UNIVERSITEIT GENT

Impulsfinanciering 2005
Zware Apparatuur

Deep Reef & Lake Surveyor

Activity Report 2006–2011

TECHNISCHE SPECIFICATIES

Type

Cherokee ROV, Sub Atlantic, Aberdeen

Dimensions

ROV

Length: 1400 mm
Width: 870 mm
Height: 1110 mm
Weight in air: 300 kg

TMS: Tethered Management system

Length: 1950 mm
Width: 1190 mm
Height: 2372 mm
Weight in air: 700 kg

Weight ROV + TMS + tether + equipment: 1500 kg

Depth rating

2000 m, limited to 1400 m by cable length

Thrusters

6 vectorized thrusters, powered by 440 VAC

Forward thrust 117 kgf
Lateral thrust 88 kgf
Vertical thrust 78 kgf

Cameras and lighting

Colour zoom: Kongsberg OE14-366/367, 460 TV lines, 0.02 lux sensitivity
Black and white: Kongsberg OE15-100a, 560 TV lines, 0.0013 lux sensitivity
Rear black and white: Kongsberg OE1358, 570 TV lines, 0.004 lux sensitivity
Digital stills: Kongsberg OE14-208, 5MP, 0.02 lux
Flash gun: Kongsberg OE 11-242, 80W/s light output
TMS camera: General purpose black and white
Video format: PAL
Video Output: Composite
External lights

Front: 3 x Q-LED from ROS, light output > 250 Watt
Rear 1 x Q-LED from ROS, light output > 250 Watt
TMS: 2 x 250 Watt halogen

Hydraulical

Hydraulek HLK-EH5: 5 fie manipulator; medium duty work, lift capacity: 25 kg
Drawer in skid: Drawer for sample stowage

Sensors

Standard on video overlay: Heading, Depth, Height, Roll, Pitch
Obstacle avoidance sonar: Tritech super seaKing dual freq., 325/675 kHz
CTD CTD 90M probe from SST
extra sensors: Turbidity, Fluorometer, Oxygen
Sediment temperature: Micrel THP temperature probe
Side-scan sonar: Klein 3000 SSS, to be integrated
Client sensor on request: RS 232 ,12/24 VDC available
Laser for measuring purposes
Niskin bottles, operated by manipulator
push core device

Umbilicals

Live boating mode

500 meter tether, dia 30 mm
Weight in air: 750 kg/km
Weight in H20: 215kg/km

TMS mode

- 1600 m steel armored heavy lift cable, diameter 25.1 mm
Weight in air: 1550 kg/km
Weight in H_2O: 1170 kg/km
Breaking strength: 230 kN
Min bending diameter: 900 mm
- 200 m tether on TMS, specs idem live boating

Conductors

copper for power, MultiMode fibre optics for telemetry

Power

Live boating mode

ROV system: 380-440 VAC, 32 Amps
Control system: 240 VAC, 16 Amps

TMS mode

ROV system: 380-440 VAC, 32 Amps
Winch : 380-440 VAC, 64-70 Amps
Control container: 240 VAC, 16 amps

Positioning

IXSEA GAPS: Plug and play USBL system, accuracy 0.2 %

deployment on fixed pole, or hanging on slings

Winch

Hydramec hydraulic winch
Length: 2.4 m
Height: 1.7 m
Width: 2.4 m
Weight with umbilical: 7500 kg
Power: 380-440 VAC, 70 Amps at full load

Other

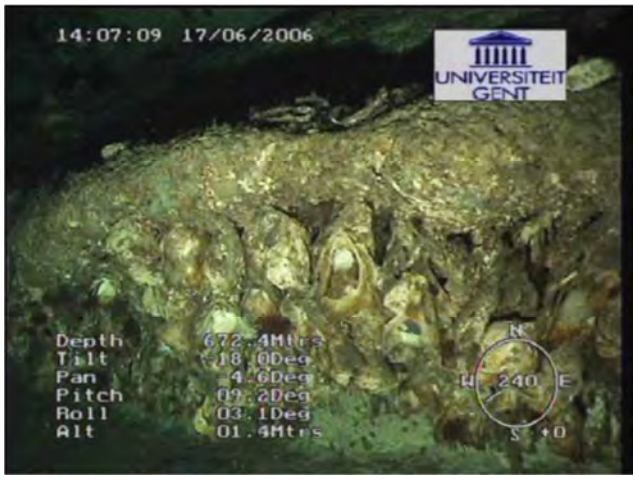
Max weight of ROV + TMS system to be deployed: 2000 kg in air, 600 in H_2O
Max cable weight: 2170 kg in air, 1650 kg in H20
Sheave wheel comes with the ROV system, ships specific shackles needed
Required height of A- frame on board: 5 m
Total weight of transport container, incl winch ROV, TMS and controls: 14 tons

