

UNDERSEA FEATURE NAME PROPOSAL

(Sea NOTE overleaf)

Note: The boxes will expand as you fill the form.

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|-----------------------|----------------------|----------------------|---------------------|
| Name Proposed: | Cole Seamount | Ocean or Sea: | South Pacific Ocean |
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|--|------|---------|-----------------|-----------------|--------------------|----------------------------|
| Geometry that best defines the feature (Yes/No) : | | | | | | |
| Point | Line | Polygon | Multiple points | Multiple lines* | Multiple polygons* | Combination of geometries* |
| | | X | | | | |

* Geometry should be clearly distinguished when providing the coordinates below.

| | | |
|---------------------|-----------------------|-------------------------|
| Coordinates: | Lat. (e.g. 63°32.6'N) | Long. (e.g. 046°21.3'W) |
| | 33°24.57'S (centre) | 179°52.29'E (centre) |
| | 33°22.567`S | 179°49.717`E |
| | 33°21.367`S | 179°52.05`E |
| | 33°20.95`S | 179°55.333`E |
| | 33°20.533`S | 179°56.967`E |
| | 33°21.567`S | 179°57.05`E |
| | 33°22.717`S | 179°56.25`E |
| | 33°24.067`S | 179°55.083`E |
| | 33°25.65`S | 179°54.733`E |
| | 33°27.35`S | 179°53.683`E |
| | 33°28.1`S | 179°51.817`E |
| | 33°28.183`S | 179°49.15`E |
| | 33°27.117`S | 179°47.483`E |
| 33°24.05`S | 179°48.183`E | |
| 33°22.567`S | 179°49.717`E | |

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| Feature Description: | Maximum Depth: | 2650 metres | Steepness : | |
| | Minimum Depth : | 1100 metres | Shape : | Volcanic edifice with spur to NE |
| | Total Relief : | 1550 metres | Dimension/Size : | 10 x 18 km |

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| Associated Features: | Cole Seamount lies 30 km SW of Kuiwai Seamount in the Kermadec volcanic arc |
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| Chart/Map References: | Shown Named on Map/Chart: Named in an internationally peer reviewed journal | de Ronde, CE et al. (2007), Submarine hydrothermal activity along the mid-Kermadec Arc, New Zealand: Large-scale effects on venting. <i>Geochem. Geophys. Geosyst.</i> , 8, Q07007. |
| | Shown Unnamed on Map/Chart: | |
| | Within Area of Map/Chart: | Chart NZ 14600 INT 600, INT 605 |

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| Reason for Choice of Name (if a person, state how associated with the feature to be named): | Named after Professor J Cole, Professor of Geology at Canterbury University, and a leading New Zealand volcanologist. |
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| Discovery Facts: | Discovery Date: | 1998 |
| | Discoverer (Individual, Ship): | RV Sonne |

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| Supporting Survey Data, including Track Controls: | Date of Survey: | Multiple surveys 1998-2012 |
| | Survey Ship: | RV Sonne (1998), RV Tanagroa (2002, 2012), RV Yokosuka (2006) |
| | Sounding Equipment: | Atlas hydrosweep-DS2, EM300, EM302, SeaBeam 2112 multibeam |
| | Type of Navigation: | DGPS |
| | Estimated Horizontal Accuracy (nm): | 25 m |
| | Survey Track Spacing: | Multiple surveys, variable spacing |
| | Supporting material can be submitted as Annex in analog or digital form. | |

