

Marine Scientific Research Application form for UK, Crown Dependencies, and Overseas Territories waters

The Ocean Policy Unit of the Foreign Commonwealth and Development Office presents its compliments to the applicant seeking to conduct marine scientific research (MSR) in UK, Crown Dependencies, and Overseas Territories waters. In order to receive clearance, please complete the <u>application form below</u> and send to <u>msrapplications@fcdo.gov.uk</u>.

Completed applications, containing **all** requested information, should be submitted at **least** <u>six months</u> prior to the proposed start date of the cruise.

Although late applications may be considered, we cannot guarantee that a decision will be made before the proposed start date of the cruise. In the interests of fairness between applications, and to ensure compliance with relevant international obligations, applications will only be expedited in exceptional circumstances, which should be stated and explained as part of the application.

1. General Information

1.1.a Cruise name and/or number:	'Ultra Athlete, Ross Edgley Swim Around Iceland	
1.1.b Name of Vessel:	CV6 (Clipper Ventures PLC fleet)	
1.1.c Flag State of Vessel:	United Kingdom	
1.1.d Dates of first entry and final departure from the research area by the research vessel and/or other platforms:	Start date: 16 th May 2025	End date: 31 st August 2025
1.1.e Port call(s) including dates, if any:	Reykjavik, Iceland 16 th May 2025 otherwise, dates not known. See map 1 in Section 3.2 below for possi- ble docking locations per weather/provision needs.	

1.2 Particulars of proposed research project:

1.2.a Using the map provided in section 11 of this form as reference, please mark which geographic area(s) the vessel will conduct its research in (mark as many as appropriate)

England		Wales	:	Scotland		N. Ireland		Crown Depend- encies /Over- seas Territories	x
1.2.b If entering tories please st	1.2.b If entering the Exclusive Economic Zone/Territorial Sea of any Crown Dependencies or Overseas Terri- tories please state them below:								∍rri-
Overseas Territory - Coastal waters around Iceland between latitude 63°00' N and 67°00'N and longitude 13°00'W and 26°00'W									
1.2.c Will any aspect of research involve/impact the seabed, including, but not limited to, dredging, trawling or dragging on the seabed:									
Yes				1	No				x
1.2.d Will any of the proposed research take place within Territorial Sea/Internal Waters:									

Yes – Iceland	x	No	
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1.3 Sponsoring Institution(s):				
Name:	Marine and Freshwater Research Institute of Iceland (MFRI)			
Address:	Fornubúðum 5 / 220 Hafnarfjörður, Iceland			
Name of Director:	Research Director: Dr Christophe Pampoulie/Scientist involved: Dr Valérie Chosson			
Name:	University of Iceland			
Address:	Sæmundargata 2, 102 Reykjavík, Iceland			
Name of Director:	Director: Dr Jón Atli Benediktsson/ Scientist involved: Dr Angel Ruiz Angulo			

1.4 Scientist in charge of the Project:			
Name:	Christophe Pampoulie		
Country:	Iceland		
Affiliation:	Marine and Freshwater Research Institute of Iceland (MFRI)		
Address:	Fornubúðum 5 / 220 Hafnarfjörður, Iceland		
Telephone:	+354 8650584		
Email:	christophe.s.pampoulie@hafogvatn.is		
Website (for CV and photo):	https://www.hafogvatn.is/is/midlun/utgafa/authors/christophe-pampoulie		

1.5 Enti	1.5 Entity(ies)/Participant(s) from coastal State involved in the planning of the project:				
Name:	Tom Myatt				
Affilia- tion:	Business Manager				
Ad- dress:	Clipper Ventures Plc, Granary and Bakery Building, Royal Clarence Yard, Weevil Lane, Gosport, Hampshire, PO12 1FX				
Tele- phone:	T: <u>+44 (0) 2392 534 730</u>				
Fax:	N/A				
Email:	tmyatt@clipper-ventures.com				
Website (for CV	<u>clipper-ventures.com</u>				

2. Description of Project

2.1 Nature and objectives of the project:

"CV6" will act as a support & science boat for Ross Edgley's long-distance sea swim in the coastal waters around lceland. The swim presents a unique opportunity for 'citizen science' research to be conducted as part of a coordinated effort between the Marine and Freshwater Research Institute of Iceland (MFRI, Hafrannsóknastofnun), the University of Iceland (HÍ, Háskóli Ísland), Future Oceans International (FOI) and the University of Victoria (VU), to facilitate research into biodiversity and human pressures. The CV6 crew members will be trained by MFRI, HÍ and FOI scientists to collect desirable water samples prior to the cruise. The goal of this collaboration is to get information on coastal marine communities using environmental DNA (eDNA), to assess microplastic presence and composition in coastal area of Iceland, and to obtain additional photographic information on distribution of whales around Iceland.