13-20 June 2006	R/V Belgica	Belgica 06/12

La Chapelle Bank and Bantry Bay, North Atlantic Ocean

Brest (France) – Cork (Ireland)	UGent-RCMG research

Total dives: 10	Total observation time: 20 hours	Depth range: 15-600 m



MAIN OBJECTIVE

First testing and deployment of the ROV at the sheltered environment of the Bay of Douarnenez and visual observations on La Chapelle Bank

PROJECT

EU FP6 “HERMES”, EU FP5 RTN “EURODOM”, ESF EUROCORES EuroMargins “MOUNDFORCE”

PARTICIPANTS

UGent-RCMG (Belgium), NOC Southampton (UK), University College Cork (Ireland), IFREMER Brest(France)

SUMMARY

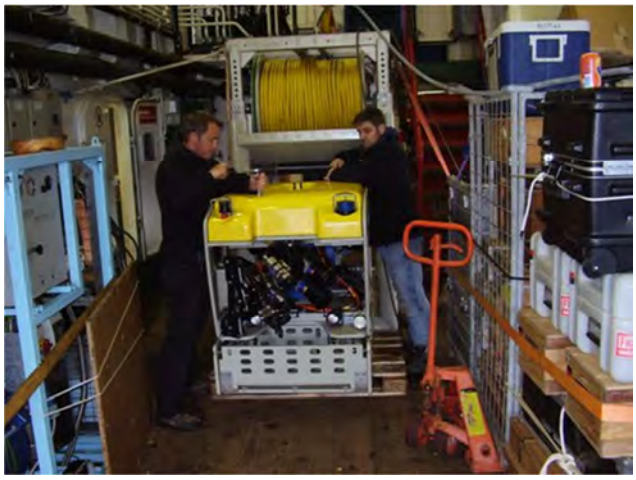
The main aim of this cruise was testing the ROV, which was successful. Lessons were learned in order to improve the ROV for next cruises. Two successful dives on La Chapelle Bank revealed a sandy-muddy seabed with intriguing bedforms and erosion exposing consolidated sedimentary sequences, often cut by vertical cliffs up to 10 m high. At the base of the cliffs, fallen blocks provided settlement sites for sessile organisms whilst the cliffs and protruding banks revealed dense communities of oysters with occasional cold-water coral (Lophelia). Although deep-water ‘oyster banks’ had already been reported earlier by Le Danois (1948) on the base of dredgings, these dramatic seascapes had remained largely hidden to the human eye up to now.

PUBLICATIONS

Van Rooij, D., De Mol, L., Le Guilloux, E., Wisshak, M., Huvenne, V.A.I., Moeremans, R. & Henriet, J.-P., 2010. Environmental setting of deep-water oysters in the Bay of Biscay. *Deep-Sea Research Part I*, **57**, 1561-1572.

06-21 September 2006	RRS Discovery	Discovery D311
Denmark Strait, North Atlantic Ocean		
Reykjavik (Iceland) – Reykjavik (Iceland)		Commissioned

Total dives: 1	Total observation time: 3 hours	Depth range: 40-70 m



MAIN OBJECTIVE
Visual observations in Denmark Strait and recovery of moorings (test)

COMMISSIONER
Institut für Meereskunde, University of Hamburg (Germany)

BUDGET
travel/transport

PARTICIPANTS
UGent-RCMG (Belgium), University of Hamburg (Germany)

SUMMARY
Due to technical problems and bad weather conditions only a test-dive at the end of the survey was successfully performed near the coast of Iceland. It resulted in good-quality video-pictures of the shelf bottom. Also the technical knowledge of the ROV-system was greatly improved.

PUBLICATIONS
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27 February - 22 March 2007	R/V Sonne	Sonne SO 191-3

Hikurangi Margin, Pacific Ocean

Napier (New Zealand) – Auckland (New Zealand)	Scientific collaboration

Total dives: 7	Total observation time: 7 hours	Depth range: 650-910 m

MAIN OBJECTIVE
Precise localisation, visual observation, measuring and sampling of active methane seeps

PARTNER
IFM-GEOMAR, Kiel (Germany)

PROJECT
BMBF GEOTECHNOLOGIEN “COMET”, EU FP6 “NEW-VENTS”, FWO-Flanders “GENESIS”

PARTICIPANTS
UGent-RCMG (Belgium), IFM-GEOMAR, Kiel (Germany), NIWA Wellington (New Zealand), GNS, Lower Hutt (New Zealand), EAWAG, Kastanienbaum (Switzerland)

SUMMARY
Two methane seeps sites (Faure Site & LM-3) were explored with the ROV in the Rock Garden area on the Hikurangi accretionary margin, east of the New Zealand North Island. ROV observations allowed the first visual observations of bubble-releasing seeps at the Hikurangi Margin. The ROV footage was also used to obtain a submeter characterization of both seeps sites, indicating a clear difference in seep environments for both sites. The total volume of bubble-released methane and the temporal variations in bubble-release activity was also estimated based on the ROV footage. Besides the visual observations also bottom-water and in-sediment temperature measurements were made with the ROV-based CTD en THP probes. Water and gas samples were taken with the two installed 5L Niskin bottles to analyse the dissolved gasses.

