

# GEHAB 2022

Marine Geological & Habitat Mapping - Venice, Italy



San Servolo Island, 16<sup>th</sup>-20<sup>th</sup> May 2022

## PROGRAM

### Golden Sponsors



### Bronze Sponsors



**Monday 16<sup>th</sup> May 2022 – Workshop**  
**“Ocean mapping in the Anthropocene: new technologies and Artificial Intelligence (AI) tools”**

- 9.30 Welcome and introduction
- 09:40 Francisco Gutiérrez (GeoAcustics Ltd., U.K.)  
THE POTENTIAL OF ARTIFICIAL INTELLIGENCE IN PHASE-MEASURING BATHYMETRIC SONAR. PRACTICAL DEMONSTRATION WITH HISTORICAL DATA.
- 10:15 Knut Hartmann, Kim Knauer and Constantin Sandu (EOMAP)  
SHALLOW WATER BATHYMETRY FOR EVERYONE – HANDS ON WORKSHOP ON THE NEW SDB ONLINE SOLUTION AND SCIENCE BACKGROUND. PRACTICAL DEMONSTRATION (PLEASE BE READY WITH YOUR LAPTOP AND A GIS SOFTWARE)
- 11:00 Coffee Break**
- 11:30 KONGSBERG (title to be defined)  
PRESENTATION AND REAL TIME DEMONSTRATION ON BOARD LITUS VESSEL
- 12:15 Dear Iason-Zois (GEOMAR)  
THE EFFECT OF SPATIAL AUTOCORRELATION IN MACHINE LEARNING-BASED MODELING OF DEEP-SEA POLYMETALLIC NODULES SPATIAL DISTRIBUTION (PRACTICAL EXERCISES, MATERIAL WILL BE SENT IN ADVANCE)
- 13:00 Lunch**
- 14:00 MARINE IMAGE ANALYSIS: FROM MANUAL IMAGE ANNOTATION TO MARINE COMPUTER VISION, FROM THERE TO MARINE DATA SCIENCE
- 14:45 R2Sonic - to be confirmed
- 15:30 Coffee Break**
- 16:00 Federica Fogliani (CNR-ISMAR), Antonio Petrizzo (CNR-ISMAR) and Fulvio Marelli (Space42)  
RELIANCE PROJECT - INNOVATIVE AND INTERCONNECTED SERVICES TO SUPPORT THE MANAGEMENT OF THE RESEARCH LIFECYCLE WITHIN THE MARINE COMMUNITY. PRACTICAL DEMONSTRATION AND “HANDS ON EXERCISES ON”
- 17:00 Discussions and Conclusions
- 17:30 END**

## Tuesday 17<sup>th</sup> May 2022

### WELCOME

- 8:30 Registration Open  
9:10 Opening Remarks  
9:30 **Key note** by H. Gary Greene and Vaughn Barrie  
BENEFITS OF HABITAT MAPPING IN AN URBAN SEA – THE NE PACIFIC MARGINAL SALISH SEA  
9:50 Gold Sponsor Welcome: Kongsberg

### Session 1

#### Shelf and Deep Sea habitats

Chair: P. Harris and M. Dolan

- 9:55 G.R. Cochrane, A. Cole, M. Sherrier, S. Hallahan, A. Roca-Lezra, R. Kvittek  
BENTHIC HABITAT IN CALIFORNIA STATE WATERS OFFSHORE OF MORRO BAY
- 10:10 L.H De Clippele, J. Gafeira, V.A.I. Huvenne, S.A. Ragnarsson, S.H. Ólafsdóttir, T. Kutti, J.A.A. Perez, P. Sumida, D. Sowers, J.M. Roberts  
MAPPING AND MORPHOLOGICALLY CHARACTERIZING COLD-WATER CORAL MOUNDS ACROSS THE ATLANTIC OCEAN
- 10:25 J.C.L.G. Fonseca, P. Vannucchi, D. Iacopini, D. Maestrelli, H. Vital, Y.R. Perez  
SEABED MAPPING USING 3D SEISMIC DATA TO INVESTIGATE CONTINENTAL SLOPE MORPHOLOGY AT THE BRAZIL EQUATORIAL MARGIN
- 10:40 M. Kanari, M. Tom, M. Rubin Blum, B. Herut, A. Giladi, O. Bialik, A. Meilijson, A. Neuman, G. Antler, Y. Makovsky  
DEEP SEA HABITAT MAPPING AND CHARACTERIZATION OF A SEEPAGE COMPLEX USING MULTIBEAM DATA, AUV AND ROV SURVEYS AT THE PALMAHIM DISTURBANCE, ISRAEL
- 10:55 Break (with demonstration by Kongsberg)**
- 11:40 T.R.R. Pearman, P.E. Brewin, F. Skeljo, P. Brickle  
MAPPING VULNERABLE MARINE ECOSYSTEMS IN THE SOUTH-WEST ATLANTIC DEEP-SEA
- 11:55 M. Schumacher, V. A.I. Huvenne, C. Devey, P. Martínez Arbizu, A. Biastoch, S. Meinecke  
THE ATLANTIC MARINE LANDSCAPE: A BASIN-WIDE CLUSTER ANALYSIS OF NEAR-SEAFLOOR PHYSICO-CHEMICAL CONDITIONS
- 12:10 D.J.B. Swanborn, V.A.I. Huvenne, S.J. Pittman, A.D. Rogers, M.L. Taylor, L.C. Woodall  
MAPPING SEASCAPE SPATIAL HETEROGENEITY AS DRIVER OF SEAMOUNT-ASSOCIATED FISH - A CASE STUDY FROM THE SOUTHWEST INDIAN RIDGE SEAMOUNTS
- 12:25 F. Foglini, J.A. Trotter, M. Taviani, C. Mazzoli, A. Remia, M. McCulloch, P. Montagna  
HABITAT MAPPING OF SOUTHWESTERN AUSTRALIAN SUBMARINE CANYON SYSTEMS
- 12:30 Lunch**

