



**ATLANTIC OCEAN RESEARCH ALLIANCE**

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AORA-CSA - Atlantic Ocean Research Alliance Co-ordination  
and Support Action      *WP9: Seabed and benthic habitat mapping*

**Atlantic Seabed Mapping International Working Group**

# Bathymetry – terrain descriptors at relevant scales



## The North Atlantic

- ~20 mill km<sup>2</sup>
- Mean depth ~ 3900m
- Greatest depth 8380m

### Example: MAREANO mapping programme

- Started 2006
- Total area covered with MBE: 131 000 km<sup>2</sup>
- € 6.5 mill/yr
- € 0.4 mill/1000 km<sup>2</sup>

➔ N Atlantic:

- € 6.5 billion
- € 130 mill/yr – 50 yr

## Realistic approaches

- Prioritization of areas
- Representative areas/transects
- More efficient use of shiptime
- Use of navy/commercial vessels
- Modern techniques AUV etc



# Atlantic Seabed Mapping Working Group

1. Established in December 2014 at the Atlantic Seabed Mapping Workshop held in Dublin as part of the implementation of the Galway Statement on Atlantic Ocean Co-operation.
2. Group consists of representatives from Canada, France, Germany, Ireland, Norway, Portugal, Spain, the United Kingdom and the USA as well as the European Commission and international associations (EuroGOOS, International Hydrographic Bureau, International Federation of Surveyors). Currently 17 members.
3. Chaired by Alan Stevenson (British Geological Survey) until November 2016. New Chair will be Stephen Locke (Geological Survey of Canada)
4. Group has met 5 times in Brussels (February 2014), Cork (July, 2014), St John's (October 2014), New Orleans (February 2016) and Galway (June 2016). Next meeting in Rostock, Germany on November 11 2016.
5. The ASMIWG reports to the Tri-Lateral Implementation Committee. Craig Mclean, Assistant Administrator for Ocean and Atmospheric Research, NOAA; John Bell, Director Bioeconomy, DG Research; Trevor Swerdfager, Assistant Deputy Minister, Ecosystems and Oceans Science Fisheries and Oceans Canada (DFO)

# ASMIWG THEMES (agreed at Dublin Workshop)

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1. Leveraging existing ocean exploration knowledge, infrastructure and programmes;
2. Integrating mapping, observation and forecasting initiatives.
3. Communicating sharing of best practice and action on survey planning, a distributed data warehouse and seabed mapping outputs.
4. Mapping the seabed of the Atlantic Ocean (specifically the North Atlantic), and identifying target pilot areas and the minimum data for reconnaissance.
5. Raising awareness of the need for mapping the Atlantic Ocean seafloor and the value of trans-Atlantic collaboration, and communicating support for existing Atlantic initiatives and policies.

# ASMIWG RECOMMENDATIONS

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1. That all bathymetric data that currently exists is identified and made accessible to the public through the establishment of a North Atlantic Data Portal.
2. That an appropriate planning mechanism to gather information from all collaborative seabed mapping network initiatives is developed and resourced, to underpin future plans and activities.
3. That a Research Vessel Co-ordinator (RVC) is appointed and resourced, to liaise with the multitude of research institutions and organisations that operate scientific and survey vessels equipped with multibeam echosounder systems.
4. That an Atlantic Seabed Mapping Pilot Project is scoped, incorporating targeted sites, minimum data requirements, standards and formats, technology & innovation considerations (with industry collaboration), desired products and outputs, and
5. That high-resolution elevation data made possible by multibeam echosounder systems (MBES) should be collected as the foundation dataset for all others.

# PROGRESS & ACTIVITY

2015 ASMIWG Meetings (3) – Brussels / Cork (Ocean Wealth) / St. Johns (Ocean Innovation) ...

2016 ASMIWG Meetings (1) – New Orleans (Oceans) / Galway June 29<sup>th</sup> (Ocean Wealth)  
Monaco 9-10<sup>th</sup> Nov (tbc – vs Rostock, Germany – Hydro16)

## OTHER EVENTS

- Forum for Future Ocean Floor Mapping, Monaco, June 15-17<sup>th</sup> (NIPPON Foundation & GEBCO)
- International Geological Conference, August 31, Cape Town – *Ocean Mapping Session*

## ATLANTIC TRANSECTS

- 2015 Celtic Explorer (Marine Institute) & Louis St. Laurent (Canadian Coastguard)
- 2016 L'Atalante (IFREMER), Celtic Explorer, Louis St. Laurent

***Transects provide key building blocks – learn by doing***

**Acquisition > Industry Trials > Student Scholarship & Training > Data Transfer > Outreach**

# PROGRESS & ACTIVITY (continued)

## DATA GATHERING & DISTRIBUTION

- North Atlantic Data Viewer Prototype in place (NOAA) – *establish data whereabouts*
- Very significant compilation of multibeam data acquired  
(although not exhaustive – e.g. commercial & research surveys)
- Major programmes and multibeam data initiatives incorporated  
(although not seamlessly – still rely on physical data transfers – time lag)
- Some discussions on developing an approach to capture future survey plans
- Transect web map viewer tested (INFOMAR) – *enable data interrogation*