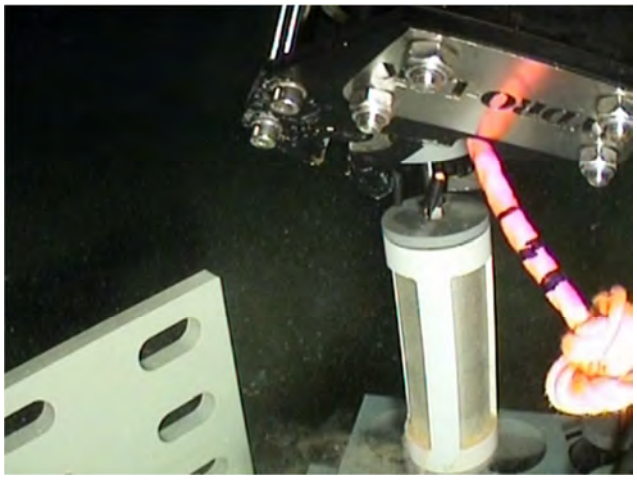
PUBLICATIONS
Naudts, L., Greinert, J., Poort, J., Belza, J., Vangampelaere, E., Boone, D., Linke, P., Henriet, J.P. & De Batist, M., 2010. Detailed visual observations and measurements by ROV and TV-sleds at Rock Garden, Hikurangi Margin, New Zeeland. *Marine Geology,* **272(1-4)**, 233-250.

03-15 June 2007	R/V Belgica	Belgica 07/13

Gulf of Cadiz, North Atlantic Ocean

Cadiz (Spain) – Cadiz (Spain)	UGent-RCMG research

Total dives: 10	Total observation time: 19.5 hours	Depth range: 300-700 m



MAIN OBJECTIVE

(1) Surveying and mapping of carbonate mound systems, (2) video-surveying of IODP ready sites, (3) surveying of mud volcano craters to identify active seepage systems, and (4) deployment and retrieval of colonisation experiments

PROJECT

EU FP6 "HERMES", ESF EUROCORES EuroMargins "MOUNDFORCE", ESF EUROCORES EuroMargins "MVSEIS", ESF EUROCORES EuroDiversity "MiCROSYSTEMS", ESF EUROCORES EuroDEEP "CHEMECO"

PARTICIPANTS

UGent-RCMG (Belgium), UGent-MBS (Belgium), University of Aveiro (Portugal), Mohamed V University of Rabat (Morocco)

SUMMARY

In total, three mud volcanoes were investigated, namely Mercator, Lazarillo de Tormes and Gemini mud volcanoes. Unfortunately it was not possible to recover the colonisation experiment of the University of Aveiro due to malfunctioning of the ROV arm. After repairing the arm the experiment of the Marine Biology Section was deployed on Gemini mud volcano. In addition two cold-water coral mounds (Alpha and Beta mound) were observed on Pen Duick Escarpment as well as the foot of the escarpment and a small mound on Vernadsky Ridge was imaged.

PUBLICATIONS

De Mol, L., Hilàrio, A., Van Rooij, D. & Henriet, J.-P., (submitted). Habitat mapping of a cold-water coral mound on Pen Duick Escarpment (Gulf of Cadiz). In: Harris, P., Baker, E. (eds.) *Seafloor Geomorphology as Benthic Habitat: GeoHab Atlas of seafloor geomorphic features and benthic habitats*. Elsevier Insights.

De Mol, L., Larmagnat, S., de Haas, H., de Stigter, H., Mienis, F., Hilàrio, A., Pirlet, H., Frank, N., Van Rooij, D., Neuweiler, F., De Batist, M. & Henriet, J.-P., (in preparation). Cold-water coral graveyards on Pen Duick

Escarpment (Gulf of Cadiz): distribution and significance. *Deep-Sea Research Part I*.

Van Rooij, D., Blamart, D., De Mol, L., Maignien, L., Larmagnat, S., Mienis, F., Stadnitskaia, A., Wehrmann, L., Templer, S., Frank, N., Pirlet, H., Barbieri, R., de Haas, H., Stivaletta, N., Zhang, Y., Hamoumi, N., van Weering, T., Henriet, J.-P. & the MiCROSYSTEMS MD169 shipboard party, (in press). Cold-water coral mounds on the Pen Duick Escarpment, Gulf of Cadiz: the MiCROSYSTEMS approach. *Marine Geology*, doi: 10.1016/j.margeo.2010.08.012.

