

Guidance on Establishing and Managing Local Nature Conservation Site Systems in Scotland – 2023 update



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INTRODUCTION

1. Introduction

The need for this update to the original 2006 Guidance on Establishing and Managing Local Nature Conservation Site Systems in Scotland was endorsed at an online workshop of stakeholders convened by NatureScot on 1st September 2022 which discussed the recent NatureScot review of existing approaches to LNCS across Scotland.



The update was completed by a working group comprising Caroline Peacock (Planning Officer, City of Edinburgh Council), Dr. Tim Duffy (Scottish Wildlife Trust Board member), Judith Cox (Environment Planner, Aberdeenshire Council), Anne-Marie Gauld (Planning Adviser, NatureScot), Christian Christodoulou-Davies (Protected Areas Manager, NatureScot), Rachel Wignall (Geology Adviser, NatureScot), and Alan Cameron (Communities and Biodiversity Adviser, NatureScot).

Bruce Wilson, Head of Policy and Advocacy, The Scottish Wildlife Trust

The Scottish Wildlife Trust is extremely proud of the role we have had in the creation of, and ongoing support and encouragement for, the Local Nature Conservation Sites network and as such I am delighted to write this foreword for the refreshed guidance issued by NatureScot. Our vision is for a network of healthy, resilient ecosystems and it's not just the famous designated sites we need to protect to realise this, our local, less prominent sites are just as important. The progress made by 28 out of 32 local authorities in establishing Local Nature Conservation Sites, with commendable efforts underway in the remaining areas, is something to be celebrated in these times of extreme worry for nature conservationists.

Local Nature Conservation Sites, along with other protected and conserved areas, can form the bedrock of a vibrant Local Nature Network. Using these sites as stepping stones and corridors they can play a pivotal role in creating a cohesive tapestry of biodiversity that is greater than the sum of its hectareage in biodiversity terms. The Nature Network model envisioned by the Scottish Government holds immense promise, serving as a beacon for identifying funding opportunities and fostering community engagement. The collaborative approach championed by the Nature Network model is paramount in our collective endeavour to protect, enhance, and cherish these invaluable natural treasures.

In the face of our swiftly changing climate, the importance of Local Nature Networks cannot be overstated. These networks serve as strongholds, bolstering nature's resilience and offering safe havens for diverse species to adapt and flourish. Equally noteworthy is the profound impact these sites have on human communities. They act as natural buffers, mitigating the impact of environmental challenges such as flooding and let us not forget the importance of local nature for our own well-being and resilience in the face of environmental changes.

With the Scottish Government's stated target to reverse declines in biodiversity by 2030 we need Local Nature Conservation Sites, as part of a wider Nature Network, now more than ever. My sincere thanks to everyone who has taken forward this review and I hope it proves useful to Local Authorities across Scotland.



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AIMS OF THIS UPDATED GUIDANCE

2. Aims of this updated Guidance

- 2.1 Local Nature Conservation Sites (LNCS) are identified by Local Authorities in Scotland to safeguard biodiversity and geodiversity of at least local importance. All LNCS should meet the general criteria set out in this document, although these can be adapted to meet local conditions.
- 2.2 This is an updated and enhanced version of the [Guidance on Establishing and Managing Local Nature Conservation Site \(LNCS\) systems in Scotland](#), which was published in 2006. It is aimed at local authorities, members of LNCS partnerships, Local Biodiversity Action Plan partners, environmental Non-Governmental Organisations (eNGOs) and other biodiversity and geodiversity conservation bodies, developers, planners and ecologists. Further information and updates on LNCS can be found on the NatureScot website www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/local-designations/local-nature-conservation-sites
- 2.3 The original Guidance was published by a partnership comprising Scottish Natural Heritage (SNH), the British Geological Survey (BGS), the Convention of Scottish Local Authorities (COSLA), Scottish Environment LINK, UK Regionally Important Geological Sites (UKRIGS), Scottish Wildlife Trust (SWT), and the Royal Town Planning Institute (RTPI) in response to a Ministerial request. While recognising the diversity of approaches to local sites taken by local authorities across Scotland the 2006 Guidance sought to promote a standard approach to running LNCS systems with the overall aim of safeguarding sites of regional or local importance for their biodiversity and/ or geodiversity.
- 2.4 This updated guidance reiterates the recommendation that local sites are referred to as LNCS and that they comprise Local Biodiversity Sites (LBS) and Local Geodiversity Sites (LGS). However, some systems continue to use a historical naming system (mostly SINCS). These may or may not include LGS, although even if they don't, LGS should be afforded equal protection through the Local Development Plan (LDP).
- 2.5 During 2021/22 NatureScot gathered information on LNCS systems finding that the majority of local authorities in Scotland have established LNCS systems, in many cases keeping their systems under review and adding new LNCS on an on-going basis. This exercise found that 27 of Scotland's 34 Local Planning Authorities managed LNCS systems, with over 3,400 sites designated.
- 2.6 The need for this update was agreed at an online workshop of stakeholders convened by NatureScot on 1st September 2022 at which there was a consensus that a working group (WG) should produce an update that recognises and builds on the success of LNCS in Scotland. The working group included representatives from NatureScot, City of Edinburgh and Aberdeenshire Councils, GeoConservationUK, Scottish Geology Trust and Scottish Wildlife Trust.
- 2.7 Workshop participants agreed that the fundamentals of the original Guidance should remain in place. The WG was asked to update and enhance the guidance to incorporate lessons learned from running LNCS systems, and to recognise the current and potential role of LNCS in building resilience to climate change and to act as the backbone for local nature networks.
- 2.8 In addition to refreshing the guidance, stakeholders at the workshop agreed that additional actions were required to, for example, improve the availability of data on habitats and species; increase access to local ecological expertise; secure funding for the ongoing maintenance of LNCS systems; manage some sites on private and public land; and, to raise the profile of LNCS generally, but that they sat outside the scope of this guidance.

A Vision for LNCS

2.9 This update does not alter the vision of LNCS principally as ‘a way to identify and safeguard biodiversity and/ or geodiversity of at least local importance’. The term LNCS applies collectively to Local Biodiversity Sites (LBS) and Local Geodiversity Sites (LGS). The refreshed role set out in this guidance recognises the contribution of LNCS collectively to building a nature-positive future, contributing to a local nature network, maintaining our natural capital, and improving the health and resilience of ecosystems: all of these are ambitions of the [Scottish Biodiversity Strategy to 2045](#).

Purpose of this guidance

- 2.10 The guidance provides advice on how to identify new LNCS and review existing LNCS. The purpose of the guidance is to:
- Confirm that the criteria for selecting LNCS remain the same and that each local authority (LA) has the opportunity to interpret the criteria to suit their particular requirements.
 - Set out the process for identifying LNCS including accessing data and expertise.
 - Confirm the reasons for, and importance of, identifying a set of LNCS, mapping them within a Local Development Plan (LDP) and implementing policies to protect them from harmful development and other infrastructure.
 - Set LNCS within updated wider policy, including nature networks, ecosystem services and climate change while recognising that the prime function of LNCS is to protect important areas for biodiversity and geodiversity.
 - Encourage engagement with a wider group of stakeholders to protect LNCS from harmful activities and seek opportunities to enhance their features through appropriate management.
 - Encourage the ongoing review of LNCS to ensure that they remain fit for purpose, identify new sites that meet the selection criteria, and to provide examples of how that can be undertaken.
 - Encourage local authorities and others to seek opportunities to promote good management of LNCS to retain features of interest and enhance sites where appropriate.

The wider policy context for LNCS

- 2.11 LNCS can contribute to a wide range of policy priorities in Scotland spanning climate change mitigation and adaptation, biodiversity and natural capital protection, supporting the local economy and regeneration and improving public health and wellbeing.
- 2.12 High level policy drivers for LNCS currently include: [The National Strategy for Economic Transformation](#) (NSET) which aims to build a nature-positive economy and rebuild our natural capital, the [Environment Strategy for Scotland](#) which sets out a vision to protect and restore Scotland's biodiversity on land and in our seas, and the Global Biodiversity Framework, particularly [Target 12](#) which aims to 'significantly increase the area and quality, and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas'.
- 2.13 The [National Planning Framework](#) (the national spatial strategy for Scotland), and the [Strategic Framework for Biodiversity](#) including the [Framework for Nature Networks in Scotland](#) provide important elements of the current policy context for LNCS.
- 2.14 [Voluntary guidance](#) from the Conference of the Parties to the Convention on Biological Diversity describes 'other effective area-based conservation measures' (OECMs) as 'areas that are achieving long term and effective *in-situ* conservation of biodiversity outside of protected areas'. As such, some LNCS in Scotland may act as OECMs and help us to achieve [Global Biodiversity Framework Target 3](#) that at least 30% of land is protected or conserved for biodiversity by 2030.
- 2.15 In summary, maintaining a LNCS system will:
- Help us to tackle the climate crisis and nature emergency by increasing the resilience of nature, protecting biodiversity and enhancing carbon sequestration by natural habitats.
 - Assist local authorities and other public bodies to consider the impacts of their activities and wider developments on biodiversity, as required under their Biodiversity Duty and current National Planning Framework.
 - Help to meet statutory targets to be set out in the Natural Environment Bill.
 - Contribute to the identification of local nature networks.
 - Provide opportunities for people to find out about and enjoy what is special about the biodiversity or geodiversity in their local area.