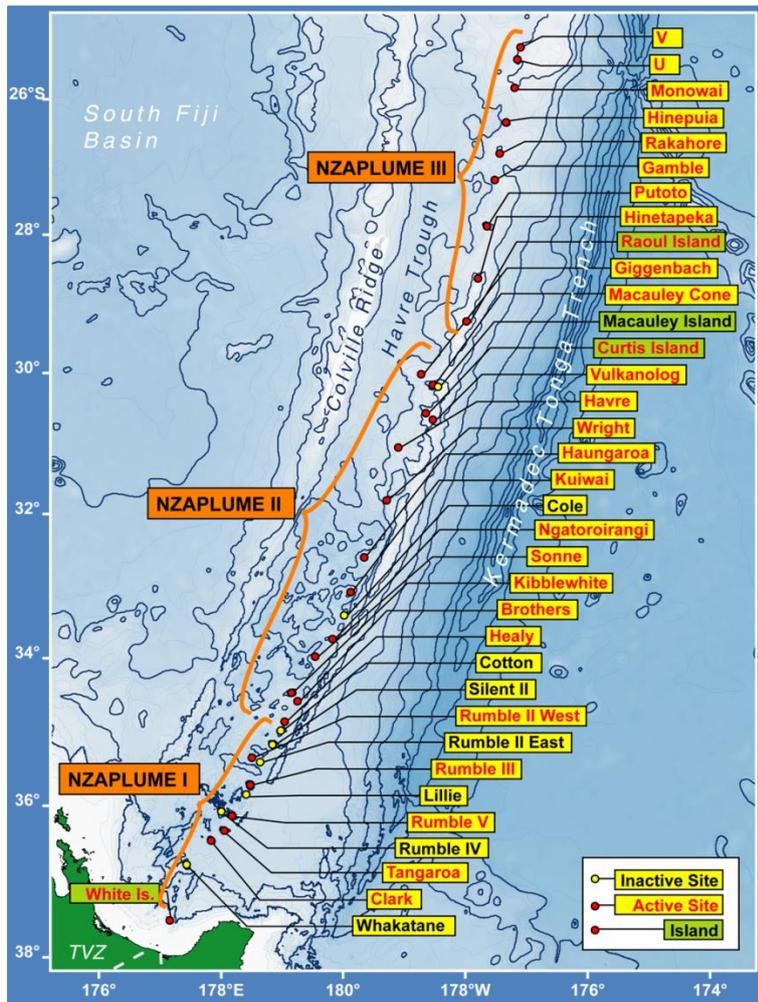
| | | |
|---------------------|---|--|
| Proposer(s): | Name(s): | Mr Mark Dyer (Chairperson of the NZGB) & Mr Adam Greenland (National Hydrographer) |
| | Date: | 27 June 2016 |
| | E-mail: | markdyer@linz.govt.nz |
| | Organization and Address: | New Zealand Geographic Board PO Box 5501 Wellington 6145 New Zealand |
| | Concurrer (name, e-mail, organization and address): | Dr Vaughan Stagpoole V.Stagpoole@gns.cri.nz GNS Science PO Box 30 368 Lower Hutt 5040 New Zealand |