Light talk

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|-------|--|--------------|
| 14:00 | K.T. Bigham, A.A. Rowden, D.A. Bowden, D. Leduc<br>BENTHIC COMMUNITY RESILIENCE TO HABITAT ALTERATION CAUSED BY AN EARTHQUAKE-TRIGGERED TURBIDITY FLOW IN KAIKŌURA CANYON, AOTEAROA NEW ZEALAND" | Virtual talk |
| 14:15 | M. Jeffers, H.C. Bostock, D. Gürer, R.J. Beaman<br>INTERMEDIATE AND DEEP WATER MASSES AND CIRCULATION IN THE TASMAN AND CORAL SEAS USING CTD AND MULTIBEAM DATA FROM R/V FALKOR VOYAGES 2020-21  | Virtual talk |
| 14:30 | T. Kwasnitschka, K. Koeser, A. Bernstetter<br>INCREASING SITUATIONAL AWARENESS IN SEAFLOOR RESEARCH FROM SURVEYING TO VISUALIZATION—AN UPDATE OF THREE PROJECTS                                  | Virtual talk |
| 14:45 | V.P. Mahale, P. Dewangan, B. Chakraborty<br>BACKSCATTER IMAGERY REVEALS FEATURE RICH CONTINENTAL SLOPES OF CENTRAL WESTERN CONTINENTAL MARGIN OF INDIA   |              |
| 15:00 | M.A. Lisniewski, V. Harlamov, V H.R. Lopes, E.P. Frazão, A. A. Neto<br>MAPPING POTENTIAL MARINE HABITATS ON THE RIO GRANDE RISE  | Light talk   |

## Session 2

### Coastal and shallow water habitats

Chair: F. Madricardo, A. Kotilainen

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|--------------------|---|--------------|
| 15:05              | J. Berglund, M. L. Rasmussen, C. Paz Von Friesen, M. Åkerholm, S. Huber, L. B. Hansen, P-O. Moksnes<br>NATIONWIDE MONITORING OF SUBMERGED AQUATIC VEGETATION IN SWEDEN USING A COMBINATION OF DRONE AND SATELLITE IMAGERY                                     |              |
| 15:20              | M.C. Espriella, V. Lecours<br>OPTIMIZING THE OBSERVATION SCALE FOR COASTAL HABITAT MAPPING  |              |
| <b>15.35 Break</b> |   |              |
| 16:00              | L. Fallati, A. Savini, A. Giulia Varzi, V. Bracchi, P. Bazzicalupo, A. Rosso, M. Muzzupappa, D. Basso<br>3D UNDERWATER PHOTOGRAMMETRIC INVESTIGATION OF PECULIAR COLUMNAR CORALLIGENOUS BIOCONSTRUCTIONS OFFSHORE MARZAMEMI (SOUTHEASTERN SICILY, IONIAN SEA) |              |
| 16:15              | S. Joshi<br>INTEGRATING SEDIMENT DYNAMICS INTO HABITAT MAPPING APPROACHES USING SEDIMENT MOBILITY INDICES AND SEABED CLASSIFICATION IN GALWAY BAY, IRELAND  |              |
| 16:30              | M.A.H. Muhamad, R. Che Hasan, N. Md. Said, J. L. S. Ooi<br>SEAGRASS MAPPING USING SPECIES DISTRIBUTION MODELING AND MULTIBEAM ECHOSOUNDER AROUND REDANG ARCHIPELAGO   |              |
| 16:45              | H. Vital, A.C. Bastos, J.M.L. Dominguez, T.C.M. Araujo<br>ADVANCES IN THE STUDY OF GEOHABITATS ON THE BRAZILIAN CONTINENTAL SHELF: IMPORTANCE OF INCT AMBTROPIC   |              |
| 17:00              | L. Jemily, N. Mhammdi, A. Raki, A. Trakadas, Z. Al-Hamdani, J. B. Jensen, L. Huff   | Virtual talk |