Mapping LNCS in Scotland

- 2.16 Data on LNCS are collated and managed by the Improvement Service and made available openly under UK Open Government Licence on their [Spatial Hub](#). This dataset is updated quarterly with data provided by local authorities and it is becoming increasingly important that this layer is kept up to date so that data are easily available. It currently shows that twenty-eight local authorities have designated 3,400+ sites. The data layer can be downloaded in various formats and is free to use and analyse so long as the source of the data is acknowledged. You need to download the dataset to a mapping platform to view all the attributes associated with a site (e.g. habitat types, date designated). Where data are missing for a local authority, or individual site, you will need to contact the relevant local authority to enquire if they hold this information locally. A number of Planning Authorities make maps and other information on LNCS available online (see the [NatureScot website](#) for links and examples).

The structure of this guidance

- 2.17 Section 3 on *Selecting LNCS* covers establishing a partnership of advisors comprising relevant interests and expertise and outlines a general procedure of six key steps for selecting Local Nature Conservation Sites. It discusses sourcing data on geodiversity, species and habitats before explaining how to apply site selection criteria in practice.
- 2.18 Section 4 on *Managing LNCS* systems provides guidance on the ongoing work needed to protect, review and add to the suite of LNCS once they have been identified. It summarises how LNCS can play an important part in meeting the requirements of planning policy through Local Development Plans before providing an overview of the need for ongoing review and monitoring of LNCS. The section concludes with a brief overview of key issues to consider in managing data including storage, sharing of data and the potential use of data in reporting.
- 2.19 Section 5 on *Managing individual LNCS* introduces key considerations in managing individual LNCS, including the value of Site Management Statements in securing resources. It concludes with an overview of the potential for LNCS to support biodiversity enhancement through the planning system.
- 2.20 Annex 1 provides examples of *Site Assessment and Review* processes, Annex 2 provides examples of *Site Statements*, Annex 3 provides examples of *Site Management Briefs*, and Annex 4 provides an *LGS Monitoring Form*.



3

SELECTING LNCS

3. Selecting LNCS

Establishing a LNCS Partnership

3.1 Responsibility for selecting, monitoring and reviewing Local Biodiversity Sites (LBS) and Local Geodiversity Sites (LGS) should be taken by the local authority, although this may be delegated, for example to a Local Biodiversity Action Plan (LBAP) partnership or local geodiversity group. Either way, it is beneficial for site selection to be informed by the knowledge and judgement of relevant advisory partners, including local experts. The involvement of the following groups in the LNCS Partnership should be considered:

- Local expert naturalists and Earth scientists (including academics and those who are part of the Local Biological/Environmental Records Centre).
- Representatives of local communities and environmental NGOs.
- Representatives of the statutory and non-statutory nature conservation organisations.
- Landowner representatives such as National Farmers Union Scotland (NFUS) and Scottish Land and Estates (SLE), Scottish Crofters Commission (SCC).
- Scottish Forestry (SF) and Forestry and Land Scotland (FLS).
- Water resource managers.
- Planning policy and development management officers.
- Local business and charity representatives with an environmental interest.
- For geodiversity sites, local Geoconservation group members, the aggregates industry and educationalists.

3.2 Several Local Authorities have used this partnership approach to identify LNCS and it is considered to have worked well in drawing in a range of local expertise and knowledge. The advisory partners can be retained to assist with advising on the review and management of sites.

A general procedure for selecting Local Nature Conservation Sites

3.3 The following are the suggested key steps in selecting LNCS:

- The partnership agrees on the site selection criteria based on this guidance, which can be adapted to meet local conditions.
- A provisional site is identified, and every effort made to contact the landowner(s) with information about why it has been identified, the LNCS selection process, and what having a LNCS on their land means for land use and management. Land ownership information may not be easy to find, although local knowledge and a site visit may provide an opportunity.
- Existing information about the site is collated and reviewed, and a decision made as to whether further information is needed. If so, and where possible, the landowner should be advised of the need for a survey. It may be useful to carry an information sheet about the survey to provide to landowners or land managers if met while on site.
- The provisional site is assessed against the criteria with a formal record made of the selection process, for example in an Assessment form (see Annex 1 for example forms). Good documentation on why a site is important and what habitats and species, and/ or geology and geomorphology, are present is important especially if the designation of a site is challenged or there is a future need to safeguard it from harmful development or other adverse land use changes.

-
- A Site Statement is prepared, as discussed below in Section 4 on *Managing LNCS systems*. The landowner or manager should be invited to give feedback on the survey and assessment information set out in the Site Statement. They could also be asked about how the site's interest can be maintained and/ or enhanced through management, as some sites will be important for nature due to the current land management or a lack of management (for example, persistently wet areas may have been avoided for generations, creating important wetland habitats). Communication with landowners can help to reduce any misunderstanding, and sharing information on why the site is special can help their appreciation of the proposed LNCS and its value.
 - Local Authorities are encouraged to put in place a mechanism for responding to any challenges or objections to a LNCS or to its boundaries through their Local Development Plan process, as discussed below in Section 4 on *Managing LNCS systems*.

Sourcing data

- 3.4 Data on **geodiversity** may be drawn from a range of sources, including national datasets (e.g. those held by the British Geological Survey), regional geological or Quaternary field guides, and the records or collections of local experts including any local Geoconservation Group. Available data may be sufficient to establish a list of provisional sites. However, fresh survey data are advisable in selecting the final list. The Scottish Geology Trust's [geosites map](#) is under development, with the aim of including locations and descriptions of all Local Geodiversity Sites in Scotland as well as nationally important geosites. Baseline data for sites selected as LGS should ideally include suitable photographic data to enable changes in condition to be detected in future.
- 3.5 Data on **species** may be drawn from a number of sources, for example from [Local Records Centres](#), the [National Biodiversity Network Atlas Scotland](#), records held by local naturalists or by societies such as Butterfly Conservation, the Royal Society for the Protection of Birds (RSPB), the Botanical Society of Britain and Ireland (BSBI). The Local Biodiversity Action Plan and the [Scottish Biodiversity List](#) should help to identify priority species. Where no data exist for a potential LNCS site, surveys are likely to be required to identify what species the site may be important for.
- 3.6 Data on **habitats** may be drawn from similar sources to data on species. Identifying habitats on potential LNCS may require the use of aerial photographs or satellite imagery (although these must be up-to-date to ensure land use changes and developments are shown, and to avoid identifying habitats that are no longer present), the NatureScot [Habitat Map of Scotland](#) or the [Space Intelligence habitat map of Scotland](#). These sources may help to identify areas on which to focus survey effort. Within settlements [Scotland's Greenspace Map](#), [20 minute neighbourhood mapping](#), local Open Space Strategies or Forestry and Woodland Strategies may also help to identify areas for consideration. Surveys are likely to be required to ground truth potential sites and identify what habitats the site may be important for.

Criteria for selecting Local Geodiversity Sites

3.7 Local Geodiversity Sites are selected for their importance with respect to the 'available geodiversity resource' i.e. geodiversity features that are visible and accessible. Accessibility of a site and its value for education and research are of greater importance for Local Geodiversity Sites than for Local Biodiversity Sites, although the site must also represent a significant geodiversity feature. If access to a site is not available, it may still be selected for its geodiversity value. Assessments should be based on the following factors, which are drawn from current assessment criteria used by [GeoConservationUK](#) and the [Scottish Geology Trust](#). Geodiversity value in the regional and local context may include:

- Research and scientific value.
- Value for education and life-long learning.
- Value for both professional and amateur study.
- Historical and cultural value for advances in geodiversity knowledge, events or human exploitation.
- Aesthetic value in the landscape, particularly in relation to raising awareness and appreciation of geodiversity.

Criteria for selecting Local Biodiversity Sites

3.8 All sites proposed as Local Biodiversity Sites should be assessed against each of the six factors considered below. These factors are based on those used to assess sites of national and international importance to nature conservation. Assessments require good data and the local knowledge and expertise of a panel of advisors including local expert naturalists.

3.9 Use of a scoring system can help to maintain consistency between sites and ensure that each factor makes a contribution to calculating the overall importance of the site (see Annex 1 for examples of *Site Assessment* forms). The emphasis given to individual criteria will depend on local circumstances, for example connectivity may be more significant for LNCS within a river catchment where restoration of riparian habitats may greatly increase ecosystem functionality, whereas the presence of populations of priority species are likely always to be a significant factor.

3.10 Where Protected Areas of national and international importance are present, a site should only be identified as an LNCS where there are habitats or species of local interest in addition to those for which the site has been designated, or where there are additional areas of local value around the designated site.

- **Species diversity**

This factor refers to the number of different species found on a site. A comparative assessment should be made of the number of species recorded against what might be expected to occur within habitats of that type present in that area based on expert knowledge.

- **Species rarity**

This factor refers to the species recorded on the site that are considered to be rare, endangered or vulnerable, in a national, regional or local context.

- **Habitat rarity**

This factor refers to the rarity of a habitat within the national, regional and local context and will benefit from local knowledge and expertise.

- **Habitat naturalness**

This factor refers to the degree of current and historic human intervention in natural processes for each habitat type. For example, semi-natural woodland and unimproved grassland are more natural than plantation woodland and improved grassland.

- **Habitat size or extent**

This factor refers to the amount of a particular habitat found on a site relative to the total found in the local area. Larger areas of habitat generally support a greater diversity of habitats and species than smaller areas, although a series of smaller sites can be important in protecting populations of certain species or rare habitats and so should be considered.

