

University of Windsor



**SYSSELMESTEREN  
PÅ SVALBARD**

Att.: Nigel Hussey

*Our date:*  
09.08.2021

*Our reference*  
21/01661-8

*Your date:*  
03.08.2021

## **Reply to research application - RiS-ID 11774 - Greenland shark tagging study - Somniosus microcephalus**

The Governor refers to your updated application dated 03.08.2021, RiS-ID 11774, concerning your project “*Greenland shark tagging study (Somniosus microcephalus)*”. We also refer to our e-mail correspondence with you in the period from 29.07.2021 – 03.08.2021 concerning the detailed fieldwork-methods and additional measures compared to the original edition of the RIS-application 11774 dated 01.07.2021.

### **Application**

The purpose of the proposed fieldwork is to study the movements, behaviour and feeding ecology of the Greenland shark (*Somniosus microcephalus*). The planned field measures are as follows:

- 1) **Tagging:** using a combination of bio-telemetry and bio-logging technologies. Archival tag packages attached to wild Greenland sharks for periods of 1-7 days will record acceleration, temperature, depth, prey fields and ambient sound. Pop-up satellite tags will record depth and temperature for longer periods of up to one year. One of the primary goals is to use bio-logging data to study the foraging patterns of this species and to identify specific feeding events throughout each 1-7 day deployment. The aim is to catch a maximum of 30 animals to equip with electronic tags.
- 2) **Use of submersibles** to allow both direct observation and scientific visual documentation.
- 3) **Use of ROVS** (as in point 2).
- 4) **Food fall experiment** – (quotation from the application): “Controlled drop of bait on the seabed to understand Greenland shark attraction rates and behavioural responses. We are planning for up to three bait fall experiments but obviously this is dependent on how successful these trials are, i.e. number of sharks/attraction rates etc. Our current plan is to hold only 'fish bait trials' (150 kg per food fall; two of these) and seal only trials (i.e. 5 seals). Depending on outcomes of the first trial; we may use combined fish and seal, i.e. 100kg of fish and 2 seals. With respect to pollution - our bait consists of fish (pollack) and seal (primarily ringed seal). The fish has been purchased from local fishing operations and the seals have been collected as part of recent ongoing scientific sampling and retained for this purpose (for NPI). Both species are natural to the environment and found in the diet

(stomach contents) of Greenland sharks. Ultimately the three trials will use the total bait we have: 300kg of pollack and 5 full seal carcasses.”

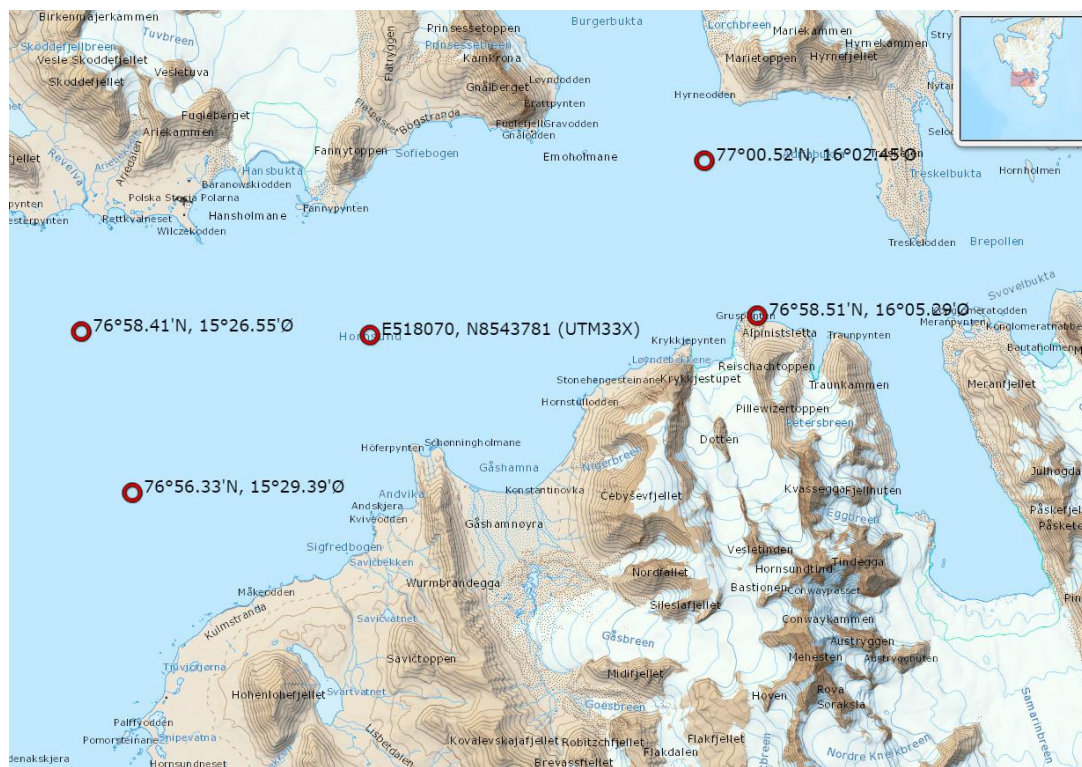
5) **Bait plume tracing using dyes** to assist food fall experiment.