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| Remarks: | Informally named Cole Volcano. The New Zealand Geographic Board gazetted Cole Seamount as an official undersea feature name on 26 May 2016. |
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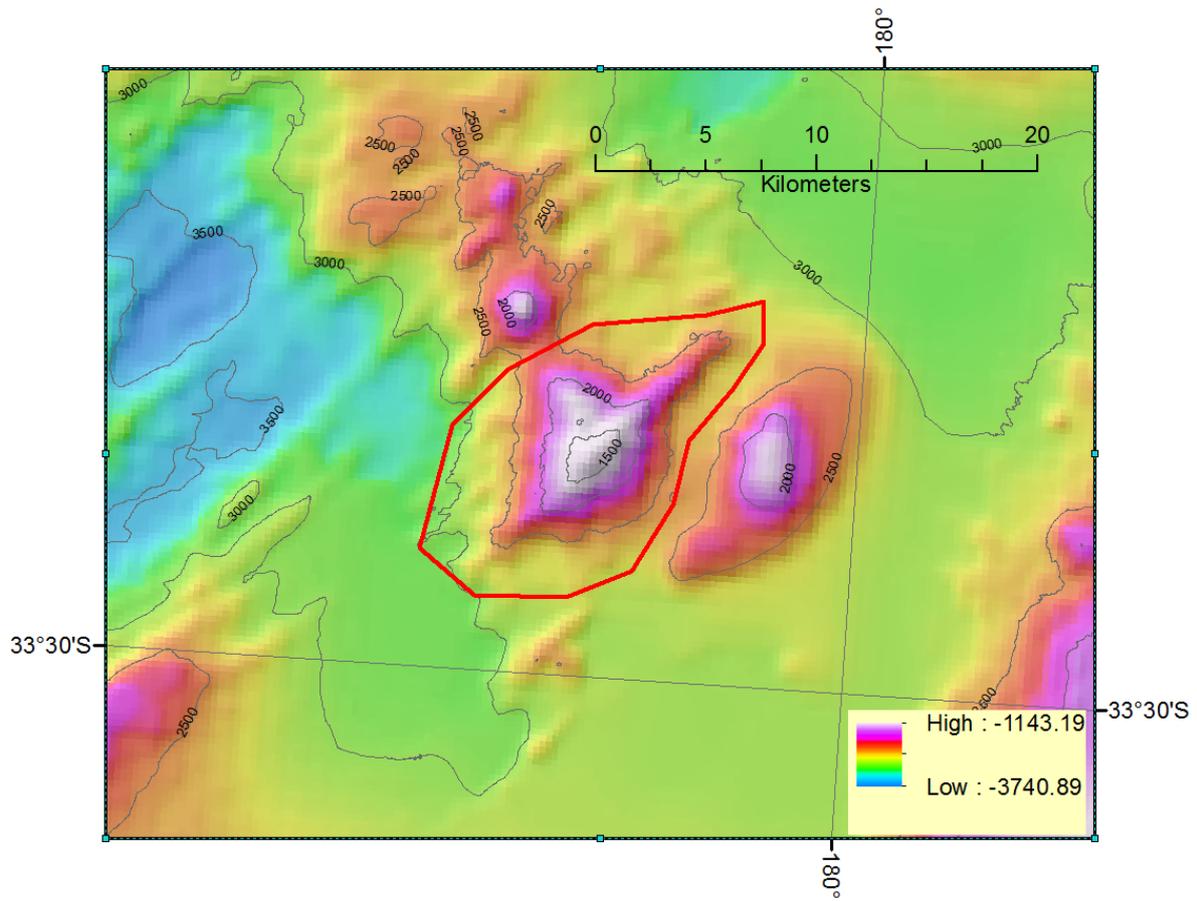
NOTE : This form should be forwarded, when completed :

- a) **If the undersea feature is located inside the external limit of the territorial sea**:-
to your "National Authority for Approval of Undersea Feature Names" (see page 2-9) or, if this does not exist or is not known, either to the IHB or to the IOC (see addresses below);
- b) **If at least 50 % of the undersea feature is located outside the external limits of the territorial sea**:-
to the IHB or to the IOC, at the following addresses :