- **Connectivity**

Connectivity provides linkages between sites or habitats. Connectivity is required to maintain functioning ecosystems between 'stepping stones' with robust populations of animal and plants that are able to move across landscapes, maintain their genetic diversity and adapt to pressures, such as the impacts of climate change. To provide functional connectivity sites do not necessarily need to be physically connected, but a set of sites may be required within a locality to support the lifecycle of particular species. Even small isolated patches of habitat may provide functional connectivity for some species.

3.11 In line with Scotland's 30x30 ambitions the criteria above should be considered alongside the broad vision outlined in the [30x30 Framework](#). This encourages recognition of ecologically diverse sites supporting diverse species assemblages where management encourages natural processes and ecological complexity.

3.12 Annex 1 presents a number of different systems and proformas employed by local partnerships in Scotland to select, assess and review LNCS.



4

MANAGING LNCS SYSTEMS

4. Managing LNCS systems

- 4.1 Once a set of LNCS have been identified ongoing work will be needed to protect, review and add to the suite of sites. Where possible, good management of LNCS will be beneficial in retaining their interest.

Documentation

- 4.2 A Site Statement should be prepared for each site to record key information, including the reasons for which the site has been identified and listing the key habitats, species and geodiversity features present. At a minimum the Site Statement should include:
- A map of the boundary of the site.
 - A record of the reasons for selection as a LNCS including the key habitats, species and geodiversity features.
 - A note of outcomes sought for biodiversity or geodiversity and, where relevant, for access, community involvement and environmental education.
- 4.3 The following should also be provided in Site Statements when resources allow:
- A map of the site showing the location of the biodiversity or geodiversity interest, and of any features of interest, except for features considered 'sensitive'.
 - Management recommendations for achieving biodiversity or geodiversity outcomes, or where appropriate, details on how to improve access.
- 4.4 A Site Management Brief can also be produced which lists the objectives of management and actions/activities required to achieve the desired biodiversity or geodiversity outcomes. Where funding is available these objectives can be developed into a Management Plan or scheme of works that can be implemented (managing individual LNCS is discussed below in Section 5). Examples of Site Statements and Management Briefs are provided in Annexes 2 and 3 respectively.

Safeguarding LNCS through Local Development Plans

- 4.5 LNCS are primarily safeguarded through Local Development Plan policy. Local Development Plans will need to reflect the requirements of the National Planning Framework with regards to the protection of LNCS.
- 4.6 Policy 4: Natural Places states that along with regionally and internationally important assets, Local Development Plans are required to identify and protect locally important assets such as local nature conservation sites on land and along the coast. They are also required to safeguard them and take into account the objectives and level of their protected status in allocating land for development.
- 4.7 The policy intent of Policy 4: Natural Places is to protect, restore and enhance natural assets and make best use of nature-based solutions. The policy outcomes are that natural places are protected and restored and that natural assets are managed in a sustainable way that maintains and grows their essential benefits and services.
- 4.8 Specifically, Policy 4d states development proposals that affect a site designated as a local nature conservation site will only be supported where:
- Development will not have significant adverse effects on the integrity of the area or the qualities for which it has been identified; or
 - Any significant adverse effects on the integrity of the area are clearly outweighed by social, environmental or economic benefits of at least local importance.
- 4.9 LNCS can also play an important part in meeting the requirements of Policy 3: Biodiversity, where the policy intent is to protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks. The policy outcomes are that biodiversity is enhanced and better connected including through strengthened nature networks and nature-based solutions.
- 4.10 The location of LNCS should be clearly identified on the Local Development Plan proposals map with boundaries shown.

Reviewing and monitoring LNCS

- 4.11 Over time LNCS may be subject to change. It is therefore desirable to undertake periodic monitoring to identify any changes to the features within LNCS due to natural causes or man-made factors. LNCS may be subject to changes such as:
- Changes in management of a site that may lead to changes in the quality and presence of particular habitats, species or geodiversity features.
 - Land-use changes such as new forestry plantations or development.
 - Changes around the margins of a site which may require boundary changes. In some cases, such as active quarries, the boundary may need to change to retain the quarry face.
 - Natural change, for example as a result of changes in the distribution of species or the succession of habitats.

In cases where there is no scope for restoration, sites should be removed from the suite of LNCS.

- 4.12 A periodic review of LNCS is beneficial. For example, a review of existing LNCS ahead of the preparation of a new LDP will help to ensure that LNCS are still important for the habitats, species and geodiversity features for which they were originally identified. During the review, as part of the LDP consultation phase, potential new LNCS could be identified. There are different approaches that Planning Authorities may take in reviewing LNCS, for example:
- Reconvene advisory partner groups – to assist with reviewing new information and ensure LNCS continue to meet selection criteria.
 - Re-survey LNCS on a rolling programme – to ensure they still meet current criteria.
 - Monitoring to check that the relevant features are still present on the site.
 - During a Local Development Plan consultation process, views could be sought on any new information or changes relevant to existing LNCS.
 - During a review, new LNCS that meet the criteria for selection may be identified, and those that no longer meet the original selection criteria removed.

Data storage, sharing and reporting

- 4.13 The LA should retain data on the site selection process, assessment forms and any boundary and habitat maps. Sharing of data (in compliance with GDPR) with agencies such as Scottish Forestry and NatureScot, and in particular sharing site boundary data, can be helpful in identifying where works being considered through forestry and agricultural grant applications may impact on LNCS.
- 4.14 Information on LNCS should be made publicly available, so that it can be accessed by developers/ ecological consultants and others, including through the Improvement Service [Spatial Hub](#) as highlighted in para 2.16.
- 4.15 Biodiversity and other environmental data should be shared with [Local Records Centre](#) as appropriate, and with the LBAP or Local Geodiversity Action Plan (LGAP). Where possible, data should be made publicly available in digital form and comply with appropriate standards. Local authorities are encouraged to share their LGS data with the Scottish Geology Trust's [Geosites Project](#).
- 4.16 The Wildlife and Natural Environment (Scotland) Act 2011 introduced a requirement for all public bodies in Scotland to report every three years on compliance with their [Biodiversity Duty](#). Where appropriate, reports from planning authorities should highlight the contribution that LNCS are making to achieving biodiversity outcomes and to mitigating and adapting to climate change.

A close-up photograph of a butterfly with white wings featuring black spots and a prominent orange band near the tip, perched on a cluster of pink flowers. The background is a soft-focus green field.

5

MANAGING INDIVIDUAL LNCS

5. Managing individual LNCS

- 5.1 Sites of biodiversity and geodiversity interest generally require some management in order to retain their ecological interest or to maintain access to, and visibility of, important geological features. Identifying a site as a Local Nature Conservation Site does not automatically ensure that it will be managed for biodiversity or geodiversity, or that the Local Authority that identifies it has any powers to require positive management.
- 5.2 Local Biodiversity Sites will have developed their interest over many years as a result of the way they have been managed; in many instances this will continue, and habitats and species will be retained. However, a lack of, or inappropriate, management can result in a deterioration of the value of the site, for example, the draining of a pond can reduce its biodiversity. Where there is the intention that an LNCS is recognised as an OECM contributing to the 30x30 target (as outlined in para 2.14) it is particularly important that the site is managed to maintain its importance for biodiversity.
- 5.3 Many geodiversity features on LGS will be naturally occurring rock outcrops or landforms, however some Local Geodiversity Sites may have been created by past management activity, such as quarrying, or excavation for road, rail or canal construction. Present land use (such as grazing), or management for present land use (such as vegetation clearance for an active cycling or walking route), is often sufficient to keep the geodiversity features visible and intact. However, in some cases, particularly where LGS have been created by past activity that is no longer active (such as quarrying), geodiversity features may become obscured or could become damaged without active conservation management. [A form to assist with condition monitoring of LGS](#), and [guidance on completing the form](#), have been developed by the Scottish Geology Trust and GeoConservation UK.
- 5.4 Where resources allow, the preparation of a Site Management Brief or detailed management plans in combination with liaising with the site owner may help to deliver positive site management and enhancement. A Site Management Brief is ideally no longer than two sides of A4 (including map) and incorporates information from the Site Statement about the features to retain, and how that might be achieved with proactive management and avoidance of detrimental actions (see Annex 3 for examples of Site Management Briefs). The management of LNCS should be informed by Local Biodiversity Action Plans and Local Geodiversity Action Plans where these exist.

Resources for managing LNCS

- 5.5 There are a number of mechanisms to encourage and enable positive management for biodiversity and geodiversity, and from which LNCS may benefit.
- 5.6 Habitat and Species Action Plans and Geodiversity Action Plans can help to identify priorities for action on LNCS and may help to identify and pull together funding sources to make progress with these priorities. In and around settlements, as part of Country Parks and Regional Parks, or through Greenspace projects, there may be opportunities to provide management for nature conservation whilst promoting community involvement and enjoyment.
- 5.7 Many LNCS will include agricultural or forestry land. Forestry and agri-environment schemes may provide an opportunity to manage a site for particular species or features of interest.
- 5.8 There may be opportunities through the planning system to deliver biodiversity enhancement on sites, including on LNCS. Almost all developments are now required to deliver enhancement for biodiversity, and there is a strong presumption that this will be delivered within the development site. However, there will be situations where this cannot be delivered on the development site, and off-site enhancement could be considered. This may provide opportunities to either enhance an existing LNCS or provide opportunities to create connectivity between LNCS or with other areas of surrounding habitat or to the wider countryside.

