GEOconservationNEWSletter

Spring 2018 issue

A Word from the Editor . . . Welcome to the first issue of the thrice-yearly GEONEWS, the re-launched GeoConservationUK newsletter. I am grateful to the various contributors to this issue for their news items of local, that should also be of some national, interest. I hope my gleanings from our various members' newsletters and webpages will be found acceptable by their original authors and also of interest to a wider readership. Accordingly, it is pleasing to see the Black Country's geology, after years of geoconservation effort, some of which is reported herein, is possibly to be recognised at the global level in the next twelve months.

However, we know that many humble sites are needed to provide access to interesting geological experiences across the UK, something that the GeoWeek project is intended to promote. Promotion and access to geosites can take many forms. The Edinburgh Geological Society's webpage is a fine example of how we can distribute geotrail information; the newly launched Brecks Earth Heritage Trail is to be commended for its smartphone/tablet app., a particularly good way to reach a wider, and potentially younger audience, than traditional leaflets. We must all recognise that a big and developing challenge for the geoconservation community at large is how to attract and engage with younger colleagues - potentially, the future geoconservationists!

Black Country Geoconservation

Since 2010, the Black Country Geological Society (BCGS) has continued developing its programme of geoconservation works in partnership with the Birmingham and Black Country Wildlife Trust (BBCWT) and Local Authority wardens. Our work has generally involved clearing vegetation to reveal exposures and improve access at various sites, including:

Barr Beacon, Pinfold Lane Quarry: Permo-Triassic sedimentary exposures of the Hopwas Breccia and Kidderminster Formation.

Portway Hill Quarry, Rowley: Carboniferous dolerite exposures showing examples of spheroidal weathering and potential columnar jointing. Part of the former infilled Blue Rock Quarry, the site is a BBCWT nature reserve.

Barrow Hill (next column, top right), Pensnett, known as the 'Dudley volcano': Exposures of Carboniferous dolerite intruding Etruria Marl showing evidence of columnar jointing; the dolerite and marl contact and associated mineralisation.

Saltwells Local Nature Reserve: Carboniferous Coal Measures in Doultons Clay Pit, Upper Silurian strata

at the Tubway *(below)* and the Silurian-Carboniferous contact at Brewins Cutting.

Wren's Nest: Silurian, Wenlock Limestone. Works have also included fossil identification sessions.

Sedgley Beacon: Silurian, Aymestry Limestone.

Lickey Hills Country Park, Barnt Green and Rose Hill Quarries: Heavily deformed Ordovician quartzite.

Rubery Cutting: Contact between the Lickey Quartzite and overlying Silurian sandstone.

Meanwhile, to its credit, Dudley Metropolitan Borough Council has recently cleared vegetation and soil along the busy B4180 Brierley Hill road cutting *(below)*, which

was blocking the footpath and hazardous to pedestrians; this has much improved visibility of the Kidderminster Formation exposures that form part of a Geosite

which, as with the other noted sites, is included within the ongoing Black Country Geopark bid.

Andrew Harrison (BCGS Field Secretary and Vice Chair)

SOMERSET GEOLOGY GROUP

Our proposed '***Review of Somerset's Local Geological Sites'*** was the priority identified at our September 2015 open meeting. Over the spring and summer of 2017, Garry Dawson and myself have been working together to move this potential project forward. We had two preliminary planning meetings with Somerset Environmental Records Centre (SERC) and, in the first week of October 2017, held a first '*Steering Group*' meeting. We now have a proposal for the project (to run for 2-3 years from 2017) and are delighted to say that we have the endorsement of Exmoor National Park, Natural England and Somerset Earth Science Centre.

We are now ready to start fund-raising and have already have our first offer of sponsorship, from Andy King's consultancy, *Geckoella* (£500 plus 5 days help-in-kind with the pilot stage of the project).

