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Permission to sample Sphagnum mosses in three nature reserves in Vestland county – Herlandsnesjane in Osterøy, Kråmyrane in Bergen and Natås in Alver municipalities

Anna B. Seniczak ved Universitetet i Bergen, med samarbeidspartar, får på nærare vilkår løyve til å ta vass- og torvmose-prøver i dei nemnde tre naturreservata, for undersøking av midd og zooplankton for å auke kunnskap om artsmangfald i nedbørsmyr. Vedtaket kan påklagast av partar og andre med rettsleg klageinteresse.

In your application dated 3 August 2021 you ask to sample Sphagnum mosses in three nature reserves, Herlandsnesjane, Kråmyrane and Natås, in Vestland county. The aim of the project is to study the diversity of different mite (Acari) groups in atlantic raised bogs in three regions of Norway: Vestland, Trøndelag and Nordland.

In each bog the plan is to collect ca. 30-50 samples of *Sphagnum* mosses, each of volume 500 cm³, for studying mites. Additionally, you will collect water (ca. 5 liters in each bog) to study zooplankton and determine water properties. In the field you will be accompanied by prof. Kjell Ivar Flatberg (NTNU Trondheim) as an expert on Sphagnum, and assoc.prof. Anders Hobæk (NIVA Bergen) as an expert on zooplankton. The nature reserves are selected because the Sphagnum species that are the target of the project, namely *S. austinii*, *S. beothuk*, *S. fuscum*, *S. medium* and *S. rubellum*, have been found there in the past. The fieldwork is planned for 11-13 August 2021.

Legal basis for our assessment

Neither the Nature diversity law (Naturmangfaldlova), nor the specific bylaws regulating the individual nature reserves, have been translated into English. They are to be found in Norwegian through the following links:

<https://lovdata.no/dokument/NL/lov/2009-06-19-100?q=naturmangfold>

<https://lovdata.no/dokument/LF/forskrift/1983-05-27-1040?q=Herlandsnesjane>



<https://lovdata.no/dokument/LF/forskrift/1983-12-16-1985?q=Kråmyrane>
<https://lovdata.no/dokument/LF/forskrift/1983-12-16-1988?q=Natås>

In all three nature reserves, removing of plants or parts of plants is prohibited. Other ways of altering the natural environment, with examples mentioned in the bylaws, are also prohibited, (Collecting of invertebrates itself doesn't need a permission if it doesn't pose any risk to the protected ecosystem.)

The bylaws list some exceptions to the prohibitions, as well as activities that can be granted upon application, but scientific work is not mentioned among them. Your application is therefore assessed in respect to the relevant requirements stated in the Nature diversity law itself (naturmangfaldlova, § 48), that the activity should not conflict with the purpose of the nature reserve or have an impact on the nature assets that are protected. The purpose of the protection (point III in the individual bylaws) is stated slightly differently for the three different nature reserves, but is basically to protect the mire ecosystem, with other nature types that might be present, in a state that is as natural as possible.

Like every permission that may influence natural diversity, your application must also be assessed against the principles in the Nature diversity law (nml) §§ 8-12.

The State Administrator's assessment

In general, mire ecosystems in Norway, as well as in most other countries, are in a longterm process of deterioration, due to centuries of various kinds of draining and exploitations (confer nml § 10). Establishing nature reserves is a way to counteract this process, but even protected mires may be susceptible to diffuse threats like man-made nitrogen depositing and climate change, as well as wear and tear of Sphagnum surface by human footsteps. Making holes in the Sphagnum cover, at least on hummocks, may lead to derangement, erosion and drying up of adjacent Sphagnum. Still, this negative "footprint" of scientific sampling is almost certainly very small compared to other kinds of disturbance and compared to the value of the scientific knowledge that will result from your work. The limit of tolerance to physical disturbance on mires seems to vary a lot and may be insufficiently understood. By documenting the sampling sites with GPS coordinates and pictures, the fieldwork may contribute to knowledge on this topic as well, as any minor signs of physical damage on the sites may be assessed by later visits to the sites.

The amount of moss and water sampled from each reserve is relatively small. Based on existing knowledge (confer nml § 8) we conclude that your project will benefit the three nature reserves through the enhanced knowledge of their ecosystems (and raised bogs in general) it is expected to give. The fieldwork itself – with the conditions given below – will not pose any risk to the biodiversity (confer nml § 9) and will not conflict with the purpose of the nature reserves or have any negative impact worth mentioning on their natural assets. We expect you to be aware of the protected status of the sites, and avoid unnecessary disturbance of terrain and vegetation, and we consider your approach (like the co-working of experts on different organism groups) as a good way to obtain much knowledge with little disturbance (confer nml § 12 on good methods and practices).

Decision

Anna Beata Seniczak and co-workers as explained in the application are hereby allowed to do the fieldwork in the three mentioned nature reserves as described in the application, with the following conditions:



1. The fieldwork should be done in a way that fulfills the purpose of the study with as little physical traces as possible, and in a way that minimizes risk of harm to the Sphagnum layers as well as other species and the environment as a whole.
2. Statens Naturoppsyn, represented by Ragni Nordås, may possess particular information on sensitive species that need special consideration, or other ways to minimize stress on the environment, and her advice should be listened to.
3. The sampling sites should be documented by GPS-positioning, and informative photos (preferably both before and after work) including photos of sampling holes that might be of particular interest – based on the Sphagnum expertise within your team – for subsequent documentation of how sampling holes (both in hummocks and wetter lawns) develop afterwards.
4. The results of the study should be made available to Statsforvaltaren i Vestland when they are ready, to benefit both the management of the reserves and our information to the public on biodiversity in protected areas.
5. This permission is given for the year 2021. If the work for some reason is to be postponed to another year, we want to consider the possible need of avoiding the breeding season for birds, or any new information that may come to our notice in the meantime.

Right to appeal

This is an individual decision that can be appealed according to the rules in the Public Administration Act, by anybody who is directly affected by the decision or is considered to have a legal interest to appeal. Any appeal must be addressed to the Norwegian Environment Agency, but sent to Statsforvaltaren i Vestland, and must be sent within 3 weeks after the appellant is aware of this decision.

Med helsing

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Johannes Anonby
seniorrådgjevar

The document is authorized electronically

Kopi til:

Ragni Nordås

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