Annexes

Annex 1 Examples of Site Selection, Assessment and Review processes

These Local Geodiversity Site assessment forms are available to download.

[GeoConservationUK LGS assessment form](#)

[GeoConservationUK LGS assessment form completion guidelines](#)

Glasgow City Council: SINC¹ Site Assessment Form

Site name		Grid ref	
Area		Owner	

Assessment date		Assessor	
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Data used for this assessment	Date produced	Tick if used
Boundary map		
Extended phase I habitat survey		
Site review sheet		
Guidance note for the assessment of Wildlife Sites and SINC ¹ s		
Phase I survey of Glasgow City Council area		
Integrated Habitat Network study		
Previous site assessment		
Other (specify)		

Site description & nature conservation summary

	Criteria	Comments	Score
Ecological Criteria	Habitat Diversity		
	Habitat Rarity / Conservation status		
	Species Diversity		
	Species Rarity / Conservation status		
	Naturalness / Quality		
	Extent		

Social criteria	Connectivity		
	Important Biodiversity Features		
	Amenity/Community Value		
	Educational Value		

Overall Ecological Score

Overall Social Score

Designation awarded (delete as appropriate)	Local SINC	City-wide SINC	No designation

Changes to the site since initial assessment or last site review

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This table for review only

Other comments

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Assessor/ Reviewer's signature _____

¹See para 2.4 on historical naming systems

Perth and Kinross Council: LBS Assessment Criteria and Scoring

Criteria	Description	Scoring
Species Diversity	Refers to the number of different species found on site. A comparative assessment should be made of the number of species recorded against what might be expected to occur within similar habitats present in Tayside. This will generally refer to plant species but may be applied to the diversity of other species groups where relevant.	0 – Lower than expected 1 – Average 2 – Higher than expected 3 – Considerably higher
Species Rarity	<p>The presence of species recorded on the site considered to be rare, endangered or vulnerable. Nationally rare species include:</p> <ul style="list-style-type: none"> – Notable A or Notable B – National Rarities (as defined by JNCC, BSBI or relevant organisation) – National Scarcities – Scottish Biodiversity List species, excluding those marked as “Watching Brief Only”, and classed as: UKBAP species, or International Obligation, or Red Listed, or Critically Endangered, Endangered, Vulnerable or Near Threatened. <p>Some sites are important because they hold a large proportion of the population of a rare species of the local area. Full botanical surveys may not be required for such sites or where a site is important for non-botanical interests. An important site for a nationally rare species includes the presence of any nationally rare botanical interest.</p>	0 – No rarities 1 – A few local rarities 2 – Many local rarities or site of importance for local rarity 3 – Site important for nationally rare species

Criteria	Description	Scoring
Habitat Rarity	<p>The rarity of a habitat within the national and local context. Locally rare habitats are those identified by the relevant vice county BSBI recorder as rare in their area. Nationally rare habitats are those listed on the UKBAP, those noted on SBL as conservation action required or rare habitat in Scotland. Sites are recognised where they are important for or contain a significant presence of a locally or nationally rare habitat.</p> <p>Therefore, habitat rarity is defined with reference to the Scottish Biodiversity List and local opinion: Locally Rare habitats are those identified by the relevant vice county BSBI recorder as rare in their area.</p> <p>Nationally Rare habitat includes those habitats on the SBL listed as UKBAP, excluding those marked 'Watching Brief Only'.</p>	<p>0 - No rare habitat. 1 - Some locally rare habitat. 2 - Significant area of locally rare habitat and/or some nationally rare habitat. 3 - Significant area of nationally rare habitat</p>
Naturalness	<p>Refers to the degree of current and historic human intervention in natural processes for each habitat type to draw a conclusion of the level of naturalness across a site.</p>	<p>0 - Wholly modified 1 - Partially semi-natural/ mainly semi-improved 2 - Mainly semi-natural 3 - Wholly semi-natural</p>
Extent in Local Context	<p>The extent of the site, whether it is a polygon or linear, is judged against the range of similar areas in the locality.</p> <p>Large sites have been shown to have greater species diversity and be more ecologically stable than equivalent habitats on smaller sites.</p>	<p>0 - Small 1 - Average sized 2 - Larger than average 3 - Large</p>

Criteria	Description	Scoring
Connectivity	<p>An assessment of the existing or potential physical links between habitats on site to similar surrounding habitats, links to other sites of biodiversity value to support species dispersal, colonisation and migration and their value or potential to form part of a habitat network to enable species colonisation and population resilience.</p> <p>Connectivity is based on connecting the habitats, species or species groups to similar habitats. Connectivity exists where similar sites, or sites which support the qualifying species, are within dispersal or commuting range (e.g. a calcareous grassland site may be within seed dispersal range of another calcareous grassland site).</p> <p>Potential connectivity exists where there is a clear and realistic opportunity to modify land practices to connect similar habitats or networks. This includes existing connection to a neighbouring local habitat.</p> <p>Connection to wider habitats may include strips of ancient woodland that are not designated or connectivity through waterways or stepping stones to similar sites, where supporting mobile species.</p> <p>Connectivity to a designated network or site does not need to relate to the specific habitat where adjacent as the protection of a LNCS is more likely than not to support the biodiversity interest of the designated site regardless of its habitat. Connectivity assessment should also include use as a stepping stone for mobile species.</p>	<p>0 - Not connected to similar habitats, with no potential connectivity.</p> <p>1 - Potential to connect to wider habitats or connection to similar local habitat of at least the same size.</p> <p>2 - Connection to wider habitats.</p> <p>3 - Connection to designated blue/green network, or nature network, or supports or is adjacent to a protected site.</p>

Criteria	Description	Scoring
Additional Factors	<p>Social Factors Opportunities for access, informal recreation and education where contact with natural heritage features may increase or support appreciation and promotion of biodiversity.</p> <p>Climate Change & Resilience The role a site plays in carbon capture, natural flood management or wider resilience and ecosystem health thereby supporting wider biodiversity.</p> <p>Vulnerability Some sites may be vulnerable from development and disturbance as a result of their location, fragmentation and further isolation.</p>	<p>Although not included in the initial scoring site assessment, they could be used as a justification for the inclusion of marginal sites with scores between 6/21 to 8/21.</p>

Perth and Kinross Council: Local Nature Conservation Sites Review: Site Assessment Form for Biodiversity sites

Date Considered by Panel:

Status:

Site Reference and Name:	
Alternative Name / Location:	
Site Type:	Grid Ref (centre of site):
Site Boundary	
Local Authority Area:	
Adjacent/Related Sites:	
Area (ha): Altitude (at grid ref):	
Access:	
Main Habitat (s)/ Interest (s):	
Site Description:	

Contacts: See Ownership file for contact details				
Owner:				
Occupier:				
Surveys and data used (Date and type of Survey, – list data sources)				
Additional Site Selection Information:				
HABITATS				
Type	Description (draft/SWT) or confirmed	Rarity (L/N)	Area (ha)	% of site
Total				
SPECIES (uncommon / rare species)				
Species Group	Species Name (SWT or unconfirmed record) or confirmed	Recent ✓	No	Rarity

SITE ASSESSMENT			
Date:		Assessor:	
1. Species Diversity 0 Lower than average; 1 Average; 2 Higher than expected; 3 Considerably higher			
Species Group	Number	Score	Comment
Plants			
Birds			
Invertebrates			
Mammals			
Other			
(SWT) / Highest Score			SWT Score Confirmed: Y/N/NA

2. Species Rarity 0 No or few rarities; 1 a few Locally Rare (LR); 2 many locally rare or important for local rarity; 3 site important for Nationally Rare (NR) species. See Appx					
Species Group	No. LR	No. NR	Score	Site important for Species Name	LR/NR
(SWT) / Highest Score			SWT Score Confirmed: Y/N/NA		
Comment:					

3. Habitat Rarity 0 No rare habitat; 1 Some locally rare habitat; 2 Locally rare habitat; 3 Nationally rare habitat.		
	% Area	Comment
Nationally Rare		
Locally Rare		
(SWT) or SCORE		SWT Score Confirmed: Y/N/NA

4. Habitat Naturalness 0 wholly modified; 1 semi-improved 2 mainly semi-natural 3 wholly semi-natural.		
	% Area	Comment
Semi-improved		
Semi-natural		
(SWT Score) or Score		SWT Score Confirmed: Y/N/NA

5. Site Extent in Local Context 0 Small; 1 Average 2 Larger than Average 3 Large.		
Site Type	Area (ha)	Comment
(SWT Score) or Score		SWT Score Confirmed: Y/N/NA

6. Connectivity 0 No connectivity 1 Connection to local similar habitats 2 connection to wider habitat network 3 connected to designated sites or green / blue network.				
Main Habitat Type(s):	<i>State if connected or potential connection to</i>			Score
	Designated Sites or Network	Wider Habitats	Local Habitats	
Comment:			Highest Score	

Species Diversity	Species Rarity	Habitat Rarity	Habitat Naturalness	Site Extent	Connectivity	Total

7. Other Factors (Comment)	
Vulnerability	
Social	
Climate Change	

8. Assessor Recommendation and Reasons

9 Management Recommendations

Expert Group Review Date: Recommendation: Adopt / Reject / More Information Required Comment:
LNCS Board Review Date: Status: LNCS / Reject Comment:

Appendix 1: Species List

Data Source & date	Name and Conservation Status	
	<i>Taxonomic vernacular (status) [No] ✓ (where SWT record is confirmed by recent record) For multiple plant species notable and total number of species is sufficient</i>	
Plants		
Birds		
Lepidoptera		
Odonata		
Other Animals		

**Appendix 2
Habitats**

North Lanarkshire Council: Criteria for the designation of SINCs (2008)

Background to SINCs in North Lanarkshire

Sites of Importance for Nature Conservation (SINCs) are locally designated non-statutory sites of importance for nature conservation, where appropriate in some cases they may also be referred to as Local Biodiversity Sites (LBS). SINCs sit below SSSIs (National Importance) and SPAs and SACs (European Importance). All these statutorily designated sites are automatically also classified as SINCs.