We have been making contact with adjacent county groups and gathering information from across the country to help us identify latest best-practice. Some careful thinking is needed; for example, on the site assessment form we will use for the review, as we need to focus on gathering a more robust evidence base and assessment procedure. The four criteria for selection remain the same: '*scientific*', '*education*', '*historic*' or '*aesthetic*' (landscape) interest, but most of our Somerset Local Geological Sites were identified before the DEFRA guidance in 2006, which requires a more substantive approach. We plan to involve volunteers from our group and recruit through SERC, including providing opportunities for volunteer placements for geology students.

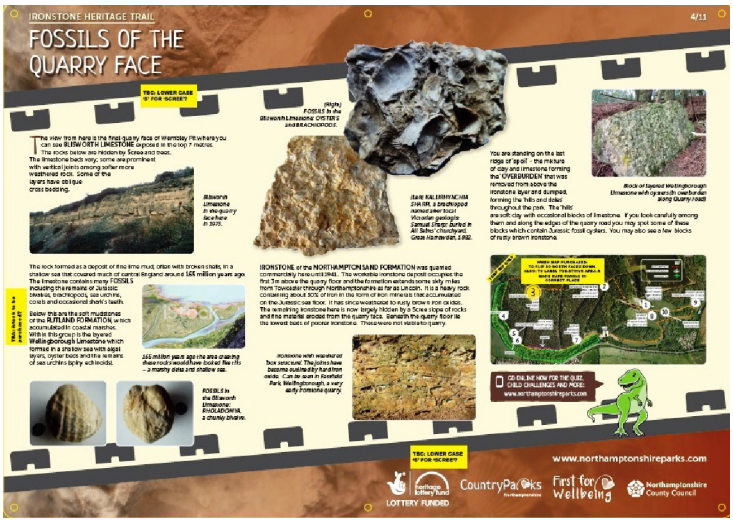
Wendy Lutley, Coordinator

"As the fiery young earth grows cooler its face settles into maturity. Rain and sun, frost and blazing heat, and the orderly cycle of moisture ascending, moving and falling, smooth and chisel it into shape."
(W. Heaton Cooper, 1938)

NORTHAMPTONSHIRE RIGS GROUP

The RIGS Group though currently reduced to its surviving original members still operates - chiefly in the form of encouragement to local councils to conserve geological sites. We have pursued Northamptonshire County Council relentlessly with regard to Irchester Country Park *(below)*; they have managed to obtain modest Heritage Lottery Funding to enhance their 'Ironstone Trail',

and we hope for useful clearance to be included. John Hudson and I have enlisted help from volunteers from the Leicester Literary & Philosophical Society's Geology Section, together with the Wellingborough U3A Geology Group, and Ian Clarke from the Open University Geological Society. Clearance of the quarry face is not yet sufficiently useful to geologists but there is now much better viewing from the path opposite. Several information boards are being prepared to illustrate not only the geology *(an example of one is shown below)* but also



the historic working of the quarry. We have had advice from John and Roy Clements on the two geology boards.

Diana Milne

GeoSuffolk's News

This winter has seen two Suffolk Coast and Heaths AONB Work Parties undertaking geological conservation work directed by GeoSuffolk on Red Crag sites on private land. On December 5th we dug out a small pit close to the SSSI at Rockhall Wood, Sutton and on January 23rd we cleared vegetation from part of one of the Red Crag pits in Ramsholt.

The east face of the pit at Ramsholt *(below)* is about 4m deep, and shows a small vertical fault (between the two holes) with a displacement of about 4cm. The rocks are

rich in phosphate nodules and there were two shelly beds from which we collected examples of the fossil mollusc fauna. We also took samples to investigate for micro-fossils. Thank you to the SCG AONB volunteers for all their hard work.

Meanwhile, a post-Christmas walk in Christchurch Park, Ipswich revealed this coarse gravel around a newly-planted tree *(below right)* in the Upper Arboretum – such a small, temporary exposure like this can show interesting geology and can be well worth recording.

Meanwhile, something to look forward to in the summer is the Pliocene Forest Open Day, on 10th June, at Sutton; this is a wonderful opportunity for everyone to visit this imaginative interpretation of the flora of Suffolk's pre-Ice Age 'Paradise Lost'.

