

SHORT TERM SCIENTIFIC MISSION (STSM) SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: ES1405-43090

STSM title: A gas hydrate geodatabase for European waters

STSM start and end date: 28/01/2019 to 15/02/2019

Grantee name: Ahaneku, Chibuzo Valeria

PURPOSE OF THE STSM:

A GIS geodatabase was developed in 2016 to establish, integrate and analyse available data on gas hydrate indicators in the European waters. During the COST MIGRATE general assembly in November 2018, the consortium determined that the geodatabase needed to be updated with new information that became available during the preceding two (2) years.

This Short Term Scientific Mission (STSM) was carried out at the Centre for Arctic Gas Hydrate, Environment and Climate (CAGE), Department of Geology, UiT – The Arctic University of Norway, Norway from the 28th of January to 15th of February, 2019. The objective of the STSM was to update the existing geodatabase with the latest information on gas hydrates indicators from European waters provided by MIGRATE partners of WG1.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

DATA

The new data for Gas Hydrate Indicators (GHI) include; Bottom Simulating Reflector (BSR), Gas Seepage (GS) and Seabed Feature (SF).

GHI DATABASE

The data was quality-checked in Excel for consistency and imported into the geodatabase. The imported data was first converted into shapefiles after which they were merged with the old data for the individual GHIs. The merging of the old and new data was successfully

done and the database was consequently updated. The new data included information from South-West Greenland, Svalbard and Barents Sea areas.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

GAS HYDRATE DISTRIBUTION MAPS

Four new gas hydrate indicator maps (Appendix I) showing the gas hydrates indicator distribution in European waters have been created. They include one large scale European gas hydrate indicator distribution map, and three site specific maps for South-West Greenland, Svalbard and the Barents Sea.

SUMMARY AND CONCLUSION

This STSM activity constitutes an important contribution to the COST action strategy and fulfills the objectives of WG1 which was to present an up-to-date, consistent and easily accessible gas hydrate geodatabase for the European waters.

The geodatabase for gas hydrate indicators for the European waters has been updated with new data made available. Based on the new data, four new maps showing the updated gas hydrate indicators in European waters have been created. These four maps include the European gas hydrate indicator distribution map, South-West Greenland, Svalbard and the Barents Sea.

This STSM has greatly enhanced my knowledge and expertise in gas hydrate research and the use of ArcGIS software. This activity has made a significant positive impact on my PhD research.

ACKNOWLEDGEMENT

I sincerely wish to thank Sunil Vadakkepuliambatta for his positive contributions towards the completion of this task. I am grateful to Aaron Micallef, and Stefan Buenz for this wonderful opportunity to participate in this STSM.