25 May - 07 June 2008	R/V Belgica	Belgica 08/13a

Guilvinec Canyon (Bay of Biscay), North Atlantic Ocean

Brest (France) – La Coruna (Spain)	UGent-RCMG research

Total dives: 5	Total observation time: 13.5 hours	Depth range: 250-900 m

MAIN OBJECTIVE
Visual observation and mapping of deep-sea ecosystems and targeted sampling

PROJECT
EU FP6 “HERMES”, ESF EUROCORES EuroDiversity “MiCROSYSTEMS”

PARTICIPANTS
UGent-RCMG (Belgium), IFREMER Brest (France)

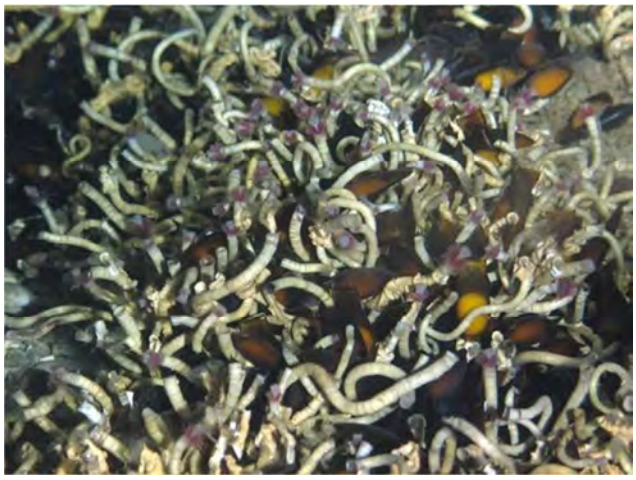
SUMMARY
Two different cold-water coral reef settings were distinguished. In water depths ranging from 260 to 350 m, mini mounds up to 5 m high, covered by dead cold-water coral rubble, were observed. The second setting (350-950 m) features hard substrates with cracks, spurs, cliffs and overhangs. In water depths of 700 to 950 m, both living and dead cold-water corals occur. Occasionally, they form dense coral patches with a diameter of about 10–60 m, characterised by mostly stacked dead coral rubble and a few living specimens. In addition, deep-water pycnodontine oysters were observed. The combined use of multibeam bathymetry, seismic profiling, CTD casts and ROV observations made it possible to describe the physical habitat and to assess the oceanographic control for the recently described species *Neopycnodonte zibrowii*.

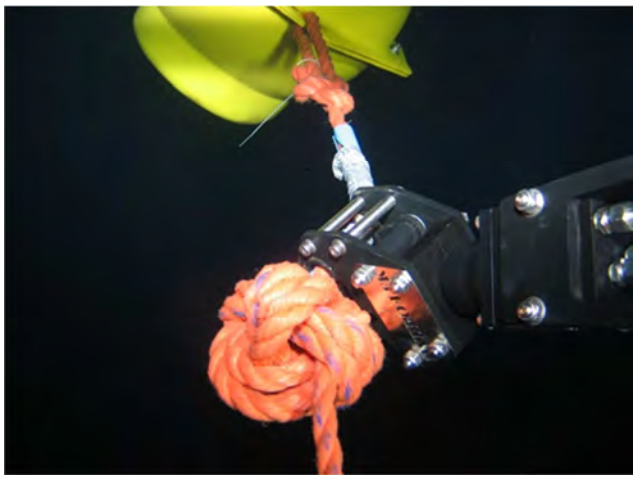
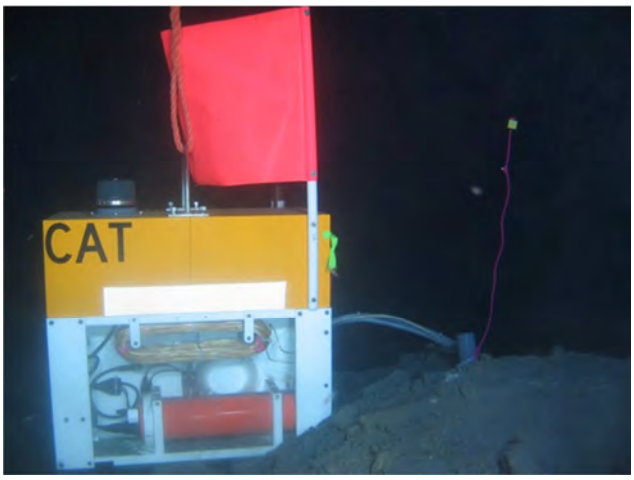
PUBLICATIONS
De Mol, L., Van Rooij, D., Pirlet, H., Greinert, J., Frank, N., Quemmerais, F. & Henriet, J.-P., (in press). Cold-water coral habitats in the Penmarc’h and Guilvinec Canyons (Bay of Biscay) : deep-water versus shallow water settings. *Marine Geology*, doi : 10.1016/j.margeo.2010.04.011.