The initial identification of SINCs was done throughout the 1990's. The criteria used followed guidelines for the identification of SINCS in other Local Authority areas (especially in England) and in summary were as follows:

- Semi-natural habitats with a good range of typical species, both plant and animal.
- Scarce or unusual species or habitats.
- Semi-natural features of local significance for environmental education

In 2000, the North Lanarkshire Biodiversity Action Plan was published detailing actions for priority habitats and species in both a national and local context, and provided a first ecological audit for North Lanarkshire (Brackenridge and Thomson, 2000) While it has been evident that the principal LBAP priority habitats and species are for the most part contained within the currently designated SINCs, it is felt that the criteria for their selection can now be usefully revisited and re-established.

Proposed criteria for designation or confirmation of a SINC

The following criteria are modelled on the 'Guidance on Establishing and Managing Local Nature Conservation Site Systems in Scotland' (RTPI, SNH and COSLA 2006) and the Scottish Wildlife Trusts wildlife sites selection criteria.

All sites proposed as SINCs should be assessed according to each of these five factors:

Species diversity

Species diversity will be assessed according to the number and variety of species found on the site compared with what may be expected to occur within similar habitats. A score will be given as follows:

Lower than expected	0
.....
Average	1
.....
Higher than expected	2
.....
Very high	3

Species rarity

Species rarity will be assessed according to species recorded on the site that are considered to be rare, endangered or vulnerable, in a national or local context, including those on the Scottish Biodiversity List and those listed as priorities in the LBAP. A score will be given as follows:

No rarities	0
1-3 species from LBAP audit list	1
3+ species from LBAP audit list	2
Nationally rare species present(UK list Scottish List, or Red Data Book species)	3

Habitat rarity

Habitat rarity will be assessed according to the rarity of a habitat within the national and local context, including those on the Scottish Biodiversity List and those listed as priorities in the LBAP. A score will be given as follows:

Not rare	0
Locally rare in unfavourable condition	1
Locally rare in favourable condition	2
Nationally rare	3

Habitat Extent (in the local context)

Habitat Extent is assessed according to the amount of a particular habitat found on a site relative to the total found in the local area. A score will be given as follows:

Small	0
Average	1
Larger than average	2
Large	3

Connectivity

Connectivity will be assessed according to a sites proximity to (physical links between) broadly similar habitats found in the surrounding countryside, and ability for the potential of new links (wildlife corridors) to be created. A score will be given as follows:

No connectivity	0
Close to other SINC	1
Extends an existing SINC	2
Joins SINC	3

These factors will be recorded on a site assessment form - a score of 7/15 or above will mean that a site is awarded SINC status.

Priority Designations

A priority designation as a SINC site is given for the following:

Habitats

i. Peatlands: North Lanarkshire has approximately 3724ha of lowland raised and intermediate bogs, this represents a significant proportion of the lowland peatland resource in Central Scotland. It is therefore important to protect all areas of peatland in North Lanarkshire regardless of their current condition as they may be restorable. Peatlands are also very difficult to rate under a scoring system because a peatland in good condition does not have many species of plants and has a greater diversity when it is more badly degraded.

All peatland sites will be designated as SINC.

ii. Riparian Corridors: North Lanarkshire has a complex network of natural, semi-natural and man-made watercourses that includes burns, rivers, canals and main surface drainage. Watercourses will be protected under a SINC designation that will afford protection to the watercourse and an adjacent buffer zone of up to 30m of semi-natural or natural habitat to either side of the watercourse.

Species

It is essential to protect populations of locally/regionally rare species and locally/regionally important populations of common species, particularly where they may act as the main source of recruitment for dispersal to surrounding areas. A site will therefore also be given SINC status if it supports a locally/regionally important population of a particular species.

North Lanarkshire Council: Site Assessment Form

Site Name:		Site Ref No:
Date:	Grid Ref:	Size:
Ownership:		
Currently designated: Y / N		
Habitats:		
Species (locally/regionally important populations?) :		
Habitat extent in a local context:		
Connectivity:		
Social Value:		
Scoring 0 1 2 3		
Species diversity:		Species rarity:
Habitat rarity:		Connectivity:
Habitat extent:		Total:
Priority Designations		
Peatlands:		Riparian corridors:
Further surveys required:		
Comments:		
Management Recommendations:		
Surveyor:		

North Ayrshire

This scoresheet is included in the North Ayrshire Council Review of Local Nature Conservation Sites (LNCS) storymaps.arcgis.com/stories/d037001e221a4760ab8bcad7a16284ac

Plants

Criterion	Points	Score	Additional Information
Nationally scarce/rare plant species	100		
Plant rare in North Ayrshire	50 each		
Plants uncommon in North Ayrshire	20 each		
An outstanding (e.g. the largest known) population of any one of the above species	100		
Total number of plant species	Actual		
Site with nationally scarce/rare lower plants, lichen or fungi	100		
Site with locally important populations of lower plants, lichen or fungi	100		

Invertebrates

Criterion	Points	Score	Additional Information
At least one nationally rare/scarce invertebrate	100		
At least two locally rare invertebrate species	50 each		
An outstanding example of an invertebrate community (e.g. 200 Lepidoptera, outstanding population of a locally uncommon species or significant list of invertebrates from any group - expert opinion acceptable)	100		
At least four locally uncommon butterfly/moth (Lepidoptera) species	25 each		
At least ten butterfly species (including migrants), at least seven of which regularly breed	100		

Vertebrates

Criterion	Points	Score	Additional Information
At least one nationally rare/scarce fish species (Schedule 5 of Wildlife & Countryside Act 1981)	100		
At least one locally rare fish species or UK BAP Priority Species	100		

Criterion	Points	Score	Additional Information
A community of seven or more freshwater fish species	100		
All four species of breeding amphibian (frog, toad, palmate newt, smooth newt)	25 each		
An outstanding (e.g. the largest known) population of any amphibian species	100		
Any species of reptile	100		
Any Schedule 1 bird species breeding or using site as part of its breeding territory	100		
At least two breeding Red List Bird species	50 each		
At least five non-breeding Red List Bird species	20 each		
At least ten Amber List Bird species	50		
At least 5% of the known North Ayrshire Area breeding or non-breeding population of any bird species	100		
At least 10% of the known North Ayrshire breeding or non-breeding population of any bird species	100		
A site list of 70 or more bird species	100		
An outstanding example (in terms of diversity or density) of any bird community	100		
At least one nationally rare/scarce mammal (Schedule 5 of Wildlife & Countryside Act 1981)	100		
A protected structure of a mammal that is not Schedule 5 e.g. Badger sett	50		
An outstanding population of any mammal species	100		

Habitats

Criterion	Points	Score	Additional Information
Ancient or Long Established Woodland, as per official inventory , >1 hectare with a bonus 50 if the wood is actually semi-natural	50-100		
Wet (Carr) Woodland (>1 hectare)	100		
Mature and bushy Hedgerows (>200 metre)	100		
Unimproved / Species Rich Grassland (>0.5 hectare)	100		

Criterion	Points	Score	Additional Information
Dwarf Shrub Heath (>0.25 hectare)	100		
Fen, Marsh or Swamp (>0.25 hectare)	100		
Peat bog (>1ha)	100		
Sand-based habitat of any size with a bonus 50 for >1ha	50-100		
Open Water of any size with a bonus 50 for >1ha and bonus of 100 for >10ha	50-100		
River or Stream (Water Course) wider than 2m and longer than 100m	100		
Rock Exposure more than or equal to 500 sq m	100		
Saltmarsh/Mudflat of any size with bonus 100 for >1ha	100-200		

Miscellaneous

Criterion	Points	Score	Additional Information
Continuity with a Site of Special Scientific Interest (SSSI).	20		
Any site in public, NGO or similar ownership which has outstanding potential to achieve, through effective conservation management, LNCS quality.	20		
Is used formally for environmental education.	20		
Is used by the local community.	20		
Within a wildlife corridor and linked to other LNCSs.	20		
Total			

Annex 2 Examples of Site Statements

Midlothian Council: Erraid Wood LBS Site Statement and Map

Midlothian Local Biodiversity Site

Site Statement

Erraid Wood Local Biodiversity Site

Grid reference NT247661

Total area (ha) 6.2

Associated sites

SITE DESCRIPTION

Summary Mixed plantation woodland on east facing slope

Physical description

Main habitats Mixed plantation and Broadleaved plantation.

