

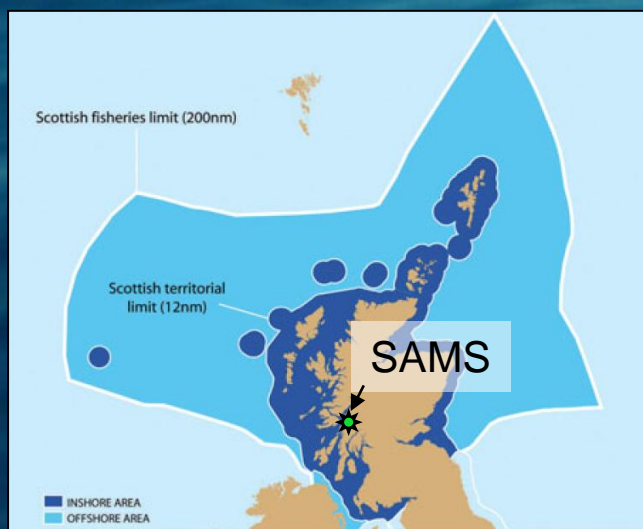
Gilders at SAMS: North Atlantic Glider Base (NAGB)

SAMS - 128 Years of Marine Science

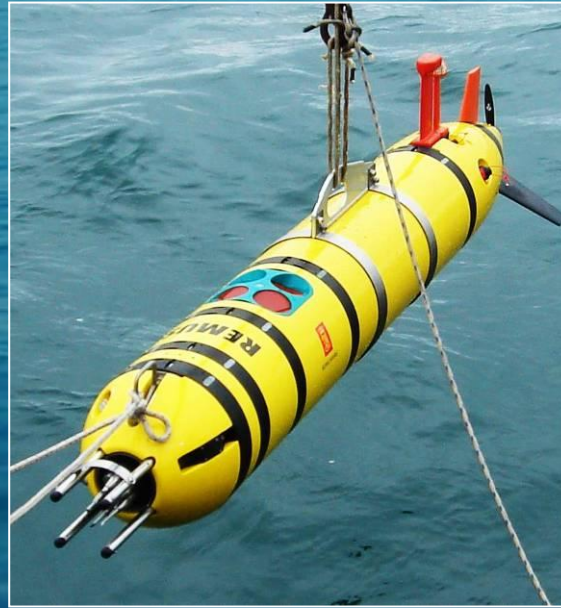
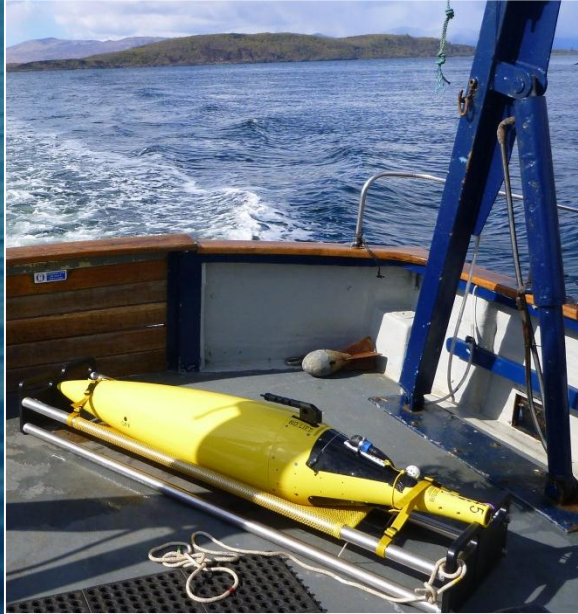


Independent marine science and education since 1884

Delivery Partner of NOC Southampton



Unmanned Underwater Vehicles



- Two Seagliders
 - SN 156: “Talisker”
 - SN 545: “Ardbeg”
- Hydroid 600m rated AUV: “Rebus”
 - 12hr / 100km max mission duration
 - Nose-mounted Rockland turbulence sensors

Support Vessels



- 9.2m fast RHIB “Triton”
- 10.4m inshore day-boat “Seol Mara”
- 20m coastal research vessel “Calanus”



