

UNEARTHED

Who do I ask?

Responsible geological sampling requires careful planning. Rachel Wignall discusses permissions, site protection, and best practice for effective research and sample collecting in Scotland

SCOTLAND'S RICH **GEODIVERSITY** has been studied for over 200 years, yielding significant advances in understanding of our science. Fortunately, many geoscience researchers are still enthusiastic to study Scotland's geodiversity, carrying out field studies and fieldwork in Scotland. If you are one of these researchers, contributing to our knowledge of Scotland's geodiversity, your research may require you to collect geological samples for lab analysis. Before you do so, it is important to consider whether your proposed sampling is legal, what permissions you will need and whom you should ask.

These questions should be on the mind of every geologist undertaking fieldwork and collecting samples – whether in Scotland or elsewhere. However, the answers are often not easy to find. Legislation differs between countries, even between the nations of the UK, and may change over time, as may the process of applying for permission. Legislation exists relating to ownership, access rights, areas protected for nature conservation, and historic monuments, so it can be difficult to know where to start.

The process of applying for nature conservation protected areas consents in Scotland changed in 2025, so now is a good time to report on what you'll need to know if you are planning to collect geological samples in Scotland for research work.

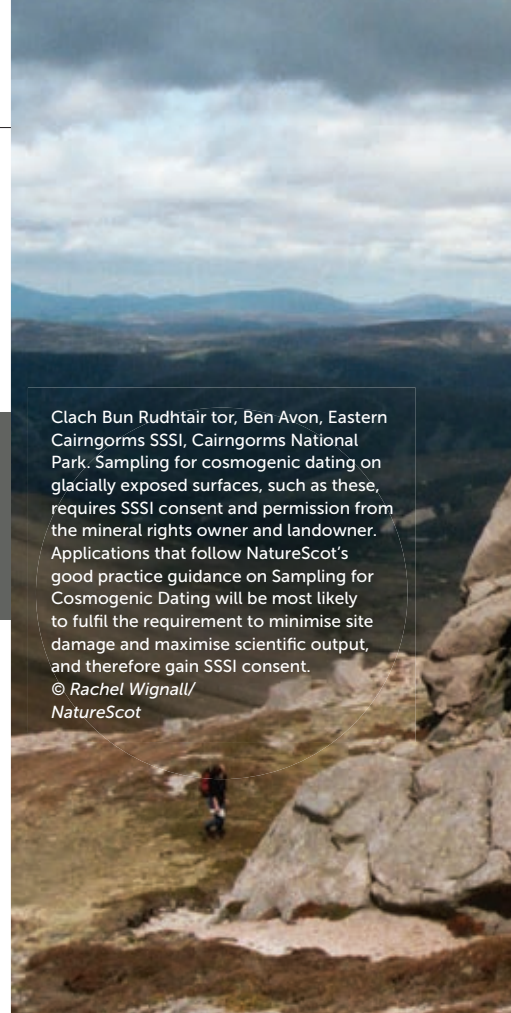
Ownership and permission

Geological sample collecting includes all methods used to collect rock, mineral, fossil, sediment and soil samples, including peat. Good practice guidelines (see box 'Resources') should be followed for all sample collecting, but it is also important to be aware of the laws that apply to your activities.

Scotland has arguably some of the best outdoor access legislation in the world, which is set out within the Land Reform (Scotland) Act 2003 and the Scottish Outdoor Access Code. However, fieldwork that includes sample collecting is not covered by access rights under this legislation. You must therefore obtain landowner/occupier permission before you access any site to remove samples, regardless of whether it is in a protected area.

Traditionally small geological specimens

Rock core sampling that does not follow best practice guidelines in the Scottish Core Code, such as this rash of holes at Glas Eilean to Mingary Pier GCR site, Ardnamurchan SSSI (which pre-date effective SSSI legislation), impacts the visual value of the geosite. Such examples of bad practice will effectively last forever and can reduce the amenity value of the site by compromising the perceived naturalness and wildness of our outdoor spaces.
© Jenny Rees/NatureScot



Clach Bun Rudhtair tor, Ben Avon, Eastern Cairngorms SSSI, Cairngorms National Park. Sampling for cosmogenic dating on glacially exposed surfaces, such as these, requires SSSI consent and permission from the mineral rights owner and landowner. Applications that follow NatureScot's good practice guidance on Sampling for Cosmogenic Dating will be most likely to fulfil the requirement to minimise site damage and maximise scientific output, and therefore gain SSSI consent.
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are collected without permission and hindrance. However, lawfully the right thing to do is to obtain permission to extract, collect and retain geological specimens and samples. Under Scots law, geological samples are 'minerals'. You must therefore identify and gain permission from the mineral rights owner (usually, though not always, the landowner) before collecting samples from any site whether it is a protected area or not. Collecting without permission may be regarded as theft. A phone call to the mineral rights owner or a knock on their door before you access the site, may be sufficient to avoid an irate owner. However, if you come to accession your samples (the process of formally recording and taking an item into a collection) into an accredited museum



collection, within your own research institute or elsewhere, you may need to show proof of ownership. Written permission from the mineral rights owner – to both collect and take ownership of geological samples – may be required.