Caroline Markham

The Aspiring 'Black Country Global Geopark'

The Black Country is a classic area of world-class geological, such as the 'singing cavern' at the Dudley Canal Tunnel *(below)*, and related cultural heritage, as

at the Black Country Living Museum. The creation of a Black Country UNESCO Global Geopark, linking 45 varied heritage sites across the Black Country, will tell a coherent story of the landscape through time.

The significant part the Black Country played in the Industrial Revolution is at the heart of the bid to become the next UK UNESCO Global Geopark. In November 2015, the four Black Country authorities (Dudley, Sandwell, Walsall and Wolverhampton), with the backing of the UNESCO national commission and the UK Geopark community, submitted an application to become part of the UNESCO Global Geopark Network. The Black Country's bid was assessed during 2016/7. UNESCO experts have recognised the area as one of globally important/world class geological and related cultural heritage and commended the dedication and enthusiasm of the whole team. Following an evaluation visit by UNESCO delegates in June 2016, and a presentation to international delegates at the Global Geopark conference in Torquay in September 2016, UNESCO decided in spring 2017, that the Black Country has all the necessary attributes to become a Global Geopark; however, under their new rules, they require additional assurances of sustainable growth in the Geopark work. They have made several recommendations to help us to take the area forward into becoming a fully operational Global Geopark; they will work with us to achieve that status. UNESCO and the other United Kingdom Global Geoparks will now work with us until the submission of our final report by late Spring 2018. We will provide a progress report at the Global Geopark Conference in Italy in September 2018. A final decision on our application will be ratified by the UNESCO board in Paris in Spring 2019.

Graham Worton & Nicola Beckley

Call for Papers

Joint Meeting of HOGG and GCG (History of Geology Group and Geological Curators' Group)

Hosted by the Bath Royal Literary and Scientific Institution, Bath

Tuesday 18th September 2018, with a day of related field trips in Bath and immediate area on Wed 19th September

Collectors, Collections and the geology of South West Britain

This collaborative meeting organised by two Special Interest Groups of the Geological Society focuses on the geology of South West Britain. We invite expressions of interest in presenting papers or posters on the broad topic of collectors and their collections related to the history of geology in the southwest, and on those who deciphered the geological story. Whilst William Smith and his role in mapping and stratigraphy has been very well presented in most recent years, there are many others whose stories remain less well known, such as William Lonsdale, who worked at both the Bath Literary and Scientific Institution and at the Geological Society. If there is sufficient interest, the proceedings may be published as a thematic issue of the GCG journal, the *Geological Curator*.

We invite any contributions on the meeting topic, especially on:

- Collectors who worked in the southwest, contributing to the development of geological science. The role of more modern or even contemporary collectors should not be forgotten.
- Collections from the southwest which are poorly known, or which have been returned to prominence with recent projects. These may be rock, fossil, mineral or archival collections.
- Field geologists whose work and observations were important to the development of the science, without necessarily having made significant collections.

A series of social events are also planned but we do not expect registration for the first day to cost more than £20 maximum, with discounted rate for members of HOGG, GCG, BRLSI and Bath Geological Society. The second day will be costed on individual options, but some choices (e.g. cemetery and building stone walks) will be free.

Closing date for expressions of interest is April 30 and submission of abstracts (max 350 words) must be completed before May 18. Please submit to: swmeeting@geocurator.org

Please contact one of the organisers for further information on this call and on the meeting.

Matthew Parkes (GCG) mparkes@muscum.ic, +353 87 1221967

Nina Morgan (HOGG) nina.morgan@cooptel.net +44-1608 676530 (or 01608 676530).

GeoWeek 5–13 May Active Geoscience Week

The Earth Science Education Forum (England & Wales) (ESEF) is leading the GeoWeek initiative to encourage geoscientists across the UK to introduce members of the public to the wonderful geoscience opportunities offered by their local areas. So, please do all you can to encourage your organisation to offer activities to the public over the nine-day 'week' from 5th – 13th May this year.