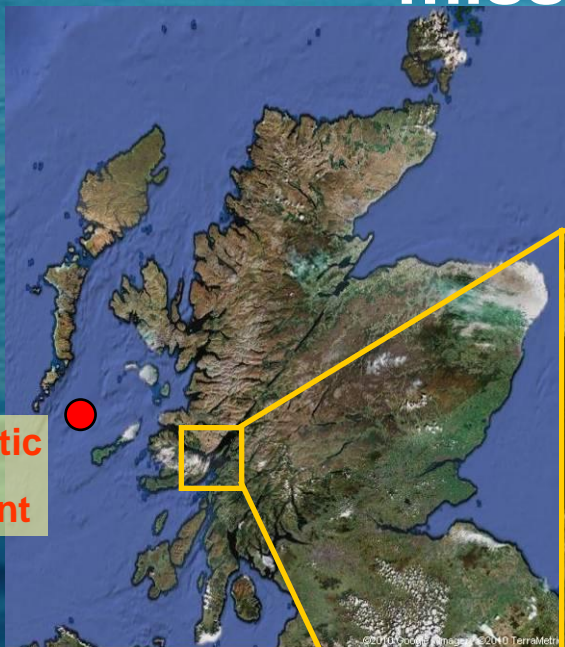
Laboratory facilities

- Modern marine laboratory facilities (built 2006)
- Direct road-level private access from labs to pontoon
- Glider ballasting tank
- Crane lift access from lab to water



West coast of Scotland: Easy access to sheltered deep water and North Atlantic mission launch

North Atlantic
launch point

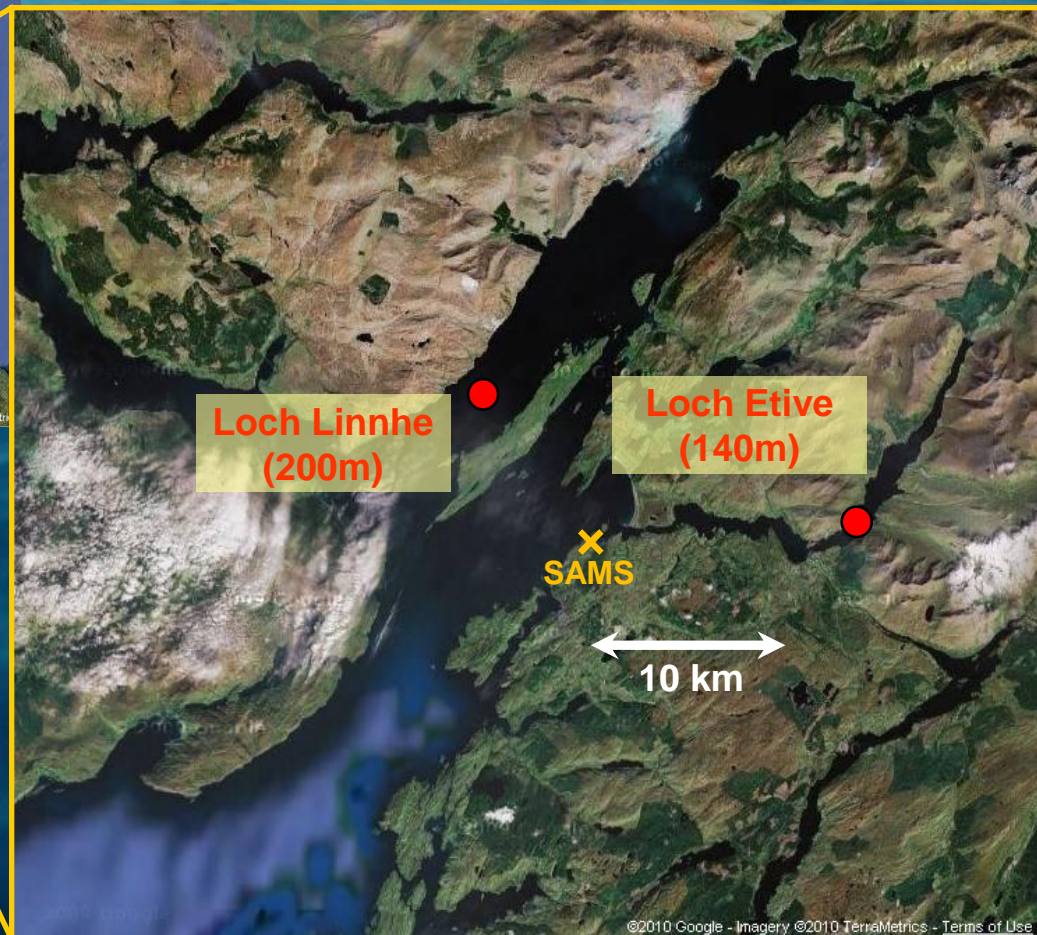


Loch Linnhe
(200m)

Loch Etive
(140m)

X
SAMS

10 km



North Atlantic Glider Base (NAGB)

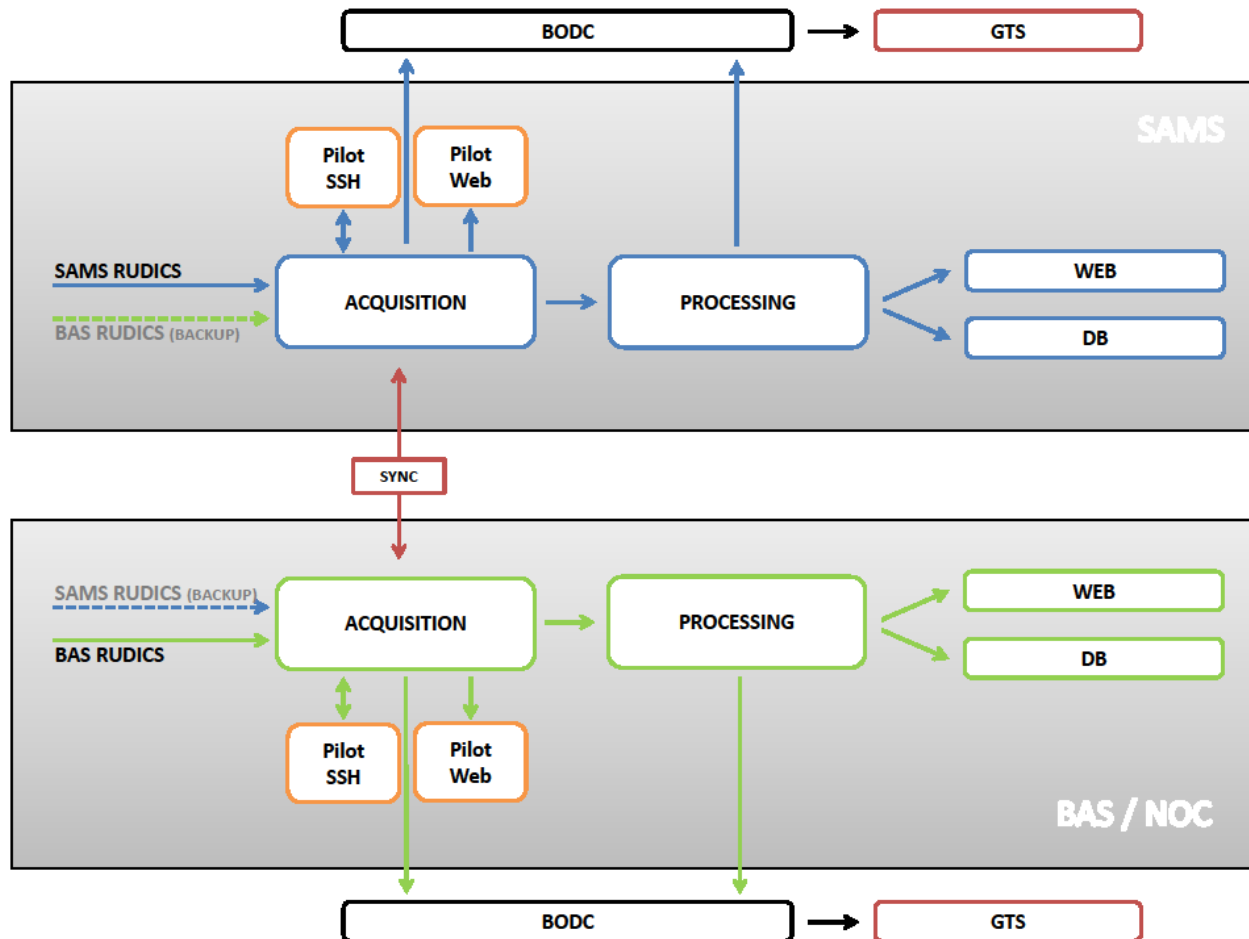
- Access to laboratory space for pre-mission, post-service Glider preparation (including buoyancy correction)
- Access to SAMS two coastal research vessels for sheltered deep water testing (to 200m).
- Arrangement of fast vessel hire for deployment and recovery for North Atlantic missions
- Advice on scientific and operational aspects of North Atlantic Gliders missions
- Advice and software for real-time Glider data delivery to GTS or to data centres

