
Part 2: Local Geodiversity Action Plan

This LGAP has been developed as a consequence of, and is based upon, the Geodiversity Audit for the North West Highlands Geopark (NWHG).

The primary aim of this LGAP is to enhance recognition and understanding of geodiversity and also to identify appropriate actions to conserve and develop the geodiversity of the NWHG, whilst promoting and managing its sustainable use. Furthermore, to assist in the development of a regional strategy for the conservation of geodiversity and the sustainable use of geological resources for amenity, education and research.

The key objectives are:-

- To ensure the future maintenance of the Geodiversity Audit of the NWHG.
- To facilitate the protection, conservation and promotion of the geodiversity of the NWHG.
- To facilitate the inclusion of geodiversity in relevant plans, strategies and policies of all appropriate local authority departments and other relevant organisations.
- To raise awareness of geodiversity among local authority elected members and relevant personnel, government agencies, professional partners, landowners/estates and their managers, across all levels of education and throughout the general public.
- To create a positive and sustainable feedback system enabling reporting, monitoring and review of the LGAP to partners and other relevant/interested parties and organisations.
- To create a sustainable LGAP which will actively assist the NWHG in pursuing funding to enable it to achieve its aim.

Partners

It is envisaged that the partners listed below may be involved in helping the North West

Highlands Geopark to develop and deliver the actions listed in this LGAP:-

ACC — Assynt Community Council

BGS — British Geological Survey

CCC — Coigach Community Council

DCC — Durness Community Council

GCUK — GeoConservation UK

SDCC — Scourie & District Community Council

SGF — Scottish Geodiversity Forum

SNH — Scottish Natural Heritage

SP — Sutherland Partnership

GSS — Grampian Speleological Society

HGS — Highland Geological Society

HIE — Highlands and Islands Enterprise

JMT — John Muir Trust

KCC — Kinlochbervie Community Council

LE — Landowners/Estates

SWT — Scottish Wildlife Trust

THC — The Highland Council

TSG — The Scottish Government

UHI — University of the Highlands & Islands Millennium Institute

UKU — Other UK Universities (Earth Sciences, or related Departments)

VS — Visit Scotland

NB. This is not intended as an exclusive list of those partners involved, but those who are central to help the NWHG implement the recommended actions. It may be added to during the life of this LGAP. It is also not implicit that these partners either agree with or have signed up to the actions listed in this plan.

Action Plan

This indicative action plan is intended to guide the work of the NWHG and its partners in achieving the recommended objectives contained within each of the following four themes:-

Theme 1 — Understanding more about the Geodiversity of the NWHG

Theme 2 — Conserving the Geodiversity of the NWHG

Theme 3 — Interpreting the Geodiversity of the NWHG

Theme 4 — Education and lifelong learning about the Geodiversity of the NWHG

Within each theme, a series of objectives is listed (numbered consecutively from the start of the action plan), identifying what is required to be achieved over the period 2013–2016. Each objective contains a series of actions (numbered consecutively for each objective) identifying any work required towards meeting that objective, plus listing of relevant partners (see abbreviations above), priority (i.e. high, medium or low) and timescale.

Theme 1 ? understanding more about the Geodiversity of the NWHG

Objective	Action	Partners	Priority	Timescale
1, To create a sustaining LGAP which will actively pursue funding to enable it to achieve its aim	1: Have all partners signed up to deliver and assist in delivering this LGAP, as appropriate	All as listed above	High	Immediate
	2: Secure sustainable funding for the delivery of this LGAP	BGS, HIE, JMT, LE, SNH, SP, SWT, THC, TSG, UHI, VS	High	Immediate.