Notable habitats None

Notable species Bluebell (*Hyacinthoides non-scripta*), Greater Chickweed (*Stellaria neglecta*), A spider (*Typhochrestus digitatus*), West European Hedgehog (*Erinaceus europaeus*), Eurasian Badger (*Meles meles*)

Access and Use Core path within 100m of site. SWT Convenor visits and periodic fungal surveys. SWT Management Plan in place to manage habitat and public access. SWT volunteers and Friends of Pentlands undertake practical management tasks on site, including for example the installation of bat and bird boxes. A kissing gate has been installed to allow access from the Hills.

Biodiversity Features 1) Site with 4.36ha of long-established (of plantation origin) ancient woodland on site.

ASSESSMENT AND STATUS

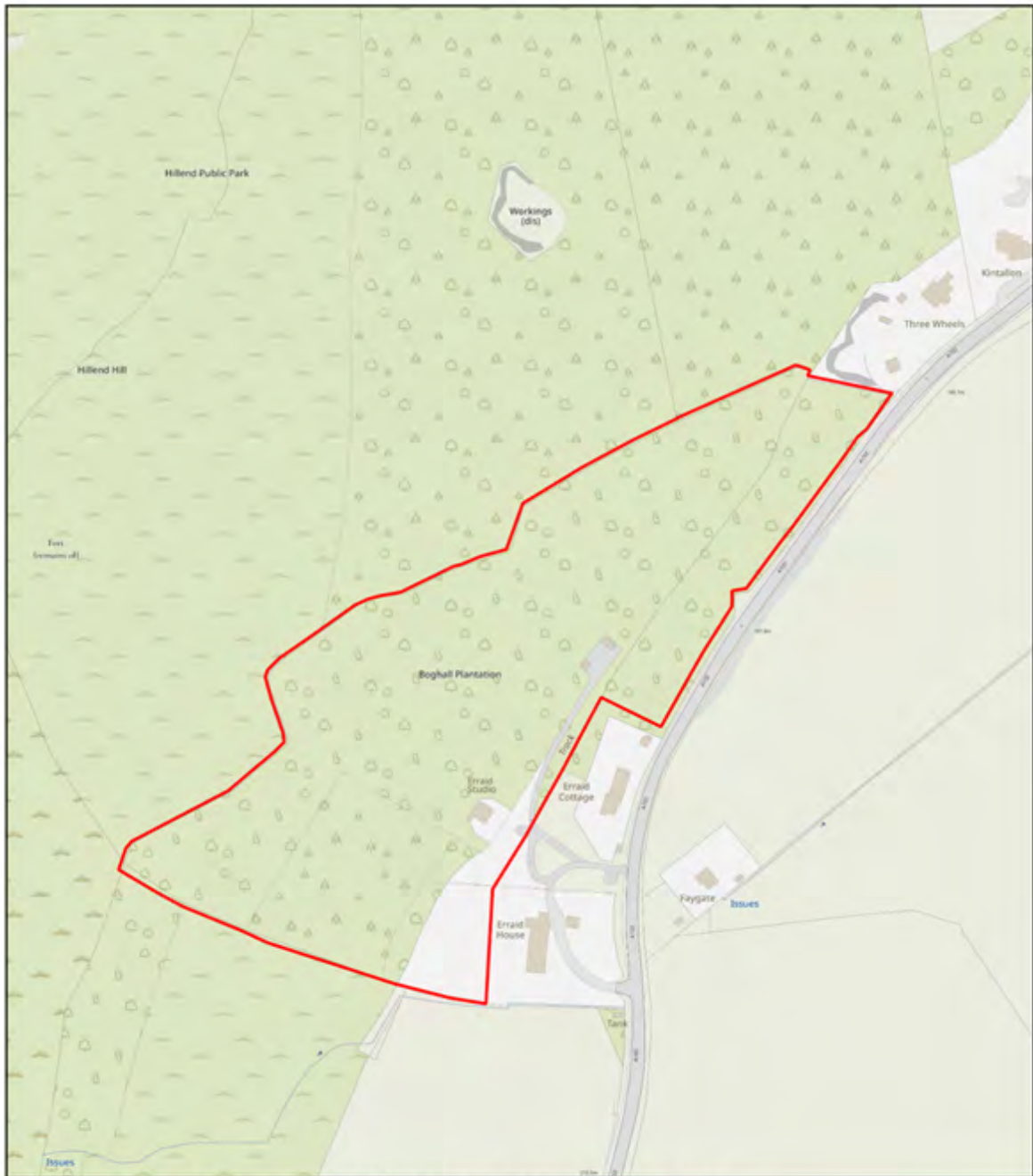
Assessment date 21/02/2014

Current status LBS

Previous status Erraid Wood Local Wildlife Site

Other status SWT Reserve

Date: 30/04/2015




Midlothian
Planning Service
Place Directorate
 Midlothian Council
 Fairfield House
 8 Lothian Road
 Dalkeith
 EH22 3AA

Erraid Wood Local Biodiversity Site

Reproduced from the Ordnance Survey map with the permission of the controller of Her Majesty's Stationary Office. Crown copyright reserved. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.

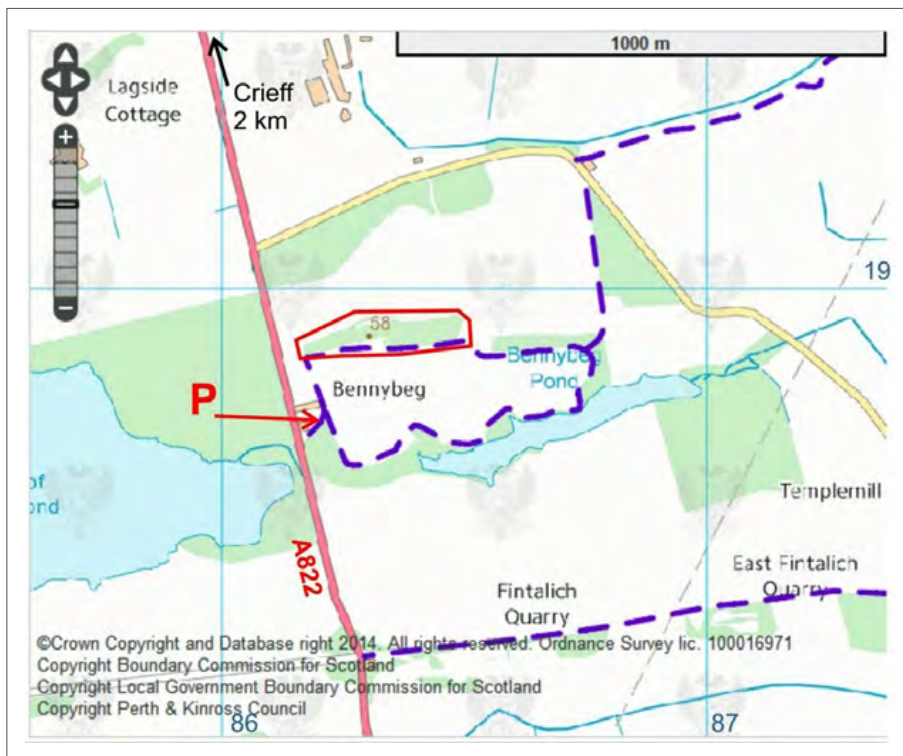
Midlothian Council Licence No. AC0000811376 (2023)



Perth and Kinross Council: LGS Site Statement

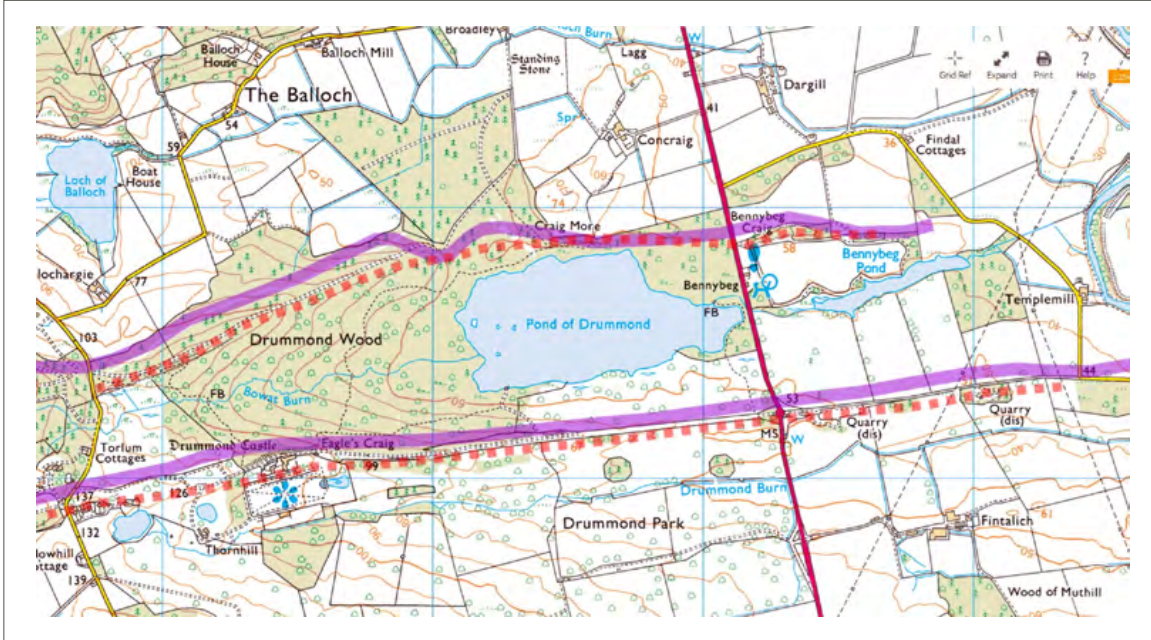
Site Name Bennybeg	No. G011	Tayside Geodiversity Perth & Kinross Local Geodiversity Site
Grid Reference NN863189		
Site Summary Dolerite dyke with vertical rock face, showing columnar jointing. This is an unusually well-exposed and accessible example of a dyke, the best in south-west Perthshire.		
Location, vehicle and pedestrian access Bennybeg is 2.5km south of Crieff, just off the A822 road. There is ample parking and a hard-surfaced path giving access to the whole length of the site.		
Site type Natural section	Current use Climbing crag adjacent to arable field	
Site ownership Grimsthorpe & Drummond Castle Trust Ltd	Current geological designations None	
Permission to visit Not required	Other designations Adjacent pond is part of Drummond Lochs SSSI	
Field surveyor(s) M.A.E. Browne, C.J. Pudsey	Date visited May 2010, Sept 2014	

