| A | | Havforsk | ningsinstitutt | et | Ref.id.: KS&SMS.5.4-03 |
|------------------|---------------|----------------|----------------|---------------|------------------------|
| Applica | tion for Cons | ent to conduct | Marine Scient | ific Research | Standard |
| Versjon: 1.01 | Opprettet: | Skrevet av: | Godkjent av: | Gjelder fra: | Sidenr: |
| 1.01 | 11.12.2013 | BTC | KRR | 11.12.2013 | 1 av 6 |

Application for Consent to conduct Marine Scientific Research

Date: January 06, 2020

1. General Information

1.1 Cruise name and/or number: Tagging and biological sampling of mackerel west of Scotland and Ireland, cruise number 2020816.

| 1.2 Sponsoring Institution(s): | |
|--------------------------------------|--|
| Name: Institute of Marine Research | |
| Address: P.O.B. 1870 Nordnes, N-5817 | |
| Bergen, Norway | |
| Name of Director: Sissel Rogne | |

| 1.3 Scientist in charge of the Project: | |
|---|--|
| Name: Aril Slotte | |
| Country: Norway | |
| Affiliation: Head of Pelagic Division, Institute of | |
| Marine Research, Bergen | |
| Address: P.O.B. 1870 Nordnes, N-5817 Bergen | |
| Telephone: +4755238500 | |
| Fax: | |
| Email: aril.slotte@hi.no | |
| Website (for CV and photo): www.imr.no | |

| 1.4 Entity(ies)/Participant(s) from coastal Sta | te involved in the planning of the project: |
|---|---|
| Name: FRS Marine Laboratory | |
| Affiliation: | |
| Address: 375 Victoria Road, AB 11 9 DB, | |
| Aberdeen, Scotland | |
| Telephone: | |
| Fax: | |
| Email: | |
| Website (for CV and photo): | |

2. Description of Project

2.1 Nature and objectives of the project: Tagging and biological sampling of mackerel as part of studies on the European mackerel stocks.

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:

RFID-tagging project. This project is a cooperation between Scotland, Ireland, Denmark, Iceland, Faroe Islands and Norway. The project is coordinated by Institute of Marine



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Research, Bergen, Norway.

2.3 Relevant previous or future research projects:

The tagging and sampling program 1968-2010 and the RFID-tagging project which started in 2011 and will continue.

2.4 Previous publications relating to the project:

Cruise reports and a paper by Maria Tenningen, Aril Slotte and Dankert Skagen, 2011. Abundance estimation of Northeast Atlantic mackerel based on tag recapture data – a useful tool for stock assessment? Fisheries Research. 107: 68-73.

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. W of Ireland, from ca 50°N to 56°N, from 9°W to 13°W, mainly ca 15 n. miles or more off the coast.

W of Scotland, from ca 56°N to 61°N, from 1°W to 11°W, mainly along the slope (150 m to 400 m depth).

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.



Mackerel tagging west of Ireland and Scotland in May/June 2020: Approximate limits of operation. Most of the work will be carried out along the edge of the continental shelf.



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4. Methods and means to be used

| 4.1 Particulars of vessel: | | |
|--|--|--|
| Name: | "Fiskebas" | |
| Type/Class: | Fishing vessel | |
| Nationality (Flag State): | Norway | |
| Identification Number (IMO/Lloyds No.): | IMO No. 9646998 | |
| Owner: | Fiskebas AS | |
| Operator: | Institute of Marine Research, Address: P.O.B. 1870 Nordnes, N-5817 Bergen, Norway | |
| Overall length (meters): | 64,2 meters | |
| Maximum draught: | 7,20 meters | |
| Displacement/Gross Tonnage: | 1899 | |
| Propulsion: | Diesel 3000 kW | |
| Cruising & maximum speed: | Cruising 11 knots, maximum 16 knots | |
| Call sign: | LDFS | |
| INMARSAT number and method and capability of communication (including emergency frequencies): | INMARSAT number: 00881622432448 Communication certificate for area A3 | |
| Name of Master: | Geir Magne Madsen | |
| Number of Crew: | 8 | |
| Number of Scientists on board: | 5 | |

| 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: | |
| Manufacturer and make/model: | |
| Nationality (Flag State): | |
| Website for diagram & Specifications: | |
| Owner: | |
| Operator: | |
| Overall length (meters): | |
| Displacement/Gross tonnage: | |
| Cruising & Maximum speed: | |
| Range/Endurance: | |



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| 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:

| gear specify type and dimensi | full description of scientific inst on) | ruments to be used(for fishing |
|--|--|--------------------------------|
| Types of samples and | Methods to be used: | Instruments to be used: |
| Measurements: | | |
| Tagging and releasing ca 30000-50000 mackerel. Biological sampling of ca 1000 mackerel. | Fishing mackerel with 4 jigging machines each with 10 hooks. | Echosounder. |
| | | |

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

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

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

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): None

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: First entry May 5, 2020, final departure June 4, 2020.

6.2 Indicate if multiple entries are expected:

7. Port Calls

7.1 Dates and Names of intended ports of call: Galway, Ireland May 19, 2020



Research

7.2 Any special logistical requirements at ports of call: Normal supplies only (water, food, oil).

7.3 Name/Address/Telephone of shipping agent (if available): Mr. Tom McElwain, City of Galway Shipping Co Ltd, New Docks, Galway, teleph. 91562987

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:

Participation possible.

8.2 Proposed dates and ports for embarkation/disembarkation: Embarkation: Bergen, Norway May 4, 2020 or Galway, Ireland May 21, 2020. Disembarkation: Galway, Ireland May 19, 2020 or Bergen, Norway June 5, 2020.

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: Basic data available in Cruise report about one month after cruise.

9.2 Anticipated dates of submission to the coastal State of the final report: About one month after cruise.

9.3 Proposed means for access by coastal State to data (including format) and samples: Data/results delivered on yearly basis to ICES WGWIDE Assessment Working Group.

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

Data/results delivered on yearly basis to ICES WGWIDE Assessment Working Group.

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

Data/results delivered on yearly basis to ICES WGWIDE Assessment Working Group.

9.6 Proposed means of making results internationally available: Data/results delivered on yearly basis to ICES WGWIDE Assessment Working Group.

10. Other permits Submitted

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

11. List of Supporting Documentation

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



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in belen Signature:

Contact information of the focal point: Name: Jostein Røttingen Country: Norway Affiliation: Cruise leader Address: IMR, P.O.B. 1870 Nordnes, 5817 Bergen Telephone: +47 55238500/ +47 45251951 Email: jostein.roettingen@hi.no