

Application for Consent to conduct
Marine Scientific Research

Date: 27/01/2015

1. General Information

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| 1.1 Cruise name and/or number: CV15015 - Celtic Sea UWTV Survey Leg 1 |
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| 1.2 Sponsoring Institution(s): | |
| Name: | Marine Institute |
| Address: | Rinville, Oranmore, Co. Galway |
| Name of Director: | Dr. Peter Heffernan |

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|---|--------------------------------|
| 1.3 Scientist in charge of the Project: | |
| Name: | Dr. Colm Lordan |
| Country: | IRELAND |
| Affiliation: | Marine Institute |
| Address: | Rinville, Oranmore, Co. Galway |
| Telephone: | 00 353 91 387200 |
| Fax: | 00 353 91 387201 |
| Email: | colm.lordan@marine.ie |
| Website (for CV and photo): | |

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| 1.4 Entity(ies)/Participant(s) from coastal State involved in the planning of the project: | |
| Name: | |
| Affiliation: | |
| Address: | |
| Telephone: | |
| Fax: | |
| Email: | |
| Website (for CV and photo): | |

2. Description of Project

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| 2.1 Nature and objectives of the project: Since 2006 the Marine Institute have carried UWTV surveys of the Celtic Sea <i>Nephrops</i> grounds which includes the Smalls and Labadie <i>Nephrops</i> grounds. The results of the survey series were used to describe the abundance, distribution and estimate the biomass of <i>Nephrops</i> in the Celtic Sea. 2.1 Nature of objectives of the project: 1. To obtain 2015 quality assured estimates of <i>Nephrops</i> burrow densities from a randomised isometric grid of UWTV stations at 4 nautical mile spacing on the Smalls <i>Nephrops</i> grounds. 2. To obtain 2015 quality assured estimates of <i>Nephrops</i> burrow densities from from a randomised isometric grid of UWTV stations at 6 nautical mile spacing Labadie, Cockburn and Jones Banks. 3. To collect ancillary information from the UWTV footage collected at each station such as the occurrence of sea-pens, other macro-benthos and fish species and trawl marks on the sea bed. |
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4. To collect oceanographic data using a sledge mounted CTD.
5. To sample *Nephrops* and macro benthos using a 4 m beam trawl deployed at ~10 stations on the Smalls only if time allows
6. To satisfy the requirements of the Irish National programme under the 'Data collection regulation' EC Regulation 1543/2000.

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:

2.3 Relevant previous or future research projects:

Since 2006 the Marine Institute have carried UWTV surveys of the Celtic Sea *Nephrops* grounds which includes the Smalls and Labadie, Jones and Cockburn *Nephrops* grounds.

2.4 Previous publications relating to the project:

Lordan, C., Doyle, J., Fitzgerald, R., O'Connor, S., Blaszkowski, M., and Simpson, S. 2014. The "Smalls" *Nephrops* Grounds (FU22) 2014 UWTV Survey Report and catch options for 2015. Marine Institute UWTV Survey report.

<http://hdl.handle.net/10793/992>

Doyle, J., Lordan, C., Hehir, I., Fitzgerald, R., O'Connor, S., Keith, M., and Sheridan, M. 2014. The Labadie, Jones and Cockburn Banks *Nephrops* Grounds (FU20-21) 2014 UWTV Survey Report and catch options for 2015. Marine Institute UWTV Survey report.

<http://hdl.handle.net/10793/991>

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.

Way points of the Smalls.

