INTERNATIONAL HYDROGRAPHIC ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (of UNESCO)

UNDERSEA FEATURE NAME PROPOSAL

(Sea **NOTE** overleaf)

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

Name Proposed:	Vulcano di fango Iulia	**Ocean or Sea:**	Ross Sea (Antarctica)

Geometry that best defines the feature (Yes/No) :						
Point	Line	Polygon	Multiple points	Multiple lines*	Multiple polygons*	Combination of geometries*
yes						

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

	Lat. (e.g. 63°32.6'N)	Long. (e.g. 046°21.3'W)
Coordinates:	75° 57' 10,00" S	165° 21' 10,00" E

Feature Description:	Maximum Depth:	710 meter	Steepness :	Average steepness is 3° (from 1° to 5°)
	Minimum Depth :	634 meter	Shape :	elliptical
	Total Relief :	76 meter	Dimension/Size :	2500 x 1500 m

Associated Features:	The feature is a mud volcano (in Italian Vulcano di fango), close to the "Vulcano di fango Tergeste", and belongs to the area OGS Explora Mounds. The mud volcanoes are generated by the presence of overpressure fluids and gas, mixed with sediment that seeps along fractures up to the sea floor. The gas and fluids enter in the water column, and the deposition of the sediment, mainly mud, produces the cone feature of the mud volcano. In the sediment are present gas hydrates. These frozen gas, constituted mainly by methane, and water, form at low temperature and high pressure. Below the gas hydrate, due to the increase of temperature from the geothermal gradient, the gas are free, and leak along fractures up to the sea floor. These volcanoes lie on a tectonically active fault system, which fractures provide the gas and fluids leaking.

Chart/Map References:	Shown Named on Map/Chart:	See figures
	Shown Unnamed on Map/Chart:	
	Within Area of Map/Chart:	

Reason for Choice of Name (if a person, state how associated with the feature to be named)**:**	Iulia is the name of the "gens" (family) Iulia, who belongs Julius Caesar. During the first century, Julius Caesar provided the development of urban centers, like Tergeste (the ancient Trieste). The name Iulia is also presents in the name of the region Friuli Venezia Giulia and Iulian Alps. Trieste is the city of the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, the owner of the R/V OGS Explora, used during the Ross Sea cruises that provided the discovery of the feature.

Discovery Facts:	Discovery Date:	15-16 January 2006

	Discoverer (Individual, Ship):	Martina Busetti and Riccardo Geletti

Supporting Survey Data, including Track Controls:	Date of Survey:	31 December 2005 – 6 March 2006
	Survey Ship:	OGS Explora
	Sounding Equipement:	Multibeam Reson Seabat 8111 Multibeam Reson Seabat 3150 Benthos Chirp II
	Type of Navigation:	IXSEA Phins
	Estimated Horizontal Accuracy (nm):	0.00162 nm (from0.5 to 3 meter)
	Survey Track Spacing:	About 1800 meter, but also irregular due to sea ice coverage
	Supporting material can be submitted as Annex in analog or digital form.	

Proposer(s):	Name(s):	Martina Busetti
	Date:	18 June 2012
	E-mail:	mbusetti@inogs.it
	Organization and Address:	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS) Borgo Grotta Gigante 42/c 34010 Sgonico (TS) Italy
	Concurrer (name, e-mail, organization and address):	

Remarks:	The name was submitted to the Italian Committee for the Antarctic Names in 2007 and accepted, and then communicated to the SCAR Gazetteer in 2008. The italian name Vulcano di fango Iulia was used according to the rules of the Italian Committee for the Antarctic Names. The name was already used in scientific papers. The evidence of the Vulcano di fango Iulia occurred during the XXI Antartic Italian Expedition (2006), among the Italian National Antarctic Program (PNRA), on the basis of the swath bathymetric data. The first evidence came from the multichannel data collected in 1990, among the PNRA, by the OGS Explora. In the 2005, reprocessing the data, we hypothesized the occurrence of the mud volcano correlated to gas and gas hydrate occurrence in the area (See: Geletti, R., and Busetti M., 2011. A double bottom simulating reflector in the western Ross Sea, Antarctica, J. Geophys. Res., 116, B04101, doi:10.1029/2010JB007864).