To maintain and update existing data, acquire improved data and support new research into the Geodiversity of the NWHG	3: Appoint a qualified Geoscientist for NWHG who can represent the interests of NWHG in the delivery of this LGAP and who can fulfil the role of Geodiversity officer	BGS, HIE, SNH, THC	High	Immediate
	4: Continue to hold membership of the European Geoparks Network (EGN) and the Global Geoparks Network (GGN) and proactively develop the already well-established links between NWHG and the EGN, GGN and the scientific division of UNESCO. Attend meetings of these organisations and network extensively in order to experience best practice in:- communication of Geodiversity to society; sustainable implementation of LGAPs; and researching appropriate funding streams.	BGS, HIE, SNH, THC, TSG.	High	2013-2016
	5: Represent the interests of the NWHG and play an active role within the Scottish Geodiversity Forum.	BGS, SGF, SNH, TSG	High	2013-2016
To maintain and update existing data, acquire improved data and support new research into the Geodiversity of the NWHG	1: Ensure regular updating and maintenance of the Geodiversity Audit (or Geodiversity Asset Register)	BGS, HGS, SNH	High	Annually
	2: Establish links with academic institutions and support studies linked to their research priorities	UHI, UKU	Medium	2013-2016.

<p>3: Acquire, maintain and keep updated sets of maps, books, reports, scientific papers, studies and create, maintain and keep updated a photographic library on the Geodiversity</p> <p>4: Establish and maintain a master database of all sites and features and other relevant information and records on a GIS, including management and interpretation records</p>	<p>HGS, JMT, SNH, SWT, THC, UHI</p> <p>BGS, SNH, THC, UHI</p>	<p>High</p> <p>High</p>	<p>2013-2016</p> <p>2013-2016.</p>
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Theme 2 ? conserving the Geodiversity of the NWHG

<p>3. to ensure that important sites and features are protected from the adverse impacts of any new developments</p>	<p>1: Plan and deliver a series of seminars/workshops to THC planning officials and landowners/estates and their managers, highlighting the GA and LGAP and raising awareness of the Geodiversity of the NWHG, its importance as a resource, significance and relevance within the planning system and relevant conservation issues.</p> <p>2: Promote the Scottish Geodiversity Charter to THC planning officials and landowners/estates and their managers</p>	<p>: BGS, LE, SGF, SNH, THC</p> <p>BGS, LE, SGF, SNH, THC, TSG</p>	<p>High</p> <p>High</p>	<p>2013.</p> <p>2013</p>
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4. to monitor the condition of GCR sites	3: Provide information to landowners/estates and their managers on the location and importance of geological features (especially those listed in the GA) on land which they own or control.	HIE, JMT, LE	High	2013-2016
	4: Promotion of specialist advice available from NWHG	BGS, SNH, THC, TSG	High	2013-2016
	1: Undertake bi-annual survey of condition of listed GCR sites by qualified geoscientist and incorporate findings in updated GA and LGAP.	BGS, SNH	Low	2015 onwards
5. to conserve the geological interest and significance of individual sites and features having high conservation requirements	1. Durness (NWHG ref 008). There is generally a low conservation requirement. There is however, a degree of risk of over-sampling and over-hammering by geologists/students. This may be helped by promoting greater awareness of the relevant codes among geologists and education of students via a leaflet to be produced and made available through the NWHW.	BGS, SNH, UHI, UKU	low	2016

<p>2. Sandwood Bay (NWHG ref 009). A notice is required to be erected at the start of the walkers' path to Sandwood Bay outlining the fragility of the beach-dune system and asking walkers to be respectful in their activities. Also, a leaflet highlighting the key aspects of the site, its significance and its susceptibility to human activities should be commissioned and subsequently made available in a dispenser at the start of the walkers' path.</p>	SNH, THC, JMT	Medium	2013-16
<p>3. Loch Laxford (NWHG ref 011). The existing Rock Route location at a layby on the A 838 ("Multicoloured Rock-Stop") requires a further notice detailing the significance and importance of the roadside exposures here (a series of high rock-faces on the eastern side of the road). Periodic monitoring (annual) by a geoscientist is required.</p>	SNH, UKU	Medium	2013-16
<p>4. Camas nan Buth (NWGH Ref 017). The relatively small area of extremely important garnet-bearing rock-exposure requires protection against over-hammering and over-collecting. Prepare a leaflet outlining the significance and fragility of the exposure.</p>	BHS, SNH, UKU	High	2013-14