APPENDIX I

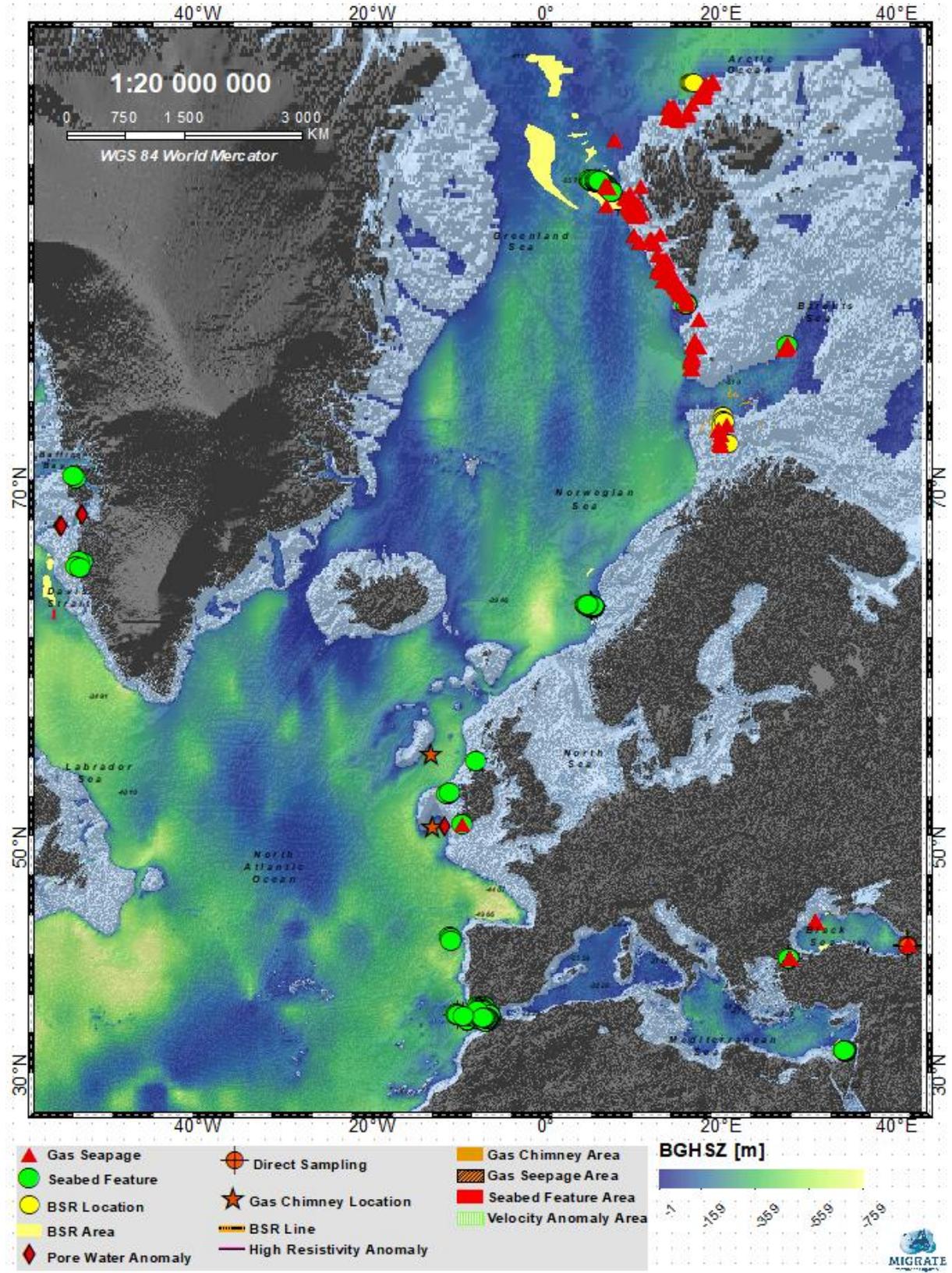


Figure 1: Gas Hydrate Indicator distribution map for Europe

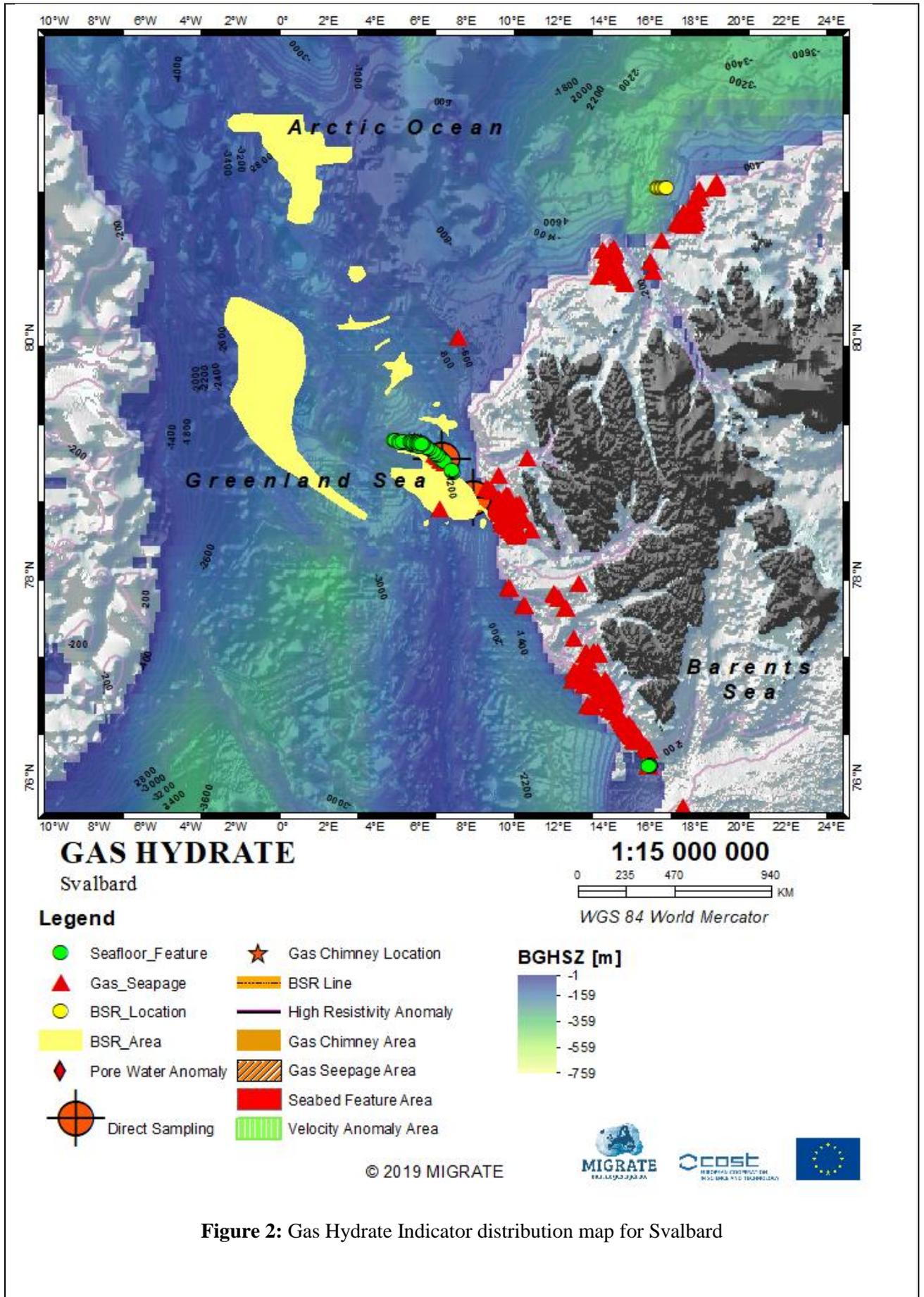