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 Principality of MONACO 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

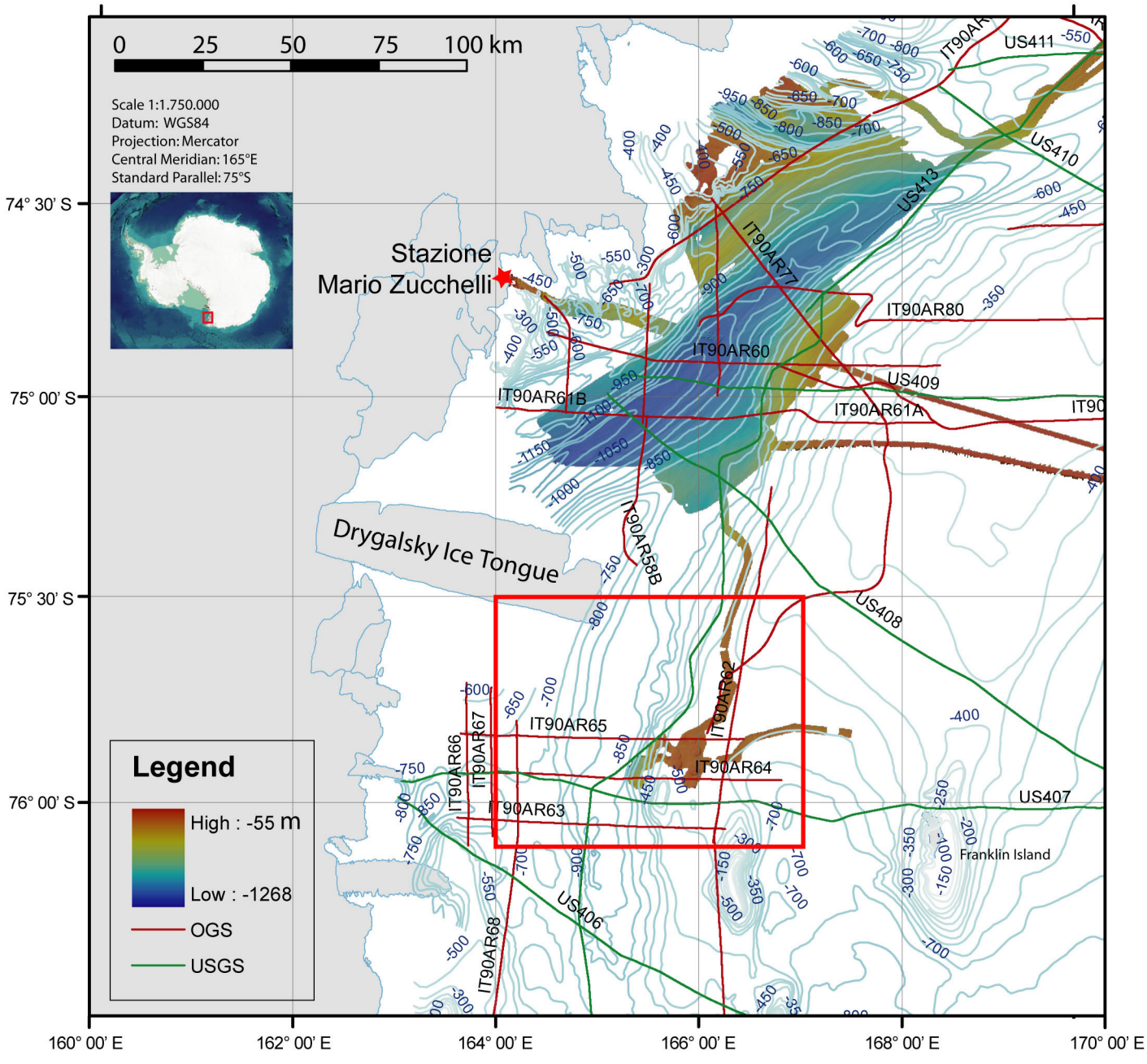

Figure 1 - Chart of the western Ross Sea with the location of the swath bathymetry acquired in 2006 and the multichannel seismic lines acquired in 1990 by the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS) (red lines) and in 1984 by the United States Geological Survey (USGS) (green lines).
The red rectangle defined the location of figure 2.
Bathymetric contour from Davey, 2004.

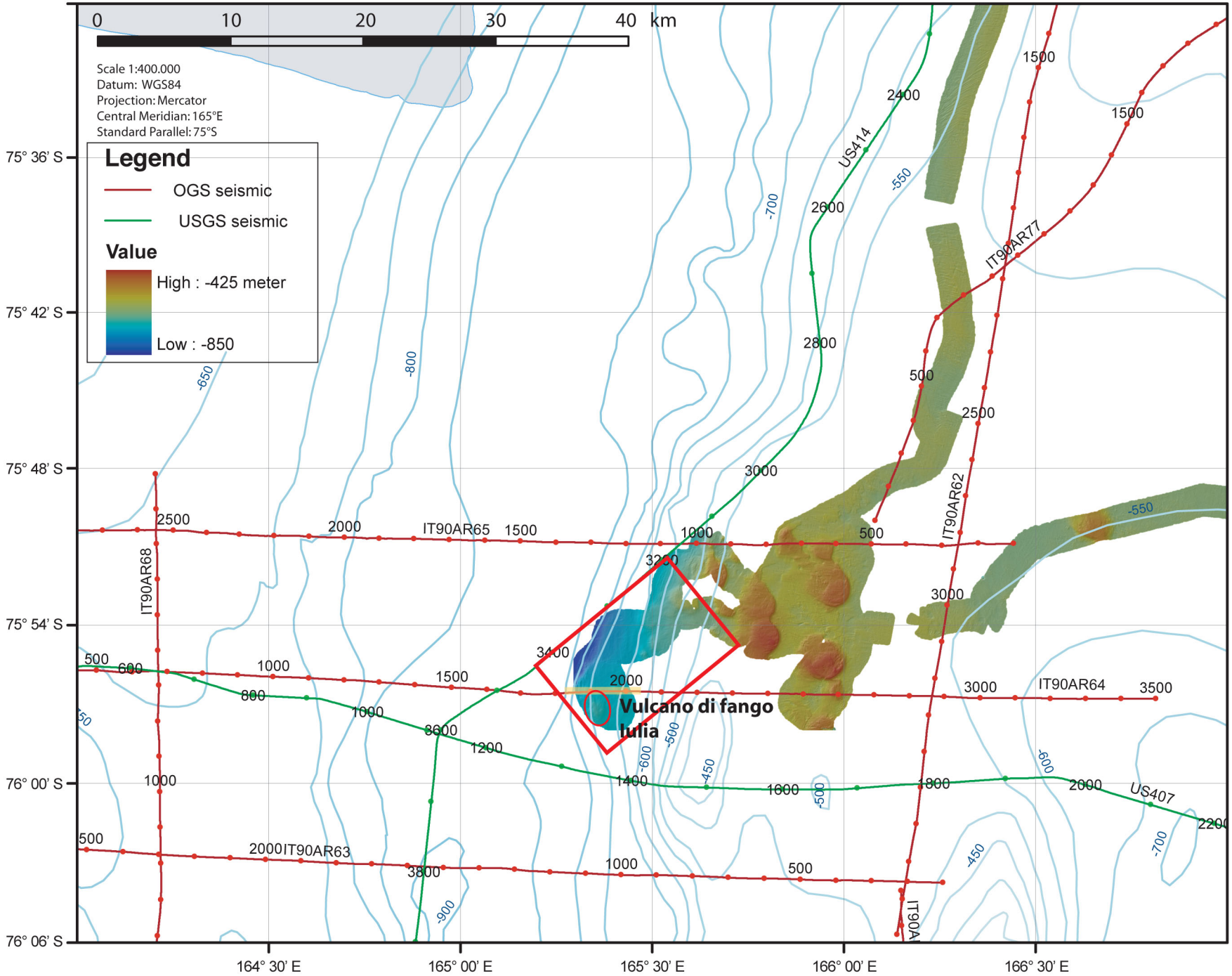

Figure 2 - Location of the Vulcano di fango Iulia (red ellipse). Swath bathymetry acquired by OGS in 2006, multichannel seismic profiles acquired by OGS in 1990 (red lines) and by United States Geological Survey (USGS) in 1984 (green lines). The red rectangle indicate the area in figure 3, the yellow line is the seismic profile in Figure 4. Bathymetic contour from Davey, 2004.

