

Application for Consent to conduct Marine Scientific Research

Date: 26/3/2020

1. General Information

1.1 Cruise name and/or number: CV20014 (Amended)
INTERREG SeaMonitor Survey Glider deployment for acoustic tracking of salmon smolts

1.2 Sponsoring Institution(s):	
Name:	Marine Institute
Address:	Rinville, Oranmore, Co. Galway H91 R673
Name of Director:	Dr Paul Connolly

1.3 Scientist in charge of the Project:	
Name:	Dr Niall Ó Maoiléidigh
Country:	Ireland
Affiliation:	Marine Institute
Address:	Marine Institute Newport, Co. Mayo, F28 PF65
Telephone:	00353 87 6296393
Fax:	
Email:	Niall.omaileidigh@marine.ie
Website (for CV and photo):	

1.4 Entity(ies)/Participant(s) from coastal State involved in the planning of the project:	
Name:	Ross McGill
Affiliation:	Loughs Agency
Address:	22 Victoria Rd, Londonderry BT47 2AB
Telephone:	028 7134 2100
Fax:	
Email:	Ross.McGill@loughs-agency.org
Website (for CV and photo):	

2. Description of Project

2.1 Nature and objectives of the project:
<p>The Marine Institute was recently successful in securing over €1 million in funding in an INTERREG VA Ireland, N. Ireland and Scotland call resulting the formation of the SeaMonitor project.</p> <p>The INTERREG VA SeaMonitor project is a novel and comprehensive project focussing on a wide range of issues across the Programme Area (Scotland, Ireland and N. Ireland). It will directly deliver the INTERREG V objective of developing cross-border capacity for the monitoring and management of marine protected areas and species. It will result in a corresponding increase in cross-border monitoring and management capacity. This will facilitate the development and growth of a regional 'blue economy' based on its maritime resources and the alignment of regional activities with the EU's Atlantic Strategy through the</p>

potential of e.g. developing and strengthening the growth of marine tourism, providing management plans and enabling sustainable development to occur in often sensitive environments.

The project will deliver 5 models, 3 management plans/groups and extend the INTERREG VA COMPASS network of buoys from the east coast of the Island of Ireland to the North establishing a physical connection of acoustic receivers between the Island of Ireland and Scotland thus providing a tangible monitoring network to the INTERREG programme. SeaMonitor has been jointly developed by all the partners and will be jointly implemented with partners working together across a range of activities.

SeaMonitor will establish a network of buoys for regional seas, including telemetry and oceanographic monitoring (e.g. for seals, cetaceans and salmonids).

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:

Led by the Loughs Agency, a cross boarder UK/Ireland body, this is an INTERREG VA EU funded project with 9 partners i.e. Loughs Agency (UK, Ireland), Marine Institute (Ireland), Queens University Belfast (UK), Agri-Food and Biosciences Institute for Northern Ireland (UK), University of Glasgow (UK), University College Cork (Ireland), Galway-Mayo Institute of Technology (Ireland), Ocean Tracking Network (Canada), Dalhousie University (Canada), University of California Davis (USA).

2.3 Relevant previous or future research projects:

INTERREG Compass Project led by the AFBI (UK) is a sister project and INTERREG MARPAMM led by AFBI are associated projects.

