

Application for Consent to conduct
Marine Scientific Research

Date: 14/05/2019

1. General Information

1.1 Cruise name and/or number: RV Keary KRY19_CHERISH
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1.2 Sponsoring Institution(s):	
Name:	Geological Survey Ireland
Address:	Beggars Bush, Haddington Rd, Dublin 4
Name of Director:	Koen Verbruggen

1.3 Scientist in charge of the Project:	
Name:	Sean Cullen
Country:	Ireland
Affiliation:	Geological Survey Ireland
Address:	Beggars Bush, Haddington Rd, Dublin 4
Telephone:	+353 (0)87 988 9141
Fax:	
Email:	sean.cullen@gsi.ie
Website (for CV and photo):	www.infomar.ie

1.4 Entity(ies)/Participant(s) from coastal State involved in the planning of the project:	
Name:	Sean Cullen
Affiliation:	GSI
Address:	Beggars Bush, Haddington Rd, Dublin 4
Telephone:	+353879889141
Fax:	
Email:	sean.cullen@gsi.ie
Website (for CV and photo):	www.infomar.ie

2. Description of Project

2.1 Nature and objectives of the project: CHERISH (Climate, Heritage and Environments of Reefs, Islands and Headlands) is an exciting, 5 year European-funded Ireland-Wales project between the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW), the Discovery Programme: Centre for Archaeology and Innovation Ireland, Aberystwyth University: Department of Geography and Earth Sciences and Geological Survey, Ireland. The project will receive €4.1 million through the Ireland-Wales 2014-2020 Programme. CHERISH is a cross-disciplinary project. It aims to raise awareness and understanding of the past, present and near future impacts of climate change, storminess and extreme weather events on the rich cultural heritage of the Irish and Welsh regional seas and coast. We will be employing innovative techniques to study some of the most iconic coastal locations in Ireland and Wales. The four main aims of CHERISH are to: Target data and knowledge gaps to raise awareness of heritage in these remote coastal locations. Discover, assess, map and monitor heritage on land and beneath the sea and establish new baseline data and recording standards.

Link land and sea.
Reconstruct past environments and weather history.
CHERISH will work with communities and will widely disseminate the results and best practice for future climate change adaptation.

The specific objectives of the 2019 Research Survey will be:

- Conduct multibeam, sub-bottom and side scan sonar surveys of selected shipwrecks
- To carry out multibeam surveys of priority survey areas
 - These are to provide seamless onshore-offshore maps in areas of significantly coastal heritage

2.2 If designated as part of a larger scale project, then provide the name of the project and the Organisation responsible for coordinating the project:

The CHERISH Project

<http://www.cherishproject.eu/en/>

Co-ordinated by: the Royal Commission on the Ancient and Historical Monuments of Wales

Clare.lancaster@rcahmw.gov.uk

2.3 Relevant previous or future research projects:

CHERISH successfully conducted KRY18_CHERISH off the coast of Anglesey in August 2018 (Authorisation: NV 83-2018). 391 km of multibeam and sub-bottom survey lines were acquired. Data has been provided to stakeholders as per authorisation conditions.

All CHERISH data and publications will be made freely available over the duration of the project as it becomes available through either the project or the various partner websites. The Geological Survey of Ireland through the INFOMAR programme feeds marine data gathered from Irish territorial waters to the UKHO and is in correspondence with the Maritime and Coastguard Agency in order to coordinate efficient survey planning by aligning both the Agency and Projects survey plans and joint interests.

2.4 Previous publications relating to the project:

All CHERISH data and publications will be made freely available over the duration of the project as it becomes available through the project or the various partner websites.

Relevant Publications:

KRY18_CHERISH – Preliminary Research Survey Report

KRY18_CHERISH – Report of Survey

3. Geographical Areas

3.1 Indicate geographical areas in which the project is to be conducted (with reference in Latitude and longitude in decimal degrees, including coordinates of cruise/track/way points/sampling stations). Please provide coordinates in a separate excel spreadsheet.

Survey areas are selected based on associated onshore coastal heritage, with priority given to areas where current Maritime and Coastguard Agency (MCA) multibeam data is absent (Figure 1).

