

APPLICATION FOR CONSENT TO CONDUCT MARINE SCIENTIFIC RESEARCH

1. General Information

1.1 Cruise name and/or number:	One Ocean Expedition II
--------------------------------	-------------------------

1.2 Sponsoring institution(s):		
Name	Address	Name Of Director
Statsraad Lehmkuhl Foundation	Skur 7, Bradbenken 2, N-5003 Bergen, Norge	Haakon Vathe
UiT The Arctic University of Norway	Hansine Hansens veg 18, 9037 Tromsø	Dag Rune Olsen
IMR	Nordnesgaten 50, 5005 Bergen	Professor Nils Gunnar Kvamstø

1.3 Scientist in charge of the project:	
Name:	Jørgen Berge
Country:	Norway
Affiliation:	UiT The Arctic University of Norway
Address:	Hansine Hansens veg 18, 9037 Tromsø
Telephone:	+47 77 64 60 36
Email:	Jorgen.berge@uit.no

1.4 Entity(ies) /Participant(s) from coastal State involved in the planning of the project:	
Name: Maxime Geoffroy	See Section 6.2
Country: Canada, Newfoundland	
Affiliation: Fisheries and Marine Institute of Memorial University of Newfoundland	
Address: 155 Ridge Rd, St. John's, NL A1C 5R3, Canada	
Telephone: +1 709-778-0200	
Fax:	
Email: Maxime.Geoffroy@mi.mun.ca	
Website (for CV and photo): https://www.mi.mun.ca/departments/officeofresearchanddevelopment/ourresearchers/drmaximegeoffroy.php	

1.5 Submitting officer:	
Name:	Geir Pedersen
Affiliation:	Norway
Address:	Institute of Marine Research
Telephone:	Nordnesgaten 50, 5005 Bergen
Fax:	+47 94279437
Email:	Geir.pedersen@hi.no

2. Description of Project

2.1 Nature and objectives of the project:



In April 2025 the Norwegian tall ship Statsraad Lehmkuhl, set sail for the second edition of One Ocean Expedition. The Expedition is a global project, and a recognized part of the UN's Ocean Decade. The main goal of the expedition is to create attention and share knowledge about the crucial role of the ocean for sustainable development in a global perspective. It encourages cooperation across borders for a more sustainable ocean and serves as a reminder that the ocean itself knows no borders.

Statsraad Lehmkuhl is with her 98 metres length, one of the largest and oldest tall ships in the world still in active duty. She is primarily a sail training vessel where the up to 135 voyage crew go sea watches and run the ship together with the professional crew. As part of the One Ocean Expedition the ship is equipped with sensors and instrumentation for scientific measurements and education.

One Ocean Expedition 2025 – 2026 will be a 12-month expedition taking the ship to various ports in Europe, including Nice, France, where it will be a part of both the One Ocean Science Conference and the UN Ocean Conference (UNOC2025), before setting sail for its Arctic adventure, going from Greenland through the Northwest Passage to the west coast of North America. In Inuit Nunangat, the expedition will have stopovers in Gjoa Haven, Cambridge Bay and Vancouver. This Arctic portion of the expedition will be a significant contribution towards the UN's Ocean Decade, providing the younger generation of students and researchers with first-hand knowledge about Arctic regions. The University of Tromsø (UiT) The Arctic University of Norway, will develop and lead the educational and scientific program for this portion of the expedition, in close cooperation with Canadian and international partners.

The backbone of this expedition will be a 10 ECTS interdisciplinary course open for bachelor's and master's students and doctoral fellows, with the title: "One Ocean Expedition II - COURSE – Arctic Future Pathfinders. A journey through the Northwest Passage". The course will be in English, and it will be open to both Norwegian and international participants.

