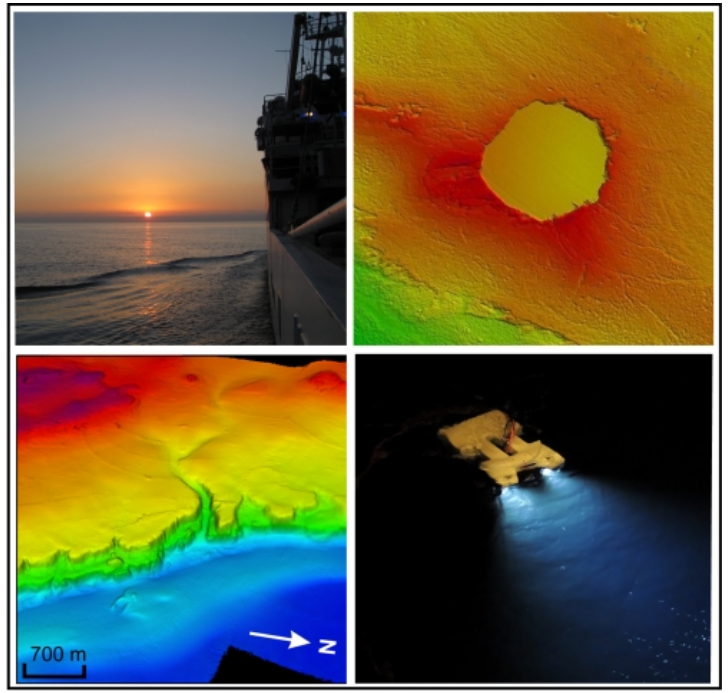
L-Università ta' Malta

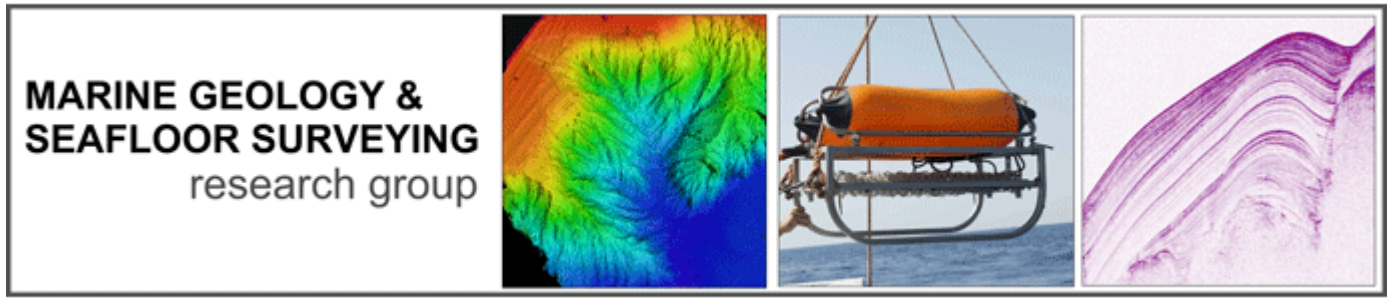
Marine Geology & Seafloor Surveying group

Aaron Micallef

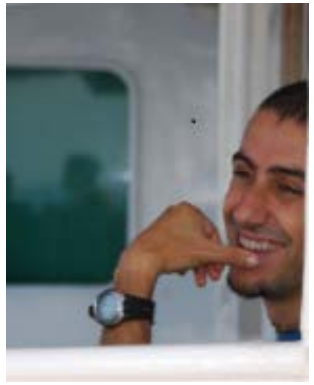


1. History

- Set up in 2015
- Part of the Department of Geosciences
- https://www.um.edu.mt/science/geosciences/mgss



2. Team



Aaron Micallef
Team leader



Denis Cohen
Research support officer



Daniele Spatola
Research support officer



Ray Zammit
PhD student



Fiorenzo Pascale
PhD student



Tanita Averes
MSc student

3. Research themes

multidisciplinary studies of seafloor and sub-seafloor environments, using advanced mapping and observational techniques, to understand the fundamental processes and dynamics of seafloor and sub-seafloor evolution