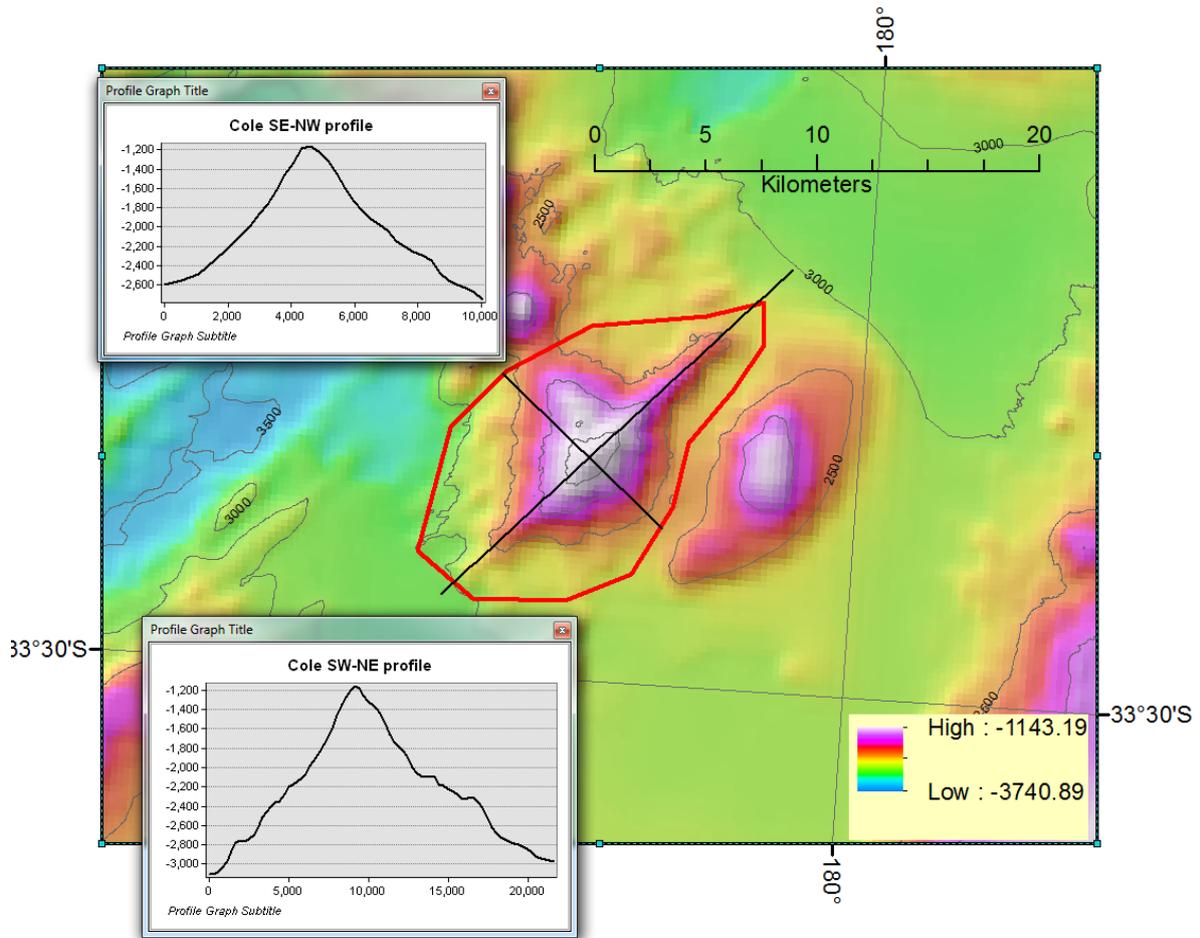
| | |
|---|--|
| International Hydrographic Bureau (IHB) 4, Quai Antoine 1er B.P. 445 MC 98011 MONACO CEDEX <u>Principality of MONACO</u> Fax: +377 93 10 81 40 E-mail: info@ihb.mc | Intergovernmental Oceanographic Commission (IOC) UNESCO Place de Fontenoy 75700 PARIS France Fax: +33 1 45 68 58 12 E-mail: info@unesco.org |
|---|--|



