conditions (locations, depths) are necessary to build up a picture of the whole food-web.</td>
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<td>b) Can the activity be undertaken in a way that reduces the amount of contact with the seabed?</td>
<td>No</td>
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<tr>
<td>Explain: The duration of bottom trawls has been reduced to the minimum required to collect an adequate sample. These trawls will be of short duration (20 minutes, 1 nautical mile in length)</td>
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<td>c) Can different methods be used in undertaking the activity to lessen its effects on the sensitive environment?</td>
<td>No</td>
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<td>Explain: Physical sampling is required because specimens will be analysed for stomach contents (diet) and for biochemical markers (trophic position) in the laboratory after the voyage.</td>
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<td>d) Can the activity be undertaken in a way that lessens its effects in the sensitive environment?</td>
<td>No</td>
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<td>Explain: By avoiding the areas of hard benthos, no damage to sensitive benthic habitats of the Chatham Rise will occur during this voyage. Because of the type of gear, the ratcatcher trawl cannot be towed over areas of hard benthos, such as corals; this will destroy the net. Hence, bottom trawls will only be made on soft-sediment seabed, which are not considered to be “sensitive environments”.</td>
<td></td>
</tr>
</tbody>
</table>

* Select one

17 July 2015

Signature of authorised contact person

Name: 
Title: 

Note: A signature is not required for electronic (email) forms.