Submarine landslides and tsunamis

Submarine canyons and gullies

Marine hydrogeology

Continental shelf dynamics

Messinian Salinity Crisis

Carbonate escarpments

Marine geomorphometry and habitat mapping

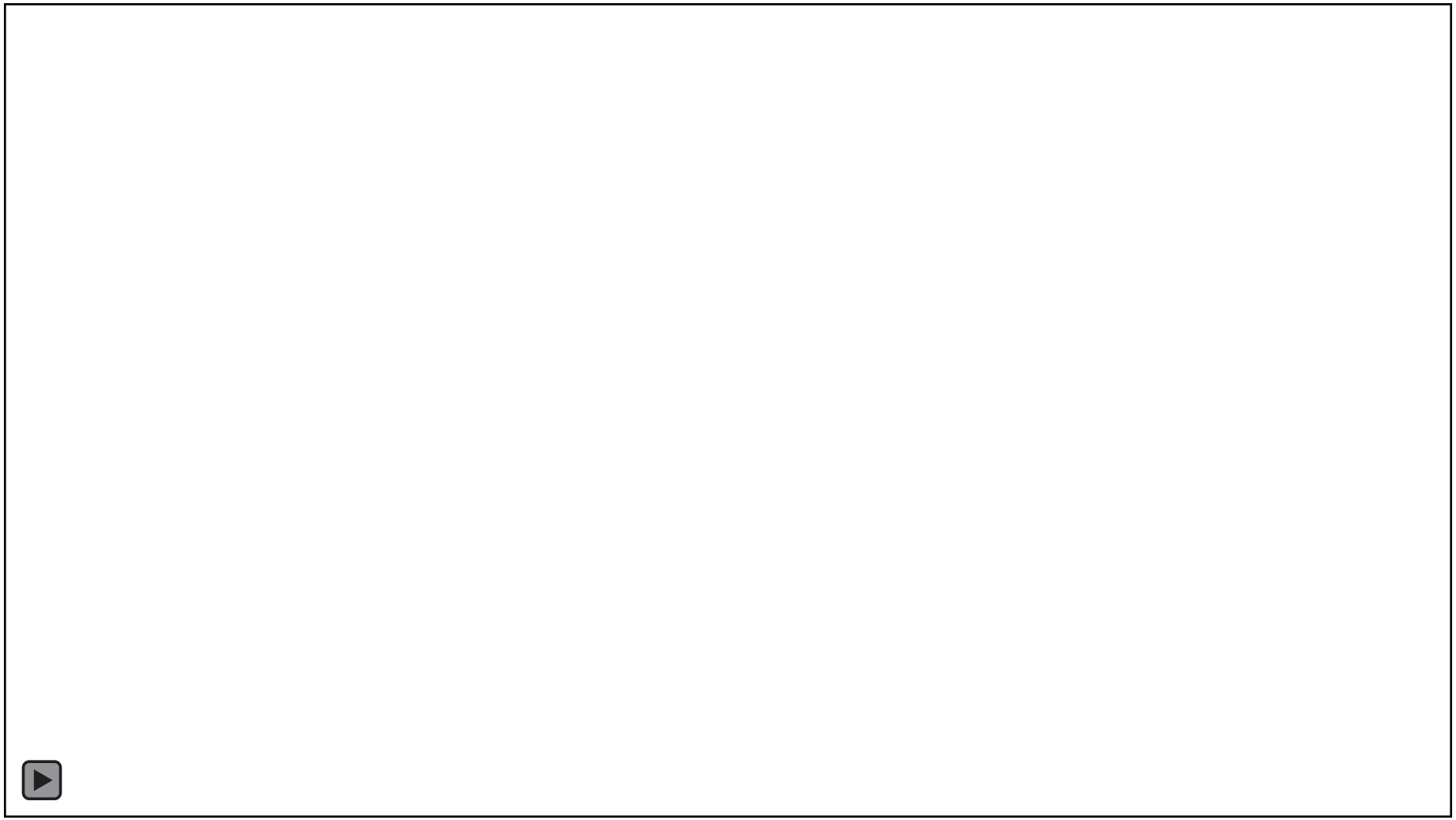