MORPHOLOGY AND MIGRATION CHARACTERISTICS OF ESTUARINE BEDFORMS:  
CASE OF BOUREGREG ESTUARY, MOROCCO

- 17:15 C. Roelfsema, M. Lyons, K. Markey, C. Say, E. Kovacs, E. Kennedy, S. Phinn, N. Murray, H. Fox, B. Bambic, P. Gerstner, M. Skone, G. Asner  
INNOVATIONS ON GLOBAL CORAL REEF GEOMORPHIC AND BENTHIC HABITAT  
MAPS: THE ALLEN CORAL ATLAS Virtual talk
- 17:30 L. Janowski, R. Wroblewski, M. Rucinska, A. Kubowicz-Grajewska, P. Tysiac  
UTILIZATION OF HIGH-RESOLUTION AIRBORNE LIDAR BATHYMETRY FOR  
AUTOMATIC MAPPING OF SHALLOW SEAFLOOR, A CASE STUDY FROM THE  
SOUTHERN BALTIC Virtual Light talk
- 17:35 K. Robert, K. Charmley, R. Command, K. Baker, F. de Leo  
SPATIO-TEMPORAL MAPPING AND MONITORING OF A SUB-ARCTIC INLET Virtual Light talk
- 17:40 D. S. Galvez, G. M. Scarpa, A. Petrizzo, F. Braga, I. Guarneri, T. Lahami,  
L. Zaggia, A. Berton, F. Madricardo. INTEGRATION OF MULTI-BEAM AND  
UAV DATA TO MONITOR MORPHOLOGICAL CHANGES IN TIDAL SALT MARSHES  
OF THE VENICE LAGOON Light talk
- 17:45 **END**

## Wednesday 18<sup>th</sup> May 2022

### Session 3

#### Submerged landscapes and cultural heritage

Chair: F. Foglini, G. Green

- 09:00 F. Madricardo, M. Bassani, G. D'Acunto, A. Calandriello, A. Petrizzo, I.  
Guarneri, D. Galvez, A. Kruss, J. Lowag, F. Foglini  
UNDERWATER CULTURAL HERITAGE HIGH-RESOLUTION MAPPING: CASE  
STUDY FROM THE VENICE LAGOON
- 09:15 H.C. Cawthra, I.E. Esteban, J. Pargeter, E.C. Fisher  
ANCIENT LAND-SEA CONNECTIONS IN M'PONDOLAND, ON THE SOUTH  
AFRICAN WILD COAST Virtual talk

### Session 4

#### The Anthropocene and the effect of human footprint on marine habitats

Chair: F. Foglini, G. Green

- 9:30 **Key note** by F. Trincardi  
MAPPING THE GLOBAL SEAFLOOR DETECTING HUMAN IMPACTS ON IT
- 9:50 P.T. Harris and T. Maes  
FATE OF PLASTIC POLLUTION IN BENTHIC MARINE ENVIRONMENTS – A MASS BALANCE  
APPROACH

- 10:05 A.T. Kotilainen, M.M. Kotilainen, S. Jokinen, J.J. Virtasalo, A.M. Kaskela  
COASTAL ESTUARIES—BALTIC SEA HABITAT TYPES UNDER THREAT
- 10:20 M.A. Young, K. Critchell, A.D. Miller, E.A. Treml, M. Sams, R. Cavalho, D. Ierodiaconou  
MAPPING THE IMPACTS OF MULTIPLE STRESSORS ON THE DECLINES IN KELPS ALONG THE GREAT SOUTHERN REEF, AUSTRALIA Virtual
- 10:35 A.J. Atchia, V. Lecours, A.E. Braswell, A.H. Altieri  
USING GEOGRAPHIC OBJECT-BASED IMAGE ANALYSIS AND SPECTRAL INDICES TO MAP CHANGES IN COASTAL HABITAT HEALTH FOLLOWING AN OIL SPILL IN MAURITIUS
- 10:50 L. Fulton, C.J. Brown, J. McIntyre, A. Smith, T. Walke  
EVALUATING THE BENEFITS OF SIDE SCAN SONAR AS A DETECTION METHOD FOR ABANDONED, LOST, OR OTHERWISE DISCARDED FISHING GEAR
- 11:05 S. Terracciano, F. De Giosa, C. Donadio, G. Mastronuzzi, A. Rizzo, G. Scardino, G. Scicchitano  
MAPPING THE ANTHROPOGENIC IMPACT ON SEAFLOOR IN THE TARANTO AREA (SOUTHERN ITALY) Light talk
- 11:10 **Break**

**Session 5** **New approaches from coast to deep water habitat mapping**  
(part A) Chair: C. Brown, V. Lecours

- 11:30 C. Fusca, L. Fallati, A. Savini, C. Argentino, B. Ferrè, G. Panieri  
CLASSIFICATION OF ARCTIC SEAFLOOR BASED ON OBJECT-BASED IMAGE ANALYSIS (OBIA) TECHNIQUES
- 11:45 L.M.C de Oliveira, A. Lim, L.A. Conti, A.J. Wheeler  
3D PHOTOGRAMMETRIC CLASSIFICATION OF COLD-WATER CORAL REEFS WITH MACHINE LEARNING – PRELIMINARY RESULTS FROM PIDDINGTON MOUND, NE ATLANTIC
- 12:00 R.V. Garone, T.I. Birkenes Lønmo, F. Tichy, M. Diesing, T. Thrones, A. Schimel, L. Løvstakken  
DEEP LEARNING FOR SEAFLOOR SEDIMENT MAPPING: A PRELIMINARY INVESTIGATION USING U-NET Virtual light
- 12:05 R. Arosio, B. Hopley, A. J. Wheeler<sup>1,3</sup>, A. Lim, F. Sacchetti, L. A. Conti, T. Furey  
FULLY CONVOLUTIONAL NEURAL NETWORKS APPLIED TO MARINE GEOMORPHOLOGY MAPPING ON THE IRISH CONTINENTAL SHELF DELIVER SATISFACTORY RESULTS FOR A MODEST EFFORT
- 12:20 E. Alevizos, A. Makris, V. C. Nicodemou, I. Oikonomidis, A. Roussos, D. D. Alexakis.  
A DEEP LEARNING APPROACH FOR SHALLOW SEAFLOOR MAPPING USING DRONE-BASED IMAGERY – INSIGHTS FROM ACTYS PROJECT
- 12:35 Lunch**
- 13:30 P. Feldens, J.S. von Deimling, P. Held, L. Bramanti, F. Espino, F. Otero-Ferrer  
ACOUSTIC FINGERPRINT OF THE BLACK CORAL ANTHIAPATELLA WOLLASTONI IN MULTIBEAM ECHO SOUNDER DATA Virtual talk
- 13:45 T. McClinton  
IMPROVED BENTHIC GEOLOGIC MAPPING USING OBJECT-BASED AND MACHINE-LEARNING TECHNIQUES Virtual talk

