

Rosie Archer
Northumbria University
United Kingdom

Höfn, föstudag, 30. maí 2025
202504-0129/C.E.J.B.
10.01.01

Subject: Application for a research permit - Jökulsárlón

The Nature Conservation Agency of Iceland has received an application from Rosie Archer, on behalf of Northumbria University, dated 16.04.2025, to conduct research within Vatnajökull National Park.

Description of project:

Project name:

Measurements of meltwater plumes at the calving front of Breiðamerkurjökull using a drone-controlled CTD

Date, timeline and duration of the project:

10.09.2025 – 24.09.2025

Location inside Vatnajökull National Park: Jökulsárlón Glacier Lagoon

Description of the project, purpose and execution:

This project aims to take measurements of meltwater plumes at the calving front of the glacier. Meltwater plumes drive melting and are not fully understood. There is a prominent plume in the centre of the glacier front that is ideal for our purpose. Learning about plumes can help us to predict glacier change. We will be taking salinity, temperature and turbidity measurements of the lagoon in front of the glacier front using a CTD (conductivity, temperature and depth instrument) attached to a drone. Given the accessibility of this site, new methods can be tested and developed with the hope, if the study is successful, to measure plumes at different sites across polar regions.

Description of methods for sample taking, if part of the research:

We will not be taking any samples.

Vatnajökull National Park is protected according to act no. 60/2007.

According to art. 14, it is prohibited to cause damage or disturbance to the wildlife, geological formations, landscape, and cultural heritage sites within Vatnajökull National Park. All activities within the park must align with the conservation objectives of the park according to the provisions of these laws, regulations set in accordance with them, and the park's management and conservation plan. Activities aimed at restoring land quality, protecting wildlife, geological formations, and landscapes, such as due to human, animal, or plant encroachment, natural disasters, water and sea erosion, soil degradation, or other disturbances caused by humans or nature, are permitted.

Impact assessment:

The Nature Conservation Agency of Iceland considers the project *Measurements of meltwater plumes at the calving front of Breiðamerkurjökull using a drone-controlled CTD* to be minimal and unlikely to have negative impact on the biodiversity, conservation value of the area or other visitors if the conditions in the permit are followed.

Conclusions and conditions:

The Nature Conservation Agency of Iceland hereby grants Rosie Archer, on behalf of Northumbria University, permission on its behalf to conduct research within Vatnajökull National Park as described above in the period 10th September – 24th September 2025 on the following conditions:

- Keep this letter with you on site during the project. The permit conditions should be introduced to the staff of the project before work begins.
- The applicant shall inform rangers in the area about their arrival and departure. This is to be done 24 hours before entering the area and again before leaving it. The best way to do this is to 'reply all' to the e-mail that this permit was sent with.
- If the project dates or description changes the Nature Conservation Agency shall be notified as soon as possible.
- When it is necessary to go off-path, extra care must be taken not to cause damage to terrain, including vegetation, soil and geological formation. All traces of activity must be removed afterwards.
- All traces of the work must be removed carefully from the site by the end of the work/project.
- If any complications occur during the project, please contact the ranger at Jökulsárlón, tel. +354 842 4355, or the Nature Conservation Agency of Iceland, tel. +354 556 6800.
- This permit is only valid for research purposes. It does not include permit to utilize the samples for commercial purposes. The samples cannot be signed over to third party for commercial use.

- Every measure should be taken to avoid damage to the sites and unnecessary disturbance while collecting samples.
- All participants in the project must wear high-visibility clothing during field work, labelled with the identity of the researcher or the research institute.

About drones

- The applicant should be conscious of other guests on the sites and make sure that the droneflight causes as little disturbance as possible to other visitors.
- An unmanned aircraft should never be flown in close proximity to people. Please take precaution not to disturb people's experience, their safety or personal privacy nor the general peace of the protected areas being filmed.
- An unmanned aircraft should never be flown near animals or birds, neither in nesting areas nor during nesting season or any other seasonal time when animals or bird habitats are considered vulnerable.
- Flight time should be kept to a minimum and flight should be avoided during the area's busiest times of the day.
- If the use of unmanned aircraft causes disturbance to wildlife in the area, its use should be ceased at once.
- The conductor of the unmanned aircraft is responsible for the aircraft within the protected area. This includes taking responsibility of any possible risk of harm to people, fauna and nature and leaving no permanent marks on the site in question. Should the aircraft crash, all components from it must be collected and removed from the area.
- For safety reasons, the pilot of an unmanned aerial vehicle must wear marked clothing so that the person can be identified.

If the licensee causes damage to nature, according to art. 87 in the Nature Conservation Act no. 60/2013, the Nature Conservation Agency of Iceland can, according to the Nature Conservation Act, f.e. order the licensee to fix damage to nature and vegetation and/or stop the project.

The Nature Conservation Agency of Iceland can according to art. 89 in the Nature Conservation Act no. 60/2013 change conditions of the permit, add new conditions or withdraw the permit in order to prevent damage to nature if environmental conditions change.

According to art 89. in the Nature Conservation Act no.60/2013 the Nature Conservation Agency can withdraw the permit if conditions of the permit are not complied to.

Unmanned aircraft should take off and land in a safe distance from other visitors according to regulation 1360/2024 on unmanned aircrafts.

The usage of a drone shall be according to regulation no. 1360/2024 on the operation of remotely piloted aircraft (<https://www.icetra.is/aviation/drones/>).

Please note that according to the regulation all drones need to be registered at the Icelandic Transport Authority. You can register them at the webpage flydrone.is

The Nature Conservation Agency of Iceland requests access to reports and scientific articles of the aforementioned studies, which could be used for educational purposes about the area and/or assist in its management, free of charge.

Best regards,



*Charli E. J. Brzeski
Assistant Park Manager
Vatnajökull National Park*