We are encouraged that university geoscience departments are considering running local 'pavement geology' trips and activities with their undergraduate students, and that a number of local groups have offered to 'rebrand' one of their current activities as a GeoWeek activity. But our ambitions this year, and in the future, are much bigger than this. We are hoping that most members of most groups will eventually become involved in offering a range of fieldwork and other activities during GeoWeek. Who knows, in future we may be able to follow the lead of Spain, where nearly 10,000 members of the public take part in geoscience fieldwork on a single day in May each year (see:

hp://www.sociedadgeologica.es/archivos_pdf/h_geolodia.pdf

So, please encourage your organisation to encourage many of their members to become involved by circulating this information and inviting them to access the GeoWeek website for more details, at:

www.geoweek.org.uk

GeoWeek possibilities include:

· Planning a 'normal' geoscience field-trip locally – based on urban, rural or coastal geology (urban geology might be based on the country-wide pavement geology and the app at: hp://londonpavementgeology.co.uk/);

· Planning a 'normal' geoscience field-trip locally - but also making some of the sites into Earthcache sites, for others to enjoy later (details of how to do this are available on the GeoWeek website);

· Stationing people at a number of sites of geoscience interest in the area, and giving members of the public a map and a 'passport' to help them to find, and find out about, as many of the sites as possible (as in Oawa's Geoheritage Day – details at:

hps://earthsci.carleton.ca/outreach/explore-geoheritage-day);

· Running a family geoscience fun day;

· Your own innovative strategy!

Please add your activity or activities to the GeoWeek website www.geoweek.org.uk by completing the 'online survey' at:

hps://survey123.arcgis.com/share/58bbdf0ec4bc47b7850e0ba7d6cddc9e

So please encourage your organisation and your colleagues to join us. Together with university geoscience departments, geological societies and groups across the country, schools and school students, and also geoscientists working and 'retired', we have the opportunity to bring active geoscience to the public across the UK in new and exciting ways.

Chris King (chris@earthlearningidea.com)
& *John Stevenson* (esefew@gmail.com)

The Edinburgh Geological Society's Webpage

The Edinburgh Geological Society's web site is a rich source of local geoconservation information. The introductory paragraph on its 'Geconservation' page, at

http://www.edinburghgeolsoc.org/home/geoconservation/,

brilliantly and simply summarises the local geology:

"Edinburgh's dramatic landscape has been shaped over millions of years by ice wind and rain to what we see today. There are two contrasting rock types across the city, sedimentary and igneous. The former was largely deposited 300-360 million years ago in shallow sea or river systems and currently makes up the city's low ground. The igneous rocks found in Edinburgh can be dated back to two different volcanic episodes, firstly in the Devonian, earlier that 400 million years ago and then 70 million years later in the Carboniferous. The older of the two form the solid bedrock of the Pentland Hills and consist of complex layering of lava and ash. The younger event gave rise to many volcanic domes including Arthur's Seat. Towards the later stage of this volcanism, it became more common for magma to erupt underground between rocks forming sills that we can now see today on Corstorphine Hill."

Detailed information on some 30 Local Geological Sites (LGSs) can be accessed via the 'Geoconservation' page. Further, several geological trail leaflets can be downloaded from the 'Publications' page at:

http://www.edinburghgeolsoc.org/publications/

Amongst the publications, which are also available to

purchase in hard-copy, is the 22-page booklet *(below)*, ***Stories in the Landscape***, for the Callander Geodiversity Trail.

As its introduction notes:

"The place we now call Callander has been shaped bu extraordinary forces over millennia. It may be hard to believe nowadays, but where we now stand was once a desert-like region south of the Equator, before continental drift [plate tectonic movements!] brought the landforms together to create Scotland. A series of Ice Ages have left their mark ... "

The introduction, is followed by summaries of the area's five linked geotrail themes along its route, together with a fold-out map. Overall, it is an excellent example of how to introduce, through a walk around the town that could be done in several sections, an area's geology to a non-specialist audience. Even better is that tourists don't even need to visit a Tourist Information Centre to get the booklet; once downloaded, it works perfectly well on a large-screen smartphone and a tablet PC.