Van Rooij, D., De Mol, L., Le Guilloux, E., Wisshak, M., Huvenne, V.A.I., Moeremans, R. & Henriet, J.-P., 2010. Environmental setting of deep-water oysters in the Bay of Biscay. *Deep-Sea Research Part I*, **57**, 1561-1572.

07-25 November 2008	R/V Pelagia	Pelagia 64PE298
West Nile Delta, Mediterranean Sea		
Heraklion (Greece) – Port Said (Egypt)		Commissioned

Total dives: 17	Total observation time: 60 hours	Depth range: 400-500 m



MAIN OBJECTIVE

(1) Installation of temperature observatories and CAT meters for long term monitoring, (2) video monitoring of seafloor structures of mud volcanoes, (3) deployment of an active source for CSEM measurements

COMMISSIONER

IFM-GEOMAR Kiel (Germany)

BUDGET

44 633 €
(excl. travel/transport)

PARTICIPANTS

UGent-RCMG (Belgium), IFM-GEOMAR Kiel (Germany)

SUMMARY

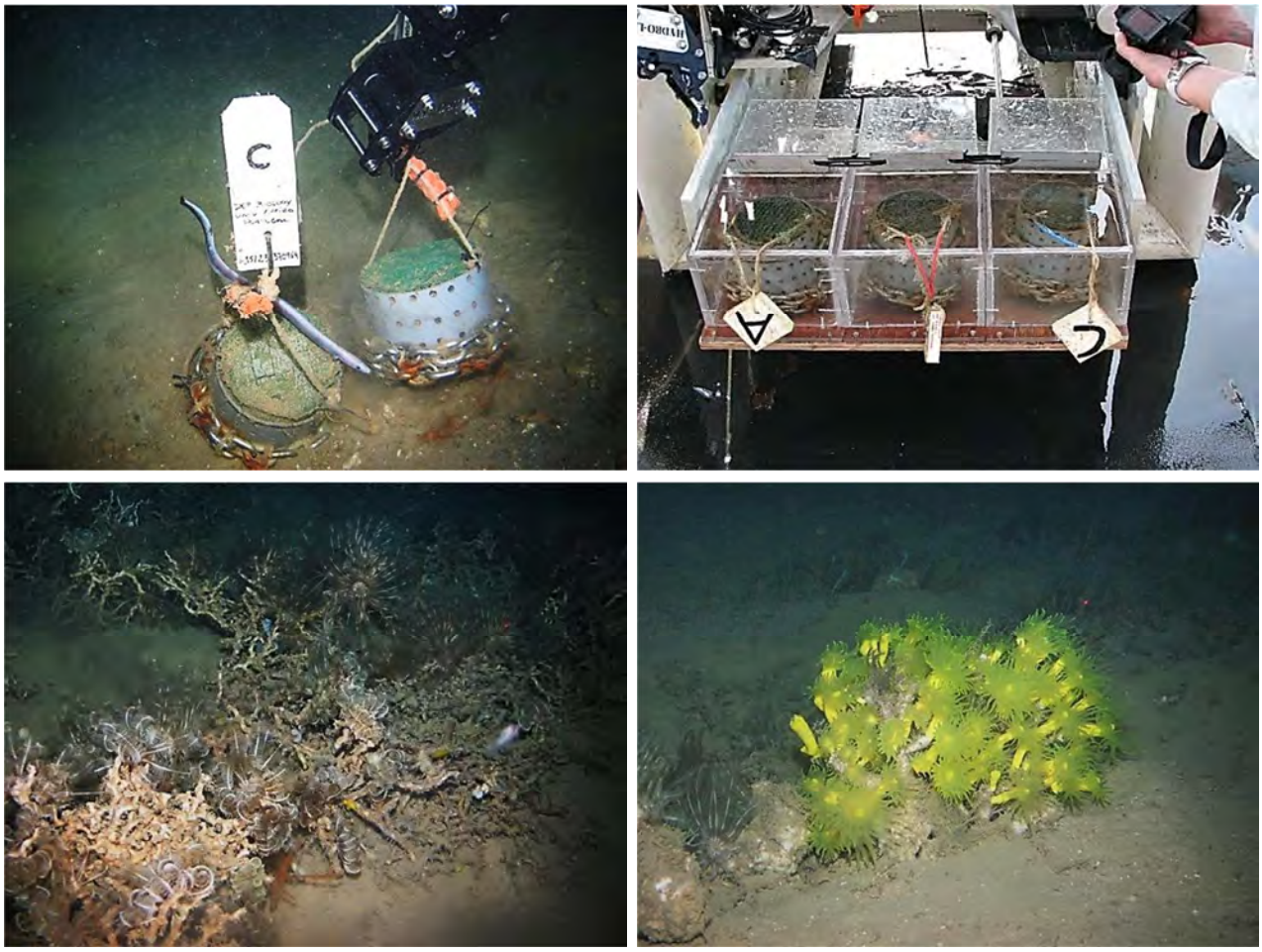
The survey area consisted of two mud volcanoes: North Alex and Giza. After two general reconnaissance video dives of North Alex, a long term heatflow station was deployed with the aid of the ROV. A 10 m wide EM-source was successfully implemented on the ROV. During 4 dives (total of 20 hrs) tracks were sailed