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|--------------|--|-----------------|
| 14:00        | O. Pizarro, J. Shields, G. Wakeham, B. Leighton, J. Lee, G. D’Urso, S. Williams, R. Fitch<br>SCALABLE BENTHIC CHARACTERIZATION USING MULTIPLE BOTTOM-FOLLOWING IMAGING DRIFTERS  | Virtual<br>talk |
| 14:15        | J. Shields, O. Pizarro, S.B. Williams<br>FEATURE SPACE EXPLORATION FOR PLANNING INITIAL BENTHIC AUV SURVEYS  | Virtual<br>talk |
| 14:30        | V. Lecours, A. Oxtan<br>OPTIMIZING ENSEMBLE MODELS TO IDENTIFY SUITABLE HABITAT OF COLD-WATER CORAL SPECIES IN THE NORTHERN GULF OF MEXICO   |                 |
| 14:45        | B. Misiuk, C.J. Brown, V. Ferrini, S.C. Lowe, T. Trappenberg<br>COMPARING MANUAL AND AUTOMATED FEATURE ENGINEERING APPROACHES FOR MAPPING SEABED SEDIMENTS IN THE BAY OF FUNDY, CANADA   |                 |
| 15:00        | R. Nanson, D. Dove, R. Arosio, J. Guinan, L.R. Bjarnadóttir<br>ADVANCEMENT OF A TWO-PART SEABED GEOMORPHOLOGY MAPPING SCHEME FOR MULTIDISCIPLINARY APPLICATIONS: PART 2 - GEOMORPHOLOGY  |                 |
| 15:15        | M. Roche, T. van Dijk, C. Mesdag, X. Lurton, L. Berger, R. Fezzani, P. Fietzek, S. Gastauer, S. Simmons, D. Parsons, M.K. Breteler<br>THE BACKSCATTER IN FLUME PROJECT (BSiF): MEASUREMENTS OF SEDIMENT BACKSCATTER IN A FLUME – PRELIMINARY EXPERIMENT RESULTS AND PROSPECTIVE" |                 |
| <b>15.30</b> | <b>Break</b>   |                 |

**Session 5 (part B) New approaches from coast to deep water habitat mapping**  
Chair: L. R. Bjarnadottir, M. Roche

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|-------|---|---------------|
| 16.00 | J.S. von Deimling, P. Held, J. Friedrich, C. Straßburger<br>FROM INTERPOLATED SURFACES TO 3D POINT CLOUD ANALYTICS FOR BETTER HABITAT MAPPING                   |               |
| 16:15 | M. Troup, D. Barclay, C. Brown, E. Bushev, K. Davies, A. Comeau, R. Davis<br>CLASSIFYING SURFICIAL SEDIMENT USING A GLIDER-MOUNTED SINGLE-BEAM SONAR            |               |
| 16:30 | M. Di Stefano<br>A LAYBACK MODEL FOR GEOREFERENCING UNDERWATER IMAGERY FROM A TOWED CAMERA SYSTEM   |               |
| 16:45 | A.R. Ilich, B. Misiuk, V. Lecours, S.A. Murawski<br>DEMONSTRATING THE UTILITY OF THE MULTISCALEDTM PACKAGE FOR SEAFLOOR HABITAT MAPPING                         |               |
| 17:00 | M.F.J. Dolan, R.E. Ross, G. Gonzalez-Mirelis, P. Buhl-Mortensen<br>LESSONS LEARNED FROM AN EVER-EXPANDING BIOTOPE MAP   | Light<br>talk |
| 17:05 | I.Z. Gazis, J. Greinert<br>THE EFFECT OF SPATIAL AUTOCORRELATION IN MACHINE LEARNING-BASED MODELING OF DEEP-SEA POLYMETALLIC NODULES SPATIAL DISTRIBUTION       | Light<br>talk |
| 17:10 | F.J. Gutiérrez, R. Dowdeswell, B. Milner, W. Wang, D. Websdale<br>THE POTENTIAL OF ARTIFICIAL INTELLIGENCE IN PHASE-MEASURING BATHYMETRIC SONAR DATA PROCESSING | Light<br>talk |

17:15 **Poster session Flash Presentation (1 minute each poster)**  
17:40 **Poster session “Grecale Room” with refreshment**  
19:00 **END**