Location Map and Site Boundary

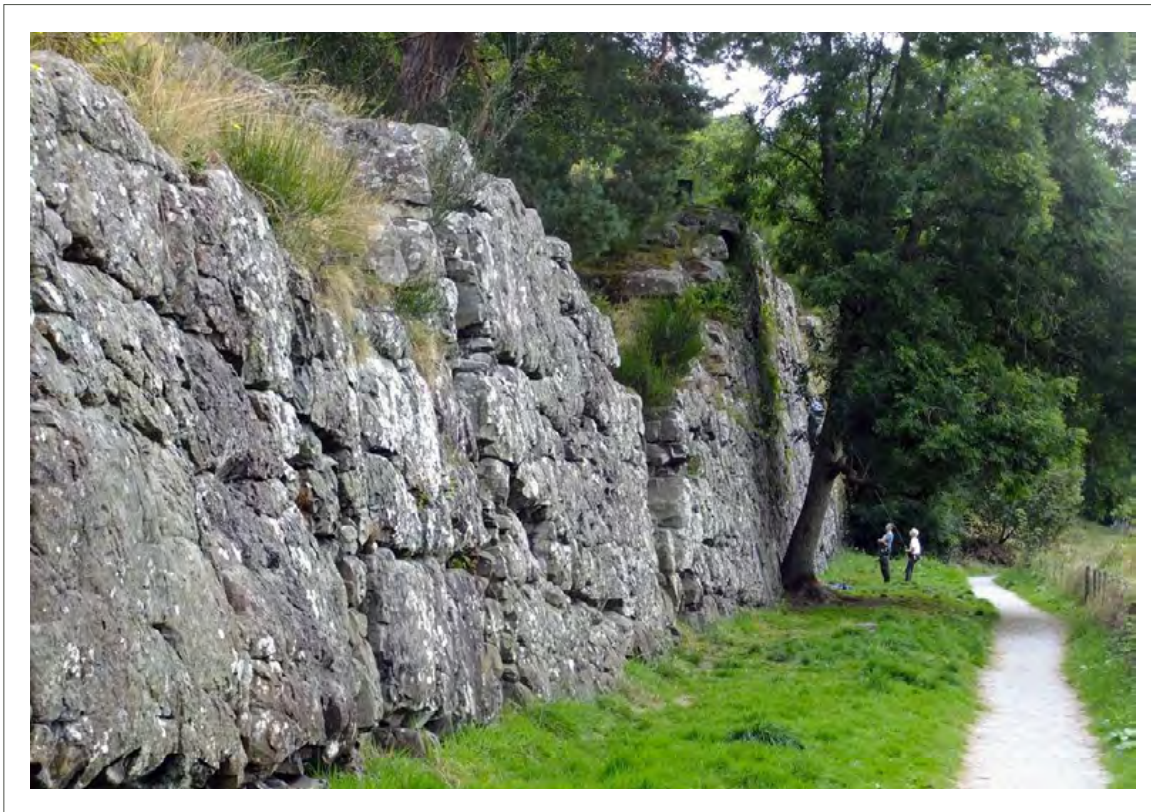


Location map of Bennybeg. The suggested protection zone is outlined in red. Purple dashed lines are Core Paths, the loop north of Bennybeg Pond being the Nature Trail.

Site Map and Photographs



The dykes are shown by purple solid lines (from BGS Digimap) and alternatively by red dotted lines (from outcrops, quarries and topographic features).



The south face of the dyke. Climbers for scale.



The dyke from the start of the nature trail.



Fresh quartz-dolerite at the west end of the outcrop.

Site Boundary

The boundary is drawn to include rock outcrops forming the near-vertical face, plus outcrops on top of the dyke for a distance of approx 25m north of the face.

Geological Description

Age	Lower Devonian; Upper Carboniferous
Formation	Teith Sandstone Formation
Position	Strathmore Group; Central Scotland Tholeiitic Dyke Suite
Rock Types	Quartz dolerite

The key feature is an easterly trending quartz-dolerite dyke of the Central Scotland Tholeiitic Dyke Suite of late Carboniferous age (c. 305 million years old). The dyke, about 25 m wide, occurs as an upstanding ridge with vertical faces and is a well known local wall-like landscape feature that is used by climbers. Columnar jointing is seen in cross-section on the vertical southern face, and long sides of columns are well seen on top of the dyke.

Although not seen on the site, the dyke is intruded into sedimentary rocks of Lower Devonian age (about 410 million years old). The dyke is one of several that can be seen *en echelon* in the Crieff area and in particular on the Drummond Castle Estate. The field in front of the natural rock wall is underlain by glaciofluvial sand and gravel which is evident whenever the soil is ploughed and reseeded. This flattish land is part of a series of river terraces that formed during the deglaciation of the Earn valley about 15 000 years ago.

Geoscientific Value

To include one or more of: surface processes, landforms, sedimentary rocks, stratigraphy, fossils, igneous rocks, metamorphism, mineralisation, tectonic features.

	Quality	Rarity	Primary interest
Igneous rocks	Very good	Common	Fine example of dyke showing columnar jointing.
Landforms	Medium	Common	Postglacial river terrace

References

Browne, M. A. E. 1980. Late Devensian marine limits and the pattern of deglaciation of the Strathearn area, Tayside. *Scottish Journal of Geology* Vol 16, 221-230

McIntyre, D.B. and McKirdy, A., 2001. *James Hutton – The Founder of Modern Geology*. National Museums of Scotland Publishing Company, 51pp.

Safety of Access/ Site Condition/ Fragility/ Threats/ Sensitivities

Safety of access/ ease of access/ barriers	Ample parking adjacent to garden centre/shop; all-weather surfaced path (part of nature trail) leads the length of the site and rough paths lead up to the top of the dyke.
Safety of exposure	Although vertical, the rock face is very stable (being kept clean by climbers). Care is required when walking along the top.
Nature of exposure	Natural outcrop.
Current conflicting activities or other threats	None.
Restricting conditions	None.
Permissions needed to visit	None.
Current condition and how clearly the features can be seen	The site is in excellent condition, being regularly cleaned by rock climbers. It can be viewed from 200m away across the field, but is better viewed close up. The freshest rock is at the west end.
Site fragility and sensitivities	This is a robust site.

Other Current Site Values, Associations or Significance

History of Earth Science	James Hutton was aware of the dyke at Bennybeg by 1764 (McIntyre and McKirdy, 2001, p26 and photo).
Economic geology	No known association.
Scientific study and education	Particularly clear exposures of features, suitable for student or adult education.
Associations with biodiversity or ecosystem services	<p>From the SSSI Management Statement: [the site] is also recognised for its rich and varied lichen assemblage. This has come about largely as a result of the fact that the broadleaved woodland is situated [...] between two parallel E-W quartz-dolerite dykes north and south of the site. ...The volcanic dyke itself also provides many niches for lichens including sunlit and shaded vertical faces, seepage tracks, underhangs and soil or moss ledges.</p> <p>Part of Bennybeg nature trail, dyke and associated vegetation are described in the trail leaflet. www.pkc.gov.uk/CHttpHandler.ashx?id=15223&p=0</p>
Aesthetic, landscape, archaeology, history and cultural associations	The site of Drummond Castle 2km to the southwest is on an outcrop of a parallel E-W trending dyke, exposed along the main driveway.
Local communities/ visitors and promoting public awareness	Site is frequented by rock climbers; nature trail is popular with visitors and local dog-walkers.

The Bennybeg nature trail leaflet www.pkc.gov.uk/media/19281/Muthill-Bennybeg-Path/pdf/Muthill-Bennybeg.pdf?m=636102155078070000

Potential Opportunities for Enhancing the Site

There is already an interpretation board at the start of the nature trail (see photo above). This and the accompanying leaflet (see [Perth & Kinross Council - Crieff Path Network \(pkc.gov.uk\)](http://Perth & Kinross Council - Crieff Path Network (pkc.gov.uk))) could be updated with the geodiversity information.