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As part of SAMS National Capability we offer all of the above on a free-at-the-point-of-use basis to NERC funded applicants using the National MARS facility housed at NOC, to a maximum of one month per year. To non NERC-funded groups we offer the above on an appropriately costed basis.

Data Management

Real time glider data management & processing model :: DRAFT



Scientific objectives

The Extended Ellett Line :

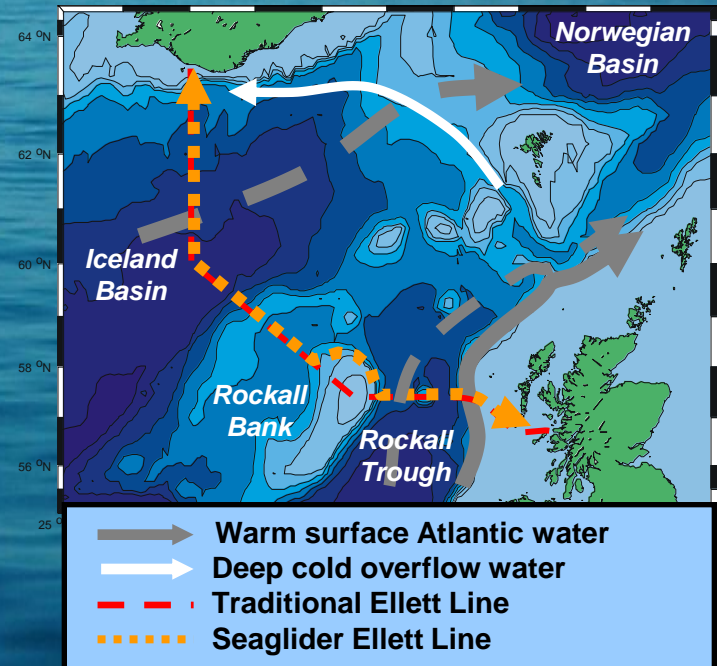
- Major gateway for water exchange between the Atlantic and the Nordic seas
→ important area for the moderation of Western Europe's climate
- Studied by research cruises since 1975

Advantages of ship measurements:

- Full suite of observations (temperature, salinity, nutrients, etc)
- Full depth observations

Disadvantages:

- Very costly (£20 – 30k per day)
- Weather dependent (not winter)
- Available only once per year (no seasonal data)