Latitude North Longitude West

| | | | |
|-----------------|-------|----------------|-------|
| 51 ^o | 46.00 | 6 ^o | 48.00 |
| 51 ^o | 26.00 | 6 ^o | 48.00 |
| 51 ^o | 56.00 | 6 ^o | 4.00 |
| 51 ^o | 11.00 | 6 ^o | 4.00 |
| 50 ^o | 96.00 | 6 ^o | 32.00 |
| 50 ^o | 86.00 | 6 ^o | 32.00 |
| 51 ^o | 61.00 | 6 ^o | 23.00 |
| 50 ^o | 86.00 | 6 ^o | 8.00 |
| 50 ^o | 96.00 | 6 ^o | 0.00 |
| 51 ^o | 26.00 | 5 ^o | 84.00 |
| 51 ^o | 46.00 | 5 ^o | 75.00 |
| 51 ^o | 0.06 | 5 ^o | 76.00 |

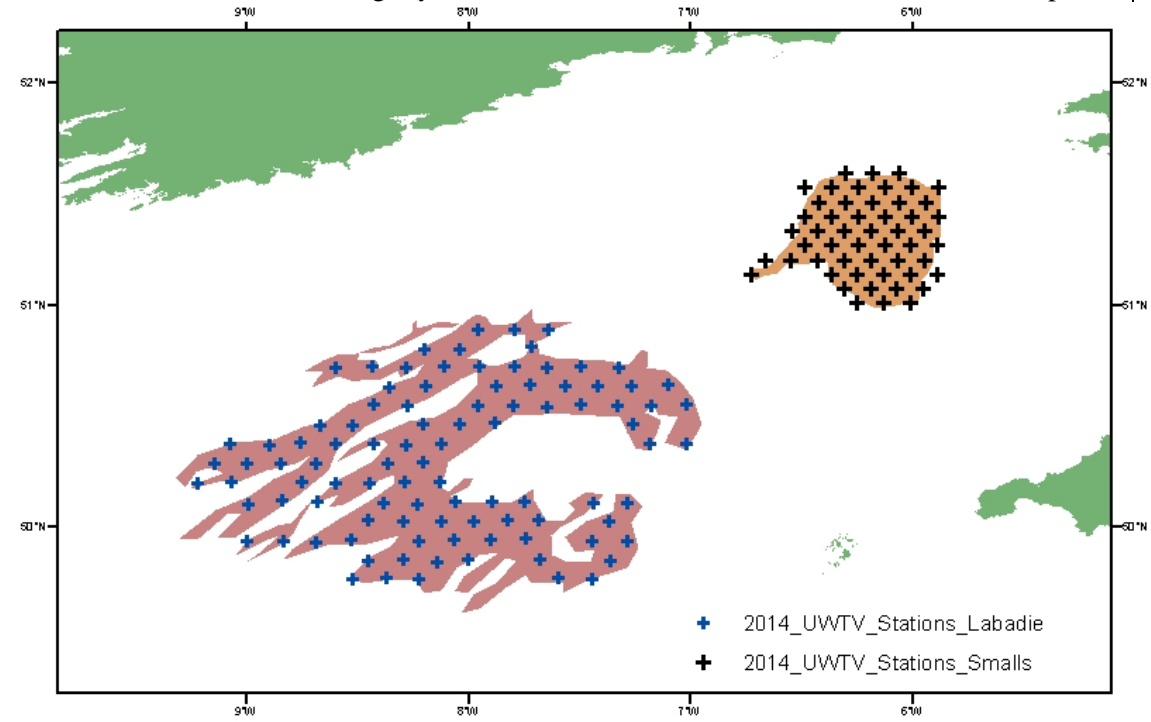
Way points of the Labadie.

Latitude North Longitude West

| | | | |
|-----------------|-------|----------------|-------|
| 51 ^o | 26.25 | 6 ^o | 46.9 |
| 51 ^o | 9.6 | 7 ^o | 28.45 |
| 50 ^o | 50.11 | 8 ^o | 35.19 |
| 50 ^o | 18.25 | 9 ^o | 9.24 |
| 49 ^o | 50.46 | 8 ^o | 58.2 |
| 49 ^o | 46.7 | 8 ^o | 27.39 |
| 49 ^o | 42.12 | 7 ^o | 53.23 |
| 49 ^o | 47.33 | 7 ^o | 22.41 |
| 50 ^o | 33.57 | 7 ^o | 0.012 |
| 51 ^o | 21.38 | 6 ^o | 46.59 |

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.

Stations in 2015 will be slightly offset to those 2014 stations shown in the below map.