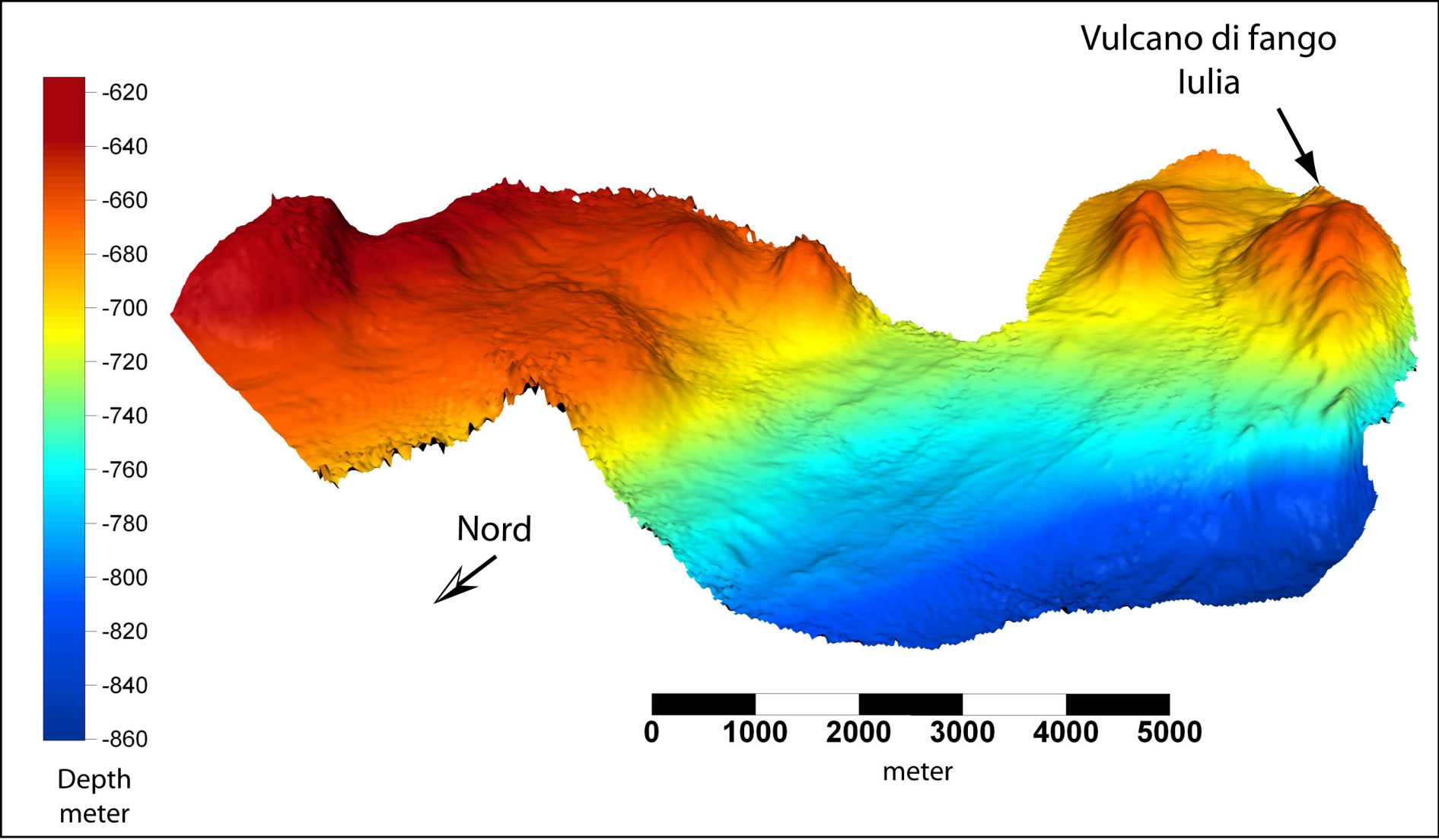

Figure 3 - 3D swath bathymetry with the relief of the Vulcano di fango Iulia.