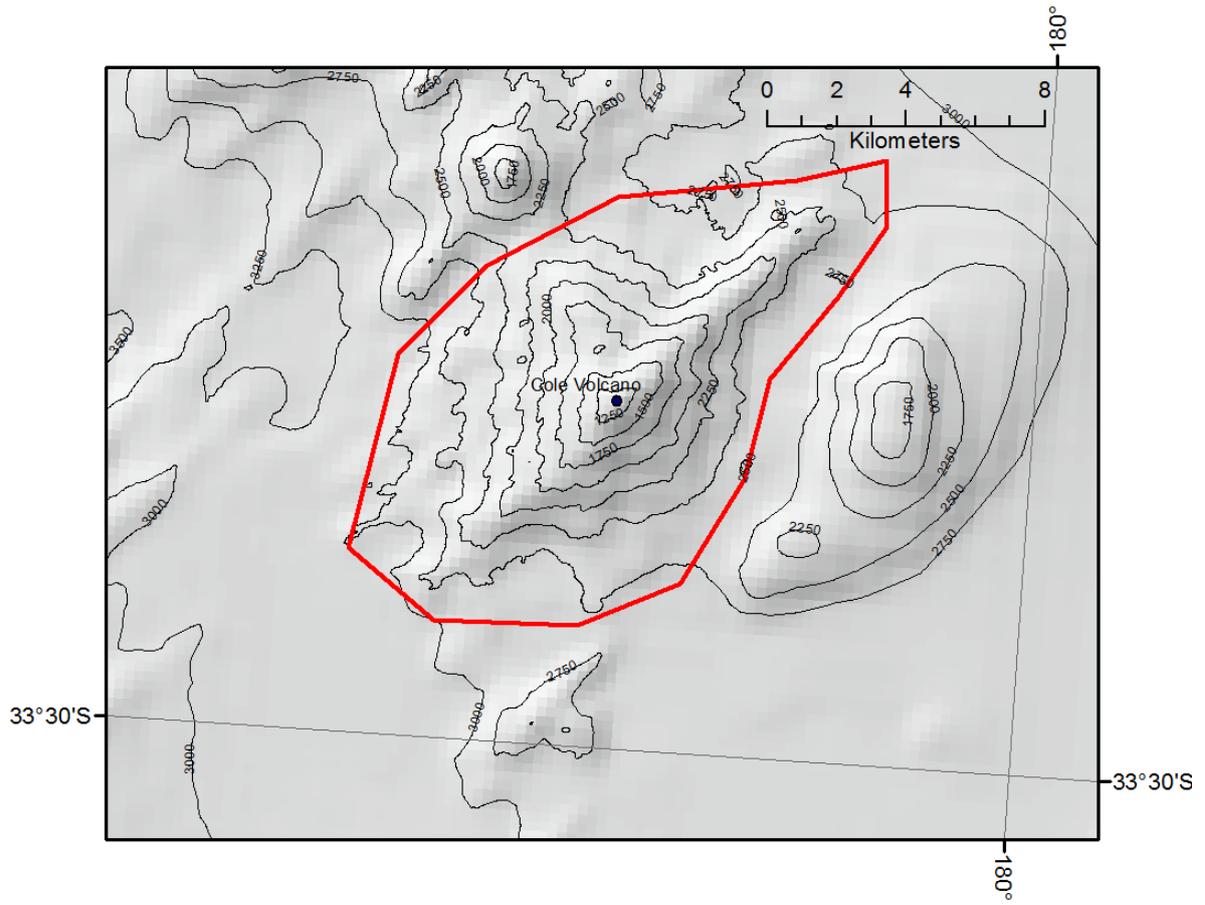
Commonly used names of volcanoes of the Kermadec arc (de Ronde, pers. com. 2015). NZAPLUME I (1999) NZAPLUME II (2002) and NZAPLUME III (2004) refer to New Zealand-led surveys that mapped the regions and named many of the features (U and V are in Tongan waters). Active sites are those that are hydrothermally active and known to vent hot water.