Tom Hose

Warwickshire Geological Conservation Group

The Group continues its programme of field excursions outside of the county, along with its outreach work and commendable financial support for geology students' fieldwork. The. latest copy of the Group's newsletter, is available to download at:

http://www.wgcg.co.uk/wp-content/uploads/2017/09/newsletter-2017A.pdf

It carries an interesting article, by John Ball, on the weathering of a newly created stone wall at the Brandon Marsh Nature Reserve which is managed by the Warwickshire Wildlife Trust. Two panels *(one is shown next column, top right)* explain the wall's geology. Anyway, John volunteered to monitor the wall last April. The work involves keeping it free from unwanted ephemeral and ruderal vegetation; these 'weeds' have been particularly removed from the wall's base. Meanwhile, the wall has been allowed to develop as if it were a natural feature such as a cliff. So, algae, mosses, lichens and other non-vascular plants are actually encouraged. So far, green algae is growing well on the Permian and Carboniferous red sandstones and also on one or two pieces of the Triassic (Bromsgrove) Sandstone formation buff sandstone. Interestingly, the other stones and bricks are apparently vegetation free.

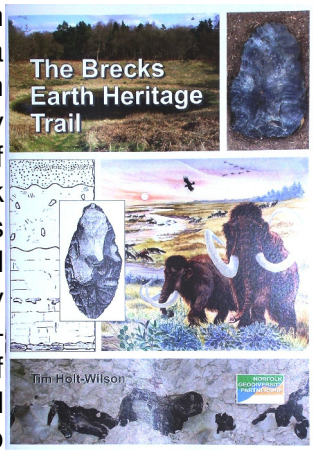
However, John has already noticed slow acting inorganic chemical changes. A fossilised Carboniferous tree trunk has developed a rusty surface deposit beneath it that covers some blue bricks manufactured from Coal Measure mudstones; presumably the trunk is rich in iron compounds, possibly including pyrite, that have leached out and oxidised into the rather unattractive deposit that is an essential part of the weathering process. The blue bricks were actually substituted for coal in the wall because coal fractures easily. The wall's Blue Lias limestone blocks are also beginning to oxidise around their edges, sometimes giving a pale yellowish tint to the otherwise grey-blue colour.

Seemingly, coal was originally featured in the rock garden in a 'sensory area'. However, when it was redeveloped it was removed. Some coal, together with other rocks, was then relocated at the end of a short existing wall, in a new Sensory Garden, under the eaves of the barn and therefore protected from the weather. The Garden is designed to be without labels, so the coal samples haven't been identified. Having myself observed with some interest the slow colonisation, by lichens and bryophytes, of a new pantile roof on my house I think John's article is a timely reminder that we can all make useful geological and ecological observations without even visiting exotic and far-off locations - not of course that such places should be neglected! Meanwhile, it is good to know that fellow geoconservationists are happy to help our wildlife conservationists.

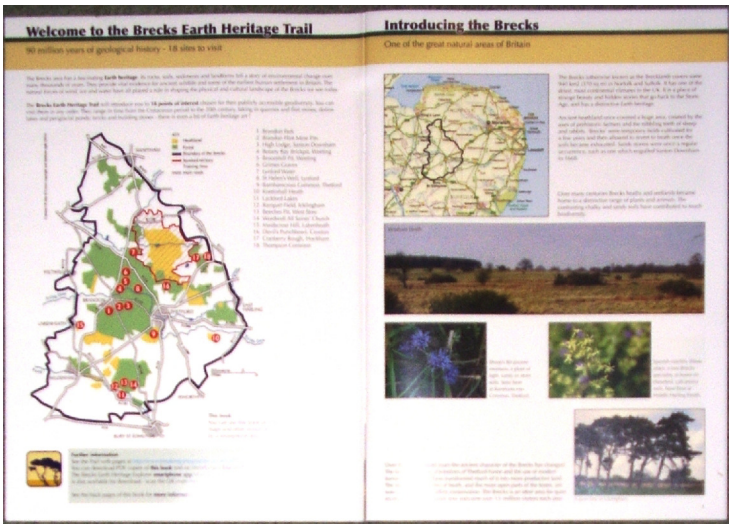
Tom Hose

"From the ridgeway along the Chilterns we look down upon layers of strata continuing below the hills, the porous upper and lower greensands with the impervious clay between them." (Arthur Mee, 1943)