3. Research themes

(a) Carbonate escarpments



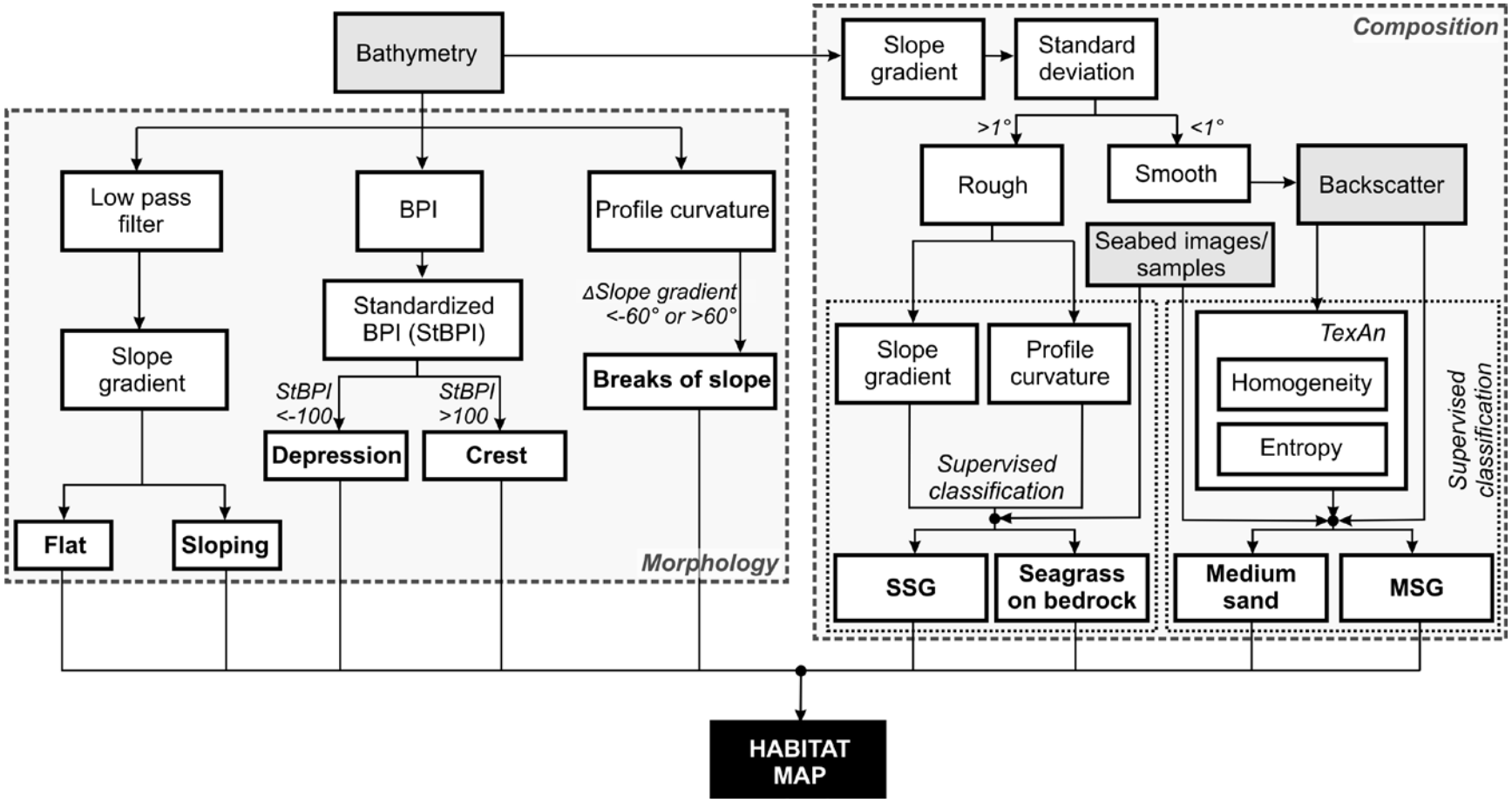
3. Research themes

(b) Messinian Salinity Crisis



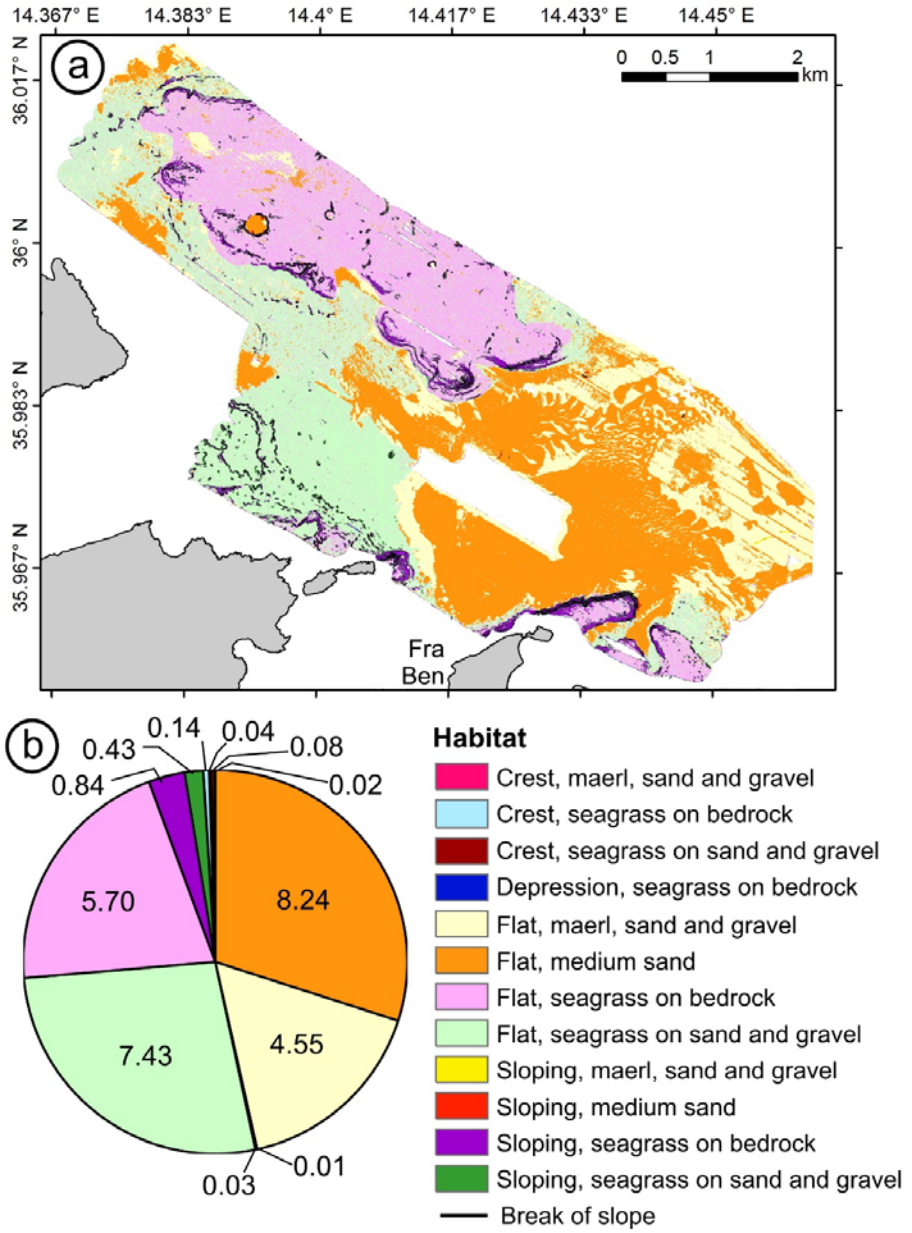
3. Research themes