covering whole North Alex. Six CAT-meters were deployed (3 dives) by the ROV. Also heatflow (T-stick) measurements at different sites and some push cores were taken in different dives. A general reconnaissance video dive at Giza was followed by heatflow measurements, one CAT-meter deployment and some pushcores. Also a lost transponder (20.000 Euro) was recovered.

PUBLICATIONS

18-27 May 2009	R/V Belgica	Belgica 09/14b
Gulf of Cadiz, North Atlantic Ocean		
Cadiz (Spain) – Vigo (Spain)		UGent-RCMG research

Total dives: 10	Total observation time: 9.5 hours	Depth range: 350-1150 m



MAIN OBJECTIVE

(1) Recovery of colonisation devices on Mercator, Meknes and Darwin mud volcanoes; and (2) visual observation of deep-water ecosystems on top of cold-water coral mounds (Pen Duick Escarpment) for habitat and environmental mapping

PROJECT

EC FP7 “HERMIONE”, ESF EUROCORES EuroDEEP “CHEMECO”

PARTICIPANTS

UGent-RCMG (Belgium), University of Aveiro (Portugal), Laval University (Canada), Mohamed V University of Rabat (Morocco)

SUMMARY

(1) Each colonisation set, composed of three devices loaded with different types of substrate (carbonate,

wood and alfalfa), was recovered. Each device was photographed and fixed following specific protocols for the study of the microbial film and the taxonomic and trophic characterisation of colonising metazoans. (2) The ROV observations will allow a detailed study of the distribution and significance of cold-water corals and discuss their role in the build-up of cold-water coral mounds and their potential for the reconstruction of palaeoceanographic conditions.

PUBLICATIONS

De Mol, L., Hilàrio, A., Van Rooij, D. & Henriet, J.-P., (submitted). Habitat mapping of a cold-water coral mound on Pen Duick Escarpment (Gulf of Cadiz). In: Harris, P., Baker, E. (eds.) *Seafloor Geomorphology as Benthic Habitat: GeoHab Atlas of seafloor geomorphic features and benthic habitats*. Elsevier Insights.

De Mol, L., Larmagnat, S., de Haas, H., de Stigter, H., Mienis, F., Hilàrio, A., Pirlet, H., Frank, N., Van Rooij, D., Neuweiler, F., De Batist, M. & Henriet, J.-P., (in preparation). Cold-water coral graveyards on Pen Duick Escarpment (Gulf of Cadiz): distribution and significance. *Deep-Sea Research Part I*.

Van Rooij, D., Blamart, D., De Mol, L., Maignien, L., Larmagnat, S., Mienis, F., Stadnitskaia, A., Wehrmann, L., Templer, S., Frank, N., Pirlet, H., Barbieri, R., de Haas, H., Stivaletta, N., Zhang, Y., Hamoumi, N., van Weering, T., Henriet, J.-P. & the MiCROSYSTEMS MD169 shipboard party, (in press). Cold-water coral mounds on the Pen Duick Escarpment, Gulf of Cadiz: the MiCROSYSTEMS approach. *Marine Geology*, doi: 10.1016/j.margeo.2010.08.012.