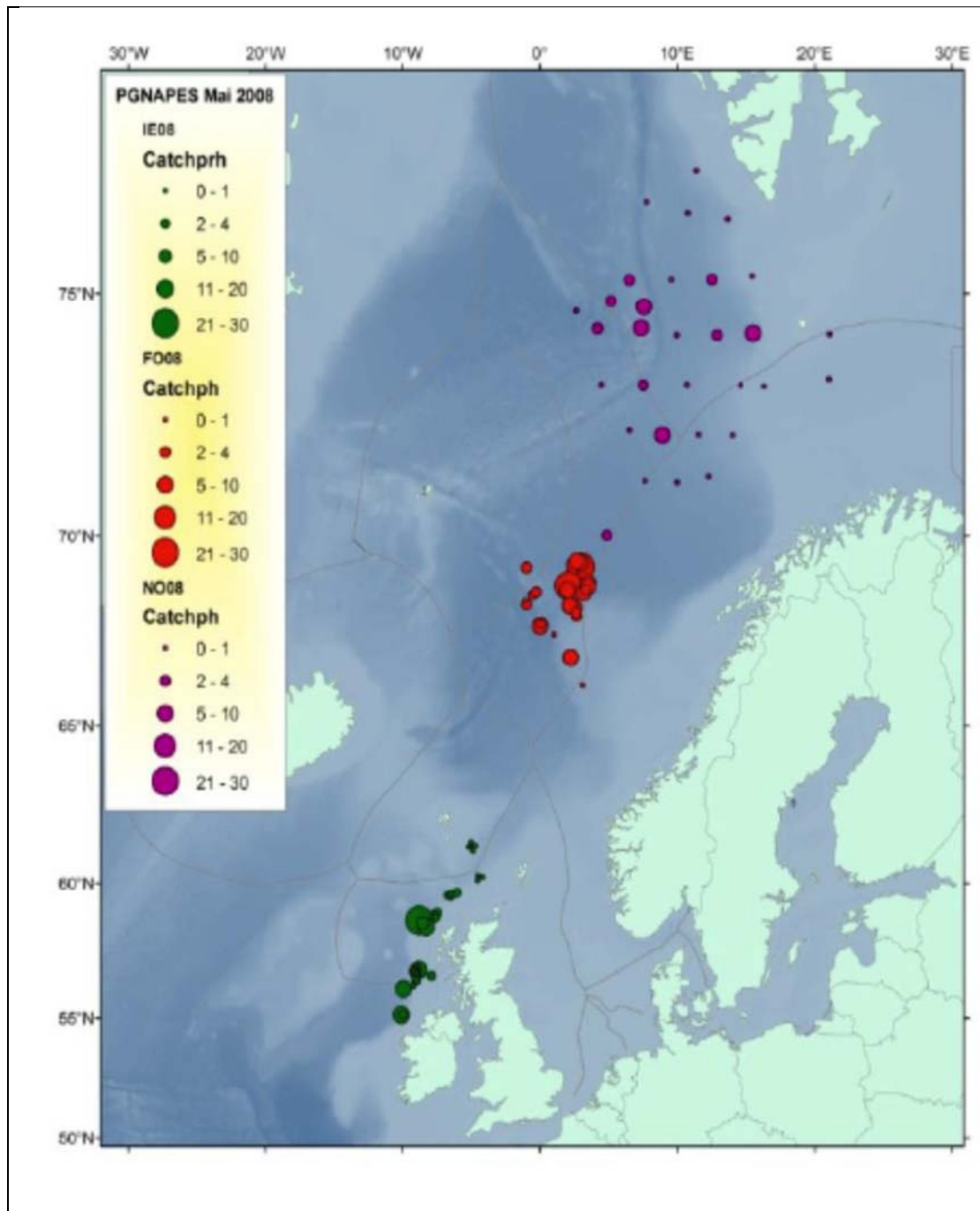
2.4 Previous publications relating to the project:

Abecasis, David, Andre Steckenreuter, Jan Reubens, Kim Aarestrup, Josep Alós, Fabio Badalamenti, Lenore Bajona et al. "A review of acoustic telemetry in Europe and the need for a regional aquatic telemetry network." *Animal Biotelemetry* 6, no. 1 (2018): 12.

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.

Location of acoustic survey using the AUV have been informed by locations of post smolt capture during the 2008 to 2011 INTERREG SalseaMerge project. In this application only the recapture locations from scientific sampling for IE08 in 2008 (green spots below) are being considered. The final date of sampling was May 22 2008 when the most northerly captures occurred. It is our intention to be at the more northerly catch locations by 15th May 2020 in order to be ahead of the post smolts assuming a similar migration timing as in 2008.

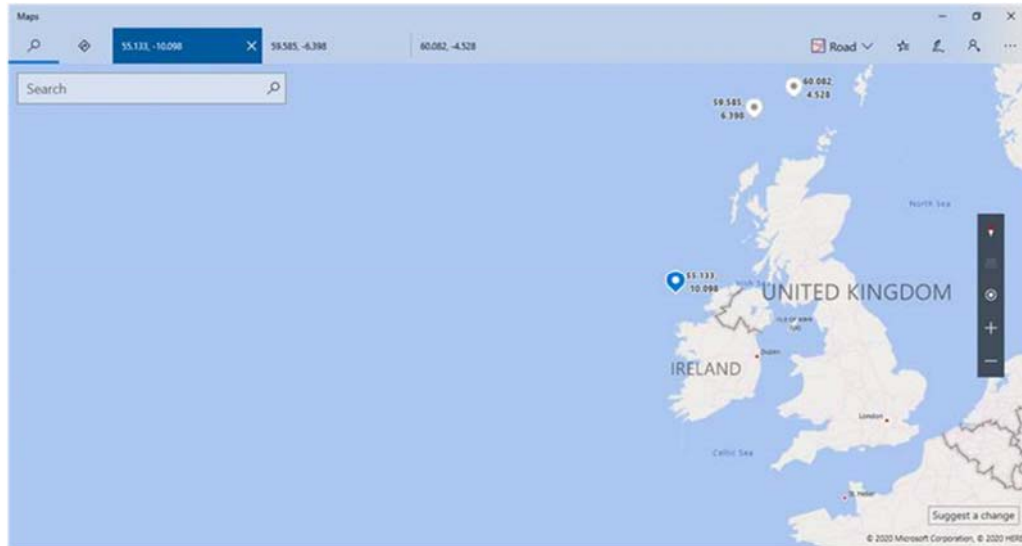


3.2 Attach chart(s) at an appropriate scale (1 page, high-resolution) showing the geographical

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.

The acoustic sampling work will take place at two possible specific locations indicated below (59.585, -6.398 and 60.082, -4.520). The AUV will be deployed at one or both of these locations and will be programmed to maintain a track perpendicular to the shelf edge for a distance of up to 3 km on either side of the point to allow for any acoustically tagged salmon smolts in the vicinity can be detected by the acoustic receiver on the AUV. The period of active tracking will be three weeks. The glider will be recovered in subsequent surveys which are planned to be carried out in this area.