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:

Part of the collaboration is within the EU mission project named "BioProtect" (<u>Home - BioProtect</u>) which is cocoordinated by MFRI and Matis in Iceland. The coordinator of the project is Sophie Jensen from Matis, and the scientific coordinator Julian M. Burgos from MFRI.

2.3 Relevant previous or future research projects:

This is a unique opportunity to conduct surface water sampling around the coastal waters of Iceland. **No previous cruises have been performed before in Iceland's coastal areas**. MFRI boats are not focussing on coastal areas and are not performing eDNA or plastic analyses in these regions. Furthermore, whale counting occurs sparsely in these areas.

2.4 Previous publications relating to the project:

eDNA studies were first implemented by MFRI in 2017 on capelin, and results were published in a scientific journal:

Pampoulie C., Singh W., Guðnason K., Bárðarson B., Ólafsdóttir G., Þórarinsson Þ., Sveinsson S., and Gíslason D., 2024. Detection and distribution of the North Atlantic capelin (*Mallotus villosus*) using environmental DNA— comparison with data from the main fishery management survey. *Environmental DNA*, 6:e415.

3. Geographical Areas

3.1 Please 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.

As noted above, this coastal cruise circumnavigating Iceland presents a unique opportunity to support the work of MFRI (Hafrannsóknastofnun), the Universities of Iceland (Háskóli Ísland) and Victoria in Canada. It involves ultraathlete Ross Edgley (<u>https://www.rossedgley.com/</u>) swimming clockwise around the entire coast of Iceland. The swim will take some 3 months and will be shadowed by the support vessel, CV6. We expect Ross, weather permitting, to swim up to 20 miles per day at a distance of no more than 1 mile from shore (but up to 20 miles for safety). Water samples will be collected daily as weather conditions permit and the latitude and longitude noted. We are unable to give latitudes and longitudes in advance as we do not know how far Ross Edgley will swim each day.

3.2 <u>Attach chart(s)</u> 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.



Intended swim route which will run clockwise around Iceland. The vessel (CV6) will remain within 20NM from shore whilst predominantly under motor, taking into account other marine traffic, hazards and depth restrictions

Methods and means to be used

4.1 Particulars of vessel				
Name:	CV6			
Type/Class:	Bespoke round-the-world vessel used by Clipper Ventures PLC			
Nationality (Flag State):	United Kingdom			
Identification Number	73287			
Owner:	Clipper Ventures PLC (<u>https://www.clipper-ventures.com/</u>)			
Operator:	Clipper Ventures PLC (<u>https://www.clipper-ventures.com/</u>)			
Overall length (metres):	20.7 meters			
Maximum draught:	2.6 meters			
Displacement/Gross Tonnage:	46.60 tons			
Propulsion:	Perkins Sabre M130C			
Cruising & maximum speed:	4-10 knots			
Call sign:	MHUJ8			
INMARSAT number and method and ca- pability of communication (including emergency frequencies):	Starlink, Iridium LT3100 GMDSS			

Name of Master:	To be confirmed
Number of Crew:	Max. 15, but will operate 9-12
Number of Scientists on board:	TBC but possible Christophe Pampoulie, Research Director at MFRI (+354 8650584).

4.2 Particulars of Aircraft – N/A	
Name:	
Make/Model:	
Nationality (flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall Length (metres):	
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) – N/A				
Name:				
Manufacturer and make/model:				
Nationality (Flag State):				
Website for diagram & Specifications:				
Owner:				
Operator:				
Overall length (metres):				
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: - N/A

4.5 Particulars of methods and full description of scientific instruments to be used (for fishing gear specify type and dimension)

Please see Appendix 1/2/3 at end of this document for more information on the research plans

Types of samples and Methods to be used:		Instruments to be used:	Carried out within (nm):			
measurements:			0 - 12	12 - 200	200+	
<u>eDNA:</u> A maximum of 90 water samples will be col- lected. See Appendix 1	Samples will be collected at the surface for eDNA and filtered on-board CV6 while following Ross Edgley during his swim. A total of 1.5 litre will be fil- tered for each sample. eDNA samples will then be send to MFRI/Matís ohf. for eDNA analysis of communities.	eDNA Citizen Sampler	Yes	Yes		