(c) Geomorphometry & Habitat mapping

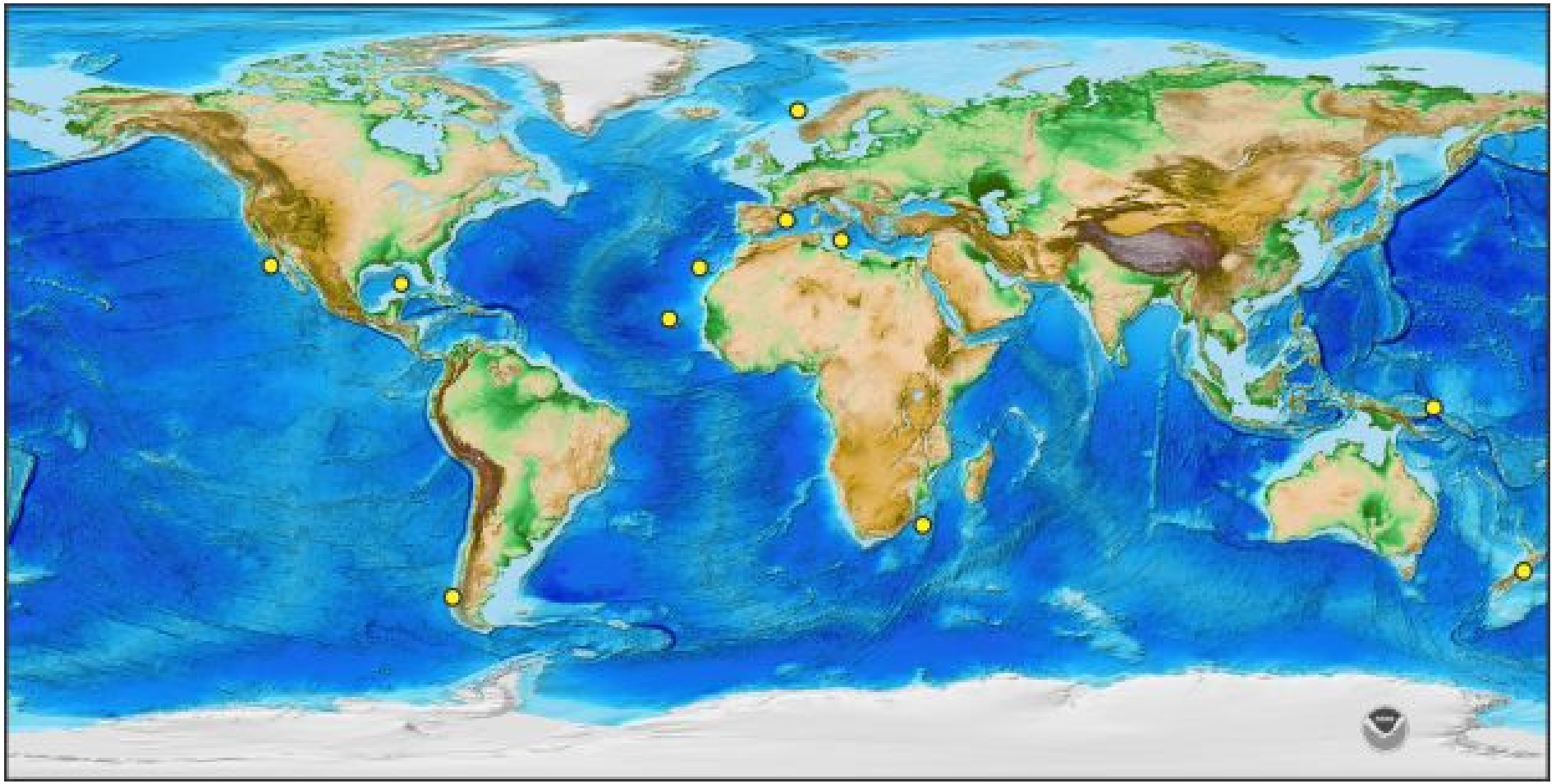


3. Research themes

(c) Geomorphometry & Habitat mapping



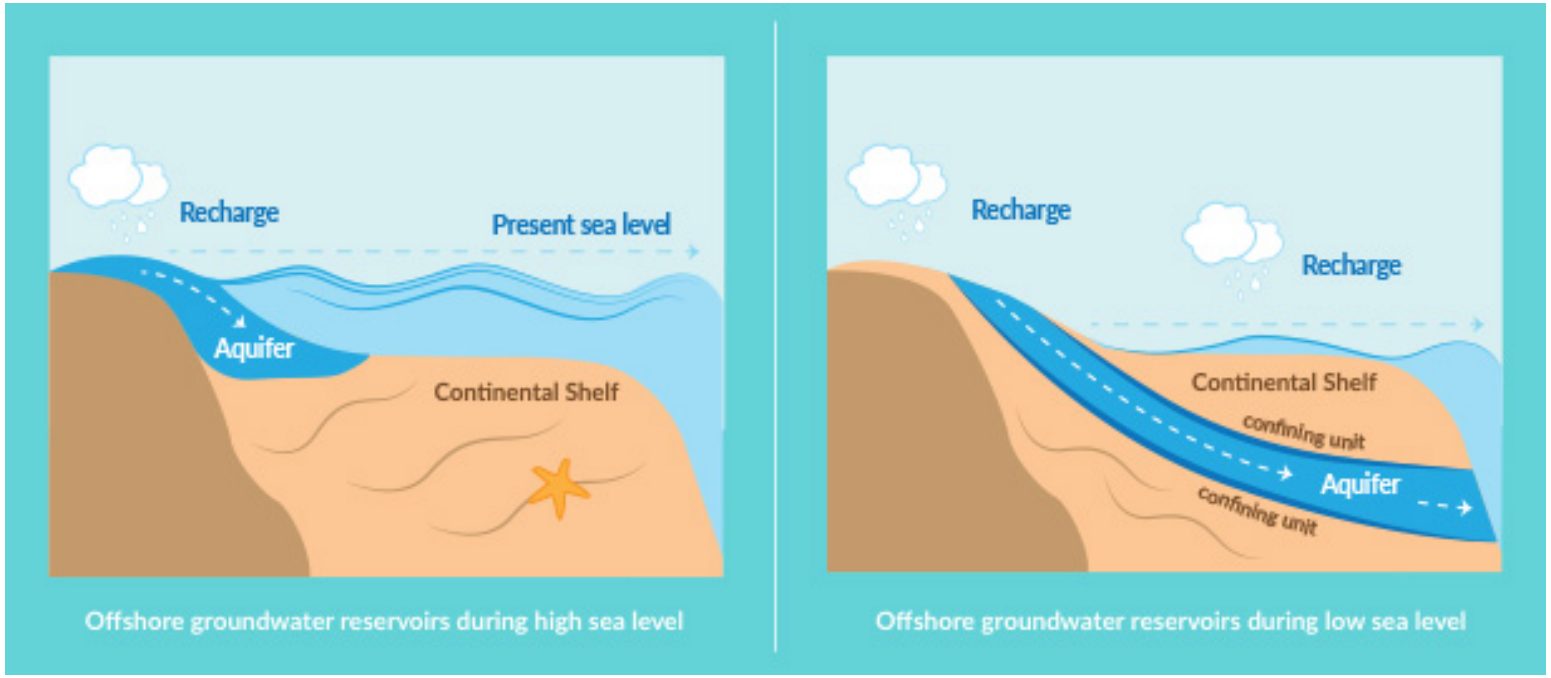
4. Research activity



5. Research projects