## CONNECTIVITY

- Ocean Literacy WG now providing key support for education / outreach
- AORA CSA – WG meeting coordination, sharepoint workspace
- Recent EMODNET calls asked for linkage with Atlantic Groups & Galway Statement
- ATLAS & SPONGES Programme Coordinators in discussion with Atlantic Portal as focus for information gathering and future survey planning

# North Atlantic Data Viewer (Protoype) - NOAA

[http://maps.ngdc.noaa.gov/viewers/north\\_atlantic/](http://maps.ngdc.noaa.gov/viewers/north_atlantic/)

- Key Multibeam Data
- Priority Areas
- Survey Plans



Layers

**Multibeam Bathymetric Data Footprints**

- NOAA NCEI
- EMODNet
- NRCan
- MAREANO

**Single-Beam Bathymetric Data Footprints**

- NOAA NCEI
- EMODNet
- NRCan
- MAREANO

**Proprietary Data Footprints**

- Portugal

**Priority Areas**

- OSPAR Boundaries
- OSPAR MPAs
- NEAFC Fisheries Closures

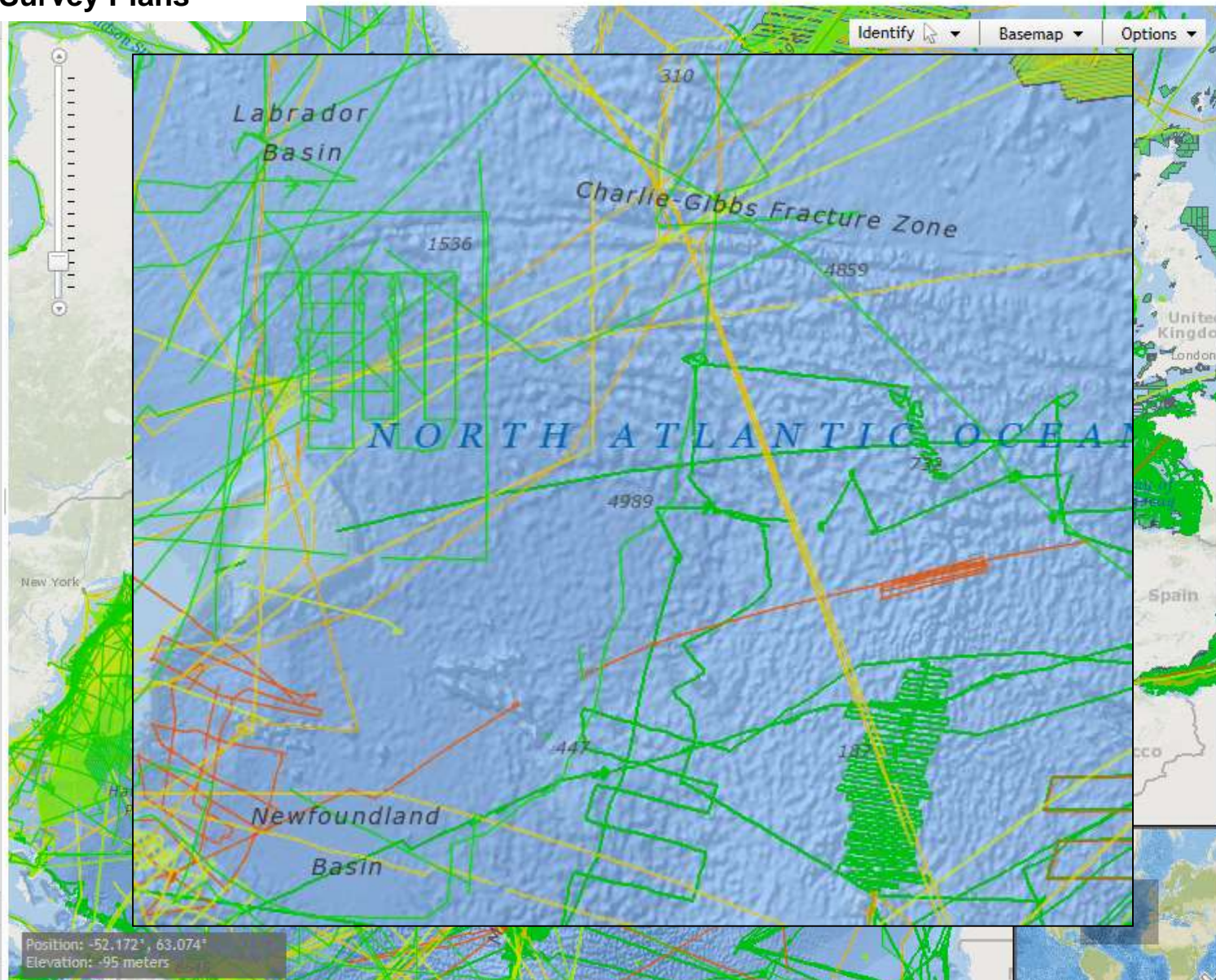
**Planned Mapping Activities**

- NOAA Office of Ocean Exploration Planned Expeditions

Legend

More Information

Help





# Dynamic web map service (INFOMAR)

- Zoom to feature
- Set colour range to depth range

<http://maps.marine.ie/atlantic>