Starting from Arklow (52.79°N, 6.14°W) (or possibly another port on Ireland's south or east coast), the GSI vessel will proceed to Porthmadog (52.91°N, 4.13°W) for operations around north Cardigan Bay (Figure 2). Priority in this area is the wreck "The Diamond" for multibeam survey to assess changes since a previous survey conducted by Wessex Archaeology in 2010. Associated with this is a multibeam survey of the shallow Sarn Badrig. Depths for multibeam survey are approximately 0-10m below chart datum. Operations are proposed out of Porthmadog

A second priority area exists on the South Sands, SW of the Menai Straits (Figure 2). Here, the promontory fort of Dinas Dinlle is an important CHERISH site, and seamless onshore-

offshore topographical and bathymetric data would augment the project. Depths for multibeam survey are approximately 0-20m below chart datum. Operations are proposed out of Caernarfon Marina (53.13°N, 4.32°W).

Given potential for poor weather, reserve multibeam sites are proposed (Figure 3). These are on the south side of Cardigan Bay, around St Bride's Bay in SW Wales, and sites around Anglesey. These secondary sites include a multibeam wreck survey of the "Lucy" and additional multibeam surveys of additional non-designated wrecks in Cardigan Bay and Anglesey. Operations are proposed out of Fishguard (52.01°N, 4.97°W), Milford Haven (51.71°N, 4.94°W) or Caernarfon (53.13°N, 4.32°W). Depths for multibeam survey are approximately 0-30m below chart datum.

Proposed transit routes are outlined in Figure 4. Additional vessels that could assist are outlined in Section 4.4

3.2 Attach chart(s) at an appropriate scale (1 page, high-resolution) showing the geographical Areas of the intended work and, as far as practicable, the location and depth of sampling Stations, the tracks of survey lines, and the locations of installations and equipment.

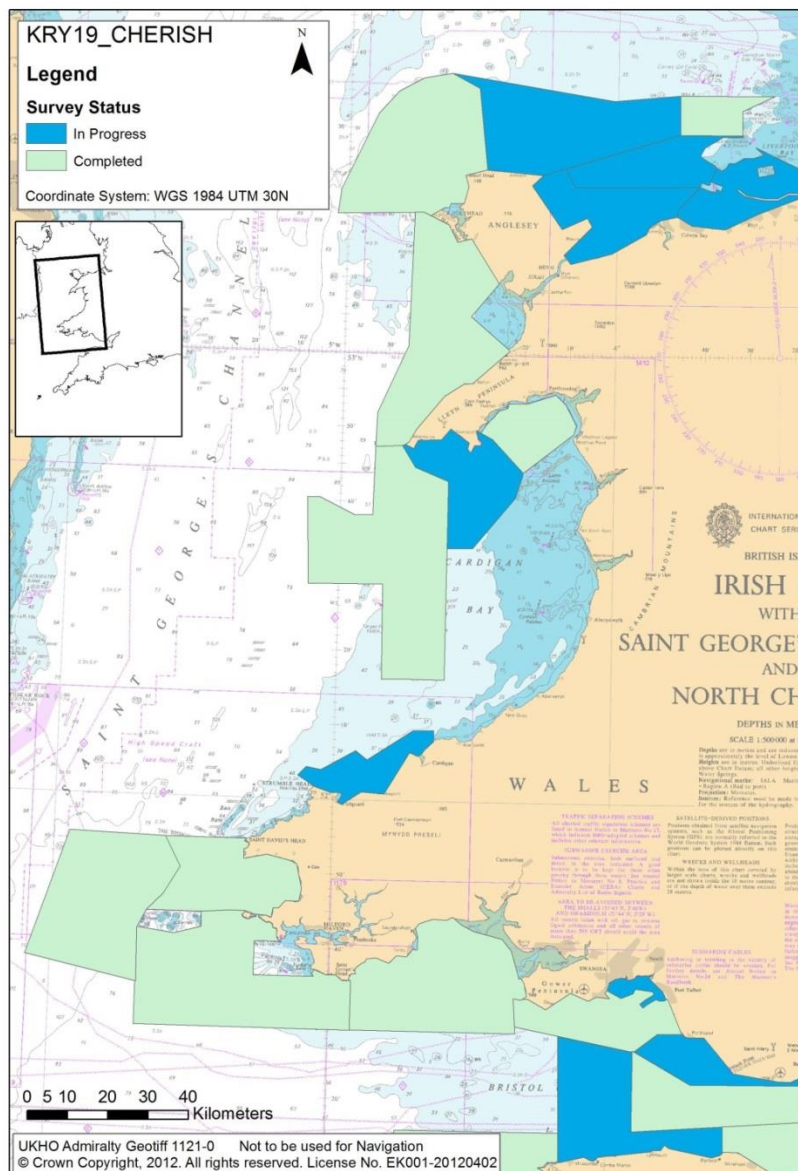


Figure 1: Completed and proposed Maritime and Coastguard Agency multibeam survey areas (correct May 2018)