The use of dyes is explained as follows in the application: Coloured dye (fluorescein [yellow/green]- classified as non-ecologically hazardous, biodegradable and EPA approved) will be released during the food fall experiment to highlight the direction of bait plume. Use of one tablet per bait fall experiment, thus 3 in total. It will be used 1 tablet for 60 gallons of water to dilute. The mixture will be injected into the current via the submersible/ROV syringe (i.e. syringe fitted to these vehicles). This will give a visual representation of the current dynamics as sharks interact with the bait complementing oceanographic data recorded by the vessel.

The aim of the fieldwork is among other described to be (quotation - e-mail from N. Hussey to the Governor dated 01.08.2021):

“(i) investigate and document spatial habitat use when an experimental bait fall is available; time to arrival, numbers of sharks attracted, time resident on the bait fall, behaviours while on the bait fall, temporal trends in abundance and return rates of individuals to the bait fall over a 10-hour period, shark behavioural interactions with bait (i.e. feeding behaviour - manipulation of bait) and shark-shark interactions given known cannibalism in this species”

The fieldwork is planned to be performed from 04.08.2021-26.08.2021 in Hornsund, within Sør-Spitsbergen National Park, cf. figure 1.



**Figure 1:** The field location applied for is in Hornsund. The coordinates for the designated grid for scientific activities is shown with the four outermost coordinates in all directions.



The need of implementing the applied measures within the protected area Sør-Spitsbergen national park is justified as follows in the application (quotation):

*“The Hornsund trench is a relatively enclosed fjord system with historically low sea ice coverage due to the warmer waters of the Atlantic current. Convergence of the current and water from the terminal glaciers of the inner fjord system combine, creating a unique productive habitat for diverse species including marine mammals and Greenland sharks; ultimately this is an ideal feeding ground and provides a real world natural experimental environment to understand the ecological role of Greenland sharks. From our extensive work in Baffin Bay, this fjord system also present an ideal location where we expect to encounter high abundance of Greenland sharks during this time period; i.e. sharks are actively selecting this type of fjord habitat. If we were to move further offshore, we would be undertaking work in habitat that is not the natural preference of sharks at this time which would undermine the scientific investigation, experimental procedures proposed and the reliability of the data/results.”*

Kongsfjorden and/or Isfjorden are mentioned in the application as back up locations if circumstances/conditions are not suitable in Hornsund. It is informed that these locations were selected based on abundance of sharks under natural conditions, and that previous tagging of Greenland sharks occurred in Kongsfjorden approximately 10 years ago.

### **Regulations**

The Svalbard Environmental Protection Act of 15 June 2001 (the Act) apply. The purpose of the Act, cf. section 1, is among other: “...to preserve a virtually untouched environment in Svalbard with respect to continuous areas of wilderness, landscape, flora, fauna and cultural heritage.” The Act applies to the entire land area of Svalbard and its waters out to the territorial limit, cf. section 2.