Nature conservation

Nationally and internationally important sites for geoscience research in Britain are identified in the Geological Conservation Review (GCR) and many are protected under the Nature Conservation (Scotland) Act 2004 as Sites of Special Scientific Interest (SSSIs).

Geoconservation in Scotland aims to ensure that future generations can enjoy and learn from our remarkable geodiversity while safeguarding key sites for geoscience research and public enjoyment. Geosites are designated primarily for their scientific value and an important purpose of geoconservation is to conserve and maximise this value. Therefore, geoconservation is pre-disposed to support scientific research. However, sample collecting in a protected

geosite presents a potential conflict between conserving material *in situ* and removing it for scientific study.

In Scotland, it is an offence for any person to intentionally or recklessly damage the protected natural features of an SSSI, and this includes unauthorised sample collecting. If you collect samples from an SSSI without the appropriate consent, you may be considered to be intentionally or recklessly damaging the protected natural features of the SSSI and thus committing an offence. Police Scotland are responsible for prosecuting cases of damage to SSSIs, and categorises this damage, including damage to geological SSSI features, as wildlife crime.

You can check whether your proposed field site is in an SSSI or a GCR site using NatureScot's Open Data Hub website (under 'Protected Areas'), which also has links to further SSSI information. Further information on GCR sites and collated information on Local Geodiversity Sites is available through the Scottish Geology Trust's excellent Geosites project website (geosites.scottishgeologytrust.org).

Additional permissions

Additional permission may be required to collect samples from one of Scotland's National Nature Reserves (NNR). If the reserve is owned by NatureScot, an application for SSSI consent should trigger an application for appropriate NNR permission.

You are also responsible for checking whether the site has any other protected status that requires additional permissions (such as scheduled monuments – those monuments with national or international importance relating to human settlement), and to obtain these permissions from the organisation responsible for regulating activities on such sites. Local Authorities may also have lists of protected local sites, such as Local Biodiversity Sites and Local Geodiversity Sites, which you should consider.

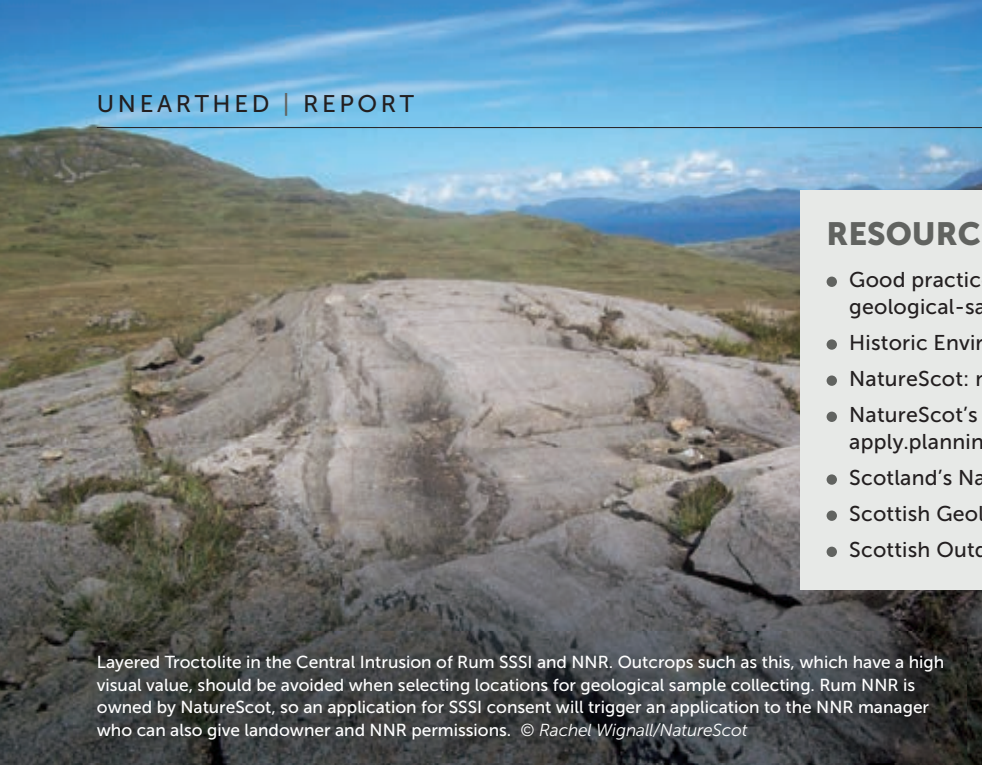
You are acting within the law if you obtain permission to collect samples. But permission from one body or person does not imply permission from anyone else. For example, consent from NatureScot does not imply permission from the mineral rights owner or any other body.