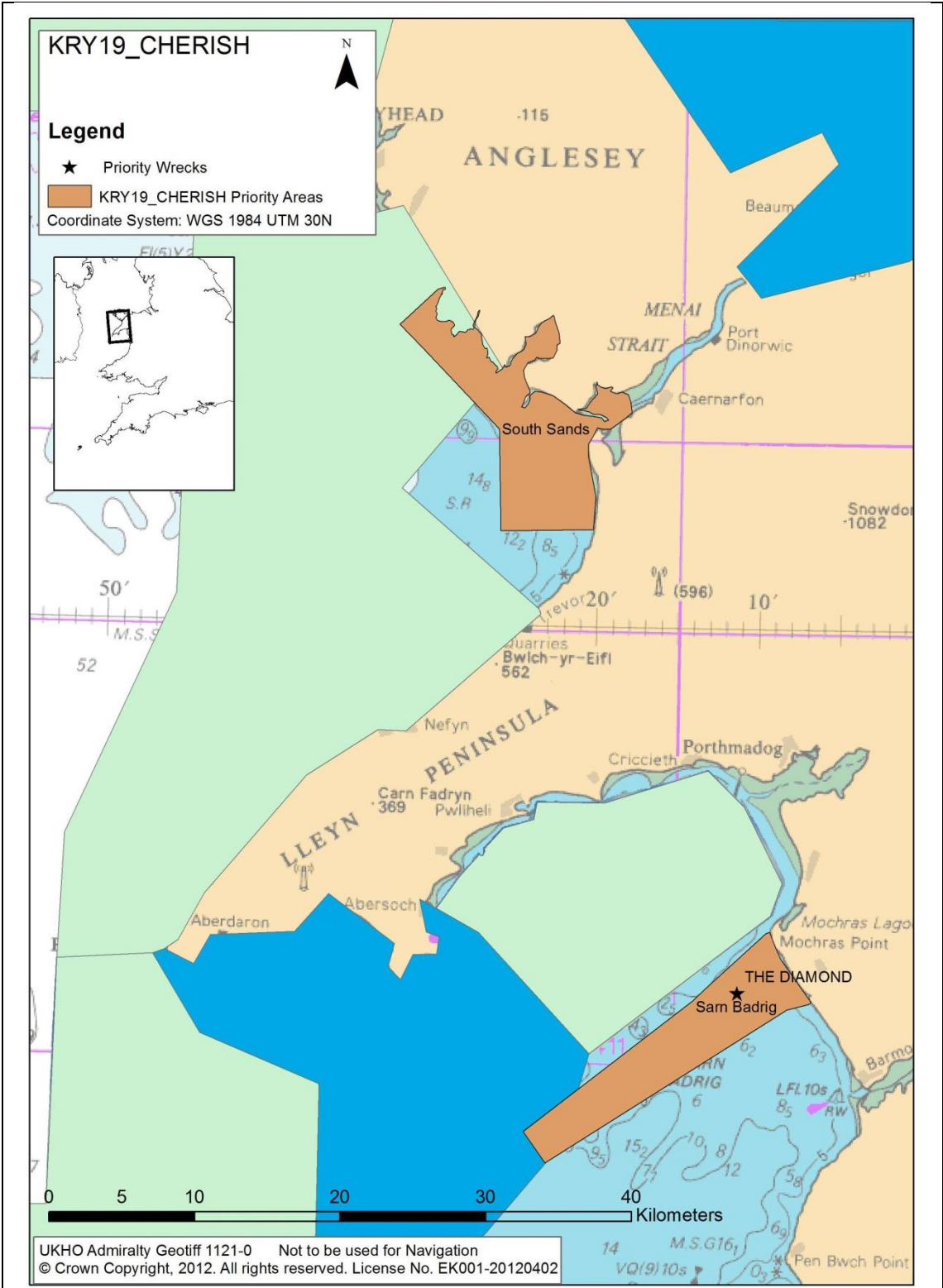


Figure 2: Priority areas for KRY19_CHERISH with proposed multibeam survey of The Diamond and shallow areas surrounding Sarn Badrig and South Sands. Map includes MCA surveys areas (legend as per Figure 1)