5. Skiag Bridge (NWHG ref 024). The rock-face is presently suffering the effects of over-hammering and sampling and is becoming fragile in its general condition, and very fragile where pipe rock is exposed. There is an immediate requirement for a sign to be located at the roadside, outlining the importance and fragility of the site. Period monitoring (every 6 months) is also required.	BGS, SNH, IUKU	High	Immediately/6 monthly
6. Traligill Caves (NWHG ref 028). Regular monitoring of the cave features required.	BGS, GSS,SNH, THC	Medium	Annually
7. Trailigill Valley (NWHG ref. 029). Moderate risk of irresponsible hammering. Regular monitoring of the karst features required. Requirement for a sign to be erected at the start of the walkers' path	BGS, SNH, THC	Medium	Annually
8. Creag nan Uamh Caves (NWHG refs. 032 and 033). Regular monitoring required plus erection of a sign highlighting the significance and fragility of the exposures	BGS, GSS, SNH, THC.	Medium	6 monthly.
9. Allt nan Uamh Caves (NWHG ref 034). Regular monitoring required plus erection of a sign highlighting the significance and fragility of the exposures.	BGS, GSS, SNH, THC	Medium	6 monthly

10. Bear Cave (NWHG Ref 035). Regular monitoring required plus erection of a sign highlighting the significance and fragility of the exposures.	BGS, GSS, SNH, THC	Medium	6 monthly.
11. Loch Awe Quarry (NWHG Ref 044). Regular monitoring required plus erection of a sign highlighting the significance and fragility of the exposures	BGS, SNH, THC.	Medium	Annually
13. Enard Bay (NWHG ref 051). The exposures of stromatolitic limestones require to be monitored occasionally	BGS, SNH, THC	Low	2016.
14. Stac Pollaidh (NWHG ref 060). Long-term monitoring of scree slopes on south-west face where these are close to the existing walkers' path	BGS, SNH, THC	Low	bi-annually
15. Stac Fada (NWHG ref 063). Requirement to ensure that over-hammerina and over-samolina do not occur and that key features of the relatively narrow exposure are not damaged. Regular monitoring required plus erection of a sign highlighting the significance and fragility of the exposures.	BGS, SNH, THC	Medium	6 monthly.
16. Smoo Cave (NWHG ref 064). Regular monitoring required of the innermost parts of the main (outer) cave plus the smaller inner cave, plus erection of a sign at the main cave entrance highlighting the significance and fragility of the exposures.	BGS, GSS, SNH, THC	Medium	6 monthly

**Theme 3 ?
interpreting the
geodiversity of the
NWHG**

6. To increase awareness of the geological heritage of the NWHG	1: Produce a general introductory leaflet about the NWHG, suitable for wide distribution to visitors at appropriate facilities within the NWHG and at VICs, both within and outwith the NWHG.	ACC, BGS, CCC, DCC, HIE, KCC, LE, SDCC, SGF, SNH, SP, THC, VS	Medium	2013-2014
	2: Produce a geological (Geodiversity?) guide specifically designed for the NWHG, suitable for people with very little or no knowledge of geology and filling the gap in level/understanding between that of the recently published Geological Excursion Guide to the North West Highlands of Scotland and nothing at all. Aimed at the majority of visitors, geotourists, local communities.	ACC, BGS, CCC, DCC, GCUK, GSS, HGS, HIE, JMT, KCC, LE, SDCC, SGF, SNH, SP, SWT, THC, VS	Medium	2013-2015
	3: Research and develop a series of 10 separate geotrails, each featuring different key aspects of the Geodiversity of the NWHG, and prepare an accomDanvina leaflet (to include maDs. Photos. etc.) for each geotrail. Geotrails to be suitable for the general public (include some with all abilities access).	ACC, BGS, CCC, DCC, GSS, JMT, KCC. LE. SDCC, SNH, THC, VS	Medium	2013-2015
	4: Plan and hold a one-day seminar and public launch event for all the partners and members of the public, introducing them to the NWHG and this LGAP.	all as listed	High	Immediate

	<p>5. Employ two part-time geo-guides to help with the delivery of programmes of guided walks during the main visitor season and support the work of the Geoscientist in other ways. These posts could be filled by undergraduate students pursuing courses of study in the Earth Sciences and represent valuable employment opportunities especially for local people residing within the NWHG.</p> <p>1. SANGO BAY (NWHG REF. 005). Provide an interpretation panel at</p>	<p>BGS, SNH, HIE, UHI, UKU</p>	<p>High</p>	<p>2013-16</p>
<p>7. To interpret key sites and features of geological interest.</p>	<p>the car park adjacent to the VIC, overlooking the bay. Consult closely with the Highland Council Countryside Ranger based at the VIC</p> <p>2. FARAIDH HEAD (NWHG REF. 006). Provide an interpretation panel, to be located at the car park at Balnakeil beach,</p>	<p>BGS, SNH, THC</p>	<p>Medium</p>	<p>2013-2015</p>
	<p>which will also provide interpretation for BALNAKEIL (NWHG REF. 007). Consult closely with the Highland Council Countryside Ranger based at Durness.</p>	<p>BGS, SNH, THC.</p>	<p>Medium</p>	<p>2013-2015</p>

3. SANDWOOD BAY (NWHG REF. 009). Provide an interpretation panel at the approach to the beach, illustrating the key elements of the beach-dune system and explaining the geomorphological significance of the site.	BGS, SNH, THC, JMT	Medium	2013-2015
4. SCOURIE BAY (NWHG REF. 015). Provide an interpretation panel at the south side of Scourie Bay, adjacent to the cemetery car park, highlighting the Scourie Dyke swarm (in general), the "Graveyard Dyke" (south side bay), the "Geologist's Dyke" (north side bay) and the surrounding Lewisian Gneiss	BGS, SNH, THC	High	2013
5. CAMAS NAM BUTH (NWHG REF. 017). Provide interpretation by combining with the panel recommended for SCOURIE BAY (NWHG REF. 015).	BGS, SNH, THC	High	2013
6. STOER (NWHG REF. 020). Research suitable sites and provide interpretation panels serving the three locations of Clachtoll, Stoer and Culkein.	BGS, SNH, THC	High	2013
7. SKIAG BRIDGE (NWHG REF. 024). Provide a roadside interpretation panel suitable for both geological specialists and the general public.	BGS, SNH, THC	High	2013

8. BEINN GHARBH (NWHG REF. 025). Provide an interpretation panel of the view looking southwards from the layby on the west side of the A 894 at the top of Skiag Hill.	BGS, SNH, THC	High	2013
9. TRALIGILL BURN (NWHG REF. 027). Provide an interpretation panel at the start of the walk eastwards into the Traligill valley.	BGS, SNH, THC	High	2013
10. TRALIGILL VALLEY (NWHG REF. 029). Research suitable site locations for the erection of interpretation panels at strategic points up the valley adjacent to the walkers' path	BGS, SNH, THC	High	2013
11. STRONCHRUBIE CLIFF (NWHG REF. 030). Examine the suitability and practicability of providing an interpretation panel beside the existing Rock Route panel located in the layby on the west side of the A 837, but describing the view of the cliffs whilst looking eastwards.	BGS, SNH, THC	High	2013.
12. ALLT NAN UAMH CAVES (NWHG REF. 034). Research the potential for a general information panel to be located at the "Bone Caves" car park adjacent to the A 837.	BGS, GSS, SNH, THC	Medium	2013-2016

13. BEAR CAVE (NWHG REF. 035). Provide an explanatory leaflet describing the process of cave formation/development in limestone rocks and covering the range of vertebrate faunas found here	BGS, GSS, SNH, THC	High	2013
15. CAM LOCH (NWHG REF. 048). Provide an interpretation panel at the Elphin Cemetery access point.	BGS, SNH, THC	Medium	2013-2015
16. TRAIGH ALLT CHAILGEAG (NWHG REF. 055). Provide 2 interpretation panels, one at the car park on the landward (southern) side of the A 838 and the other towards the western end of the beach with a good outlook westwards onto the high rock-face. Highlight the concept of boudinage and summarise the main points of the Lewisian Gneiss and its complex history.	BGS, SNH, THC	High	2013
17. STRATH DIONARD (NWHG REF. 056). Provide an interpretation panel, highlighting the classic U-shaped features of this long glaciated Strath, to be sited on the east side of the A 838 at a suitable layby.	BGS, LE, SNH, THC	High	2013
18. LOCH GLENDHU (NWHG REF. 057). Provide an interpretation panel at the main car park on the north side of the Kylesku Bridge, looking eastwards.	BGS, LE, SNH, THC	Medium	2013-2015