2.2 Relevant previous or future research projects:

One Ocean Expedition I
Arctic Ocean 2050 (planned start in 2026)

2.3 Previous publications relating to the project:

One Ocean Expedition I (2021-2023). The One Ocean Expedition 2021-2023 was a 20-month long circumnavigation of the globe by Statsraad Lehmkuhl. A

report summarizing the scientific motivations, equipment and work for this expedition:

<https://www.hi.no/hi/nettrapporter/rapport-fra-havforskningen-en-2023-34#sec-2-15>

All data from One Ocean Expedition 2021-2023 are published by the Norwegian Marine Data Centre (NMDC) - <http://metadata.nmdc.no/metadata-api/landingpage/16316eb3cea666a1871679a8b78568e1>

Data from One Ocean Expedition II (2025-2026) will also be publicly available through NMDC (<https://nmdc.no/en>).

3. Geographical Areas

3.1 Indicate geographical areas in which the project is to be conducted (with reference in latitude and longitude, including coordinates of cruise track/ way points):

Statsraad Lehmkuhl is a sailing vessel which makes it challenging to follow a fixed schedule or route when using the wind for propulsion, however the plan is as following:

From Ponta Delgada to Nuuk, it would be natural to head north on the eastern side of the Flemish Cap to avoid the Labrador Current as much as possible and thus reduce the chances of encountering icebergs.

Tentative plan, depending on sailing and ice conditions:

From	To	Country of arrival	ENTRY	ENTRY	EXIT	EXIT
Nuuk	Pond	Canada	56°24,3' N	044°38,1' W	70°42,5' N	061°29,7' W
Pond (via Bellot Strait)	Gjøa Haven	Canada	64°59,7' N	057°44,0' W	48°29,9' N	124°45,7' W
Gjøa Haven	Cambridge Bay	Canada	70°48,1' N	139°53,9' W	32°36,2' N	117°36,1' W
Cambridge Bay	Nome	USA	68°51,1' N	168°58,6' W	67°42,2' N	168°58,6' W
Nome	Anchorage	USA	32°36,2' N	117°36,1' W	12°48,1' N	093°43,1' W
Anchorage	Vancouver	Canada	12°48,1' N	093°43,1' W	11°42,0' N	091°05,8' W
Vancouver	Seattle	USA	11°42,0' N	091°05,8' W	10°47,1' N	088°55,3' W

In writing this is the intended inshore route where Lat/Long – coordinates make less sense.

Pond Inlet
 South of Bylot Island – North of Baffin Island
 Navy Board Inlet
 East of Brodeur Peninsula (Baffin Island) – West of Bylot Island
 Lancaster Sound
 North of Baffin Island – South of Devon Island
 Prince Regent Inlet
 East of Sommerset Island – West of Brodeur Peninsula
 Bellot Strait
 South of Sommerset Island – North of Boothia Peninsula

Amundsen Route from this point onwards

Franklin Strait

East and south of King William Island, stopping in Gjoa Haven
 Queen Maud Gulf & Coronation Gulf
 South of Victoria Island, stopping in Cambridge Bay for Crew Change etc.
 Dolphin and Union Strait
 Amundsen Gulf
 Beaufort Sea

Alternatively, if Pond Inlet is not accessible.

Lancaster Sound
 North of Baffin Island – South of Devon Island
 Parry Channel
 North of Sommerset Island – South of Cornwallis Isl.
 Peel Sound
 East of Prince of Wales Island – West of Somerset Isl.
 Franklin Strait
 East and south of King William Island, stopping in Gjoa Haven
 Queen Maud Gulf & Coronation Gulf
 South of Victoria Island, stopping in Cambridge Bay for Crew Change etc.
 Dolphin and Union Strait
 Amundsen Gulf
 Beaufort Sea

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.

See attachment and 3.1. Sampling stations TBD, weather and time permitting. All coordinates and timings (3.1) are approximate. Statsraad Lehmkuhl is a sailing vessel which makes it challenging to follow a fixed schedule or route when using the wind for 'propulsion'.