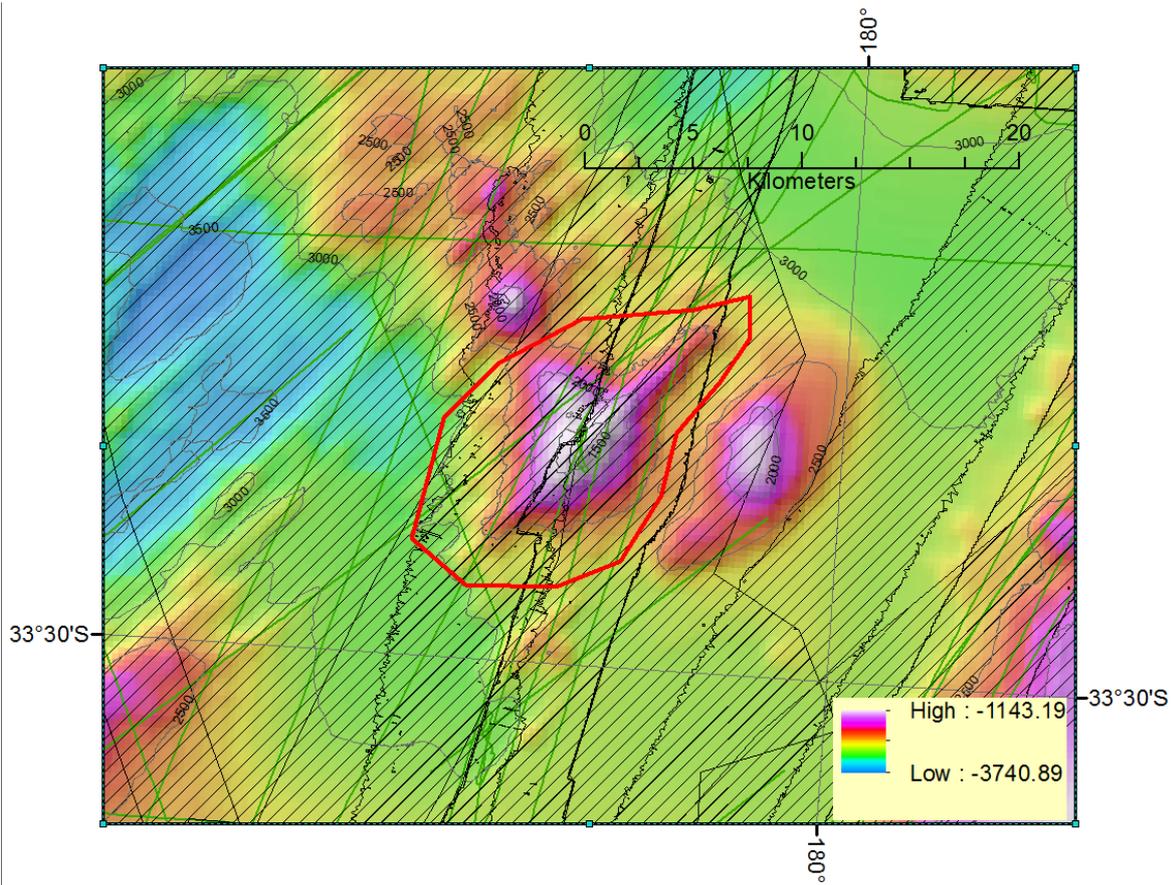
Bathymetry (250m grid) of Cole Seamount and polygon around the feature



Profiles of Cole Seamount (dimensions in metres), summit elevation = 1100m



Bathymetry contours on hillshade background



Data coverage

Cross-hatch = multibeam bathymetry coverage
 Dark green = single beam bathymetry data

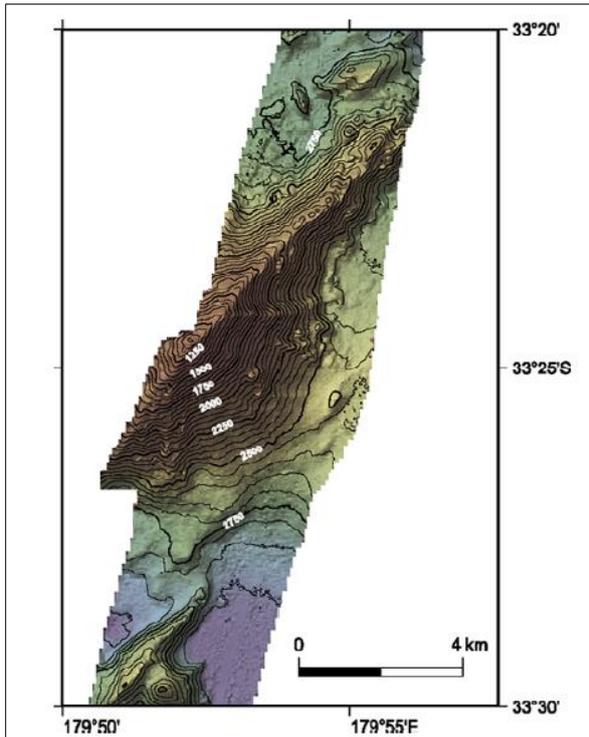


Figure 2. The Cole volcanic center is dominated by a single cone ~ 12 km long by up to ~ 6 km wide with an elevation of $\sim 1,400$ m off the surrounding seafloor and is located on the western margin of the Kermadec Ridge. The main edifice is elongated along a \sim NE-SW direction, similar to the regional structural fabric in the area. This map, together with that shown in Figure 3, complements those given by *Wright et al.* [2006] of volcanic centers of the MKA.

Source: de Ronde et al. (2007)