Introduction

AUV

Presentation

Scientific objectives

Deployments

Future plans

Glider

Presentation

Scientific objectives

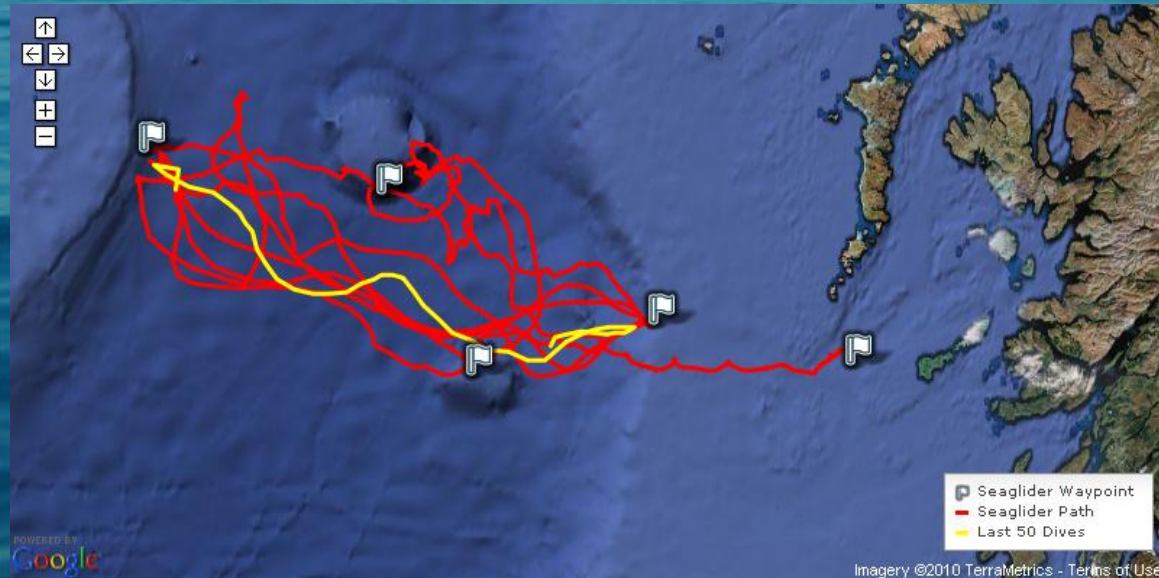
Deployment

Future plans

Conclusion

Mission 1

- Deployed on the 12th October 2009 (south of Barra)
- Recovered on the 9th March 2010 (west of Barra)



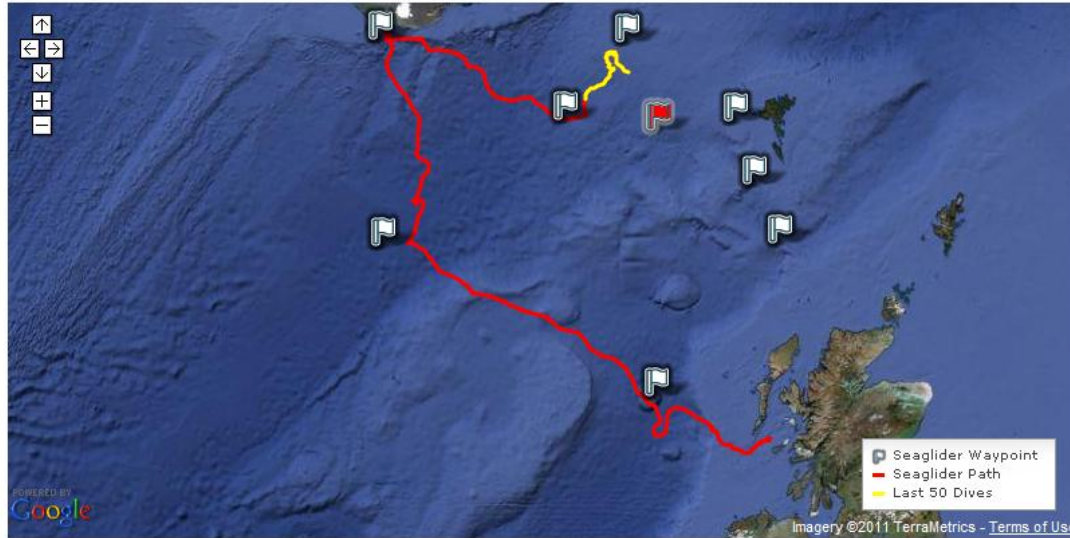
- Statistics:
 - 21 weeks
 - >3000km
 - Data from the surface down to 1000m
 - Encountered force 9 storms



