



# Permitted activities: Initial environmental assessment and sensitive environments contingency plan

*Form 3 of Schedule 5 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Permitted Activities) Regulations 2013*

**How to use this form:** This form must be completed by organisations planning to carry out marine scientific research, prospecting or exploration in accordance with regulation 5 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Permitted Activities) Regulations 2013 (PA Regulations 2013). This form fulfils the initial environmental assessment and contingency plan requirements of Schedule 2 of the PA Regulations 2013.

**Timeframe:** You must provide this form to the Environmental Protection Authority (EPA) at least 5 working days before starting the activity.

**Note:** Items marked in *italics* are not compulsory; however, including this information will help the EPA process the form.

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 the completed form in hard copy, post it to Environmental Protection Authority, Private Bag 63002, Wellington 6140.

**Submitting electronically:** If you wish to provide the completed form electronically, email it to [permitted.compliance@epa.govt.nz](mailto:permitted.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
- a statement that the person is authorised to supply the form on behalf of the operator.

**Note:** The EPA has an 8 MB limit on electronic files submitted by email.

You can find and download all forms prescribed by the PA Regulations 2013, as well as suggested templates for providing other information, on our website at [www.epa.govt.nz](http://www.epa.govt.nz) or request them from us by contacting:

Environmental Protection Authority,  
Private Bag 63002, Wellington 6140  
Email [permitted.compliance@epa.govt.nz](mailto:permitted.compliance@epa.govt.nz)

Phone +64 4 916 2426  
Fax +64 4 914 0433

**Operation name:**

Name used by operator to reference the activity described in this form: Waveglider for GPS-A

**Activity code:**

Code given to you by the EPA after submitting the pre-activity notice: GNSPA10

**Details of the person undertaking the permitted activity**

<b>Name of company, organisation or person:</b>	GNS Science		
<b>Contact person:</b>			
<b>Phone number:</b>			
<b>Mobile number:</b>		<b>Fax number:</b>	
<b>Physical address:</b>	1 Fairway Drive, Lower Hutt	<b>Postcode:</b>	5010
<b>Postal address (if different):</b>	PO Box 30368	<b>Postcode:</b>	5040
<b>Email address:</b>			

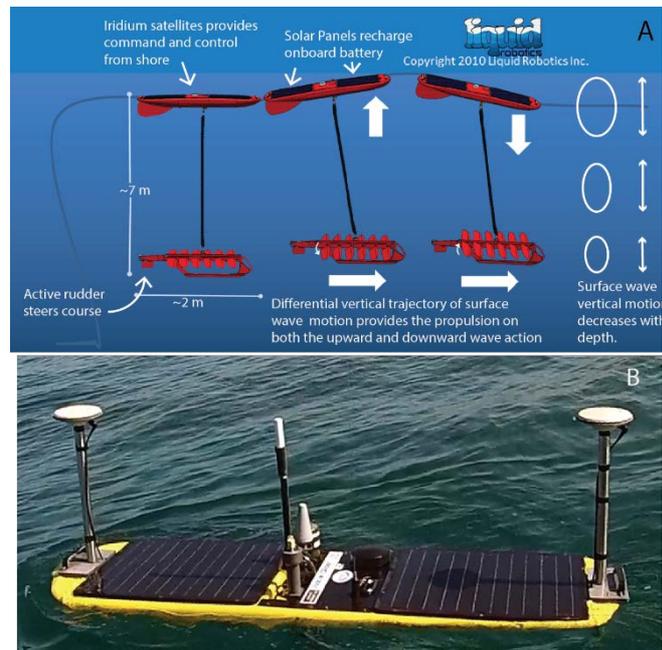
**General description of the permitted activity****Type of activity:**

Marine scientific research	<input checked="" type="checkbox"/>	Alteration, extension or removal of a permitted marine structure	<input type="checkbox"/>
Prospecting	<input type="checkbox"/>	Discharge of sediments from iron sand prospecting and exploration	<input type="checkbox"/>
Exploration	<input type="checkbox"/>	Incidental discharge of sediments from phosphate nodule or placer gold prospecting and exploration	<input type="checkbox"/>
Placement or removal of submarine cables	<input type="checkbox"/>	Discharge of sediments from seafloor massive sulphide prospecting and exploration	<input type="checkbox"/>

**Describe methods to be used to undertake the activity:**

A Wave Glider is an autonomous, remotely controlled vehicle that operates on the surface of the ocean. The Wave Glider uses mechanical wave motion of the ocean surface for propulsion (Figure 1), solar arrays for electrical power and Iridium satellite communications for command/control from shore. Given that both the sea-surface wave action and solar energy are renewable, the vehicle can operate for extended periods (months) remotely. It is in wide use for oceanographic observations around the globe.