Microplastic Analysis: The study of microplastic will be supported by two complementary projects: a) Total of 90 raw ocean water samples will be col- lected. b) Total of 30 to 60 samples will be col- lected. See Appendix 2	 a) Samples will be collected at the near surface (arms length depth ~45cm) and placed in glass sample jars. Each sample size is approximately 15ml. Samples will be returned to the University of Victoria for analysis, and interpretation of the data will be done in collaboration with scientists in Iceland (MFRI and HÍ). b) Samples will be collected using a manta net during a small transect and samples will be sent to HÍ for microplastic analysis. Results will be shared with MFRI and HÍ, and interpretation of the data will be done in a collaborative effort. 	Glass Sample Bottles Manta Net (Microplastic)	Yes	Yes	
Whale identification:Pictures of whales to be aken, i.e., the saddle for killer whales and pictures of the flukes (under part of he tail) for the humpback whales.During the route, crew members will be taking identification pictures of whales.See Appendix 3Appendix 3		Stills Camera	Yes	Yes	

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):

N/A

6. Port Calls

6.1 Dates and Names of intended ports of call:

Various – dependant on weather/provision requirements. See previous map (in section 3.2) for planned visits to ports.

6.2 Any special logistical requirements at ports of call:

Will need access to re-fuelling services and supermarkets.

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

N/A

7. Participation of the representative of the coastal State

7.1 Modalities of the participation of the representative of the coastal State in the research project:

The Research Director of MFRI Christophe Pampoulie contacted Skúli Kristinn Skúlason from the Ministry of Food in Iceland skrifstofa auðlinda / Department of Resources, Iceland.

As the support vessel is under UK flag, we were then asked to submit a research permit to **Sophie Stewart**, **Deputy Head of Mission and Consul at the British Embassy in Reykjavík** who has advised that we need formally submit a UK MRSA application. Once this is completed, the British Embassy will forward the request for the permit to the Ministry of Foreign affairs in Iceland.

7.2 Proposed dates and ports for embarkation/disembarkation:

Embarkation/Disembarkation will be from Reykjavik Port. Other ports not known as current.

8. Access to Data, Samples and Research Results

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

31st of August 2025 for the samples. Results will not be produced by the coast state (Iceland) before spring 2026.

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

October 2025.

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

eDNA samples and photos of whales will be given to the coastal state as soon as the swim contest of Ross Edgley will be finished. Some plastic samples will be sent to University of Victoria and results will be provided and discussed with the coastal state as soon as they will be available.

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

Please see 8.5

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

eDNA samples and photo identification of whales will be analysed by the coastal state (Iceland). Assistance will only be valid for the plastic samples analysed in the University of Victoria which will collaborate with scientists in Iceland for the interpretation of the data, namely Dr Angel Ruiz Angulo (HÍ) and Valérie Chosson (MFRI).

8.6 Proposed means of making results internationally available:

<u>eDNA</u> samples will be made available to MFRI and Matis as soon as the context is finished. They will be analysed before the end of 2025 for coastal biodiversity assessment. eDNA results will be integrated into BioProtect Biodiversity toolbox, which aims at a better understanding of biodiversity and at developing tools promoting its conservation considering human pressures and societal benefit. In addition, results from eDNA will be published in international scientific journal and advertise on the website of the Marine and Freshwater Research Institute. This collaboration will also be advertised on media for the promotion of citizen science and the importance of such event in accessing areas where scientists rarely go. These results will be part of BioProtect EU mission project and will be made open access once published in scientific journals.

<u>Plastic analysis:</u> The study of microplastic will be supported by two complementary projects. First a total of 90 raw ocean water samples will be collected at the near surface (arms length depth ~45cm) and placed in glass sample jars. Each sample size is approximately 15ml. Samples will be returned to the University of Victoria for analysis, and interpretation of the data will be done in collaboration with scientists in Iceland (MFRI and HÍ). Second, a manta net will be used to collect samples during a small transect and samples will be sent to HÍ for microplastic analysis. A total of 30 to 60 samples will be collected. Results will be shared with MFRI and interpretation of the data will be done in a collaborative effort.

<u>Whale identification:</u> Pictures of the flukes of humpback whales and of the saddle of killer whales will be made available to MFRI scientists as soon as the cruise will be finished. MFRI will integrate pictures of humpback whales' flukes into it registers database (<u>Humpback Whale Photo ID | Marine and Freshwater Research Institute</u>) and in the North Atlantic Whale catalogue.