SAMS Seaglider (Talisker) :: Mission 2: To Iceland and back

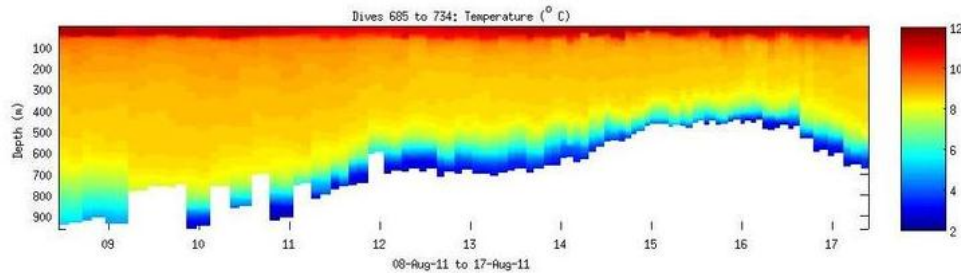


[Information on this research project, which is funded by NERC, can be found here.](#)



Latest dive, number 734 at 62.73 N, 11.73 W was received on 2011-08-17 11:55 GMT.

Zoom into the map to access plots and data for each dive or click on the plots below to access plots and data for the latest dive.

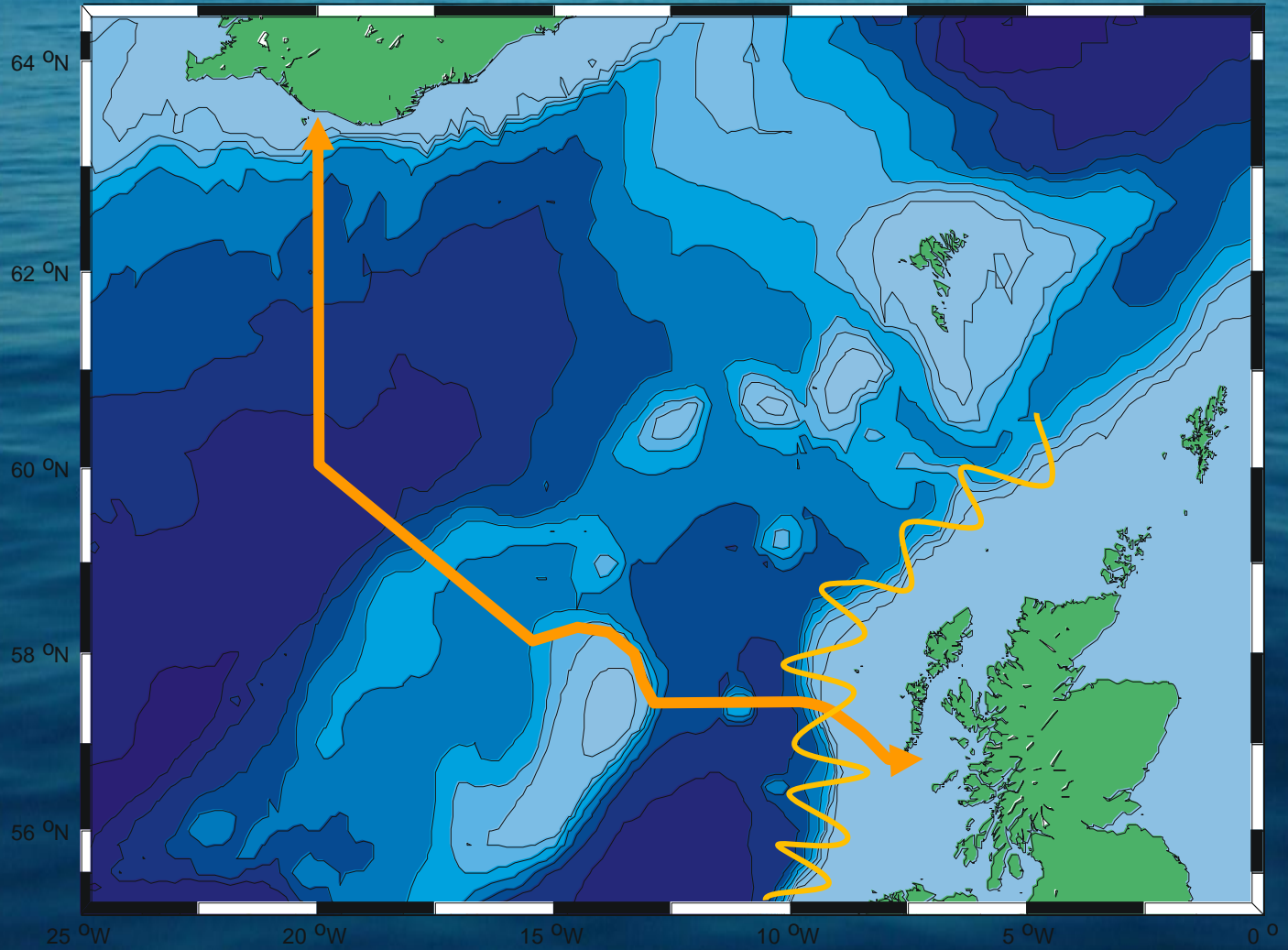


Temperature section from the last 50 dives.