SSSI consent from NatureScot

Where geological sample collecting is required for a civil engineering, geoenvironmental or similar project regulated by the planning system, the system requires the planning authority to consult NatureScot for consent where appropriate. However, for activities such as geological sample collecting for scientific research, which are not regulated by the planning system, there are two pathways by which NatureScot may grant SSSI consent:

- Directly to a Public Body (including government-funded bodies and educational institutes) or its representative.
- To the landowner or occupier to permit the activity to be carried out.

If you represent an organisation that may be considered a public body, such as a government-funded body or an educational institution, you can apply directly to NatureScot for permission →



Layered Troctolite in the Central Intrusion of Rum SSSI and NNR. Outcrops such as this, which have a high visual value, should be avoided when selecting locations for geological sample collecting. Rum NNR is owned by NatureScot, so an application for SSSI consent will trigger an application to the NNR manager who can also give landowner and NNR permissions. © Rachel Wignall/NatureScot

RESOURCES

- Good practice guidance: scottishgeologytrust.org/geology/geological-sample-collecting
- Historic Environment Scotland: historicenvironment.scot
- NatureScot: nature.scot
- NatureScot's InformedDECISION™: apply.planning.nature.scot
- Scotland's National Nature Reserves: nnr.scot
- Scottish Geology Trust: scottishgeologytrust.org
- Scottish Outdoor Access Code: outdooraccess-scotland.scot

to collect samples from an SSSI. If you do not represent an organisation that may be considered a public body, you need to ask the landowner, occupier or manager of the SSSI to apply to NatureScot for permission for you to collect samples. The landowner, occupier or manager will need information about your proposed activities so that they can apply to NatureScot.

In 2025, NatureScot launched a new online service called InformedDECISION™ to enable the submission of applications, including applications to collect geological samples from Sites of Special Scientific Interest. Guidance on applying for consent to collect geological samples in Scotland is available through the NatureScot website. The form 'Public body and SSSI owner geological sample collecting application' should be completed and uploaded with your InformedDECISION™ application. Note that this form is only for use by public bodies and the owners, occupiers and managers of the site(s) from which samples are to be taken.

Our role at NatureScot is to balance safeguarding a protected area's geodiversity for future generations with fostering thriving research and geoscience education. Requesting permission and outlining your planned research helps us understand how and when geosites are being used for their primary role as scientific resources. It also provides the information we need to assess your proposal and to document

“ Geoconservation focuses on conserving the scientific resource ”

authorised research for future site-condition monitoring. If you come across research samples that were inadvertently collected without SSSI consent, please contact NatureScot and we can make a retrospective assessment for those samples.


The scientific value of a geological SSSI is the sum of the existing scientific data from the site, and the potential scientific information remaining within the site. Removing geological samples decreases the store of remaining information and is usually considered irreversible damage to the SSSI feature. However, in some circumstances, the loss of resource may be off-set, or balanced, by the scientific information gained from the samples taken, allowing an overall assessment of no loss of scientific value for the SSSI.

Research projects are most likely to generate scientific benefits that offset any loss of *in situ* geosite material when they:

- minimise the loss of *in situ* scientific study potential, including minimising damage to the visual value of the site,

- maximise the scientific knowledge gained from collected samples, including through *in situ* study and recording before removal, and
- avoid long-term impacts on natural processes at active process geosites.

NatureScot may refuse consent for a variety of reasons, such as a resource being extremely limited, or a site being particularly vulnerable to damage and loss. We may ask for further details about your proposal if we have concerns about damage to the site. It is also important that we understand how any remaining samples will be stored and curated after the research is completed, to ensure that maximum scientific and educational benefit is gained from samples, and that the minimum number of samples are taken over time.

Further guidance on best practice for minimising loss of *in situ* scientific study potential and maximising knowledge derived from geological samples is provided in our online guidance notes. If you have any questions, please do ask, as we are keen to engage with researchers who are studying Scotland's amazing geosites. 

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FURTHER READING

A full list of further reading and resources are available at geoscientist.online.

- Ellis, N.V. et al. (1996) Geological Conservation Review Series No. 1. Joint Nature Conserv. Commit. Peterborough
- MacFadyen, C.C.J. (2024) In: Smith, M. & Strachan, R.A. (eds) The Geology of Scotland. 5th edn. Geological Society of London 654 pp.
- Nature Conservation (Scotland) Act (2004); legislation.gov.uk