30 May – 08 June 2009	R/V Belgica	Belgica 09/14c
Cabo Ortegal, North Atlantic Ocean		
Vigo (Spain) – Zeebrugge (Belgium)		UGent-RCMG research

Total dives: 3	Total observation time: 3.5 hours	Depth range: 400-800 m

MAIN OBJECTIVE
Visual observation and mapping of seafloor ecosystems as well as sampling of sponges associated with cold-water corals

PROJECT
EC FP7 "HERMIONE", ESF EUROCORES EuroDEEP "BIOFUN"

PARTICIPANTS
UGent-RCMG (Belgium), UGent-MBS (Belgium), University of Santiago de Compostella (Spain), University of Amsterdam (The Netherlands)

SUMMARY
Two dives were taking place in an area of so-called mini mounds whereas the third dive took place in an area where coral rubble was recovered by means of dredge samples during the RV Sarmiente de Gamboa cruise in 2008. The seafloor consisted of bioturbated soft sediment with on a regular base small to larger pieces of dead coral (*Lophelia pertusa*). In addition, anemones, crinoids, gastropods, holothurians, sea pens, hermit crabs and a few galatheid lobsters were observed.

PUBLICATIONS
Verreydt, W., 2011. *Late Cenozoic sedimentary processes on the outer edge of the NW Iberian shelf, Cabo Ortegal*. MSc Thesis.

04 January – 02 March 2010	RVIB N.B. Palmer	Palmer 10-01

Antarctic Peninsula

Punta Arenas (Chile) – Punta Arenas (Chile)	Scientific collaboration

Total dives: 10	Total observation time: 30 hours	Depth range: 160-1420 m

MAIN OBJECTIVE

Visualisation and sampling of ecosystems (including methane seeps) at the newly accessible seafloor below the recently disintegrated Larsen B ice shelf

PARTNER

Hamilton College, Clinton NY (USA)

PROJECT

NSF “Larissa”, BELSPO “HOLANT”

PARTICIPANTS

UGent-RCMG (Belgium), Hamilton College, Clinton NY (USA), University of Hawaii at Manoa (USA), University of Colorado, Boulder (USA), Duke University, Beaufort (USA), Ohio State University, Columbus (USA), Scripps Institute of Oceanography, San Diego (USA), Lamont-Doherty Earth Observatory, New York (USA), Korean Polar Research Institute, Incheon (Korea)

SUMMARY

Due to severe sea ice conditions, the Larsen B study area could not be reached by RVIB NBP during the 2010 Larissa expedition. As a backup plan several locations at the western and eastern side of the Antarctica Peninsula were explored with the ROV to study submerged ice shelf moraines, sediment drifts, several circular basins at the western side of the Antarctic Peninsula, a submarine volcano and different fjord basins. At these different environments, epibenthic fauna was recognized, quantified and sampled and compared in relation to their habitats. The main discovery was the presence of invasive lithodid crab species in the Palmer Deep basin.

PUBLICATIONS

Smith et al., (in preparation). Large, reproductive population of Neolithodes yaldwyni on the West Antarctic shelf. *Proceedings of the Royal Society*.

7-16 June 2010	R/V Belgica	Belgica 10/17a
Guilvinec Canyon, Bay of Biscay, North Atlantic Ocean		
Zeebrugge (Belgium) – La Rochelle (France)		UGent-RCMG research

Total dives: 3	Total observation time: 7 hours	Depth range: 650-1100 m

MAIN OBJECTIVE

Visual observation of deep-water ecosystems (mainly cold-water corals) for habitat and environmental mapping

PROJECT

EC FP7 “HERMIONE”

PARTICIPANTS

UGent-RCMG (Belgium), IFREMER Brest (France)

SUMMARY

Due to bad weather, only three dives were carried out during this cruise. Thick cold-water coral rubble graveyards with living corals on top were observed, often colonised by sponges, crinoids, antipatharians and soft corals. *Madrepora oculata* and *Lophelia pertusa* are the most common species. In addition, a lot of trawl marks were observed.

PUBLICATIONS

19-28 June 2010	R/V Belgica	Belgica 10/17b
Whittard Canyon, Bay of Biscay, North Atlantic Ocean		
La Rochelle (France) – Zeebrugge (Belgium)		UGent-RCMG research

Total dives: 5	Total observation time: 9 hours	Depth range: 450-1150 m

MAIN OBJECTIVE
Benthic habitat mapping and groundtruthing of previously observed acoustic features

PROJECT
EC FP7 "HERMIONE"

PARTICIPANTS
UGent-RCMG (Belgium), UGent-MBS (Belgium), University College Cork (Ireland)

SUMMARY
During theses dives, (rippled) soft sediment, often colonized by numerous pennatulids, was seen alternately with hard substrates in the shape of small banks, ridges and/or large cliffs with heights varying between 10 cm and 8 m (even one cliff of about 50 m high). The area was characterised by an irregular topographic relief with steep slopes and frequent evidence of downslope transport. Mostly dead cold-water coral rubble was observed with occasional living cold-water corals (*Lophelia pertusa* and *Madrepora oculata*) on top of the rubble. Several *Dendrophyllia sp.* and *Desmophyllum* species were noticed, as well as debris from the deep-water oyster *Neopycnodonte zibrowii*.