The field work is planned within Sør-Spitsbergen national park where the Regulation relating to the national parks South-Spitsbergen, Forlandet and North West - Spitsbergen, on the nature reserves North East-Svalbard and South East-Svalbard, and on the nature reserves for birds on Svalbard (the Regulation) apply.

The purpose of Sør-Spitsbergen national park is among other to preserve intact nature, ecosystems, species and natural ecological processes, cf. the Regulation section 3. According to the Regulation section 6 the national park is protected against all measures and activities that may impact landscape, terrain, or cause disturbance of the nature environment, included different installations. Furthermore section 7 prohibits to dump or leave behind any substances and objects that may harm animal and plant life or have an unsightly effect. The regulations apply for both marine, aquatic and terrestrial environments.

According to § 11 d in the Regulation, the Governor may grant exemptions for scientific purposes as long as this is not in conflict with the purpose of the national park.

Deploying bait may be considered as dumping of waste. According to the Act section 65 polluting and littering is prohibited unless this is lawful under the Act. Further, section 67 (discharges from ships) provides that no person may release waste into the sea from a ship or other vessel.

When processing an application for an exemption, we shall emphasize the purpose of the Act and the Regulation relating to protected areas. Intact nature, ecosystems, species and natural ecological



processes in the sea is part of the purpose of the Regulations. The purpose of the Act emphasizes maintenance of a virtually untouched environment regarding contiguous wilderness, landscape, flora, fauna and cultural heritage.

According to the Act section 6, the guidelines set out in sections 7 to 10 shall form the basis for the exercise of authority under this Act. These guidelines comprise the precautionary principle (section 7), the cumulative environmental effects (section 8), user pay-principle (section 9) and the principle of environmentally sound technology and factor inputs (section 9).

### **The Governor's considerations**

#### *Point 1: Tagging*

According to the Regulation section 6 Sør-Spitsbergen national park is protected against all measures and activities that may cause disturbance of the nature environment. The Governor may grant exemptions from this protection for scientific purposes as long as this is not in conflict with the purpose of the national park. The tagging is, as we consider it, a disturbance of the nature environment. The maximum number of animals to tag is 30. The catch is permitted by the Norwegian Food Authority who consider animal welfare in animal experiments. The Norwegian Food Authority consider the burden for the animals caused by the described catching and tagging to be moderate. The disturbance on the nature environment caused by the measures is temporary and affects a limited number of individuals of one species. According to the applier, there are no direct estimates of Greenland shark population size for any region. It is, however, informed that Greenland sharks can be very abundant in certain regions, and that the occurrence is seasonal, and their abundance is seemingly tied with marine mammals in the summer.

The rationale for why the tagging experiment should be performed within a protected area is as we consider it scientific and credible.

On this basis, we assume that the tagging experiment entails low risk of significant negative impact for the Greenland shark population and consider that the activity does not conflict the purpose of the national park.

When considering if to grant an exemption, the importance for the nature management is of relevance. The results from the current tagging experiment may contribute to better future population estimates, and thus the experiment may have significance for future management of Greenland shark.

The purpose of the measures is clearly scientific. On this basis the Governor consider that we can grant permission for catching and tagging Greenland sharks in Hornsund area as described in the application.

#### *Point 2 and 3: ROV and submersibles*

The Governor has considered this activity and concluded that the activity itself does not conflict with the Svalbard Environmental Protection Act. Nevertheless, all activity in Svalbard, including the use of ROV and submersibles, must be in line with section 5 and 73 of the Act.

Section 5 states that "Any person who is staying in or operates an undertaking in Svalbard shall show due consideration and exercise the caution required to avoid unnecessary damage or disturbance to the natural environment or cultural heritage. A head of undertaking shall ensure that





every person who carries out work or takes part in the activities for which an undertaking is responsible is aware of the provisions set out in or under this Act regarding the protection of Svalbard's flora, fauna, cultural heritage and the natural environment otherwise.”