BOOK REVIEW: *The Brecks Earth Heritage Trail*

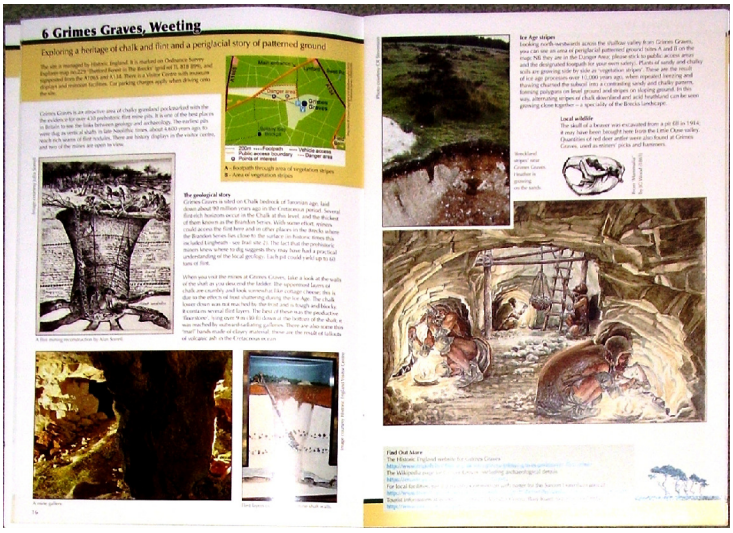


This is an attractive publication that can be used as both a field-guide and an introduction to the geology and archaeology of the Brecks; this is an area of some 940km^2 in central Norfolk and Suffolk. The A-4 booklet is profusely illustrated, and printed on heavyweight glossy paper, to a high standard in full-colour throughout. A variety of illustration styles are employed from photographic images, to full-colour sketch illustrations and reproductions of modern and 19th C. line drawings. The text, interspersed with numerous illustrations *(see below)*, is in



short snippets, ideal for quickly reading in the field, although the format of the booklet does make it much less portable than say the typical Geologists' Association field-guide.

The text is generally well written and fairly approachable to non-geologists; I particularly liked that *"Ancient heathland once covered a huge area, created by the axes of prehistoric farmers and the nibbling teeth of sheep and rabbits."* from the introductory section *(see above)*. However, just occasionally geological jargon creeps into the text; for example, *"Grimes Graves is sited on Chalk bedrock of Turonian age..."* when the term is not explained anywhere in the booklet; it actually points to its one major omission - a stratigraphical column. The booklet describes 18 sites, both geological and archaeological, in mainly two-page spreads; helpfully, especially when flicking through the booklet for a site to visit, each has a summary header and an associated small location map. A footer directs the reader to sources of further information. The site accounts include a brief introduction, an account of the geology/geomorphology and any archaeological or natural history interest. The Grimes Graves *(see below)* account exemplifies this interesting mix with its coverage of the flint mines and the patterned ground. Indeed, the booklet is also an excellent



introduction to the prehistory of the whole region. The Medieval period is covered by the account of All Saints church at Wordwell. Victorian industrial archaeology is covered by the account of Botany Bay brickpit near Brandon.

The booklet, along with a leaflet, the ***Brecks Earth Heritage Trail*** *(right)*, was prepared as part of a geotrail project managed by the Norfolk Geodiversity Partnership. Both can be also be downloaded as pdf files, together with a smartphone app. (for Android and i Phone), from the dedicated webpage at:

hp://www.breakingnewground.org.uk/earthheritagetrail/

The support of the Breaking New Ground Partnership Scheme (supported by the Heritage Lottery Fund) and the cooperation of several landowners has been crucial to the Trail's development; they should all be pleased with the outcome and especially the booklet, authored by Tim Holt-Wilson, which is an excellent guide celebrating the achievement. I look forward to using it as a pdf, as well as trying the app., on my tablet on a cycling trip to the area this summer; the booklet is a most welcome and already well-thumbed addition to my bookshelves.