Figure 2: Gas Hydrate Indicator distribution map for Svalbard

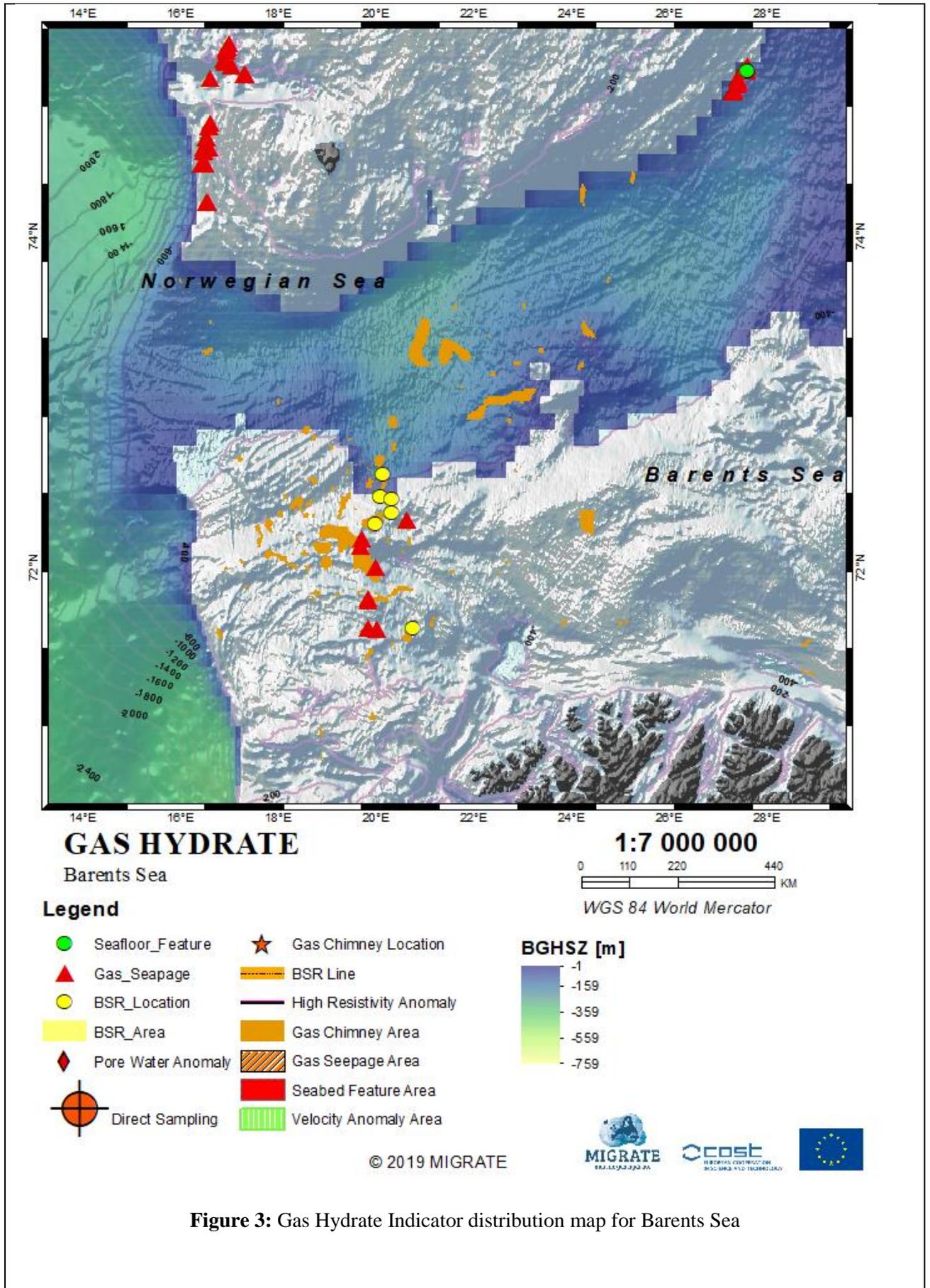


Figure 3: Gas Hydrate Indicator