According to section 73 “The public right of access to and passage through the natural environment also applies in Svalbard, subject to the limitations imposed by this Act. All access and passage in Svalbard shall take place in a way that does not harm, pollute or in any other way damage the natural environment or cultural heritage or result in unnecessary disturbance to humans or animals.”

#### *Point 4: Food fall experiment*

Deploying bait may be considered as dumping of waste. The purpose of deploying the bait is however not to get rid of the dead fish and seals, but to attract several Greenland sharks. Consequently, we do not consider deploy of bait as dumping of waste. The regulations relating to littering and dumping are thus not relevant in this case.

Deploying bait will, however, affect the wildlife by influencing animal behavior, intervening with their behavioral pattern without the bait. One of the aims with the experiment is to (quotation): “..investigate and document ...shark behavioral interactions with bait and shark-shark interactions given known cannibalism in this species”. Cannibalism is also mentioned as a risk factor associated with the catching part of the tagging-experiment. As we consider, measures provoking aggressive behavioral responses as cannibalism are clearly a disturbance of the natural environment, cf. the Regulation section 6. The aim of the experiment is influencing the behavior of the target specie Greenland shark, by luring several individuals to gather for observation and filming. As we consider, the experiment implies impacting both the species and the natural ecological processes in the national park, and also involves a clear risk of negative impact on the fauna by provoking competitive behavior in a large predator, cf. the Regulation section 3.

The terms for granting a permission, cf. the Regulation section 11, are as we consider not met. On this basis the Governor consider that we cannot grant permission for the food fall experiment as described in the application.

#### *Point 5: Bait plume tracing*

This measure is as we interpret a follow-up-part connected with the food fall experiment. As we do not grant permission for the food fall experiment, we consider it as irrelevant to process this as a separate measure and makes no further assessment of the bait plume tracing.

#### **The Governor's decision**

The Governor has considered your application and made the following decisions:

**The Governor does not grant permission for deploying bait to implement food fall experiments on Greenland sharks as applied for. The experiment causes disturbance of the nature environment and conflict the purpose of Sør-Spitsbergen national park, cf. the Regulation sections 3 and 6.**

**Under the provisions of the Svalbard Environmental Protection Act of 15 June 2001, § 37 and the Regulation for bird sanctuaries and larger nature protection areas on Svalbard of 1 June 1973, § 11 d, The Governor grants University of Windsor by project owner Nigel Hussey**



**permission to catch and tag a maximum of 30 Greenland sharks in Sør-Spitsbergen national park as described in the application during the period 10<sup>th</sup> of August – 26<sup>th</sup> of August 2021.**

The Governor's permission is granted on the following conditions:

- Catching and tagging must be performed in a way that minimizes the disturbance and risk of negative impact for the affected animals and for the nature environment.
- Routines for preventing transmission of disease between the captured animals must be prepared and followed up.
- The bio-logger packages that must be retrieved as soon as possible after being released from the animals in order to prevent littering.
- The project owner shall provide for immediate reporting of possible accidents/ irregularities to the Governor.
- The project shall submit a report from the field work by **1<sup>st</sup> of November 2021 and by 1<sup>st</sup> of November 2022** after all tags have been released. The template for this report can be found on the Governors web pages.
- When carrying out the projects, the researchers shall show consideration towards other users of the areas in such a way that the research does not seem provoking or destroy people's wilderness experience.
- These exemptions are only valid for the people included in the projects.
- A copy of this permission must be brought along during the fieldwork.

#### **Duty of care**

The Governor calls attention to the duty of care in the Svalbard Environmental Protection Act § 5 first sentence; *“Any person who is staying in or operates an undertaking in Svalbard shall show due consideration and exercise the caution required to avoid unnecessary damage or disturbance to the natural environment or cultural heritage.”*

#### **Right to complain**

According to Norwegian law you are entitled to complain about the present decision. Written complaints must be submitted within three weeks of receiving this letter. The complaint must be submitted to the Governor.

Please note that the food fall experiment requires you to apply to the Norwegian Food Safety Authority (Mattilsynet).

Regards

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*This document is approved and expedited electronically without signature*



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