Tom Hose

The latest issue of the ***Earth Heritage*** magazine *(left)* is now available. Its articles cover: the 51 best places to see Scotland's geology; Irchester Country Park; the Brymbo fossil forest at Wrexham; and the Thames palaeolithic at Farnham in Surrey. It can be downloaded at:

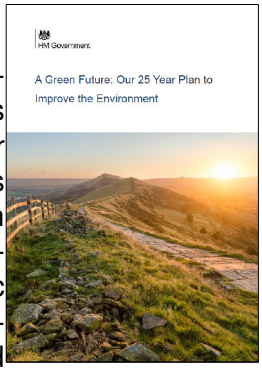
http://www.earthheritage.org.uk/ehpdf/EH%2049%20-%20final%20draft.pdf

DORSET DIGS - literally!

Whilst the Jurassic Coast in Dorset is well-known for its status as a World Heritage Site due to its geological interest, there are also over 60 registered inland sites of great geological interest and importance. Many of these need regular simple maintenance, to ensure that rock faces are kept clear of vegetation and access paths kept open for the safe use of visitors. One of these sites is the Red Lane Quarry at Abbotsbury in south west Dorset. It is significant for its exposure of the Abbotsbury Iron Ore, a unique deposit within the Kimmeridge Clay; it's an iron-rich oolitic clayey sandstone. The quarry's faces show horizontal and vertical iron-rich veins. The ore is in the form of chamosite, but was found, when excavated in the late-19th C., to have too much silica to be economically viable. Fossils from the quarry (fossil wood, worms, bivalves and brachiopods) suggest its rocks were formed in a shallow-water near-shore environment - a

sub-tidal barrier bar? As part of the essential basic geoconservation work to keep the geological interest visible, a small working party of six DIGS volunteers *(above)* just did some essential spring clearing! *Tom Hose*

A Green Future: Our 25 Year Plan to Improve the Environment



The UK Government's new environment ***Plan*** *(right)* sets out its goals for improving the environment over the next quarter century. It details how to achieve these by work with communities and businesses. Unsurprisingly, there are no specific actions for safeguarding geodiversity! However, geodiversity and geoconservation are recognised within the context of protected sites and their potential contribution to the economy, culture, society; for example, through UNESCO World Heritage and Global Geoparks status. General measures such as reducing waste, improving water quality and connecting people with nature, should also have a positive impact. As geoconservationists, we must now explore how we can progress geoconservation within the remit of the ***Plan***, which can be downloaded at:

https://www.gov.uk/government/publications/25-year-environment-plan

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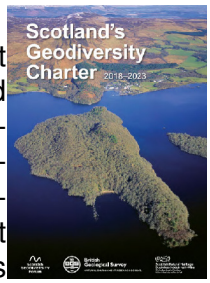
Relaunch of *SCOTLAND'S GEODIVERSITY CHARTER*



The ***Charter*** *(right)*, as the world's first such initiative, was originally launched in 2012 and in need of a planned update. This was completed after a year-long effort the Scottish Geodiversity Forum and it was relaunched, by Bridget Campbell (the Scottish Government's Director for Environment and Forestry) on 16th November 2017 at a conference held in the Dynamic Earth in Edinburgh. The ***Charter*** is now supported by 87 signatory organisations such as Local Authorities, key Government agencies, NGOs, universities, geoparks, and small businesses; these all recognise the importance of Scotland's geodiversity that it is an integral and vital part of the country's environment, economy, heritage and its future sustainable development, that needs to be managed appropriately and safeguarded both for the current and future generations.

Fancy a geology excursion with a difference? Why not, rather like the Geologists' Association in Edwardian England, get on your bike? Two cyclists' geotrails for the Beds/Bucks area are available in pdf format. ***The Bradwell to Newport Pagnell Geotrail*** (originally published in 2012) and *(right)* ***Awheel in Bedfordshire*** (in very draft form until it's finalised and online), can be obtained from the author; just email him at t.hose123@btinternet.com.

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Editor: Dr. Thomas A. Hose
Correspondence should be addressed to the Editor at:
t.hose123@btinternet.com