4. Methods and Means to be Used

4.1 Particulars of Vessel:	
Name:	Statsraad Lehmkuhl
Type/Class:	Tall Ship / 3-masted Barque, training vessel
Nationality (Flag state):	Norwegian
Identification Number (IMO/Lloyds No.):	5339248
Owner:	Stiftelsen Seilskipet Statsraad Lehmkuhl
Operator:	Stiftelsen Seilskipet Statsraad Lehmkuhl
Overall length:	98 meters (incl. bowsprit – length extreme)
Maximum draught:	5,3 meters
Displacement/Gross tonnage:	2231 T / 1516 GT
Propulsion:	Bergen Diesel-KRM6 - 827 kW
Cruising:	8 knots (in calm conditions)
Maximum speed:	10 knots (in calm conditions)
Call sign:	LDRG
INMARSAT number and method and capability of communication (including emergency frequencies):	VSAT: (+88) 16 77 11 17 26 Iridium: (+88) 16 41 70 97 58
Name of master:	Jens Joachim Hiorth / Marcus Albert Seidl
Number of crew:	25-30
Number of scientists on board:	20 scientists and 60 students per leg (Nuuk-Cambridge Bay, Cambridge Bay-Anchorage)

4.2 Other craft in the project, including its use:

TBD

4.3 Particulars of methods and scientific instruments:		
Types of samples and measurements	Methods to be used	Instruments to be used
Single-beam echosounder	Hull mounted sensor	Kongsberg Discovery EK80 (38, 120, 200 kHz)
ADCP	Hull mounted sensor	RDI 75 kHz, Kongsberg Discovery CP 300 kHz
Passive acoustics	Hull mounted sensor	Three Ocean Sonics hf hydrophones
Temperature, relative humidity, precipitation intensity, precipitation type, precipitation quantity, air pressure, wind direction, wind speed, radiation	Mast mounted sensor	WS700-UMB Smart Weather Sensor
Rain/precipitation quantity, rain/precipitation type (Rain, snow, sleet, freezing rain, hail)	Mast mounted sensor	WS100 Radar Precipitation Sensor / Smart Disdrometer
SST skin temperature	Mast mounted sensor	Apogee SI-421-SS. Narrow field of view infrared radiometer sensor
Temperature, conductivity, dissolved oxygen, chlorophyll A, turbidity, backscatter pH, PAR	Sensors on CTD rosette	Seabird SBE19plus V2 SBE43 DO CHL-a & TURBIDITY ECO-FLNTU SATPAR PAR-LOG ICSW, SATPAR SURFACE/REFERENCE PAR SBE18 pH
Temperature, conductivity, dissolved oxygen, turbidity, chlorophyll A	Sensors of flow through system (ferrybox)	AADI 4319B AADI 4835 AADI 4112 Turner Designs Cyclops
PAR	Mast mounted sensor	Quantum SQ-522 PAR sensor
Zooplankton	Zooplankton net deployed from vessel	WP2 plankton net, mesh size of 180 micrometer. Planktoscoptes for semi-automated ID of communities.
Fish samples	Four fishing rods at the stern of the vessel	Onboard sequencing and samples for post cruise lab analysis
Water samples for eDNA analysis	Water samples collected from vessel flow through system and water bottles on CTD rosette (12x2.5l)	Onboard filtration and qPCR/sequence analyses and water filtered for post cruise lab analysis
Water samples for microplastics analysis	Water samples collected from vessel flow through system and water bottles on CTD rosette (12x2.5l)	Onboard filtration and analysis (size, numbers of particles), and water samples for post cruise lab analysis
Water samples for water isotope analysis	Water samples collected from vessel flow through system.	Water samples for post cruise lab analysis.
Sampling of benthic fauna (macrofauna and meiofauna)	Seafloor sediment extraction	Boxcorer, Van Veen Grab. Onboard morphological and molecular sequence ID and specimens for post-cruise ID.
Water samples for Chlorophyll, POC	Water samples collected from vessel flow through system and water bottles on CTD rosette (12x2.5l)	Onboard filtration and analysis (size, numbers of particles), and water samples for post cruise lab analysis
Blood plasma proteomic and metabolomic profiles of individuals onboard	Microsampling device for blood sampling (Capitainer system)	Sampling and storage of samples for post cruise lab analysis

4.4 Indicate nature and quantity of substances to be released into the marine environment:
No substances will be released into the marine environment.