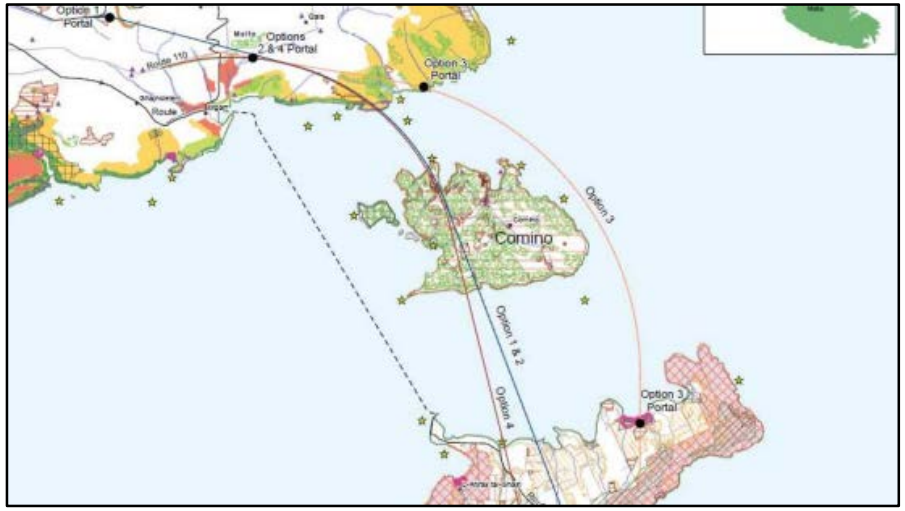
MARCAN

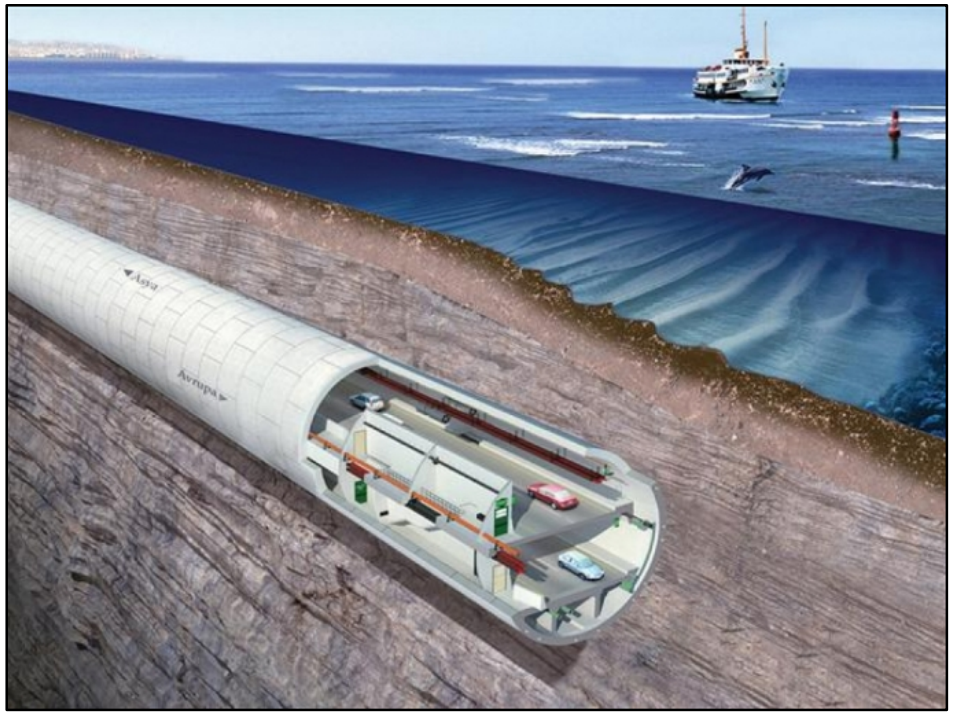
erc



5. Research projects

Transport Malta





5. Research projects

EMODnet

European Marine Observation and Data Network

S⁴SLIDE

Significance of Modern and Ancient Submarine Slope LandSLIDEs

IGCP-640

MedSalt

IAG

GEOMORPHOLOGY
GEOMORPHOLOGIE

AIG

6. Collaborators

National Oceanography Centre Southampton
UNIVERSITY OF SOUTHAMPTON AND NATURAL ENVIRONMENT RESEARCH COUNCIL

IFM-GEOMAR

OGS

CSIC
COMO SEGUIR INVESTIGANDO EN CRISIS

UBO
université de bretagne occidentale

NIWA
Taihoro Nukurangi

UCD DUBLIN

C A U

MBARI

L-Università ta' Malta

7. Expertise

Seafloor surveying

Acquisition, processing, interpretation and quantitative analyses of **multibeam echosounder, sidescan sonar, sub-bottom profiling and 2D/3D seismic reflection data, ROV imagery/samples, seafloor sediment samples (gravity, piston, box and multi coring), water column samples (CTD, Niskin bottles)**.

Laboratory analyses

Rock, sediment and water sample preparation/analyses (MSCL, XRF, SEM, EDAX, geochronology, X-radiography, laser granulometry, spectrophotometry, geotechnical and index measurements).

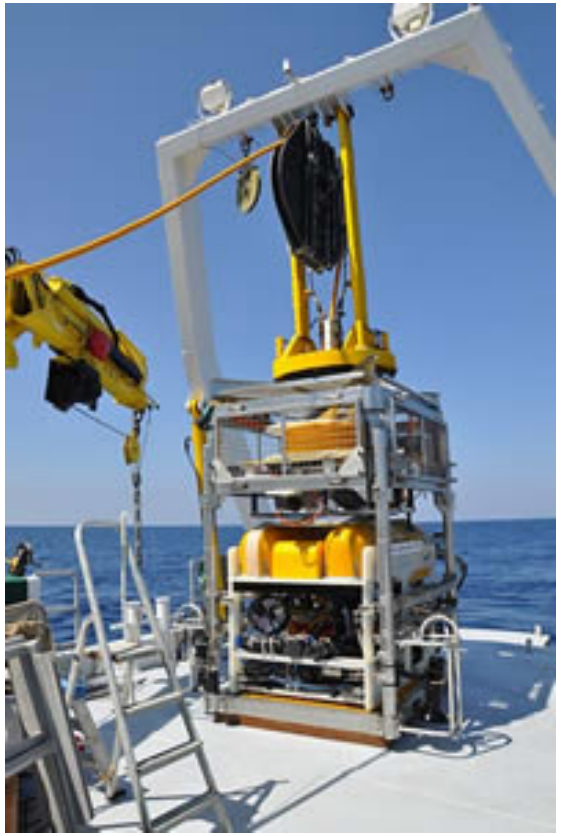
8. Research vessels



RV Hercules

Length: 37.3m
Beam: 6.7m
Configuration: Monohull
Draft: 1.5m (thrusters deployed 2.1m)
Engines: Two Caterpillar 900-horsepower 3412 diesel engines
Power Supply: Two 65kw and one 30kw Northern Lights generators
Fuel Capacity: 26,500 litres
Cruising Speed: 10 knots
Range: 1,000 nautical miles

8. Research vessels



Model: Seaeye Panther XT
Length: 1.750 m
Height: 1.217 m
Width: 1.060 m
Weight: 500 kg
Forward Thrust: 220 kg
Lateral Thrust: 170 kg
Vertical Thrust: 75 kg
Payload: 105 kg
Maximum Working Depth: 1000 m

8. Research vessels



MV Gold Finder



MV Wilfred

8. Research vessels



Length: 33m
Beam: 6.1m
Draft: 1.5m
Engines: Two GM 16V149TI diesel engines
Power Supply: 3200 bhp
Fuel Capacity: 28,000 litres