## Thursday 19<sup>th</sup> May 2022

9:10 Gloden sponsor2: R2Sonic

### **Session 5 (part B) New approaches from coast to deep water habitat mapping** Chair: T. Le Bas, G. Cochrane

9:15 **Virtual Key note** by Jamie McMichael-Phillips  
SEABED 2030

9:35 C. Marques, M. Ribeiro, A. Moura, C. Monteiro, L. Veiga, H. Leonor, K.K. Knut  
USING SATELLITE-DERIVED BATHYMETRY DATA FROM 4S PROJECT TO MONITOR SHALLOW WATER AREAS—THE CASE OF BUGIO (PORTUGAL) Light talk

9:40 D. Mallace, J. Wheeler  
COLLECTING HABITAT DATA DOESN'T HAVE TO IMPACT THE HABITAT—USING USVs TO COLLECT OCEAN DATA IN A CARBON NEUTRAL & ENVIRONMENTALLY SAFE MANNER Light talk

9:45 B. McCormack, M. Borrelli  
USING UNCALIBRATED REFLECTIVITY BACKSCATTER FROM THE BATHYMETRIC DATA STREAM OF A PHASE-MEASURING SIDESCAN SONAR: OBJECT DETECTION AND BOTTOM CLASSIFICATION Light talk

9:50 A.C.G. Schimel, M.F.J. Dolan, S. Chand, T. Thorsnes, L. Bjarnadottir  
ISKAFFE: A TOOL FOR BACKSCATTER DATA QUALITY CONTROL Light talk

9:55 M. Steinsiek, K. Hartmann, K. Knauer, C. Kleih, M. Siegmann  
AI MEETS SEABED: MAKING THE BENTHIC ANALYSIS OF VIDEO RECORDS, AIRBORNE AND SATELLITE DATA MORE EFFECTIVE Light talk

10:00 K. Trzcinska, J. Tegowski, P. Pocwiardowski, L. Janowski, J. Zdroik, A. Kruss, M. Rucinska, Z. Lubniewski, J. Schneider von Deimling  
CHARACTERIZATION OF BENTHIC HABITATS USING ACOUSTICALLY CALIBRATED MBES AND ANGLE VARYING GAIN CORRECTION OF BACKSCATTER—AS A PART OF ECOMAP PROJECT Light talk

10:05 H. Van Rein, E. Manca, A. Cordingley, G. Lourenço, A. Audsley, T. Hooper, L. Molloy, J. Day, P. Walker, M. Hartley, L. Robinson  
NOVEL APPLICATION OF EUNIS-BASED MAPPING PRODUCTS TO DEMONSTRATE THE POTENTIAL FOR MARINE SPATIAL PLANNING PROCESS USING A NATURAL CAPITAL-BASED APPROACH IN THE UK Light talk

10:10 P. Wintersteller, K. Karantzas, J. Quintana, P. Nomikou, R. Neville, K. Baika, D. Lampridou, and NEANIAS team members  
THE NEANIAS CLOUD-BASED UNDERWATER SERVICES Light talk

- 10:15 R. Devillers, L. ElMoussaoui, E. Lebreton, A. LeQuilleuc, A. Aubry, T. Claverie, A. Collin, Y. Lubac, T. Schmitt, M. Jasinski  
IMPROVING SEAFLOOR AND MARINE HABITAT MAPPING IN DATA POOR REGIONS USING ICESAT-2 SATELLITE-BASED LIDAR AND VERY-HIGH RESOLUTION IMAGERY FUSION
- 10:30 K. Hartmann, K. Knauer, C. Kleih, J. Wenzel, J. Berglund, C. Paz von Friesen, R. Santos, V. Marques, A. Moura, M. Filippone, D. Adhiwijna, M. Stender, J. Banton, E. Mondon, J. Beaudoin, D. Urdaneta, M. Rovere, C. Pellegrini, V. Funari, A. Mercorella, L. Vigliotti, F. Madricardo, A. Remia, I. Conese, V. Drakopoulou, V. Kapsimalis, S. Reizopoulou, D. Sakellariou, G. Rousakis, M. Salomidi  
SHALLOW WATER MAPPING AND MONITORING IN THE BROWSER – SDB-ONLINE
- 10:45 G. Summers, A. Lim, A., A.J. Wheeler  
A GEOMORPHOLOGICAL OBJECT-BASED IMAGE ANALYSIS APPROACH TO INVESTIGATE THE HYDRODYNAMICS SURROUNDING COLD-WATER CORAL MOUNDS
- 11:00 Break**
- 11:15 M. Papaelias, F. P. García Márquez, S. Marini, F. Foglini, F. Madricardo, Pedro José Bernalte Sánchez; V. Jantara Junior  
LONG-TERM AUTONOMOUS ROBOTIC SOLUTIONS FOR COASTAL TO DEEP SEAFLOOR ENVIRONMENT MAPPING AND MONITORING