PUBLICATIONS
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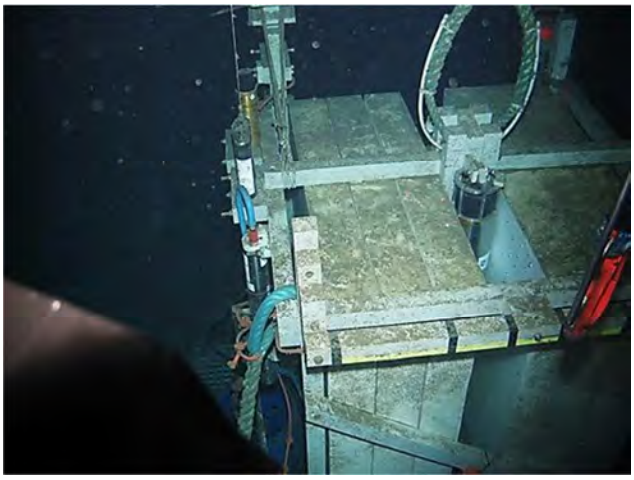
24 September -08 October 2010	R/V M.S. Merian	Merian MSM 16/2

Håkon Mosby Mud Volcano, North Atlantic Ocean

Tromsø (Norway) – Tromsø (Norway)	Commissioned

Total dives: 6	Total observation time: 17 hours	Depth range: 1200-1250 m

MAIN OBJECTIVE

(1) Recovery of seafloor observatory "LOOME", (2) deployment of temperature lance and camera, (3) video-surveying of the Håkon Mosby mud volcano.

COMMISSIONER

Max Planck Institute for Marine Microbiology, Bremen (Germany)

BUDGET

42 566 €
(excl. travel/transport)

PARTICIPANTS

UGent-RCMG (Belgium), Max Planck Institute for Marine Microbiology, Bremen (Germany)

SUMMARY

During a reconnaissance dive of the mud volcano the seafloor observatory "LOOME" and still-camera were easily found and recovered on the next dive. The T-lance was found around 160 m to the south and recovered on the 4th dive. Three wooden blocks for a colonization experiment were taken in the 5th dive. In

the 6th dive temperature-stick measurements were acquired at 13 sites. Next to this, video-surveying over selected sites was also undertaken during these dives to map e.g. the distribution of gas flares, recent mud volcanism and benthic habitats.

PUBLICATIONS

04-18 October 2011	RV S. Surveyor	ss2011_v05

Offshore Northern Perth Basin, Indian Ocean

Fremantle (Australia) – Fremantle (Australia)	Commissioned

Total dives: 10	Total observation time: 21 hours	Depth range: 300-800 m

MAIN OBJECTIVE

Quantifying hydrocarbon migration and seepage in the offshore Northern Perth Basin, and its effect on benthic biota

COMMISSIONER

Royal NIOZ (Netherlands), Geoscience Australia (Australia)

BUDGET

travel/transport/maintenance

PARTICIPANTS

UGent-RCMG (Belgium), Royal NIOZ (Netherlands), Geoscience Australia (Australia)

SUMMARY

Despite 21 h of video surveying, no hydrocarbon migrations or seepages were spotted. A reconnaissance survey (prior to our survey) of multibeam and subbottom profiles had also not been successful in revealing seepage structures. The study area consisted mainly of a sandy-muddy seabed with consolidated bed forms in some areas.

PUBLICATIONS

RECENTE SOLLICITATIES

Actieve aanvragen

Offshore SW Ireland	RCMG, UGent Marine Biology Section, UGent	2012
Antarctic Peninsula	Scripps Institution, San Diego (USA)	2012
North Sea	NIOZ, Den Helder (NED)	2012
Gulf of Biscay (EuroFLEETS)	IFREMER	2012
Porcupine Seabight (EuroFLEETS)	University of Fribourg (SWI)	2012
Red Sea	IfM-GEOMAR, Kiel (GER)	2012
Offshore South Australia	Australian National University, Canberra (AUS)	2012-2013
Offshore Svalbard	Université Pierre et Marie Curie, Paris (FRA)	2012-2013
Offshore East Greenland	GEUS, Copenhagen (DAN)	2012-2013
South China Sea	National Taiwan University, Taipei (TWN) Central Geological Survey, Taipei (TWN)	2013-2014 ?

Gedesactiveerde aanvragen

Offshore Northeast Greenland	VBPR AS, Oslo (NOR)	SEP 2011
Tyrrhenian Sea	IfM-GEOMAR, Kiel (GER)	APR 2011
Offshore Marquesas Islands	Université de Perpignan (FRA)	JAN-FEB 2012
Portuguese continental margin	University of Aveiro (POR)	2011-2013