4. Methods and means to be used

4.1 Particulars of vessel:

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| Name: | R.V. Celtic Voyager |
| Type/Class: | 100 A1 Research Vessel, LMC |
| Nationality (Flag State): | Irish |
| Identification Number (IMO/Lloyds No.): | |
| Owner: | Marine Institute |
| Operator: | P&O Maritime Services |
| Overall length (meters): | 31.4 |
| 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: | Philip Baugh/Colin McBrearty |
| Number of Crew: | 7 |
| Number of Scientists on board: | 8 max |

4.2 Particulars of Aircraft:

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| Name: | |
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| 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: | |

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| 4.3 Particulars of Autonomous Underwater Vehicle (AUV): | |
| Name: | |
| 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: | |

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| 4.4 other craft in the project, including its use: |
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| 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): |
| Underwater TV Footage of Nephrops ground to estimate burrow counts | Rapid Visual Counts | Sled mounted Underwater TV System | Yes |
| Nephrops and macrobenthos catches | Fishing Gear | 4 m beam trawl | No |
| CTD data | CTD profile | Sled mounted CTD | Yes |

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| 4.6 Indicate nature and quantity of substances to be released into the marine environment: |
| N/A |

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| 4.7 Indicate whether drilling will be carried out. If yes, please specify: |
| N/A |

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| 4.8 Indicate whether explosives will be used. If yes, please specify type and trade name, |
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Chemical content, depth of trade class and stowage, size, depth of detonation, frequency of Detonation, and position in latitude and longitude:

N/A

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):

The sled will be towed by a load bearing umbilical cable and associated winches.

RV Celtic Voyager will making between 2-3 knots for shooting into the weather. Once in the water the camera lights are switched on and warp paid out until the seabed comes into view. Shortly before touch down the vessel is slowed back to 0.8-1.0 knots. A warp-depth ratio of around between 1.4:1 and 1.8:1 is used at most stations. Once stable on the bottom the sledge is towed between 0.8-1.0 knots for around 10-14 minutes. During this time the sledge travels between 160-200m along the sea bed.

The sledge will be deployed at around 4-6 nautical mile intervals in regularly spaced grid over the survey area. The starting point for this grid will be randomized. The depth range will be from 50-147 meters (average ~100 m) for the Celtic Sea.

If time allows when TV operations are completed successfully, 10 stations selected randomly on the Smalls ground only will be trawled for 30 minutes. A warp depth ratio of around 3:1 is used.

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:

01/07/2015 – 10/07/2015

6.2 Indicate if multiple entries are expected:

Yes (the survey area covers some of the Irish zone and UK zone) so multiple entry are expected.

7. Port Calls

7.1 Dates and Names of intended ports of call:

NA

7.2 Any special logistical requirements at ports of call:

NA

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

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:

This survey involves fishery and oceanography and we would be happy to accommodate further multi-disciplinary elements within the survey programme.

8.2 Proposed dates and ports for embarkation/disembarkation:

01/07/2015 - Galway City, County Galway, Ireland.
10/07/2015 - Cork City, County Cork, Ireland.

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:

30/08/2015 Preliminary survey report.

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

30/11/2015 Final survey report.

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

Survey data and results will be analyzed by Scientists from MI (Ireland) through ICES. Access to data and samples can be arranged via Chief Scientist. Historical data and UWTV footage has been provided to JNCC in the UK in 2014.

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

Data and results will be shared freely between scientists from AFBI Northern Ireland (UK), JNCC UK, IFREMER France and MI (Ireland). Access to data and samples via Chief Scientist.

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

via Chief Scientist and through ICES fora

9.6 Proposed means of making results internationally available:

Report will be presented to the international scientific community through the relevant ICES working groups. The survey results will also be made publically available on the Marine Institute's publications repository:

http://oar.marine.ie/handle/10793/59/browse?type=title&submit_browse=Title

10. Other permits Submitted

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

NA

11. List of Supporting Documentation

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

NA

Signature:

Contact information of the focal point:

Name:

Country:

Affiliation:

Address:

Telephone:

Fax:

Email: