

Looking to the future... and hoping that...

Welcome to first 2021 issue of the three planned for this year of the GCUK newsletter. Let's hope it heralds a better year to get outdoors and do some of that practical geoconservation work we all enjoy - field surveys, scrub and mud clearance... Similarly, we can hope it will soon be possible to showcase such important work to the public, through site visits and events. In so doing, we can demonstrate the community-asset value of the sites we manage and perhaps encourage town and parish councils in particular to financially support our work.

Of course, the necessary site-monitoring work and historical background research (after, of course, the libraries and archives fully re-open) will still need to be done. Then there is the preparation of revised and new on-site interpretation and geotrails, the updating (please!!!) of group web-sites and...

We might even find some much-needed time to look at how we might better engage with the new life-blood of geoconservation, such as earth science undergraduates and those newly employed in earth science-related activities (not always obviously geological!). Here we not only need to continue to build and maintain the bridges with our local universities and nature conservation groups but also to look at contacting those firms and organisations working in and around our sites; admittedly this isn't easy when local decision-making isn't a feature of many large companies/organisations and health and safety and insurance matters are to the fore.

Meanwhile, I must say a BIG "thank you" to the contributors to this newsletter and follow it up with the usual plea to groups to send me their news and to include me in their newsletter mailing list. Perhaps, also think about forwarding GEONEWS, and your group's newsletter, to possible new members and partner companies and organisations. Do let your friends and even family see this newsletter; they might even forgive you for those absences doing work that makes a real difference. *Tom Hose*



GeoConservationUK Update

GCUK held a necessarily much delayed 22nd AGM, starting at 10 am, on Saturday 27th March 2021. Of course, this had to be a virtual (Zoom!) meeting. The business matters included approving the Minutes of the previous AGM (held on 19th October, 2019) and Reports were given by the Chair, and on



behalf of the Honorary Treasurer, and Newsletter Editor, together with some from member groups, etc.

The election of members to the Executive Committee was also held. Lesley Dunlop was re-elected Chair and likewise Dr Ian Stimpson as Honorary Secretary. Garry Dawson and Tom Hose were re-elected to, and Alan Holiday remains on, the Executive Committee. Ken Addison (for Geoconservation Cymru) and Mike Browne (for the Scottish Diversity Forum) were re-confirmed as *Ex officio* Partner-Members of the Executive Committee. However, with the passing of Alan Cutler, GCUK is still without a Honorary Treasurer; a volunteer for this, not really onerous, role is actively being sought and if anyone wishes to self-nominate themselves...!

During the meeting's comments from the floor and AoB discussion session the extra workload borne - due to Covid matters and the lack of a Honorary Treasurer - by the Honorary Secretary, Ian Stimpson was acknowledged. It was also noted that GCUK has some limited funds it would like to use, perhaps as match-funding, to help kick-start geoconservation projects - especially as the lockdown eases. Of some related interest, the proposal to UNESCO for a 'Geodiversity Day' was reported; consequently, member groups should perhaps begin to consider what they might do for this welcome global event taking place on 6th October, 2022.

Tom Hose

International Geodiversity Day

Following the support of colleagues from around the world, the proposal for an 'International Geodiversity Day' is now officially on the agenda for the next UNESCO Executive Board Meeting. UNESCO Member States supporting the proposal include: Brazil, Colombia, Croatia, Italy, Oman, Poland, Portugal, the Russian Federation, the United Kingdom, Uruguay, Viet Nam, and Zimbabwe. The proposal can be at examined at:

<https://unesdoc.unesco.org/ark:/48223/pf0000375688>

The proposal will now go forward to a vote at the 211th session of the Executive Board, which will take place between 7th - 21st April. All being well, the final decision will then be made at the 41st session of the UNESCO General Conference in November 2021; the first 'International Geodiversity Day' would be the 6th October 2022.

Over the coming weeks we will be in touch with more news on the upcoming vote, and also a number of online events we will be holding to highlight the International Geodiversity Day project. In the meantime, do refer to the dedicated website (at: geodiversityday.org) for more information.

Murray Gray



Interesting experience with on-line field trip for London South Bank University students

For several years I have been helping with a Dorset field trip for London South Bank University (LSBU) civil engineering students looking at coastal management issues. Owing to Covid-19 this year the March field trip was not possible. The lecturers at LSBU organised a local film company, Pageant Productions, to film four local geologists explaining the geology and coastal management at five locations. The locations were Lulworth Cove, Lyme Regis, Portland, Weymouth Bay and West Bay.

After a reconnaissance at each of the locations with Gary Jarman from Pageant Productions we then had filming sessions in late February. This was very professionally done, and Gary was excellent learning about the geology as we went along. The weather wasn't brilliant but at least it wasn't raining! Not only was there filming on the ground but also use of a drone which provided some excellent aerial cover and not normally available to the students on a standard field trip. I covered part of Weymouth Bay and West Bay.

The Weymouth Bay filming was at Redcliff, Bowleaze Cove, Furzy Cliff, Overcombe and Preston Beach Road. This provides very good examples of coastal management, hold the line and no active intervention. Redcliff (*see below*) has excellent examples of rotational slip due to the



combination of Corallian limestone over clay and sandstone. The section has been particularly active since 2016. The use of a drone produced (*see right column, top*) some superb sections in the final version of the film. As the cliff-top land has little value nothing is being done to stop the mass-movement, so it is a good example of no

active intervention.



In Bowleaze Cove the Riviera Hotel was at risk of damage but in 1980 coastal protection measures were put in place with a gabion wall supporting the cliff as well as drainage and grading of slope to reduce the risk of landslips. Forty years on the gabions are still there but looking their age. However, they have done a good job for around £60,000! So here we have a good example of 'holding the line' in coastal management terms. In the final film version, Gary included archive pictures to show how things have changed over the years and not just giving a 2021 view.

Furzy Cliff (*see below*), with Oxford Clay capped by Corallian sandstone is another example of no active intervention with rotational slip and clay flows. However,



owing to beach replenishment further west on Preston Beach Road, shingle has moved eastward and now helps to protect the base of the cliff from marine erosion. Overcombe and Preston Beach Road are good examples of 'holding the line' and where fairly dramatic improvements have occurred helped by coastal protection schemes supported by the Environment Agency and the local council. I also covered the West Bay section with further excellent examples of coastal management contrasting East Cliff with work carried out in 2004 and 2019 protecting West Bay from flooding.

After the filming, Gary did an excellent editing job so the students had four 3-hour sessions viewing the films and then having the opportunity to ask questions and make comments. It also allowed me to introduce more archive material to show how successful recent schemes have been.

Alan Holiday (Chair, DIGS)



WGCG
Hidden wonders in the
landscape of Warwickshire

Warwickshire GeoConservation Group

As have many member groups, the WGCG has had to run its lecture programme as an on-line 'Zoom' offering; the 17th February offering, 'Geological Time and the Anthropocene', was presented by Ian Fairchild in two parts.

The initial *PowerPoint* presentation (*see below*) examined the way in which geologists establish stratigraphic golden spikes that represent particular instants in geo-



logical history, using examples throughout the record. The particular issues from the idea of an Anthropocene Epoch were then examined. A key idea of this is that the Earth System is now operating outside its range within the Holocene Epoch, representing the time since the last Ice Age.

The second part (*see next column, top*) of the evening was in the form of a scripted dialogue between the speaker and participating members; it was titled 'Introducing the Anthropocene'.



Future presentations include topics such as:

on 21st April:- *'Henry Clifton Sorby – Sheffield's Greatest Scientist'* by Noel Worley;

and on 19th May:- *'Iapetus No More – the continental collision that shaped Scotland'* by Angus Miller.

Meanwhile, anyone interested in fuller information on the Group's recent and near-past activities can read and download its latest newsletter (*see right*) at:

https://www.wgcg.co.uk/wp-content/uploads/2021/02/WGCG_Spring_2021_Newsletter_3.pdf



WGCG



Newsletters
Spring 2021 Issue Number 41



Adieu to the Pliocene Forest

The owners of Rockhall Wood SSSI (on which the Pliocene Forest (*see below*) is growing) at Sutton have



informed me that they require a lease on the site, at a peppercorn rent, to secure the position of themselves and of GeoSuffolk using the site. I have had amicable conversations with the owner but, as GeoSuffolk's work on sites is all voluntary, sadly we can go no further and have withdrawn from this site.

I would like to thank all of the individuals, families and organisations (national and international) who have contributed to this climate-change interpretation project, and Barry Hall who developed and cared for the Pliocene Forest. There is more on the project on the web-page at [Pliocene Forest \(geosuffolk.co.uk\)](http://Pliocene Forest (geosuffolk.co.uk)).

Bob Markham



Past Zoom Events & a Walk

Due to Covid Lockdown Number Three Hull Geological Society (HGS) arranged an early spring programme of roughly fortnightly Zoom Talks (lasting about 35 minutes and normally starting at 7.30pm) through to the end of April:

Thursday, 21st January:- evening Zoom lecture by Professor Patrick Boylan (School of Arts and Social Sciences, City, University of London), *"New light on the Neanderthals: music, rope-making and now an apparent genetic link to Coronavirus"*.

Wednesday 27th January:- Zoom Talk, by John Connor, *"The Geomorphology of the San Andreas Fault"*.

Thursday 4th February:- morning walk 'Geology in Hull' led by Mike Horne – this event was fully booked!

Thursday 11th February:- Zoom talk, by Mike Horne, *"Geology under Hull"*.

Wednesday 24th February:- Zoom seminar chaired by Mike Horne, *"Fossilisation"*.

Thursday 11th March:- Zoom lecture, by David Hill, *"The geology of southern Sweden"*.

Thursday 25th March:- Members' Evening on Zoom - includes Helen Kitson on *"Keyingham Gravel Pit"* & Mike Horne on *"South Ferriby Foreshore"*.

Thursday 8th April:- Zoom lecture, by Mike Horne, *"The Yorkshire Type Erratics collection"*

Mike Horne (HGS Secretary)



Current Projects, Focused on the City

The city of Cambridge is the focus for three of our current projects, all of which are aimed at encouraging people to look at the links that cities have with their local landscape and geology. The first is the recent publication of the latest in our Fen Edge Trail walks (fenedgetrail.org), this one starting at the famous Sedgwick Museum of Earth Sciences (*see right*) in the city centre and finishing in the attractive riverside village of Fen Ditton a few miles away.



The route is titled 'from revolutionary science to riverside meadows' and is a fascinating mixture of history, culture, science and geology. It takes in the exotic building stones of monuments and historic buildings (including Crick and Watson's favourite pub!), fossil-rich floors (and even an ammonite - *see left* - on display in one) of the shopping arcades and reclaimed waterside land whilst also passing sites



where significant Quaternary research has revealed the complex geological history of the river valley. The second is the write up of the city's geology for the upcoming book 'A Natural History of Cambridge' (NatHistCam.org.uk) by Cambridge Natural History Society (cnhs.org.uk). Both of these highlight the city's location in the Cam Valley where the river enters the fenland basin. An important river crossing point on the southern edge of the Fens, it developed on the drier Pleistocene River Terraces underlain by the Cretaceous Gault clay and Chalk. The fossil-rich bed of the Cambridge Greensand lies between them and many of the fossils from it can be seen in the Sedgwick Museum, alongside internationally important displays on the region's Jurassic fossils.

For those not expecting to see some decent geology not far from the city centre, a visit to Cherry Hinton East pit is a pleasant surprise. Here, a large, now-disused Chalk pit (*see below*) is a Local Geological Site. Excavated for the Totternhoe Stone (a hard band extensively used as a building stone) at its base, the cliffs now provide excellent exposures of the Zig Zag Chalk and the Holywell Nodular Chalk, together with the Melbourn Rock bed and the Plenus Marls. The site is owned and managed



by The Bedfordshire, Cambridgeshire & Northamptonshire Wildlife Trust as it is also a biological SSSI known for its chalk flora. One of the area's important chalk springs issues from the Totternhoe Stone just across the road, forming a pool known as the Giant's Grave.



Cambridge is well known for its famous buildings such as King's College Chapel (*see left*), particularly the view of it across 'The Backs' and the River Cam. Much study has been done of the building stones used in the city and we are delighted that an article on mapping Cambridge building stone has recently

been published by Nigel Woodcock and Euan Furness; details can be found at:

www.esc.cam.ac.uk/news/mapping-cambridge-building-stone

This is very timely as our third project is to look at local building stone, particularly in Cambridge, to identify buildings that should be put forward as Local Geological Sites. That should keep us busy for a while!

Chris



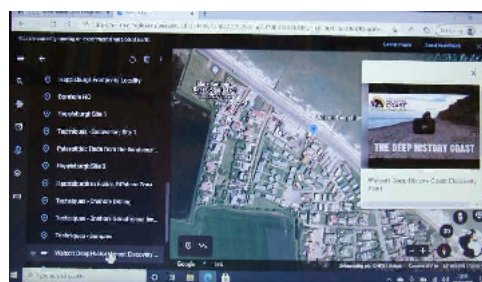
Mapping and listing of 'Candidate Local Geological Sites'

As we have so few LGS (/RIGS) in Cambridgeshire, we have decided to follow the example set in Norfolk to map and list a relatively large number of 'candidate' sites. This is in addition to continuing to put forward proposals for the full designation of some priority sites. We hope that an initial 'trial' list of ten or so sites will be put forward for listing later this year. We are currently looking at examples of the geoconservation of Quaternary sites designated elsewhere in the country because we would like to learn from others' experience as we start to consider the potentially high number of both Pleistocene and Holocene sites in the county. Any relevant advice, which can be emailed to info@cambsgeology.org, from other groups would be most welcome.

Chris

A North Norfolk Coast Virtual Field Trip

We've all got much used to on-line meetings over the past year and have, just possibly, appreciated the commuting time saved. I wonder, though, if we would all feel the same about, avoiding travel time and reducing our carbon footprint by not actually visiting geosites in person? Well, such opportunities do exist and, indeed, potentially are a valuable way of giving access to, and engaging with, individuals and groups not normally drawn to such a basic geology experience - and without the cold and the rain! Some years ago I was a day-participant in an Open University project aimed at developing fieldwork experiences for students unable to per-



sonally safely visit geosites due to various physical impairments. Quite recently, a virtual field trip was compiled (*see left and below right for a couple of screen-captures*) as part of the 'Palaeolithic Artefact Discoveries from Sandscaping' (PADS) project, funded by North Norfolk District Council and based at Queen Mary University of London (2020-21). It was created with Google Earth Projects; the Yorkshire Geological Society has produced a handy guide to this tool at:

<https://static1.squarespace.com/static/5ebc647c0446723b32229119/t/54013398564127a9d657c7d/1598034761802/YGSVirtualFieldTripUserGuide.pdf>

Meanwhile, details of the project can be found at:

<https://www.pabproject.org/research-projects/happisburgh/#sandscaping>

Many of the research findings referred to within the PADS virtual field trip are the result of over 20 years of research at Happisburgh by a large team of researchers, and their contributions are to be gratefully acknowledged. The virtual field trip can be found at:

<https://www.pabproject.org/research-projects/happisburgh/north-norfolk-coast-virtual-field-trip/>

and is best cited as: *Harris CRE, Bynoe R, Lewis SG and Pathways to Ancient Britain (2021). A Virtual Field Trip to the North Norfolk Coast. [Online]*

It's an informative and interesting experience using the virtual field guide. However, perhaps rather perversely, I really missed the screech of gulls and the salty air smell, if not the driving rain of east coast work in the field!

TJW



Publishing your work in...

Perusal of geoconservation and geotourism journal papers indicates that work in the UK is grossly under-represented. This is possibly because in Europe and elsewhere there is much more actively promoted academic engagement in the associated research. '**Geoconservation Research**' (website at: <http://gcr.khuif.ac.ir/>) is an international, open-access peer-reviewed journal. Because its accepted manuscripts aren't subject to any page and article processing charges why not submit accounts of your work, in an appropriate academic style (and advice on this is available via GCUK) to the journal?

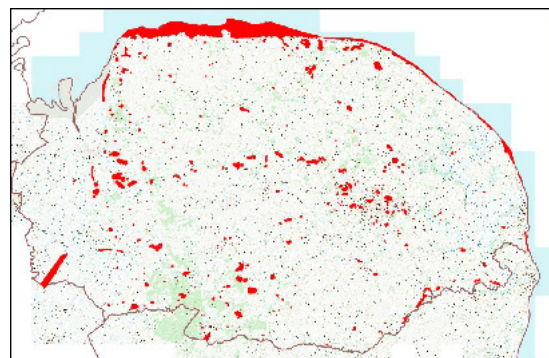
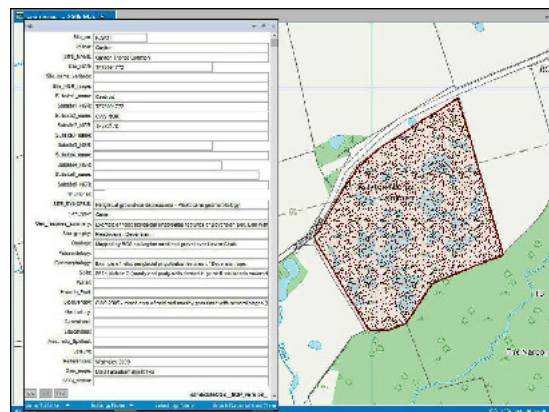
TJW

Putting Geosites Records Online

Norfolk has seven County Geodiversity Sites (CGS) but over 350 candidate CGS (cCGS) identified at audit since 2007 through a combination of literature review and personal recommendation. The features of about 40% have so far been verified by ground-truthing – an essential step towards CGS designation. We could do more of this if we had the resources – which we don't. Rather than let the precious geosite information fester fruitlessly on someone's hard-drive the NGP decided, as an interim step, to make sure that all local authorities knew about the locations of, and had summary information about, the sites.

The result was a campaign in 2018 to spatialise our geosites data in the Norfolk County Council's Geographic Information System (GIS), specifically the local sites database held in MapInfo format at the Norfolk Biodiversity Information Service – www.nbis.org.uk

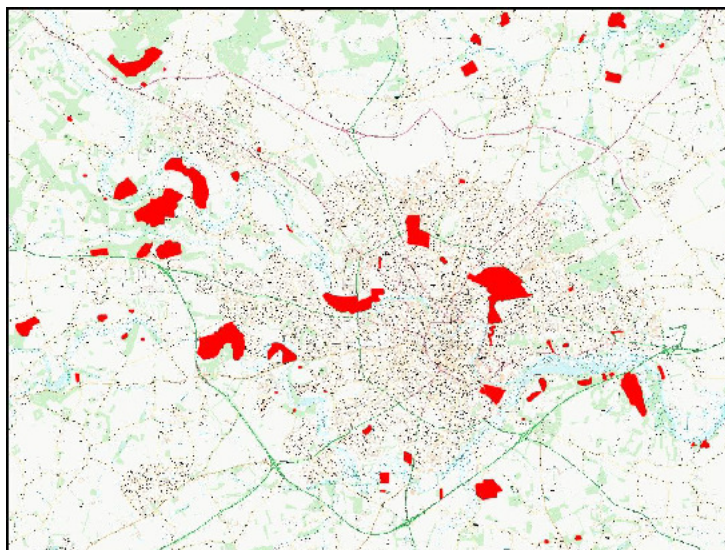
This work was funded by the Curry Fund of the Geologists' Association and the Geoconservation Fund of the Quaternary Research Association. The project was written up in *Earth Heritage* magazine as 'Geosites Data for Planners in Norfolk' (*Earth Heritage* No.53, June 2020). All CGS and cCGS are represented as polygons which can be clicked to bring up an edited version of the audited information about each site (*see below*). There is overlap



between our local sites and SSSIs if the latter contain geodiversity features, some of which may not be listed in the official designation documents. All local authorities in Norfolk who are signed up to a data provision agreement with NBIS are now able to receive information about our geosites in spatialised format. The GIS layer is also available

for use by NGP members at home by exporting it from NBIS (*see above*) into the Open Source GIS program (*see next column, top*) *QuantumGIS* - <https://qgis.org/en/site>

There has been another, though less significant, project

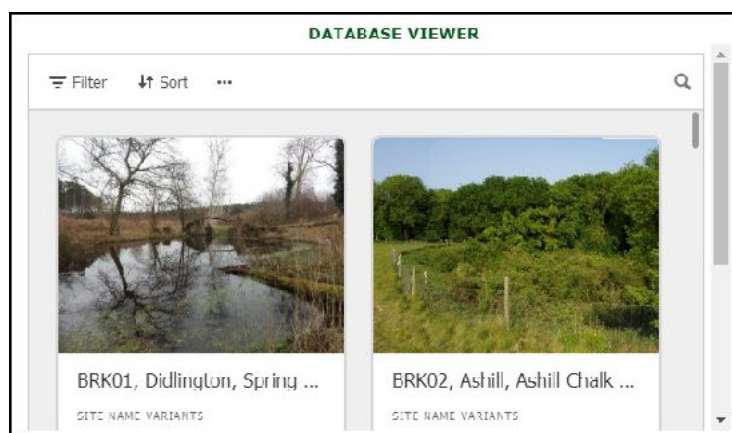


to publish Norfolk geosites information. The initial audit information is held in 'Excel' format, and this has been decanted in edited form into an online 'cloud' computing database called *Airtable* – <https://airtable.com/>

A widget from *Airtable* has been inserted into a page on the NGP website at:

<https://sites.google.com/site/norfolkgeodiversity/home/norfolk-geodiversity-sites>

The results can be viewed in a frame on the website showing basic site information and photos (*see below*). The



sites are listed by audit code number, e.g. BRK39 for the Swell Pit at Lynford. The interface has simple filtering, sorting and search functions. The information is public but not available for commercial usage; people have to make a request to be able to access it.

Hopefully both projects have demonstrated that it is possible to put geosites information online in a useful way. Since the GIS layer has been competed and circulated to local authorities and other agencies we have had several requests for information about likely impact of development on Earth heritage assets, e.g. in quarry restoration plans. This has given us an opportunity to make recommendations.

If any GCUK members wish to know more please contact Tim Holt-Wilson (Norfolk Geodiversity Partnership) at: timholtwilson@myphone.coop



College Lakes: Exposing the Quaternary

College Lake, near Marsworth in Buckinghamshire, is one of the most important sites managed by the Berkshire, Buckinghamshire, and Oxfordshire Wildlife Trust (BBOWT). The 65-hectare nature reserve is situated in a former chalk quarry in Pitstone, in the Aylesbury Vale district of Buckinghamshire. Importantly, the site has a SSSI designation for its Quaternary geology. There have been a series of significant fossil finds at the site. However, it is the sedimentary evidence from College Lake and Marsworth area which has helped constrain a series of warm and cold periods from the Middle and Late Pleistocene MIS 7-5.

MIS (for the non-Quaternary specialists!) is short for Marine Isotope Stage (or oxygen isotope stages, OIS), each of which represents alternating warm and cool periods in the Earth's relatively recent palaeoclimate history. They are calculated from oxygen isotope levels, that reflect changes in temperature, obtained from deep-sea core samples. More than 100 stages, covering the last 6 million years, have been recognised so far. Stage 7 represents a time around 200,000-243,000 years ago whilst Stage 5 represents a time period of 80,000-130,000 years ago. MIS 7 represents a warm period, the Avelly Interglacial. MIS 5, is split into sub-stages, in which 5 a and c are warm stages and b and d are cold stages.

Two major channels of different ages have been identified and investigated. The older one, dating from approximately 220,000 years ago, has produced evidence of a warmer interglacial rich in mammalian fauna. This was followed by a cold period when permafrost conditions prevailed. The sediments at College Lake were subjected to intensive freeze thaw cycles which created the involution features that we want to expose. These features are formed where frost heave, soft sediment deformation and cryoturbation occur. The upper channel, now absent due to quarrying activities, represented warmer conditions from c.120,000 years ago

The BBOWT, in partnership with local geologists, the Geologists' Association (GA), members of the Quaternary Research Association (QRA), and Natural England have worked collaboratively in seeking to promote the geological heritage and the fascinating geological story at College Lake.

In 2018 a test pit (see right) was dug exposing a series of convolutions, and during next nine months the condition of the face was monitored for weathering and vegetation growth. The results were particularly pleasing; thus in August 2019, with funding (from the BBOWT, the GA's Curry Fund and the QRA) and the appropriate consents in place, a section (8m in length and 1.5m vertically) revealed a series a distinctive



cryoturbation structures. The vegetation was cut back and a small digger was used to expose the section (see below right). Additional work included a graded path fit for mobility scooter access, erecting fencing and installing a bench.

The College Lake site has been thoughtfully developed such that bird hides can be accessed by graded

pathways and the same is now true of access to the newly exposed section (see below).



This work was completed in March 2020. The remaining task was the detail for the information panel; this had to be done remotely by the stakeholders in the third lockdown. With the content and format agreed fabrication could com-

mence and was completed in early 2021. When the pandemic status permits, the area can be 'formally' opened – hopefully in the summer of 2021. The next stage includes monitoring weathering of the section, and understanding the nature of the maintenance required. This also needs to be a collaborated effort to ensure the great work already completed is not compromised.

Nick Pierpoint (Geologists' Association)



CGS's Latest Virtual Lectures

The Cambridgeshire Geological Society's (CGS) next programme of virtual (on-line) talks, which are open to anyone and start at 19.30, are as follows:

Monday, 12th April, 2021:- 'The First Day of the Cenozoic: Insights from the Chicxulub Crater' by Dr Auriol Rae (Department of Earth Sciences, University of Cambridge).

Monday, 10th May, 2021:- 'Geological mapping of the core-mantle boundary: Unravelling the mysteries of the deep Earth' by Dr Sanne Cottaar (Department of Earth Sciences, University of Cambridge).

Monday, 14th June, 2021:- 'Île De La Réunion: Pitons, Cirques, Ramparts and Volcanoes' by Steve Thompson (Cambridgeshire Geological Society).

If you don't already receive links for these Zoom talks, you can always email the CGS (at www.cambsgeology.org) and request to be added to their distribution list - you know it'll be worth it for such a variety of interesting talks!

Chris



Coralline and Red Crag Sites - and all Surveyed in a Three-Week Gap!

GeoSuffolk has been busy this winter surveying 11 Suffolk SSSIs for Natural England, under the Geology Trust umbrella. Suffolk's three weeks in (Covid-19) Tier 2 during December gave us the opportunity to visit, amongst others, three Coralline Crag/Red Crag sites in the Orford area.

The Red Crag at Buckanay Farm pit in Alderton was, as always, an astonishingly beautiful sight in the winter sunshine (*see below*); we were pleased to report the good



condition of the exposures. The sedimentary structures as per the citation were easy to find with megaripples, lag deposits, cross-cutting and fissures in evidence. It is on private property but can be seen from the footpath between Alderton and Shingle Street. Although it is classified by Natural England as a disused quarry, the exposures at Buckanay are kept in good condition because it is worked in a traditional way, taking out occasional amounts for farm tracks, etc. - as has been done locally for over 200 years.

Richmond Farm pit in Gedgrave is protected for its Coralline Crag - a marine limestone unique to Suffolk. This is the 'Rock Bed', hard enough to have been used as a building stone, so it has stood the test of time and still displays excellent exposures of large cross-bedded units - with very little change since the Victorians recorded it. The origins of the pit are ancient, but it has



been suggested that rock for the churches at Wantisden and Chillesford was taken from here. It is on private land (please don't trespass) but can be easily seen from the road from Orford to Gedgrave as in the photo (*see previous column, bottom*) which illustrates the strong aesthetic appeal of the Coralline Crag. This pit was easy to survey and in good condition with several exposures showing a variety of large-scale sand-wave structures.

Gedgrave Cliff is a natural river cliff, close to the Butley ferry crossing. It is one of the very few places with some level of public access to Coralline Crag. It is on private land, but viewable (*see below*) from the footpath



down to the ferry - a lovely walk on a nice day. It is mostly vegetated but there is still visible a small exposure of cross-bedded Coralline Crag from the Natural England 'facelift' in 2014. The site is protected because the junction with the fossiliferous silty crag beneath the cross-bedded facies is present.

Caroline Markham

Geoconservation Stalwart's Latest International Role



Cynthia Burek is to become a member of the 'Geoheritage and Sustainable Development Group' of the Science board assessing applications to UNESCO IGCP from countries, organisations, and networks on geoconservation and geoheritage topics; the appointment is for an initial term of four years. In 2015, UNESCO recognised the new designation of Global Geoparks and this is partly to help support such recognition. At present there is also a commitment to helping developing countries, women scientists and young scientists (under the age of 35); these groups must normally be represented within the project leaders and participants. This is seen as fulfilling UNESCO's commitment to encouraging younger scientists and women into science subjects and is part of the UN sustainable development goals. Cynthia's honoured to take part in this work. She's already on the board of the GeoMon UNESCO Global Geopark and is the world's only Professor of Geoconservation. Additionally, Cynthia is Emeritus Professor of the University of Chester and a Research Affiliate of their Institute of Gender Research; she also chairs the Graduate Women International Fellowship Fund Committee.

The 'Countryside Code' Refreshed

At the end of March I was pleased to be included amongst the recipients of an email from Marian Spain, the CEO of *Natural England* concerning matters of public access and behaviour in the countryside; I just wish it had been accompanied by some hint that there might be an updated version of that splendid television advert of the mid-2000s by Aardman:

<https://www.bing.com/videos/search?q=countryside+code+adverts&docid=607999951365157667&mid=DA0B8747695893CF1DDCDA0B8747695893CF1DDC&view=detail&FORM=VIRE>

The 'Countryside Code' has been around since 1951 and seems to be based on the premise that mere 'townies' - the bulk of the population - don't know how to behave in that part of England away from shopping malls, street-lights and takeaways (oh, and buses!) mainly in the 'care' of big estates, foreign investors and companies, and, of course, farmers (owners and tenants). It rather reminds one of the assumption of too many in the farming, game and estate management communities that nobody outside their circle has any knowledge, understanding and sympathy for the challenges they face in economically working and caring for the working landscape; of course, that assumption should particularly excludes the wildlife and geological conservation communities!

Mind you, having seen over the past year the increased volume of discarded fireworks, take-away packaging, soda/beer cans and plastic bottles littering footpaths (over-widened by people unable to follow each other in tandem rather than abreast) and country park picnic sites... perhaps they do have a point. The counter argument might partly be in the seeming increase in wildlife abuse, particularly the poisoning of birds of prey. Anyway, the "refreshed" 'Countryside Code' is designed to help people enjoy the countryside "in a safe and respectful way". Now, back to the words of that welcome email announcing the launch of the new Code, 70 years after the original booklet:

"We launch the refreshed Countryside Code in time for Easter Bank holidays and the new change to pandemic restrictions on spending time outdoors.

We anticipate many people wanting to spend more time in nature as spring truly arrives. People will be using parks in both town and country, visiting nature reserves and wildlife sites and using the many footpaths and bridleways in national parks, AONBs and our wider countryside.

We want to welcome and encourage everybody to enjoy nature, but to help them do that in a way that "protects and respects" nature, other visitors and those who own and manage the land they visit. 1 April is just the start. We've been working on a refreshed Code over the winter involving our partners and stakeholders



Countryside Code e-bulletin April 2021



to update the content, language and tone to reflect what the public want and also meet the needs of farmers, site managers and others.

We want to keep evolving the Code further, so that it is even more inclusive and relevant to as many people as possible. I hope you will continue to work with us on further developments and further communication throughout the year.

Tomorrow (1st April 2021) is day one of a long-term campaign: we are hoping for a lot of media coverage on the day, but we need to keep sharing the Countryside Code far and wide, making the 'Respect, Protect and Enjoy' messages relevant to everyone, no matter how they choose to enjoy time in nature. There will be more communication by Natural England over the coming months, including with schools, user groups and farming groups. But may I also ask for your help to keep sharing the Code tomorrow and beyond? The engagement toolkit, linked below, has content for you to adapt to suit your audiences.

Finally. I'd like to send my personal thanks to all of you for taking the time to share your insights and support us with this important piece of work over the last few months."

Helpfully, *Natural England* and *Defra* have created a toolkit of content for use in communications, digitally and to print, and to share on social media channels. They are encouraging its adoption and adaption to suit the needs of different audience needs, using the Code as the starting point for conversations and engagement. The Countryside Code Refresh Partner Toolkit in Dropbox can be accessed at:

<https://paper.dropbox.com/doc/The-Countryside-Code-CsCfJa4EHja9phPbDviVC>
New content will be added in the upcoming weeks to the Toolkit. If there are any issues in accessing the Toolkit, then contact Natural England at:

countryside.code@naturalengland.org.uk

Please continue to support the 'Countryside Code' and do refer to it in your geotrails - you know it makes good sense!

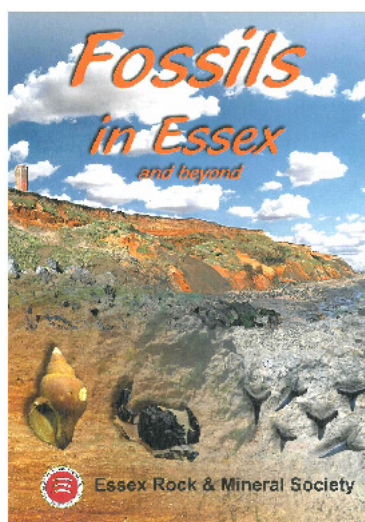
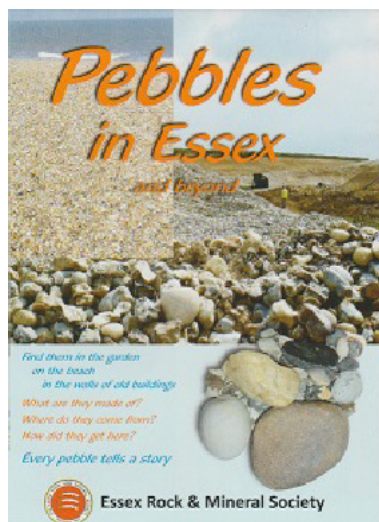
Tom Rose



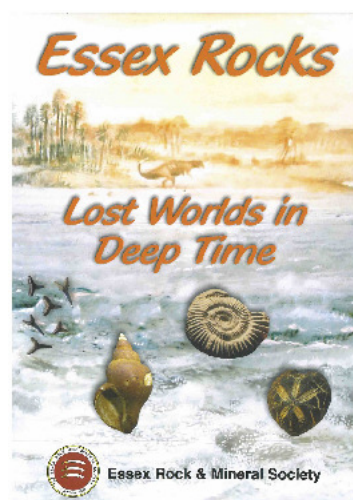
Essex Geology News

The Essex Rock & Mineral Society took delivery of the third in their Essex Geology series of posters, 'Essex Rocks', almost a year ago; this unfortunately coinciding with the beginning of pandemic's first lock-down, hampering its promotion. However, geology does not go out of date that quickly! So we hope to get them out and available this summer.

The first in the series was 'Pebbles in Essex and Beyond' (see below left), which sold well once people were tuned into looking at what pebbles are made of rather than just regarding them as 'stones'. The pebbles are pictured and described and their origin and journey from their source is related on the reverse of the poster.



The 'Fossils in Essex and Beyond' poster (see above right) is more self-explanatory, but fossils are less easy to come by, especially in Essex, unless you go to the coast – Walton-on-the-Naze in particular – and there is a section to help with the identification of the multitude of molluscs from the Red Crag.



The 'Essex Rocks' poster (see left) has a large 3-D column illustrating the rocks you would encounter when (and if) you dig down 300m into the county. On its reverse are pictures of the rocks and scenes to show the environment of the times.

All these posters are available at the very modest price of £2 each from the Essex Rock & Mineral Society; there is an order form on the web-site at:

www.erms.org

We hope to make them available through visitor centres,

museums, etc. and when we do talks for other organisations.

GeoEssex also has been busy compiling reports, for District Planning Authorities, that give details of the local geology and list all of the geological sites in their areas; a citation is produced for each geosite that has been designated as a "Local Geological Site (LGS)" to parallel the designation given to wildlife sites. Unsurprisingly, follow-up to ensure that these geosites are incorporated into Local Plans has been found to be necessary as geology is not on everyone's radar yet – we must all do much more to wave the flag as geology does not have the same statutory profile as either archaeology or wildlife. We do find, however, that once you engage people in discovering deep time, they are fascinated.

Ros Mercer (Secretary ERMS & GeoEssex)



Zoom Events & Field Trips

Due to the Covid lockdown, the Hull Geological Society (HGS) has arranged a late-spring programme of roughly fortnightly online talks (lasting about 35 minutes & normally starting at 7.30pm), through to May. Non-members are welcome to attend but they must book with the HGS Secretary who'll send them the log-in code. People are asked not to share or record talks.

Friday, 16th April 2021:- Virtual Club Night on Face Book - the topic is "Sedimentary Structures". Please post your pictures in the album entitled "club night 16th April - Sedimentary Structures" which you can find by clicking on "media" and then "albums". You are also welcome to "like" and comment on other members' pictures.

Friday, 16th April:- Bisat Research Group field meeting – booking required; further details will be sent when you book. For more information please telephone Graham Kings on 01482 659 133 or e-mail bisat at: hullgeolsoc.co.uk

Wednesday, 21st April:- Zoom seminar (tbc) by John Connor & Mike Horne, "The Cobble Churches of Holderness".

Thursday, 29th April:- South Ferriby Foreshore research fieldwork meeting (we hope to record and log some of the sections) led by Mary Howard & Mike Horne – booking required; further details will be sent to you when you book.

Wednesday, 12th May:- evening Zoom lecture meeting - John Connor, "The Use of Geophysics for Marine Archaeology".

Note: we cannot offer lifts to field meetings due to the Covid Pandemic and ask members not to offer lifts – we have to closely follow Government guidelines for our liability insurance to be valid. This may change after 17th May. There will continue to be a restriction on the number of members attending field meetings, so please book early.

Mike Horne (HGS Secretary)



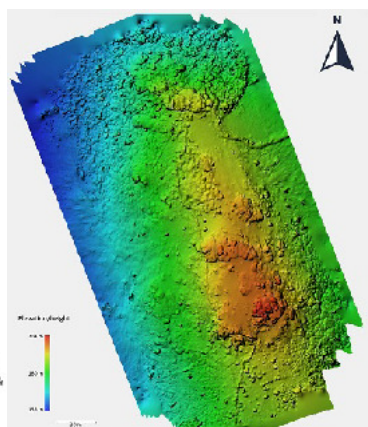
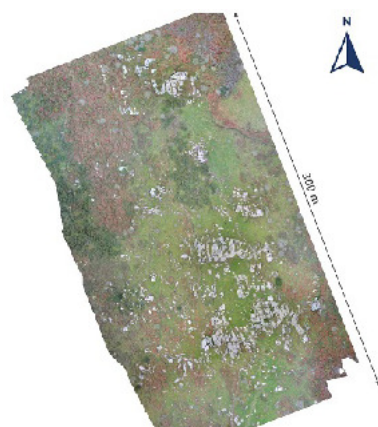
Writing for the Wildlife Trust

Cornwall Geoconservation Group (CGG) has been part of Cornwall Wildlife Trust (CWT) since its formation 30 years ago. CWT has over 17,000 members. They get a colourful magazine four times a year and CGG tries to feed a little geology into each issue – sometimes we get a whole page or more! Usually it's around 250 words and a picture. The article below was put together by John Macadam and Mark Vickers and is an early draft of what the members will be able to read next month.

"Droning on? Cornwall Geoconservation Group has been active as the Wildlife Trust's geological arm for 30 years, and for all that time the Trust's Sue Hocking, geologist and ecologist, has been key as the secretary. This means much more than just taking minutes of meetings: Sue handles all the planning applications, manages all the documentation for County Geology Sites (which are akin to County Wildlife Sites, with similar criteria) and does a multitude of other tasks.

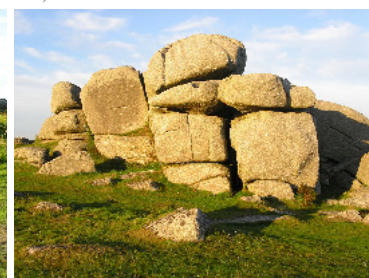
The members of the group, mere drones by comparison, have a broad range of geological expertise from hard-rock, tectonics, mining and minerals, engineering geology, and soils and have a multitude of connections with academia (particularly Camborne School of Mines), various societies and local government. Recently we have added both a geomorphologist and a geologist with expertise in using drones. Mark Vickers, the drone man, flew his drone at a height of about 30m over Helman Tor with permission of the Trust.

This was just a trial run lasting 18 minutes flying (one battery charge!) so the boundary of the flight was tight and did not include any of Breney Common, a post-industrial site. Processing the 380 images and their GPS data took rather more than 18 minutes – in fact around 30 hours. As a taster of the results here's a small part (see above) of a true-colour image – the striped black and white shapes are not panda bears loose on the tor! Plus



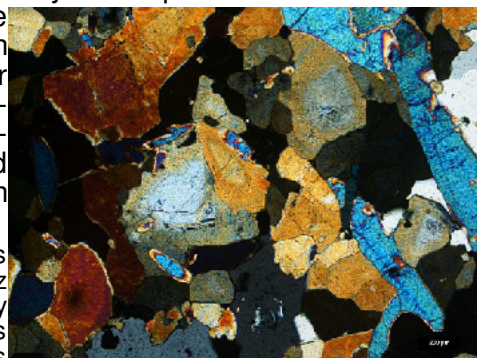
there's a 'heat-map' (see previous column, bottom right) showing by the use of colour the height of the ground [and an image showing the actual topography (see previous column, bottom left)].

We all know Helman (see below) is a beautiful and fasci-

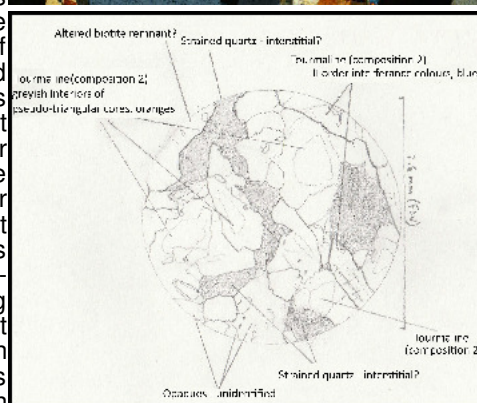


nating place; it's also interesting for its plants, its Neolithic and quarrying history and its geology – plus the fabulous views, but flying a drone over it gives a new perspective and extra information. To see more of these images (plus some technical detail) please visit the website: www.cornwallgeoconservationgroup.org.uk"

Unsurprising, to those in the know and with the right kit, is that the great beauty of the place is further enhanced when its rocks are seen in thin-section (see right) and under the polarising microscope; the complex patterns and colours seen can be explained:



1) The mineralogy is predominantly quartz and tourmaline (likely of two compositions and orientation) - its bluish crystals are edge-on along one of the three a - axes, and orange-brown crystals are likely a different composition and/or on their c- axis. There are pseudo triangular cores within at least three of the crystals (orange and bluish-grey ones) suggesting a slightly different composition within each crystal - this is apparently common around this area in Cornwall.



2) The quartz appears to be strained (but it's hard to tell without having a slide on a stage and looking for varied extinction!) and appears to be interstitial between the tourmaline. Determination of whether the quartz is interstitial (and therefore infilled afterwards) or not, depends if the tourmaline was magmatic or metasomatic (as a replacement of feldspathic minerals) in origin. Unsurprisingly, this makes the genesis a little tricky to unravel.

3) There are also some unidentifiable opaque minerals, as well as a possible partially replaced biotite crystal in the top left of the image.

Perhaps sticking to examining a hand specimen with a hand-lens is easier, but it's much less informative and nowhere near as beautiful!

John Macadam & Mark Vickers

This isn't just any book, it's '**STRATA: William Smith's Geological Maps**'

by

Peter Wigley, Douglas Palmer, John Henry, Tom Sharpe, Jill Darrell, Diana Clements, John Mather, Dave Williams
(with a Foreword by Robert Macfarlane)

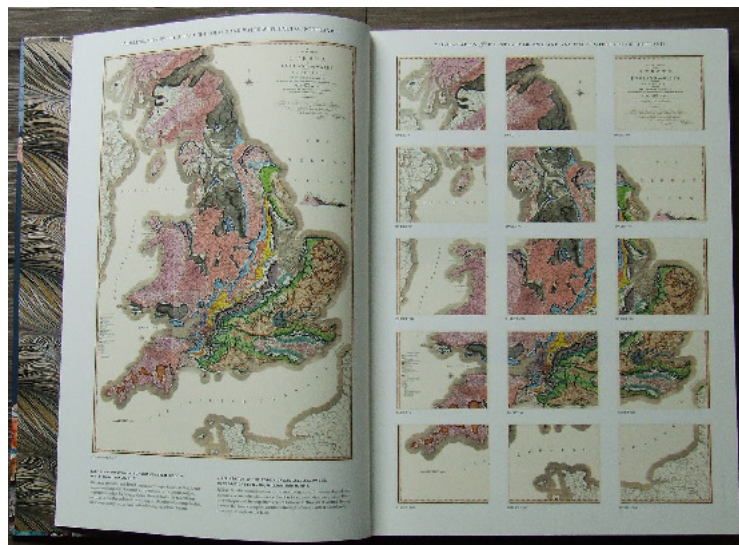
Publication Date: 22nd October, 2020

Publisher: Thames & Hudson

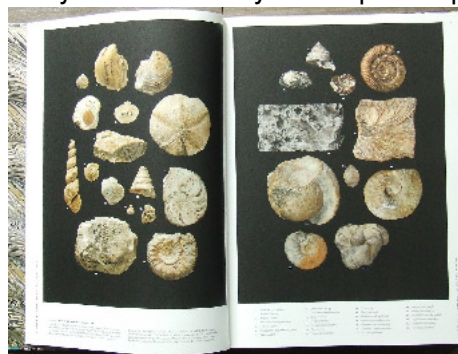
Price: £50.00

Released just in time for some lucky geologists' Christmas lists this sumptuous hard-bound volume quite quickly went out print. So, it's pleasing to report it's already back in print and as well produced as the original - just a pity, but perhaps another sad reflection on the economics of the UK's modern manufacturing, it's both printed and bound in China. Actually, that binding is a little tight, sometimes making it difficult to fully open and admire the two-page spreads that are such an excellent feature of the volume. Its 256 (36.5 x 26.5 cm) art-quality paper pages are profusely illustrated in full colour.