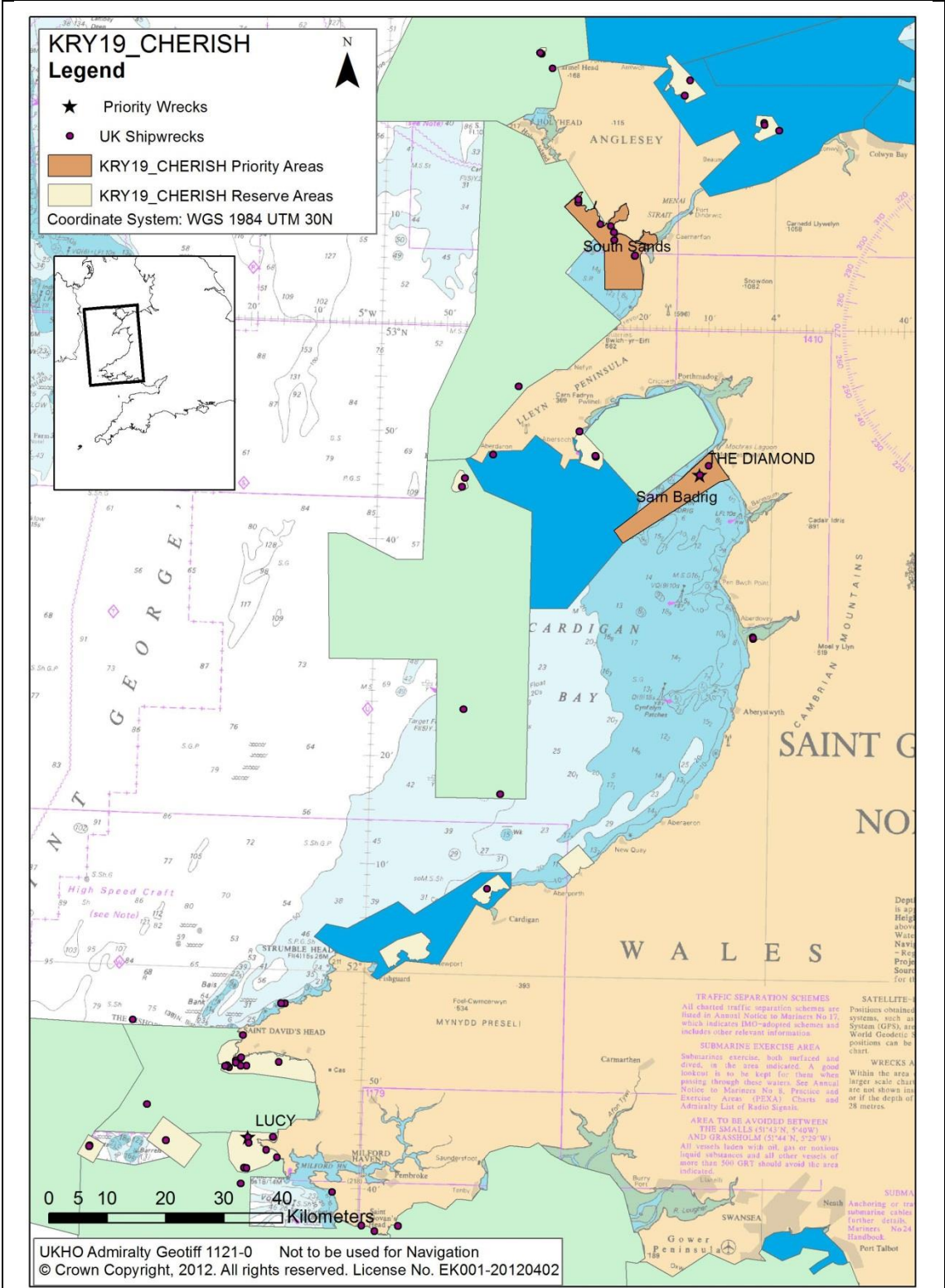


Figure 3: Reserve areas for KRY19_CHERISH in case of poor weather conditions, including areas on south side of Cardigan Bay and wreck survey of the Lucy. Map includes MCA surveys areas (legend as per Figure 1)

