

Smithsonian Institution National Air and Space Museum
6th St. and Independence Ave SW
Washington, DC 20560 USA

Reykjavík, April 17th 2024
UST202403-425/S.V.
09.04.00

Subject: Permit for a research - Fjallabak

The Environment Agency of Iceland has received an application from Smithsonian Institution National Air and Space Museum, dated March 27th 2024, within Fjallabak Nature Reserve for a research project entitled *Ground Truthing an Alluvial Fan in Iceland as an Analog for Mars Exploration*.

Fjallabak is protected as a nature reserve, cf. regulation no. 354/1979. Construction work, extraction of minerals, disturbance to geological formations, vegetation and wild animal life in the protected area is prohibited. The use of unmanned aircraft (drones) within the nature reserve from June 15th - September 15th is subject to a permit from the Environment Agency of Iceland.

Description of the project:

The researchers intend to take samples from the Alluvial Fans west of Laugahraun and just north of Námskvísl for 3 days, July 6th - 9th. In these areas they assume to collect 5-7 rock and sand samples (~1 kg total). At each of the fans, they will use a non-destructive portable ASD QualitySpec Trek spectrometer and on 5-7 surface and near subsurface (<10 cm) rock and sand samples will be collected with a small shovel or by hand to capture general compositional variability across Icelandic alluvial fans and their catchments. They will also collect samples from the surface and near-subsurface (<10 cm deep), using rock hammers or possibly a small sledgehammer and small coring tools as needed (to a depth no greater than ~0.5 m). Nine participants will participate on location. According to the applicant there will be minimal disturbance to any soil, flora and fauna.

Impact assessment:

The Environment Agency of Iceland considers the project unlikely to have a negative impact on the environment or conservation values of the Fjallabak Nature Reserve if conditions of the permit are followed.

Conclusions and conditions:

The Environment Agency of Iceland hereby grants Smithsonian Institution National Air and Space Museum permission on its behalf to take samples from the Alluvial Fans within Fjallabak Nature Reserve as described above on July 6th - 9th 2024 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.
- If the project dates or description changes the Environment 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.
- The crew must follow rules of conduct that apply to the area.
- All traces of the work must be removed carefully from the site by the end of the project. This includes filling up holes and erasing all signs of excavation, if present.
- If any complications occur during the project, please contact the ranger or the Environment Agency of Iceland, tel. +354 591 2000.
- 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.
- Samples should be collected where any resulting disturbance to soil, vegetation or geological formations is not visible to other visitors.
- The project requires some excavation by hand and the collection of a few kg of rock samples. It is however important that all traces of excavation and sampling are erased as much as possible, including filling up holes.
- All participants in the project must wear high-visibility clothing during field work, labelled with the identity of the researcher or the research institute.

If the applicant causes damage to nature, according to art. 87 in the Nature Conservation Act no. 60/2013, the Environment 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 Environment 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 Environment Agency can withdraw the permit if conditions of the permit are not complied to.

If you wish to export samples from Iceland a special permit is needed from the Icelandic Institute of Natural History (www.ni.is).

The Environment Agency of Iceland wishes to receive, free of charge, a copy of all reports and scientific articles that result from the research project.

Permission fee:

Environment Agency of Iceland charges a fee for processing applications for permits in protected areas based on Article 92 of Act no. 61/2013 on Nature Conservation. The fee for research is **62.400 ISK** according to art. 29. a. in the agency's tariff no. 1410/2023.

Supervision:

The Environment Agency will supervise the project. The supervisor will be a ranger from the Environment Agency.

Sincerely

Inga Dóra Hrólfsdóttir
director

Daníel Freyr Jónsson
advisor