9. Other permits submitted

9.1 Indicate other types of coastal state permits anticipated for this research (received or pending): N/A

10. List of Supporting Documentation

11.1 List of attachments, such as additional forms/licences and/or permits required by the coastal State: N/A, but see appendices 1 to 3 for research plans and collaboration

Appendix 1: Environmental DNA (eDNA) - BioProtect Project and collaboration with Ross Edgley

BioProtect EU project was funded by the EU commission in 2023, and its main objective is to develop tools for a better understanding and management of biodiversity in the ocean while considering anthropogenic pressures and societal benefits.

BioProtect develops and promotes the use of an area-based management decision support framework (ABM-DSF) to support ecosystem-based Marine Spatial Planning (EB-MSP) and reduce multiple interacting pressures from human activities in European seas.

The BioProtect ABM-DSF includes:

- 1) Recommendations for good governance and management.
- 2) Procedures and technologies to activate and engage citizens and stakeholders in co-design and decisionmaking.
- 3) Strategies to map, monitor and forecast changes in marine biodiversity.

- 4) Process to identify risks and adaptive measures to reduce pressures from human activities on marine biodiversity.
- 5) Decision support tool (DST) for ecosystem-based conservation and restoration planning.
- 6) Impact assessment workflows to understand the ecological and socio-economic consequences of management options.
- 7) Capacity building to facilitate the use of the framework.

The points 2) and 3) addressed during the development of the ABM-DSF tool of BioProtect include participatory science in the collection of data related to Biodiversity in the marine environment. As such, one of the goals of BioProtect is to engage citizen to collect environmental DNA samples using a "eDNA citizen sampler" purchased by the project (Figure 1)

Environmental DNA (eDNA) is DNA that is collected from environmental samples such as soil, seawater, snow, or air, rather than directly from an individual organism. It includes genetic materials shed by organisms into their environment, such as cells, hairs, secreted feces, mucous, and gametes. eDNA technology is therefore non-invasive (not lethal) and has been shown to be useful for community assemblage and biodiversity analyses. The Marine and Freshwater Research institute (MFRI), which cocoordinates the science part of BioProtect with, has been collecting eDNA samples since 2019 but most of them are located at the limit of the continental shelf and the deep ocean. Monitoring of biodiversity along the coast of Iceland is presently not conducted and very little information is available on biodiversity in this area.

By using the swimming challenge of Ross Edgley, e.g. his crew members will be collecting eDNA in coastal areas, BioProtect and MFRI will achieve two of their important objectives:

- 1) Promote and engage citizen for the monitoring and protection of biodiversity,
- 2) Improve its knowledge on coastal communities which is presently unknown.



Figure 1. a) eDNA citizen sampler. b) Sampling procedure.

a)

Appendix 2: Microplastic Analysis – Collaboration with Ross Edgley team

1. Future Oceans International's Partnership with Ross Edgley's Iceland Swim

With the health of the world's oceans in rapid decline, advancing research and innovation is critical to reversing harmful practices. Future Oceans International is committed to accelerating the visibility and application of emerging technologies that address ocean conservation challenges.

As part of Ross Edgley's upcoming **4-month swim around Iceland**, Future Oceans International will collaborate with his team and scientists in Iceland to conduct a **first-of-its-kind microplastic survey** along the swim route. This initiative will bring global attention to the **presence and distribution of microplastics in Icelandic coastal waters** while showcasing cutting-edge detection technology developed by the **University of Victoria's MiNa Lab**.

The MiNa Lab has pioneered a **rapid on-site microplastic detection system**, capable of identifying particles from $1 \mu m$ to 5 mm in minutes—a breakthrough in environmental monitoring. Our collaboration will integrate this technology into Ross's expedition, capturing real-time data on microplastic contamination in the North Atlantic.

How It Will Work

- Future Oceans International will **train a designated member** of Ross's support team in a standardized water sampling protocol.
- 70 to 90 samples will be collected along the swim route, with procedures designed to ensure the integrity of raw ocean water samples.
- Samples will be securely stored and transported to **MiNa Lab for analysis** at the earliest convenience following the swim.
- The lab will provide **detailed analytical data**, which will be shared with Ross's team and made available to the rest of the team for broader scientific (among which scientists from MFRI, HÍ) and public engagement.
- Future Oceans International will work with MiNa Lab to determine the most effective analysis approach, maximizing insights within the available budget.

This collaboration offers a unique opportunity to couple Ross's global audience and media reach with Future Oceans International's to spotlight the urgent issue of microplastic pollution while demonstrating a transformative solution for large-scale environmental monitoring.

Sampling Materials

- Centrifuge tubes (15 mL) 90 tubes (one for each sampling day)
- Clean bucket Ensure it is free from any contaminants prior to sampling.