19. SUILVEN (NWHG REF. 058). Research suitable locations for roadside interpretation panels at the western end (Lochinver?) and the eastern end (Elphin?) of the mountain, highlighting the processes of evolution of the Assynt mountainscape and explaining the concept of inselbergs.	BGS, LE, SNH, THC	High	2013
20. QUINAG (SPIDEAN COINICH, SAIL GHARBH, SAIL CORM) (NWHG REF. 059). Research suitable locations and provide roadside interpretation panels on the western (Lochinver) and eastern (Skiag) sides	BGS, SNH, THC	High	2013
21. LEDMORE ESKER (NWHG REF. 061). Provide an interpretation panel at the layby on the west side of the A 837, 500m north of Ledmore Junction	BGS, SNH, THC	High	2013
22. STAC FADA "METEORITE SITE" (NWHG REF. 063). Provide an interpretation panel at the Bay of Stoer, looking north-westwards along the coast, identifying the location of the Stac Fada outcrop (and how to find it) and explaining the main features of meteorites and their impacts upon the Earth, in addition to the detail of the Stac Fada site itself.	BGS, SNH, THC, UKU	High	2013

23. SMOO CAVE
(NWHG REF. 064).

Provide an interpretation panel close to, or just within, the main cave entrance.	BGS, GSS, SNH, THC	High	2013
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Theme 4 ? Education and lifelong learning about the geodiversity of the NWHG

8. To create/increase opportunities for schools and university/colleges to use the geodiversity of NWHG as a resource for the study of earth sciences.

1. Develop and foster closer links with primary and secondary schools located both within and adjacent to the NWHG and establish a system of regular communications with head teachers.

THC	High	2013
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2. Produce geological educational resource material in consultation and partnership with teachers.

THC.	Medium	2013-2016.
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3. Develop and deliver teacher-training days in consultation with schools located within and adjacent to the NWHG.

THC	Medium	2013-2016
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4. Establish a programme of regular visits to schools by the NWHG geoscientist and assist with teaching of Geodiversity as part of a broad-based curriculum within the physical sciences.

THC	Medium	2013-2016.
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5. Develop the "Rock Detective Agency" as a NWHG-led initiative with all the primary schools for pupils and teachers to become

further engaged with the NWHG and develop the concept of (junior) Rock Detectives as representatives/ambassadors of NWHG.

ACC, BGS, CCC, DCC, HGS, KCC, LE, SDCC, SGF, SNH, THC	Medium	2013-2016
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9. To support lifelong learning about the Geodiversity and Earth science heritage of the NWHG	6. Engage with the Earth Sciences departments of universities and colleges within UK to further promote the NWHG as a teaching resource and facilitate closer links with, and greater awareness of, the NWHG.	BGS, UHI, UKU	High	2013.
	1. Develop and deliver an annual programme of geology-related events (e.g. guided walks, talks, etc.) within NWHG as part of lifelong learning activities for all ages, extending throughout the whole year.	ACC, BGS, CCC, DCC, HGS, JMT, KCC, SDCC, SNH, THC, UHI, VS	Medium	2013-2016
	2. Encourage the continuation and development of existing groups/organisations having an interest in Geodiversity, or the formation of new ones.	BGS, GCUK, HGS, JMT, SGF, SNH, THC, UHI.	Low	2013-2016.
	3. Engage with VS to ensure that staff are fully aware of the Geodiversity of NWHG and its relevance to Geotourism. Promote NWHG to VS as a World-class destination for lifelong learning about Earth Sciences and Earth Science Heritage.	VS	High	2013-2016.
	4. Develop a sustainable Geotourism Strategy for the NWHG.	ACC, BGS, CCC, DCC, HIE, JMT, KCC, LE, NTS, SDCC, SGF, SNH, SP, THC, TSG, UHI, UKU, VS.	High	2013-2016.
	5. Build on the recommendations of the Geo Centre feasibility study.	All partners	High	2013-2016

Summary

This LGAP will provide a good basis for the effective and strategic management of the NWHG and its very special and World-class Geodiversity. It is underpinned by the Geopark's first GA and will require to be reviewed regularly, say at least annually, and also when changes are made to the GA.