8. Research vessels



RV Tangaroa



RV Suroit



RV Meteor



RV Poseidon



OGS Explora



RV Sonne



RV Sarmiento de Gamboa



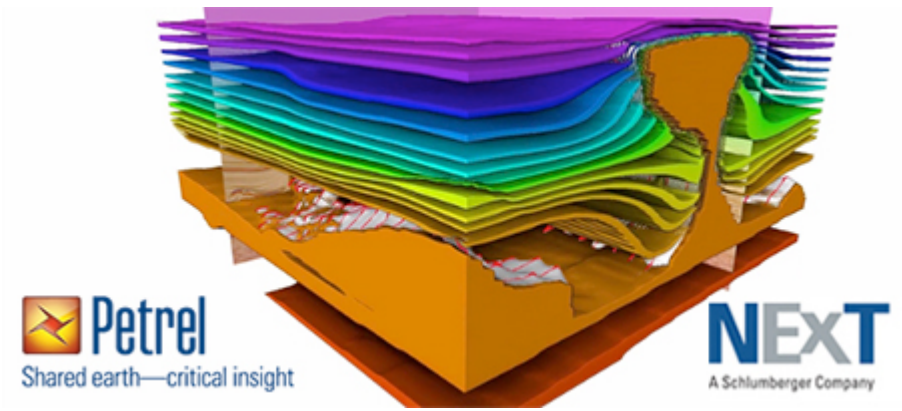
RV Hesperides



RV Urania

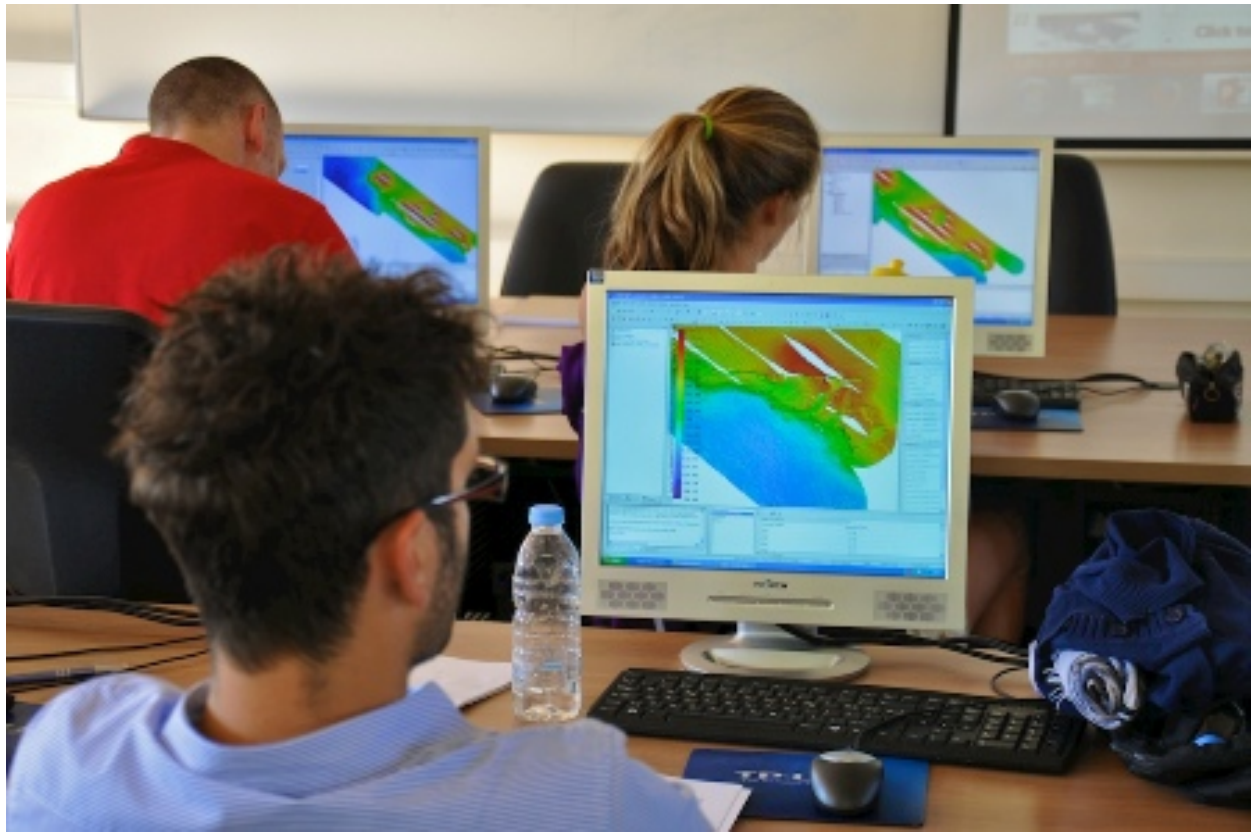
9. Facilities







10. Training



Seafloor Exploration Training Course

Study-units at Master's level:

GSC5200 Geology I
OMS5001 Scientific Baseline of Oceanography

Study-units at undergraduate level:

GSC1100 - Geology 1 - Fundamentals of Geology
GSC1400 - IT Skills for Geoscientists (GIS)
PHY3212 Science of the Ocean Floor

10. Training

MaRHE CENTER

MAPPING TECHNOLOGIES IN CORAL REEF ENVIRONMENTS

Training Course

April/May 2019



Organised by:
Submarine Geomorphology Working Group (IAG)
at the
MaRHE center – Magoodhoo, Faafu Atoll, Republic of Maldives

Thank you!

Aaron Micallef
aaron.micallef@um.edu.mt