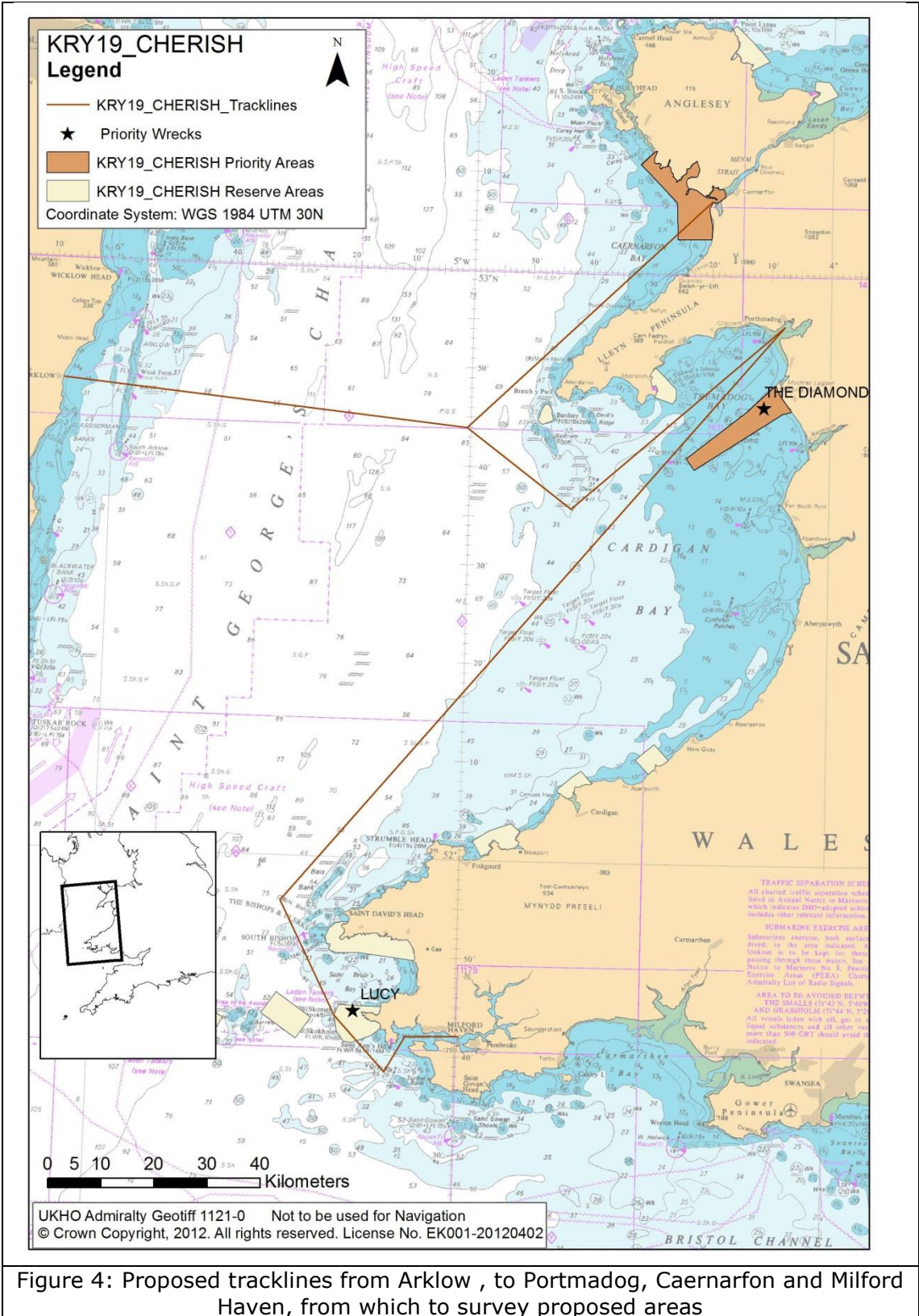


Figure 4: Proposed tracklines from Arklow , to Portmadog, Caernarfon and Milford Haven, from which to survey proposed areas

4. Methods and means to be used

4.1 Particulars of vessel:	
Name:	R.V. Keary
Type/Class:	Coastal Research Vessel
Nationality (Flag State):	Irish
Identification Number (IMO/Lloyds No.):	IMO 404520
Owner:	Geological Survey of Ireland
Operator:	Geological Survey of Ireland
Overall length (meters):	15.5
Maximum draught:	1.5 or 2.1 with survey equipment deployed
Displacement/Gross Tonnage:	10/36
Propulsion:	2*Cummins QSC 8.3-500 INT 368 kW/2600RPM
Cruising & maximum speed:	17 & 22 knots
Call sign:	EI-GO-9
INMARSAT number and method and capability of communication (including emergency frequencies):	VHF DSC
Name of Master:	Sean Cullen/Agust Magnusson
Number of Crew:	2 crew + 10 max
Number of Scientists on board:	10 max