distribution map for Barents Sea

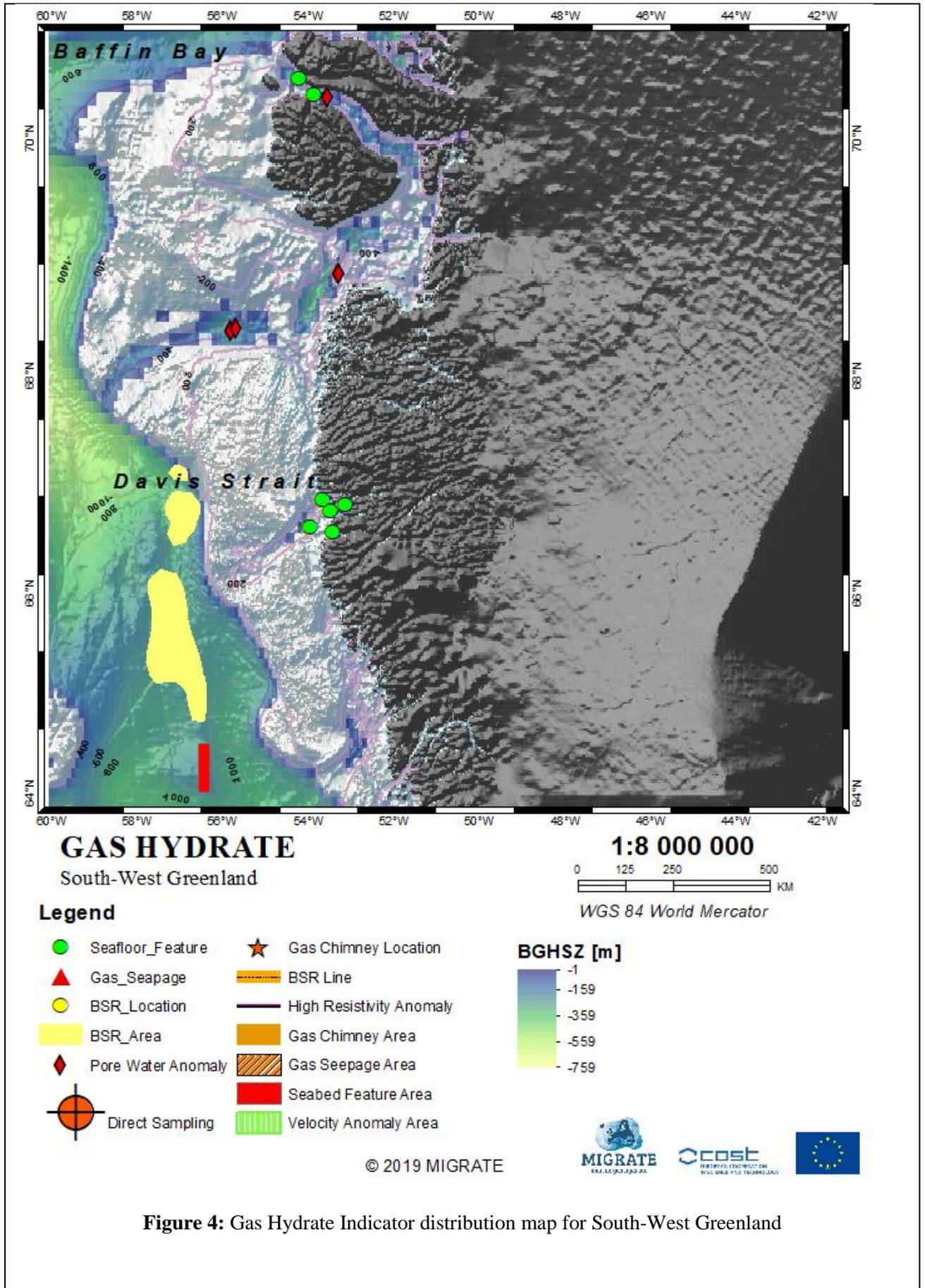


Figure 4: Gas Hydrate Indicator distribution map for South-West Greenland