We will be using the Wave Glider (with a GPS antenna mounted on it) to periodically survey in an array of acoustic transponders on the seafloor at various locations offshore the North Island's east coast. Each survey will allow us to establish the position of the array to within 1-3 cm. The periodic re-surveys of the arrays using the GPS-Acoustic method will thus allow us to monitor cm-level horizontal movement of the seafloor related to tectonic activity on the Hikurangi subduction zone. Each Wave Glider deployment will last less than one month, and will take place at least once per year (most likely in the summer months) over a period of 5 years. The vehicle will be launched from a boat in open ocean, and navigated remotely to seafloor transponder sites to collect the GPS-A data. Average speed is ~1 kt.



**Figure 1:** (A) Wave Glider concept for harvesting wave motion for propulsion. (B) Wave Glider configured for GPS-Acoustic operations underway at sea.

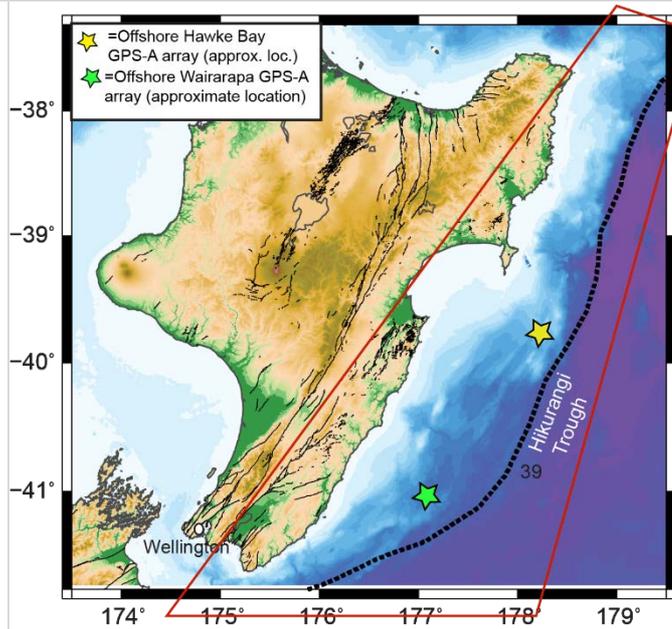
**Location of permitted activity**

**Co-ordinates of area where activity will be undertaken:**

Set 1	179°10' E, 37°S
Set 2	179°50', 37.25°S
Set 3	178°10' E, 42°S
Set 4	174°45' E, 42°S
<input type="checkbox"/>	I have attached a shape or KML/KMZ file to a previous form

**Map**

(showing position of activity relative to the New Zealand coastline)



The map shows the location of the two planned GPS-A transponder arrays that will be surveyed in by the Wave Glider. The red box outlines the possible area of operations as part of our research.

**Describe the current state of the area and the surrounding environment, including any sensitive environments:**

The Wave Glider will be operating in open ocean, more than 12 nm from the coastline. To our knowledge this surface-based platform will not encounter any sensitive environments.

**Describe the likely effects of the activity on the environment:**

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As the Wave Glider travels along the ocean surface, there will be minimal to no effects on the environment. It will be deployed for short periods of time (less than one month), and therefore will not be susceptible to overgrowths or biological accumulations. Any unexpected growth that may occur affects the successful operation of the vehicle, and will be cleaned appropriately before any redeployment.

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## Identification of sensitive environments

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

None that we are aware of. The Waveglider will only be operating at the sea surface in open ocean (and more than 12 nm off the coast of New Zealand).

## Contingency plan

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

<p><b>a) Can the activity be undertaken in another place?</b></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><b>Explain:</b> The purpose of the Waveglider deployments are to survey in seafloor instruments that have already been deployed (these deployments took place under an existing EPA permit)</p>
<p><b>b) Can the activity be undertaken in a way that reduces the amount of contact with the seabed?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>Explain:</b> There is no contact with the seabed during these operations. It is restricted to the sea surface.</p>
<p><b>c) Can different methods be used in undertaking the activity to lessen its effects on the sensitive environment?</b></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><b>Explain:</b> No impact is anticipated on any sensitive environments with the current methods.</p>
<p><b>d) Can the activity be undertaken in a way that lessens its effects on the sensitive environment?</b></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><b>Explain:</b> We are not aware of any impact on sensitive environments that these operations will have. There will be no contact with the seabed, and operations will only be carried out at the sea surface in the open ocean (in deep water).</p>



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**Signature of authorised contact person**

**Date 18 January 2019**

**Name:** 

**Title** 

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