4.2 Particulars of Aircraft:	
Name:	N/A
Make/Model:	
Nationality (flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall Length (meters):	
Propulsion:	
Cruising & Maximum speed:	
Registration No.:	
Call Sign:	
Method and capability of communication (including emergency frequencies):	
Name of Pilot:	
Number of crew:	
Number of scientists on board:	
Details of sensor packages:	
Other relevant information:	

4.3 Particulars of Autonomous Underwater Vehicle (AUV):	
Name:	N/A
Manufacturer and make/model:	
Nationality (Flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall length (meters):	
Displacement/Gross tonnage:	
Cruising & Maximum speed:	
Range/Endurance:	
Method and capability of communication (including emergency frequencies):	
Details of sensor packages:	
Other relevant information:	

4.4 other craft in the project, including its use:
RV Mallet - Marine Mapping
RV Lir - Marine Mapping
RV Geo - Marine Mapping

4.5 Particulars of methods, full description of scientific instruments to be used (for fishing gear specify type and dimension) and location			
Types of samples and Measurements:	Methods to be used:	Instruments to be used:	To be carried out within 12nm (yes or no):
Acoustic	SONAR	Multibeam Echosounder	Yes
Acoustic	SONAR	Sub-bottom Profiler	Yes

4.6 Indicate nature and quantity of substances to be released into the marine environment:
None to be released

4.7 Indicate whether drilling will be carried out. If yes, please specify:
No drilling will be carried out

4.8 Indicate whether explosives will be used. If yes, please specify type and trade name, Chemical content, depth of trade class and stowage, size, depth of detonation, frequency of Detonation, and position in latitude and longitude:
No explosives will be used

5. Installations and Equipment

Details of installations and equipment (including dates of laying, servicing, method and Anticipated timeframe for recover, as far as possible exact locations and depth, and Measurements):
No installations will be made

6. Dates

6.1 Expected dates of first entry into and final departure from the research area by the research vessel and/or other platforms:
01 st July to 30 th September 2019
6.2 Indicate if multiple entries are expected:
Yes

7. Port Calls

7.1 Dates and Names of intended ports of call:
To Be Decided – Portmadog likely to be first base of operations. Other ports include: Caernarfon Marina Milford Haven, Fishguard

7.2 Any special logistical requirements at ports of call:
None

7.3 Name/Address/Telephone of shipping agent (if available):
N/A

8. Participation of the representative of the coastal State

8.1 Modalities of the participation of the representative of the coastal State in the research Project:

RCAHMMW and Aberystwyth University are full partners of the project.

8.2 Proposed dates and ports for embarkation/disembarkation:

01 July 2019 – 12 July 2019

9. Access to Data, Samples and Research Results

9.1 Expected dates of submission to coastal State of preliminary report, which should include The expected dates of submission of the data and research results:

3 months after completion of survey, as per KRY18_CHERISH

9.2 Anticipated dates of submission to the coastal State of the final report:

6 months after completion of survey, as per KRY18_CHERISH

9.3 Proposed means for access by coastal State to data (including format) and samples:

Open Access data and data to be send to the UKHO as per INFOMAR and UKHO standards

9.4 Proposed means to provide coastal State with assessment of data, samples and Research results:

Direct submission to UKHO and Open Access data. This was done by electronic transfer, with hard copies when required

9.5 Proposed means to provide assistance in assessment or interpretation of data, samples And research results:

Through the CHERISH and INFOMAR Projects as required

9.6 Proposed means of making results internationally available:

Results will be made available to the UKHO for charting purposes. The CHERISH project will publish its results in a variety of formats. Results will be disseminated within journals aimed at audiences across the specialities represented by the project's team. Critical data sets, including scans will be made available digitally for re-study by the wider community. The spatial and temporal nature of the data lends itself to the production of animations of change over time - disseminated via video websites such as YouTube and Vimeo. This work is not just multidisciplinary but truly interdisciplinary and will produce significant publications within the realms of archaeology, geography, ecology, biology, and simulation.

10. Other permits Submitted

10.1 Indicate other types of coastal state permits anticipated for this research (received or Pending):

CADW Licence to Survey a Site Designated Under the Protection of Wreck Act 1973 for "The Diamond" and "Lucy". These were submitted to CADW on 2nd May 2019

11. List of Supporting Documentation

11.1 List of attachments, such as additional forms required by the coastal State, etc.:

N/A



Signature:
14 May 2019

Contact information of the focal point:
Name: Sean Cullen
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Affiliation: Vessel coordinator
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