The Perth and Kinross Council - Crieff Path Network www.pkc.gov.uk/media/11015/Crieff-Path-network-Leaflet/pdf/crieff_paths_2014_amended.pdf?m=1474615583713

Technical Working Group Recommendation

Technical Working Group Recommendation	
Date: 25 February 2021	Recommendation: Approve
Reason for Recommendation	Agree to recommend for scientific, educational, historic, aesthetic, cultural and public awareness values.
Panel Decision: Approve / Reject	
Date:	
Reason if Rejected	

Glasgow City Council: Site Statement Template

Site Name & Designation	
Boundary Map	
Grid Ref.	Area
Key Features	
Habitat(s)	
Species	
Connectivity	
Community	
Description	
Nature Conservation Summary	
Management and Enhancement Opportunities	

Annex 3 Example of Site Management Brief

Midlothian Council: Erraid Wood LBS Management Brief 2023

Name and location of site	Erraid Wood SWT Nature Reserve	Grid ref: NS 248 662
Owner and/or manager	Scottish Wildlife Trust (90%), Private adjacent Wood owner (10%, also the Convenor of the Reserve) – Total 6.2 Ha	Date brief was last updated: 02/11/23
Main habitats requiring active management	Mixed plantation and Broadleaved plantation on east facing slope	
Main species requiring active management	Bluebell (<i>Hyacinthoides non-scripta</i>), Greater Chickweed (<i>Stellaria Neglecta</i>), native tree species and encouraging breeding bird populations.	
Overall objectives of management	<ol style="list-style-type: none"> 1. Maintain the groundflora by removing invasive species if at all possible. 2. Improve relative amount of native tree species on site. 3. Improve woodland for biodiversity by adding bird and bat boxes where appropriate. 	
Recommended management actions (including time of year and how often)	<ol style="list-style-type: none"> 1. Remove two groups of Larch and Beech (12 and 6 trees) in the southern end of the wood to increasing open space. 2. Try and remove the very invasive and common on site Green Alkenet (<i>Pentaglottis sempervirens</i>) at least where it might impinge on the area of the last recording (1990) of the <i>Stellaria Neglecta</i>. 	
Monitoring and survey recommendations	<ol style="list-style-type: none"> 1. Annual bird and bat box surveys are being carried out. 2. An expert local volunteer has started in 2023 to do the Common Bird Census on site. 3. Visits by BSBI surveyors to check on status of notable species. 	
Potential resources available, including voluntary help	The SWT Reserve manager for the area does relevant work (e.g. tree felling, well used public path maintenance throughout the year backed up by an SWT run in-week volunteer team (which may only be one person from time to time). Local SWT Volunteers carry out the surveys and minor work such as monitoring and adding bird boxes when the resource is there for them to be annually surveyed.	

Annex 4 Condition Monitoring form and guidance for LGS

Forms for site condition monitoring of Local Geodiversity Sites have been developed by GeoConservationUK and the Scottish Geology Trust, along with guidance on completing the form.

[LGS condition monitoring form](#)

[LGS condition monitoring form guidance on completing the form](#)

Example: Petershill LGS, West Lothian

1. Site Information [Note 1]									
Site Name & ID no.		Petershill				WLGS26			
Site Code & Type		ED	Disused quarry		Grid Reference		NS 9849 6952		
Date of Visit		21/05/21			Local Authority		West Lothian Council		
Surveyor		MB			Landowner		West Lothian Council		
1:50,000 BGS Sheet no.		31E			1:25,000 OS Sheet no.				
Site designation		Scientific	<input checked="" type="checkbox"/>	Educational	<input checked="" type="checkbox"/>	Aesthetic	<input type="checkbox"/>	Historical	<input checked="" type="checkbox"/>
Interest Features									
Geodiversity Value Summary:									
<p>Petershill is located in the Bathgate Hills about 1 km north-east of Bathgate. This area was a limestone quarry during the 18th century and was converted to a reservoir in the 19th century, but this was closed in 1986. It now includes areas of species-rich grassland, scrub and wetland, as well as being an important geological site. It is a Wildlife Reserve managed by Scottish Wildlife Trust.</p> <p>These quarries illustrate a sequence of sedimentary rocks which were formed about 325 million years ago during the middle of the Carboniferous Period. The main rock is a band of limestone formed in what was otherwise a predominantly volcanic environment. This limestone, called the Petershill Limestone is famous for its well preserved marine fossils. These are of immense significance and many species have been described from this site. Thick beds of limestone are visible at the southern end of the quarries. The Petershill Quarries are a Site of Special Scientific Interest (SSSI) due to them being a good example of rocks of the middle Carboniferous Period, and also because of the lowland neutral and calcareous grassland.</p>									

Location Map:



Detailed Site Description:

Petershill shows a sequence of bedded and slightly argillaceous limestones through the Petershill Limestone of the Lower Limestone Formation. The limestone is a classic locality famous for its well-preserved marine fossils including corals, brachiopods, bivalves and echinoids. These faunas are of immense taxonomic significance, and many type species have been described from this location.

A quiet sedimentary environment is indicated by the good fossil preservation. The lateral and vertical facies variations of the Petershill Limestone are of great interest to carbonate sedimentologists and palaeoecologists. Massive limestones (biohermal buildup) occur at the southern end of the quarry. Petershill Quarries are well-known and a lot of material has been removed in the past by fossil collectors. The site is a GCR (Dinantian of Scotland) site.

The limestone rocks support one of the richest assemblages of bryophytes in the district.

Third Party Interest:

Petershill is now a nature reserve, part of the Wildlife Trust. The site is a mixed SSSI designated for the largest area of species rich limestone grassland in the Lothians. Grassland of this type is a very scarce habitat in the region, and this site is the only example of any size in West Lothian. Woodland, scrub pools and marsh add to the diversity of habitat within the site.

Previous management and dates (if any)

Parts of the wall and main entrance gate were demolished by a vehicle but professionally replaced – 2020. A secondary gate was also replaced – possibly around the same time. The whole site is in good condition with no litter or damage in general.

2. Primary Factors [Note 2]

Bedrock feature	Is (are) the feature(s) exposed?	Y	If No, can it (they) practically be re-exposed?	
	Is (are) the feature(s) being affected by the following factors?			
	Factor	Y/N	Comments	
	Vegetation	Y	Some exposures covered. Others slowly being invaded.	
	Scree/Mass Movement	N		
	Flooding	N		
	Dumping/Landfill	N		
	Quarrying/Engineering Works	N		
	Development (housing/industrial)	N		
Others (please define) -	Y	The exposures have been damaged by what is most likely people looking for fossils, using implements to break up the rock.		
Superficial deposit feature	Is (are) the feature(s) exposed?	N	If No, can it (they) practically be re-exposed?	
	Is (are) the feature(s) being affected by the following factors?			
	Vegetation (Trees or crop planting)	N/A		
	Agricultural practices (deep ploughing)	N/A		
	Quarrying/Engineering Works	N/A		
	Development (housing/industrial)	N/A		
	Others (please define) -	N/A		
Geomorphology feature	Is (are) the geomorphological feature(s) being allowed to evolve naturally?		Y	
	Is (are) the feature(s) being affected by the following factors?			
	Vegetation	N		
	Sea Defences	N		
	River Management	N		
	Ground Stabilisation (slopes/sand dunes)	N		
	Water level change	N		
	Development (housing/industrial)	N		
	Others (please define) -	N		

3. Secondary Factors [Note 3]

Factors that do not directly affect the feature(s) but may need to be managed in order for feature(s) to maintain a desirable condition

	Factor	Y/N	Comments
Site access	Are any of the following causing difficulties in accessing the site?		
	Physical obstacles	Y	There is some on-road walking required if on foot. There is a lot of vegetation on the slopes, so care is required.
	Landowner permissions	N	Public access
	Protected species/habitats	Y	This is a wildlife nature reserve and an SSSI
	Other (please define)	Y	Cattle is put on the land to graze at certain times. Notices are put up when this happens.
Furniture	Are any of the following in an undesirable condition?		
	Interpretation Boards	Y	Apart from one board giving the site name there are no other interpretation boards.
	Benches/Fences/Gates	N	
	Earthworks	N	
	Other (please define)	N	
Other features	Are there any other features of interest that should be considered?		
	Biodiversity	N	
	Historic Environment	Y	Former quarry then a reservoir
	Other (please define)	N	

Site Status [Note 4]

Overall, is the site in a desirable condition for use(s) of the feature(s) identified?	Uncertain	
	Condition Status: [Note 4]	Poor/declining
If Yes - what management is required (if any) for the feature(s) to maintain a desirable condition: General: help Specific:		
For the above, is the management		
If Uncertain or No - what management is required for the feature(s) to reach and maintain a desirable condition: General: Clear vegetation away and from identified exposures. Specific: <ol style="list-style-type: none"> 1. Main exposures to be cleared of vegetation. 2. Gather loose rocks on the basis people will focus on these rather than potentially damaging the exposures. 		
For the above, is the management: <i>Being undertaken / Going to be undertaken / Not going to be undertaken / Not possible</i>		
Are there any secondary factors that need further management?		Yes / No / Not applicable
Suggested management in order for the feature(s) to reach/maintain a desirable condition: General: <ul style="list-style-type: none"> - Improve public awareness that the site is not just a nature reserve but also an SSSI Specific: <ul style="list-style-type: none"> - Install information boards at both entrances with details of the geological aspects for educational purposes and placing emphasis on the restrictions due to the SSSI status. - Place markers at the exposures where practical and a notice board with information on the fossils that can be seen. (There is always the concern of vandalism to standalone notice boards) - Create piles of loose rocks so they may become the focal points. 		

References & Links

West Lothian Council, 26. Petershill Quarries, north east Bathgate, Available at <https://www.westlothian.gov.uk/article/41312/26-Petershill-Quarries-north-east-Bathgate>

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