The temperature of the Rockall Trough has risen by 1 deg C in the last 30 years -

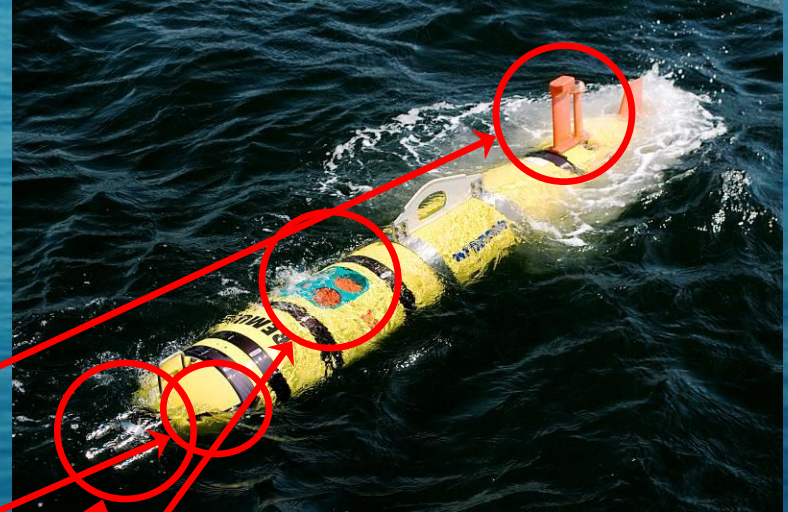
using gliders we can monitor future changes and quantify the natural variability in the upper 1000 m of the water column.

Future plans

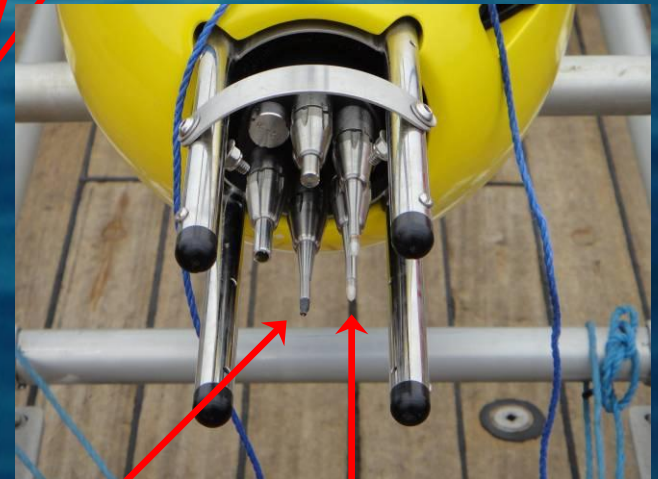


REMUS 600

- Propeller-driven vehicle
- Depth rating: 600m
- Speed: 4.5 knots (~2.5m/s)
- Endurance: 24h, >100km



- Equipped with:
 - GPS
 - Iridium
 - Wi-Fi
 - CTD
 - 600 kHz ADCP (up and downward looking)
 - Micro-structure sensing package



fast-response temperature sensor

velocity shear probes

FASTNEt: Proposed Glider Operations

- Glider pair/triple studies: Celtic shelf, Malin Shelf, and North Scotland. ~50 days each x 2
- Glider Pair studies: Summer to Winter breakdown of stratification. Celtic and Malin
- Long Glider-pair mission from south to north (Malin Shelf to Faroe-Shetland Channel) ~ 30 days
- Total Glider-days: ~780+
- Six Gliders available to FASTNEt, plus 2 from AUV Sensors Call