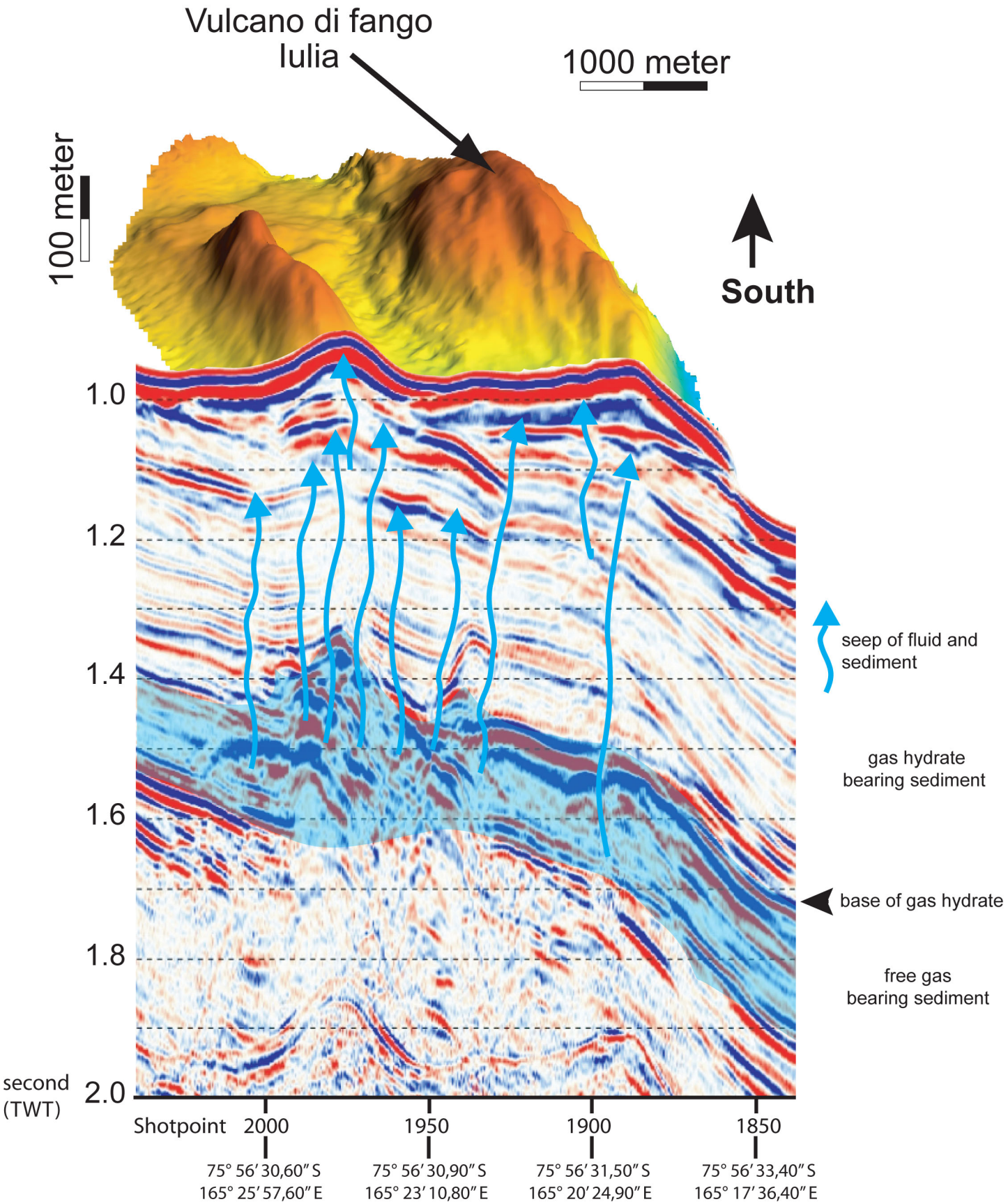

Figure 4 - Multichannel seismic section and swath bathymetry acquired in the area of the Vulcano di fango Iulia, by OGS (see Figure 2 for location).

The mud volcanoes are generated by the presence of overpressure fluids and gas, mixed with sediment that seep along fractures up to the sea floor. The gas and fluids enter in the water column, and the deposition of the sediment, mainly mud, produces the cone feature of the mud volcano. In the sediment are present gas hydrates. These frozen gas, constituted mainly by methane, and water, form at low temperature and high pressure. Below the gas hydrate, due to the increase of temperature from the geothermal gradient, the gas are free, and leak along fractures up to the sea floor. These volcanoes lie on a tectonically active fault system, which fractures favour the gas and fluids leaking.

In the seismic profile the vertical section is in Two Way Travel-time (TWT). Approximately 1 second corrispond to about 750 meter below sea level, while 2 seconds corresponds to about 1000 meter below sea floor.