Sampling Procedure

Water Collection

- Collect surface water by **submerging the tube** directly or using a **clean bucket** to transfer **water** into the tube.
- Fill each tube completely and secure the cap tightly to prevent leakage or contamination. Label each tube with sample number and return to storage container.

Data Recording (template will be provided)

- GPS Location: Document the latitude and longitude of the sampling site.
- Date & Time: Record the exact date and time of collection.
- Temperature: Note the water temperature and/or ambient temperature at the time of sampling. *Sampling Consistency*
- Collect samples at approximately the same time each day using the same method to ensure uniformity across all collected samples (where and when practical).

Storage & Shipment

- Store samples in the provided storage container or other dark location at room temperature, avoiding exposure to direct light.
- Ensure all tubes remain properly sealed to maintain sample integrity.

• Coordinate with Future Oceans International representative for the return of samples upon completion of the sampling period.

2. University of Iceland and the Marine Geosciences research group at the University of Barcelona (UB) "Surfing for science 2" project

This second project on microplastic aims to identify and quantify the distribution of microplastic pollution in shoreline waters around Iceland, involving citizens as 'citizen scientists. Following the successful model of the 'Surfing for Science' project and in collaboration with the Marine Geosciences research group at the University of Barcelona (UB). The main idea is rather simple: we deploy a small manta-net during parallel boat sailing as Ross swims and collect GPS data via typical applications (Strava, Garmin or boat GPS). The net has a small bag at the end where the collected material is trapped. This end bag will be deposit in a designated bottle and filled up with freshwater. The bottles would be labeled in a sequential way and the collected material will be then analyzed at the University of Iceland. The trawl, specially designed for this project, has a microplastic fishing net that captures all plastic pieces larger than 0.3mm. Later, these microplastics are counted in the lab. We plan to create a photographic album showcasing the types of plastics found in our vicinity. This project serves as the pilot version for Iceland, with the aspiration of being adopted by all sailing clubs in the country.

The pictures below show the manta net and the sampling bags, as well as the tracks and the material collected in the nets. This project is inspired by a successful project out of the coast of Barcelona called *"Paddle surfing for science https://www.asensiocom.com/surfingforscience/en/#"* (Camins et al.,



Appendix 3: Photo identification of humpback whale

The aim of this study is to complete a unique collection of humpback whale visiting Iceland feeding grounds and promote more the participation of citizen. This photo-identification is a tool to answer various questions about the ecology and movement of humpback in the coastal waters of Iceland. The collaboration between MFRI and Ross Edgley team will contribute to:

1) To collect photograph and compare them to the Icelandic Humpback whale catalogue (ISMN catalogue) and bring a unique insight of how the central North Atlantic feeding ground is used. Data will also be shared with the North Atlantic Humpback Whale Catalogue to improve our knowledge at a larger scale.

2) To fill data gap and investigate if and how humpback whales individuals are moving around Iceland within a short period of time corresponding to their feeding time.

Using a digital camera and lens provided by the MFRI, crew member will take pictures of the humpback whale flukes and of saddle of killer whale, while recording the presence of these whales at the same time.

The two main species of interest are humpback whale and killer whale, which are the species currently curated in our database. The body features of interest are different and depend on the species.

- For the humpback whale, the under part of the tail (fluke) is the very distinctive body part used.
- For the killer whale, the saddle (grey patch on the back of the whale), the dorsal fine shape and scars are the key features. The right-side saddle is the most important target.



For these two species, photos of the groups will also be taken with special focus on mother-calf pairs since it can be used to estimate the age of the mother whale in the future. For each group (encounter), latitude and longitude will be recorded.

Unusual features, such as scar or wound due to boat strike and/or entanglement for example, should be documented and dead marine mammals body reported to the coast guard and MFRI as soon as possible.

Data will be recorded in such template for each day, provided by MFRI:

Date	Starting point			Ending point				comment	
	First	Time	Latitude	Longitude	Time effort	Latitude	Longitude	Last photo Num-	
	photo	effort			ends			ber	
	Number	starts							
10/03/2025	10-002	10:30			17:18			11-012	
		20:30			01:30				

Encounter	date	Leg ID	specie	Latitude	Longitude	Photo (y/n)	comment	photographer
1	01-06-2025	1	porpoise			n		
102	30-08-2025	34	humpback			У		

11. Map showing Maritime delimitations of English, Scottish, Northern Ireland and Welsh waters. Please use this map as a reference to answer question 1.2.a. If you are unsure whether your cruise crosses the borders from one administration to another, please ensure you mark BOTH administrations when answering question 1.2.a. For information on delimitations of the Crown Dependencies and the Overseas Territories please see the charts available <u>here.</u>