**Session 6**

**Habitat mapping and climate change**

Chair: A. Bastos, B. Todd

- 11:30 J.V. Barrie, H.G. Greene  
CLIMATE CHANGE AND AN URBAN SEA – IMPACT OF THE EVENTS OF 2021 ON THE SALISH SEA
- 11:45 C. J. Brown, B. Misiuk, B. DiTrolino, T. Trappenburg, S. C. Lowe, K. Robert  
BENTHIC ECOSYSTEM MAPPING FOR SUSTAINABLE OCEAN STEWARDSHIP IN A SHIFTING OCEAN CLIMATE
- 12:00 J. Harff, J. Dudzińska-Nowak, Wenyan Zhang, F. Foglini, Jakub Miluch, J. Zhang  
MARGINAL SEAS TASK GROUP OF THE DEEP-TIME DIGITAL EARTH (DDE), IUGS BIG SCIENCE PROGRAM
- 12.15 **Lunch**

**Session 7  
(Part A)**

**Habitat mapping for maritime spatial planning (MSP) with in an ecosystem based approach**

Chair: A. Bastos, B. Todd

- 13:15 A. Fedorovska, M. Kostanda, I. Barda, I. Andersone  
INVESTIGATION OF NATURA 2000 MARINE BENTHIC HABITATS IN THE LATVIAN EEZ: IDENTIFICATION, CHALLENGES AND DESIGNATION OF NEW MPAS
- 13:30 S.L. Goode, A.A. Rowden, D.A. Bowden, M.R. Clark, F. Stephenson  
USING PATCH CHARACTERISTICS OF BENTHIC COMMUNITIES DERIVED FROM HABITAT SUITABILITY MODELLING TO INFORM SPATIAL MANAGEMENT OF THE MARINE ENVIRONMENT

Virtual

- 13:45 A. Giladi, M. Kanari, T. Katz, G. Tibor  
MONITORING SEDIMENT TRANSPORT AND GRAIN SIZE DYNAMICS ALONG THE ISRAELI CONTINENTAL SHELF USING MULTIBEAM BATHYMETRY AND BACKSCATTER
- 14:00 K. Ismail, A. Ali, Z. Bachok, C.D.M. Safuan, R. Che Hasan, A.A. Chan, N.M. Said  
A STEP TOWARDS EFFECTIVE ECOSYSTEM-BASED MANAGEMENT IN MALAYSIA MARINE PARKS: STANDARDISED BENTHIC CLASSES USING MARINE LANDSCAPE APPROACH
- 14:15 F. McGrath, B. Picton, C. Morrow, L. Scally, N. Pfeiffer  
SYNTHESIS AND DEVELOPMENT OF 'SENSITIVE ECOSYSTEM ASSESSMENT AND ROV EXPLORATION OF REEF' (SEAROVER) SURVEY OUTPUTS FOR RESEARCH AND POLICY SUPPORT
- 14:30 P. S. Menandro, F.V. Vieira, A.C. Lavagnino, G.C. Boni, T. Franco, A.C. Bastos  
WHY DOES BENTHIC HABITAT MAPPING MATTER FOR BRAZILIAN SCIENCE AND MANAGERS? A MULTI-SCALE APPROACH IN THE SOUTHEAST BRAZILIAN SHELF
- 14:45 S. Millán, N. Rivas, J. Cortina, D.F. Morales, L. Chasqui  
BENTHIC HABITAT MAPPING UNDER MULTILEVEL APPROACH IN THE ARCHIPELAGO OF SAN ANDRÉS, PROVIDENCIA AND SANTA CATALINA, COLOMBIAN CARIBBEAN
- 15:00 **Break**

**Session 7  
(Part B)**

**Habitat mapping for maritime spatial planning (MSP) within an ecosystem based approach**

Chair: B. Misiuk, T. Pearman

- 15:30 C. Murray, C. Brown, M. Bailey, S. Denney, S. Iverson, Mills-Flemming, V. Gazzola, B. Muisik, F. Whoriskey  
COMBINING SATELLITE IMAGERY AND ACOUSTIC DATA TO SUPPORT HABITAT CHARACTERIZATION OF THE BRAS D'OR LAKE ESTUARY TO SUPPORT STEWARDSHIP OF CULTURALLY, ECOLOGICALLY, AND COMMERCIALY IMPORTANT SPECIES
- 15:45 T. Thorsnes, B.N. Borrevik, N. Tengs-Hagir, H. Welde, G. L. Taranger  
TOWARDS THE BEST MAPPED COASTAL ZONE IN THE WORLD? THE NORWEGIAN MARINE BASEMAPS INITIATIVE
- 16:00 B. Vinha, V.A.I. Huvenne, A. Gori, K. A. Barnhill, C. Wardell, M. Schumacher, S. Piraino, J. M. Roberts, T. H. Hansteen, C. Orejas  
MAPPING OF VULNERABLE MARINE ECOSYSTEM (VME) INDICATOR TAXA OFF CABO VERDE (EASTERN EQUATORIAL ATLANTIC OCEAN)
- 16:15 C. Wardell, J. Strong, A. Haïssoune, A.L. Jones, L. Coals  
MARINE HABITAT MAPPING TO SUPPORT THE USE OF CONSERVATION AND ANTI-TRAWL STRUCTURES IN KEP PROVINCE, CAMBODIA
- 16:30 G. Castellan, L. Angeletti, F. Foglini, V. Grande, P. Montagna, M. Taviani  
TO WHAT EXTENT ARE MESOPHOTIC COMMUNITIES IN THE MEDITERRANEAN SEA PROTECTED BY THE CURRENT CONSERVATION NETWORK? Light talk
- 16:35 H. Vital, J.E.L. Oliveira, A.G. Aquino da Silva, F.E. Silva, V.C. Fontes  
SENSING, INTEGRATION AND ANALYSIS OF DIGITAL INFORMATION IN THE MARINE GEOLOGICAL MAPPING – SEABEDMAP PROJECT. PHASE I Light talk

16:40 T.F. Wanda, E.A. Wiles H.C. Cawthra and A. de Wit  
MULTIBEAM BATHYMETRY AS THE BASELINE FOR MARINE RESEARCH: APPLICATION IN  
MARINE HABITAT MAPPING, SOUTH AFRICA Light talk

**16:45 GEOHAB Annual Meeting**

**Friday 20<sup>th</sup> May 2022 – Field Trip**  
**“To the origins of Venice”**

- 9:00 START FROM SAN SERVOLO ISLAND  
9:30 LIDO INLET: THE MOSE SYSTEM
- 10:00 TREPORTI CHANNEL: A ROMAN ROAD UNDER THE WATER?  
THE SCOURS AT THE TIDAL CHANNEL CONFLUENCES
- 10:15 SAN FELICE SALT MARSHES
- 10:30 SCANELLO CHANNEL
- 11:00 TORCELLO ISLAND: GUIDED TOUR TO THE BASILICA AND MUSEUM
- 13:00** LUNCH BREAK
- 15.00 GUIDED TOUR IN THE LAZZARETTO NUOVO ISLAND
- 17:00 TRAVEL BACK TO SAN SERVOLO
- 18.00 ARRIVAL TO SAN SERVOLO

## Poster Session

### Session 1 Shelf and Dee Sea habitats

- 1 F. Butschek, R. Arosio, T. Furey, A.J. Wheeler  
THE ABC CELTIC SEA PROJECT – ACOUSTIC SEABED CHARACTERISATION AND BENTHIC HABITAT ASSOCIATIONS IN THE CELTIC SEA
- 2 F. Di Giovanna, J. A. Trotter, P. Montagna, M. McCulloch, G. Castellan, V. Grande, M. Taviani, F. Foglini  
HABITAT SUITABILITY MODEL OF THE BEMER CANYON SYSTEM (AUSTRALIA) COLD-WATER-CORAL GROUNDS
- 3 S. Medelytė, A. Šiaulyš, E. Vaičiukynas, K. Buškus, S. Olenin  
BENTHIC BIOTOPE IDENTIFICATION AND CLASSIFICATION IN THE CHALLENGING ENVIRONMENTS: SE BALTIC SEA REEFS AND ARCTIC BAYS IN SVALBARD

### Session 2 Coastal and shallow water habitats

- 4 F. Butschek, J. Appah, A.J. Wheeler  
MAPPING LOCAL AND SPECIES CONTRIBUTIONS TO BETA DIVERSITY IN THE PORCUPINE BANK CANYON
- 5 L. Fallati, A. Savini, C. Argenitino, S. Bünz, G. Panieri  
SEAFLOOR LANDFORMS OF THE CENTRAL PART OF HAakon MOSBY MUD VOLCANO (BARENTS SEA) RECONSTRUCT THROUGH ROV VIDEO PHOTOGRAMMETRY
- 6 A. Gasparotto, C. Bertolini, J. Da Mosto  
CREATING A MAPPING TOOL TO ESTABLISH BEST PRACTICES FOR SALT MARSH RECONSTRUCTION IN THE VENETIAN LAGOON
- 7 S. Innangi, M. Innangi, M. Di Febbraro, G. Di Martino, M. Sacchi, R. Tonielli  
AN ACCURATE METHOD FOR HIGH-RESOLUTION AND CONTINUOUS MAPPING OF LOOSE SEDIMENTS IN THE CONTINENTAL SHELF: TWO CASE STUDIES IN THE MEDITERRANEAN SEA, BAGNOLI-COROGLIO AREA (GULF OF NAPLES, ITALY) AND LAMPEDUSA ISLAND (SICILY CHANNEL, ITALY)
- 8 T. Lahami, I. Guarneri, A. Petrizzo, D. Galvez, V. Grande, F. Foglini, F. Madricardo  
BENTHIC HABITAT MAPPING USING MULTIBEAM ACOUSTICS AND GROUND-TRUTHING TECHNIQUES IN THE TIDAL CHANNELS OF THE NORTHERN VENICE LAGOON
- 9 Le Bas T., Durán R., Bialik O., and Micallef A.  
CARBONATE REEFS AT MESOPHOTIC DEPTHS: OFFSHORE SOUTH-EAST MALTA
- 10 G. Montereale Gavazzi, D. A. Kapasakali, F. Kerckhof, V. Van Lancker, E. Pecceu, K.  
EXPLORING NATURAL HARD-SUBSTRATE HABITAT IN BELGIAN WATERS: CASE STUDY ON A RECENTLY DISCOVERED HOTSPOT
- 11 M. Prampolini, V. Grande, P. D'Ambrosio, G. Di Martino, F. Foglini, S. Innangi, M. Sacchi, C. Silvestrini, R. Tonielli, S. Frascetti  
A NEW BENTHIC HABITAT MAP OF THE CAMPANIA REGION (ITALY) MERGING DATASETS WITH DIFFERENT SOURCE, SPATIAL RESOLUTION AND TIME-PERIOD

- 12 B.J. Todd  
Seafloor mapping in a hypertidal setting: Minas Basin, Nova Scotia, Canada
- 13 R. Tonielli, S. Innangi, M. Contiero, G. Di Martino, F. Molisso, L. Monti, M. Conti, A. Fiorentino, F. Papasodaro, Marco Sacchi  
PRELIMINARY RESULTS FROM NEW DATA ACQUISITION OFF THE INNER SHELF OF GULF OF GAETA, EASTERN TYRRHENIAN SEA, FOR THE GEOLOGICAL MAPPING OF SHEET N° 429 MONDRAGONE, 1:50.000 SCALE (CARG PROJECT)
- 14 A.G. Varzi, L. Fallati, A. Savini, V. A. Bracchi, P. Bazzicalupo, A. Rosso, R. Sanfilippo, M. Bertolino; M. Muzzupappa, D. Basso  
HIGH-RESOLUTION MAPPING OF THE SEAFLOOR OFFSHORE MARZAMEMI VILLAGE (SOUTHEASTERN SICILY, IONIAN SEA): EXTENT AND DISTRIBUTION OF CORALLIGENOUS REEFS

### **Session 3 Submerged landscapes and cultural heritage**

- 15 I. Guarneri, A. Petrizzo, D. Galvez, D. Tagliapietra, F. Madricardo  
UNDERWATER ARCHAEOLOGICAL STRUCTURES AS BIODIVERSITY HOTSPOTS: CASE STUDY FROM THE TIDAL CHANNELS OF THE NORTHERN VENICE LAGOON, ITALY

### **Session 4 The Anthropocene and the effect of human footprint on marine habitats**

- 16 A. Petrizzo, I. Guarneri, D. Galvez, T. Marčeta, V. Moschino, N. Nesto, M. Sigovini, D. Tagliapietra, D. Sallé, M. Rodriguez, F. Madricardo  
MAPPING OF SEAFLOOR MARINE MACROLITTER DISTRIBUTION IN THE VENICE COASTAL AREA

### **Session 5 New approaches from coast to deep water habitat mapping**

- 17 S. Bigelli, V. Ferrero, M. Marro, R. Nardini, M. Demarte, R. Ivaldi  
HYDROGRAPHIC AUTOMATIC TOOL FOR SEDIMENT ANALYSIS AND THEMATIC MAP CASE HISTORY OF GARDA LAKE
- 18 F. Foglini, S. Aracri, M. Belgacem, G. Castellan, J. Chiggiato, F. Falcini, V. Grande, F. Madricardo, P. Montagna, A. Petrizzo, K. Schroeder  
INTEGRATING THE EUROPEAN OPEN SCIENCE CLOUD (EOSC) INFRASTRUCTURE TO PURSUE THE OPEN SCIENCE PRINCIPLES: THE RELIANCE SERVICES PORTFOLIO AND THE USE CASE SCENARIOS OF THE SEA MONITORING COMMUNITY
- 19 V. Grande, F. Foglini, L. Lisciani, S. Frascchetti  
THE AMARE PLUS GEOPORTAL, A TOOL FOR IMPLEMENTING NETWORKS OF MARINE PROTECTED AREAS IN THE MEDITERRANEAN SEA
- 20 R. Nanson, R. Arosio, D. Dove  
PROGRESSION OF A TWO-PART SEABED GEOMORPHOLOGY CLASSIFICATION SCHEME WORKSHOP: PART 2 (MORPHOLOGY)
- 21 S.F. Rende, A. Bosman, A. Annunziatellis, S. Agnesi, L. Rossi, A. Pazzini, M. Angilillo<sup>1</sup>, A. Izzi, M. Giusti  
UNDERWATER PHOTOGRAMMETRY: FULL MOTION VIDEO AND INTEGRATION OF MACHINE LEARNING ALGORITHMS—A CASE STUDY APPLIED TO MSFD SEABED HABITAT MONITORING
- 22 A. Recouvreur, A.J. Wheeler, R. Strachan, P.A. Meere, R.P. Unitt, A. Lim  
OFFSHORE BEDROCK MAPPING: APPLICATIONS FOR REGIONAL OUTCROP AND POTENTIAL REEF HABITAT MAPPING ON THE IRISH CONTINENTAL MARGIN

### **Session 6 Habitat mapping and climate change**

- 23 A.C. Bastos, G.C. Boni, F.V. Vieira, P. M., M.D. Leite, A.C. Lavagnino, N. Oliveira, P.H. Cetto  
FROM INCISED VALLEYS TO SUBMERGED REEFS: THE QUATERNARY LEGACY IN HABITAT DISTRIBUTION

### **Session 7 Habitat mapping for maritime spatial planning (MSP) within an ecosystem based approach**

- 24 Helen Lillis, Eimear O'Keeffe, Aldo Annunziatellis, Sabrina Agnesi, Harriet Allen, Lewis Castle, Jordan Pinder  
EMODNET SEABED HABITATS: COLLECTING HABITAT MAPS ONCE, USING MANY TIMES
- 25 R. Sayre, K. Butler, K. VanGraafeiland, S. Breyer, D. Wright  
ECOLOGICAL COASTAL UNITS – STANDARDIZED GLOBAL SHORELINE CHARACTERISTICS