Salmon smolts migrate generally within the top 10 metres of the water column.



4. Methods and means to be used

4.1 Particulars of vessel:	
Name:	R.V. Celtic Voyager
Type/Class:	100 A1 Research Vessel, LMC
Nationality (Flag State):	Irish
Identification Number (IMO/Lloyds No.):	9154842
Owner:	Marine Institute
Operator:	P&O Maritime Services
Overall length (meters):	32.45
Maximum draught:	4m
Displacement/Gross Tonnage:	340
Propulsion:	Wärtsilä UD25M5 (626 kW),
Cruising & maximum speed:	<= 10 knots
Call sign:	EIQN
INMARSAT number and method and capability of communication (including emergency frequencies):	GMDSS A class, E-mail. Mini M SAT C and GSM 00 353 91 423396 / 00870 763066755 00870-764687325 / 764687326
Name of Master:	
Number of Crew:	
Number of Scientists on board:	

4.2 Particulars of Aircraft:	
Name:	
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:	Teledyne
Manufacturer and make/model:	Teledyne Webb G2
Nationality (Flag State):	Ireland
Website for diagram & Specifications:	http://www.teledynemarine.com/slocum-glider
Owner:	Marine Institute
Operator:	Marine Institute
Overall length (meters):	Vehicle Length: 1.5 meters; Hull Diameter 22 cm
Displacement/Gross tonnage:	55 - 70kgs (dependent upon configuration)
Cruising & Maximum speed:	Buoyancy Engine: 0.35 m/s (0.68 knot) Average, up to 0.5 m/s (1 knots) with full drive. Thruster: Up to 1 m/s (2 knots)
Range/Endurance:	Up to 3 months battery life
Method and capability of communication (including emergency frequencies):	RF Modem, Iridium (RUDICS), ARGOS, Acoustic Modem
Details of sensor packages:	Vemco VMT acoustic receiver, CTD, Fluorescence, Dissolved oxygen
Other relevant information:	

4.4 other craft in the project, including its use:

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):
Tracking	Marine species tracking	Teledyne G3 Glider	No - glider will be deployed beyond the 12nm limit.

4.6 Indicate nature and quantity of substances to be released into the marine environment:
A recoverable AUV will be deployed. No other substances will be released into the environment

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

5.1 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):
AUV glider to be deployed between the 13 th May 2020 and recovered subsequently within two months.

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:
<p><u>Equipment monitoring/ Oceanographic surveys:</u> Start Date: 13/05/2020 End Date: 17/05/20</p> <p>Locations of the surveys are the same as those in Table 1 (See appendix).</p>
6.2 Indicate if multiple entries are expected:
No

7. Port Calls

7.1 Dates and Names of intended ports of call:
<p><u>Ireland</u> -Rathmullan Harbour</p>

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7.2 Any special logistical requirements at ports of call:
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- | |
|---|
| <ul style="list-style-type: none">- Equipment upload at Rathmullan harbour. |
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7.3 Name/Address/Telephone of shipping agent (if available):

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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:

Coastal state is a partner in the INTERREG VA project

8.2 Proposed dates and ports for embarkation/disembarkation:

Rathmullan Harbour, Co. Donegal - 13 th May to 17 th May 2020
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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:

Coastal state is a partner in the INTERREG VA project (Loughs Agency is lead, with University of Glasgow and Marine Scotland are on the project Board), so will have access to all information and interim reports during the project

9.2 Anticipated dates of submission to the coastal State of the final report:
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Final Report Due in April 2023

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

Coastal state is a partner in the INTERREG VA project (Loughs Agency is lead, with University of Glasgow and Marine Scotland are on the project Board), so will have direct access to all information and interim reports during the project
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9.4 Proposed means to provide coastal State with assessment of data, samples and Research results:

Results will be provided in tabular, database and report format as required. Access to central database for partners including coastal state will be established. Requirement under INTERREG to have data and in some cases samples available post the project.

9.5 Proposed means to provide assistance in assessment or interpretation of data, samples

And research results:

Marine Institute will guarantee that data will be extracted, analysed and categorised after each recovery so data analyses will be ongoing once monitoring starts. One year of data will be modelled at the end of 2020 and the overall dataset by Dec 2021. Results will be generated at 4/5 monthly periods when equipment is recovered to facilitate collaboration with existing projects and to identify significant trends over the duration of the project. All progress will be updated in quarterly reports and summary results delivered when available. Extensive analysis of data will also be delivered when available for quarterly reports but this will be dependent on deployment and retrieval of equipment.

9.6 Proposed means of making results internationally available:

We will produce 8 peer reviewed publications by December 2024. This will be after the programme finishes but due to the length of time in getting the data analysed and going through the peer review process this is a more realistic target than the end of the programme in March 2022.

10. Other permits Submitted

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

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11. List of Supporting Documentation

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

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Signature:

Contact information of the focal point:

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