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

4.6 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:

Explosives will not be used.
4.7 Indicate whether protected species be studied. If yes, please specify:
Protected marine mammals or birds will not be sampled or studied. Rare or undescribed benthic species may be included in the seafloor samples. These will be identified to highest possible taxonomical level onboard the vessel using traditional morphology and DNA sequencing, and then preserved in 96% ethanol for post cruise identification and description.

5. Installations and Equipment

5.1 Details of installations and equipment (including dates of laying, servicing, method and anticipated timeframe for recovery, locations and depth, and measurements):
None

6. Dates

6.1 Estimated overall project start and end dates:
Project Start Date: 07.04.2025
Project End Date: 18.04.2026

6.2 Coastal State-specific details:	
Coastal Area	
Estimated Entry Date:	05.08.2025
Estimated Departure Date:	02.09.2025
Estimated Research Start Date:	05.08.2025
Estimated Research End Date:	02.09.2025
Explanation of multiple entries:	Statsraad Lehmkuhl will exit Canada and sail around Alaska before reentering Canadian waters and port call in Vancouver.
Research will be performed:	
Extent to which [name of coastal State where applying] will be enabled to participate or to be represented in the research project:	Memorial University of Newfoundland Greenland Institute of Natural Resources UArctic In contact with Students On Ice In contact with local community representatives and students, and an application for funds to cover their participation in the cruise was submitted to the Norwegian Directorate for Higher Education and Skills
Name, affiliation and contact information for all participants from [name of coastal State where applying] :	To be determined

7. Port Calls

7.1 List of Port Calls

Port	Arrival Date	End Date	Special Logistical Requirements	Shipping Agent
Pond	13-aug-2025 10:00	14-aug-2025 14:00		
Gjøa Haven	22-aug-2025 10:00	26-aug-2025 14:00		
Cambridge Bay	29-aug-2025 10:00	02-sep-2025 14:00		
Vancouver	20-okt-2025 10:00	21-okt-2025 14:00		

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:
There is a certain number of berths for students from Memorial university will be selected through internal selection process.
Other modalities from other participants TBD.
8.2 Proposed dates and ports for embarkation/disembarkation:
Nuuk, Greenland (5 th of August 2025): embarkation Cambridge Bay (2 nd of September 2025): embarkation/disembarkation Anchorage (8 th of October 2025): disembarkation

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:
No more than 3 months from the end date of the research as provided in Section 6.1.
9.2 Anticipated dates of submission to the coastal State of the final report:
No more than 2 years from the end date of the research as provided in Section 6.1.
9.3 Proposed means for access by coastal State to data (including format) and samples:
Data will be provided through official channels at no cost to the coastal State(s). Samples will be provided upon request.
9.4 Proposed means to provide coastal State with assessment of data, samples and research results:
Assessment of data, samples and research results will be provided at no cost to the coastal State(s). Research data will be hosted in a cloud service accessible to the coastal State(s).
9.5 Proposed means to provide assistance in assessment or interpretation of data, samples and research results:
Assistance in further assessment or interpretation will be provided upon request.
9.6 Proposed means of making results internationally available:
Reports, student theses, scientific publications produced based on data and samples will be openly available.

10. List of Supporting Documentation

10.1 List of attachments, such as additional forms required by the coastal State, etc.:			
Attachment Type	Description	Attachment	Submission Date
PDF	Introduction to OOE and the educational and scientific program	1 One Ocean Expedition 2025-2026 – introduction.pdf	xx.10.2024
Excel	Overview of voyage, entering and exiting EEZs and ports.	MasterdocumentOOE2.xlsx	xx.10.2024