The first two of these have a full-page composite map of Smith's '*A Delineation of the Strata of England and Wales, with Part of Scotland*' (see below) and, opposite it,



reproductions of the original 15 individual sheets - so, at a glance the reader is aware of the volume's focus. They're followed by a couple of plates (see below left) of

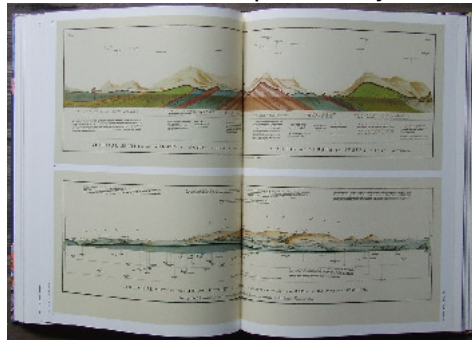


selected fossils from the collection Smith sold to the British Museum in 1818 and a stratigraphic key to his 1815 map - a version of which is provided as a bookmark. A double-page spread

illustrates some of Smith's diaries for the years 1789 and then (excepting 1808) 1802-1822.

'The Table of Contents' shows the volume's split into the 'Forward' and 'Introduction and four sections': 'Borders and the North', 'Wales and Central England', 'East Anglia and the South-East', and 'The West'. Each opens with four sheets of the 1815 map and includes an essay on aspects of Smith's great work. The whole is rounded off by an index and a bibliography.

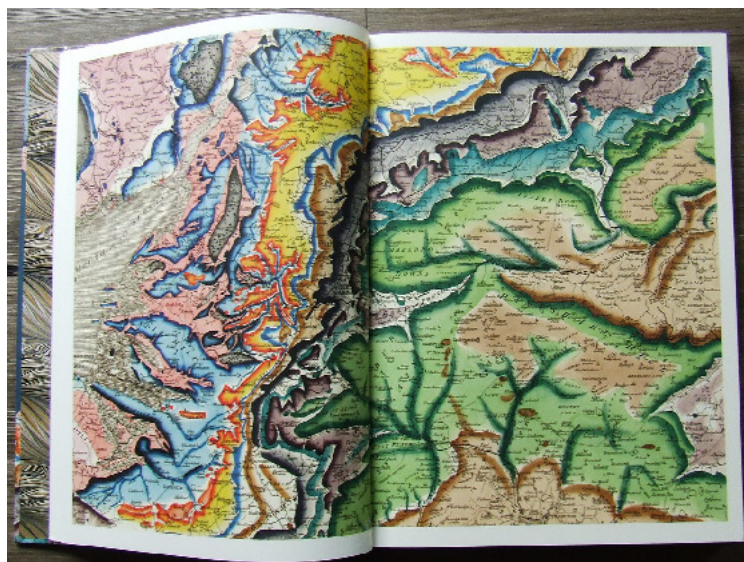
Following the the two-page 'Forward', which establishes Smith's achievements in their necessarily subterranean and historical contexts, is a useful time-line of his life and work. The 'Introduction' provides an overview of Smith's formative years and contextualises his work within earlier, contemporary and subsequent concepts about the nature and natural processes of the earth. The illustrations of his notebooks on Newhaven's Castle Hill cliff strata are particularly informative about a much

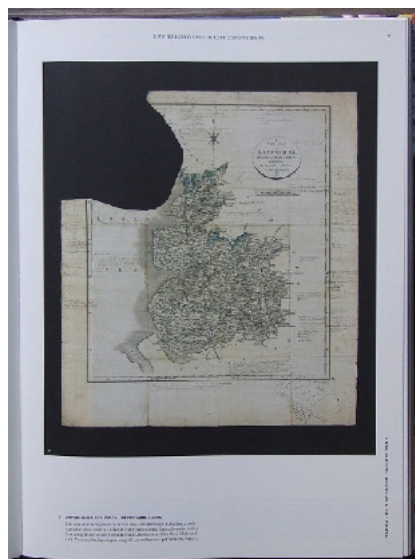


less well known, even neglected, early example of his work and approach; likewise, the early cross-sections' illustrations - comparing this with the later prepared and published ones

(see above) is most illuminating.

'Borders and the North' opens with the sombre-coloured palette (unlike that of the west country in the opening map spread - see below) of that region's sheets in full-size reproductions. It's interesting to see how Smith recognized and roughly delineated the complex geology of the Lake District - something hard to appreciate whilst gazing at a wall-mounted and glazed original copy in the Geological Society's foyer! On the other coast, The





German Ocean shows up something of the politics of modern cartography. Like the other regional accounts, reproductions of individual county geological maps, dating from 1824, are provided - for other regions these date from 1819-1824. Also included are various similar but unpublished maps, such as for Lancashire (see left); it's sad to see that 'God's own county' missed out on being issued - unlike that lesser and darker county to its east!

Somewhat unfathomably, this region is followed by Smith's illustrations of London Clay and Crag fossils accompanied by photographs of actual specimens. At least the Chalk and Greensand fossils make some geographical sense. The succeeding first essay, 'The Apprentice', examines his early training as a surveyor, the canal work, and the production of the c.1799 Bath map. The accompanying illustrations of canals are both charming and informative.

The accounts of the other three regions are equally well and interestingly covered. Similarly, the other interleaved essays that explore in just sufficient detail to inform without overwhelming the reader, with their considerations of Smith's work in terms of its aims, coal-mining and agricultural applications, hydrology and fossil collecting, his mapping endeavours and their impact on biostratigraphical theories and the development of geology as a true science.

My own interests in mapping, palaeontology and specific aspects of the history of geology were particularly stimulated by Tom Sharpe's account of Smith's cartography, the summary by Jill Darrell and Diana Clements of Smith's fossil collecting, and John Henry's consideration of Smith's contributions (such as the Rotunda Museum) to Yorkshire geology and some reflections on his private life and seeming reconciliation with the Geological Society (including the award to him of the first Wollaston Medal). It would be invidious to exclude the other essayists from praise for their superb contributions. John Mather's account of Smith's hydro-geological surveys provides a sound and insightful overview of a sometimes forgotten aspect of how Smith tried to pay his way. The account by John Williams of surveying practices and their significance in agricultural improvement in Smith's day is well written - just a pity (and partly for me from a local history interest) that the reproduction of the engraving of the

Woburn Sheep Shearing illustration isn't larger. John Wigley's examination of Smith's and his contemporaries' mineral collecting activities also has some outstanding illustrations (see below).



Yes, there are some little niggling aspects of the volume; such as the interspersing and sometimes the order of the essays and at what scale various illustrations are given. I'd have welcomed an accompanying DVD (or should that be a memory-stick or web-site these days?) of the maps; still, at least I do have my 'Strata' Smith: His Two Hundred Year Legacy' CD published by the Geological Society in the mid-2000s - just need to check it will run, unlike many of the numerous other Windows 2000/XP interactive geology CDs I have, in the latest iteration Windows 10!

To adequately review 'STRATA' almost demands a volume in its own right and then I'd be in danger of breaking copyright by the desire to reproduce so many of its pages. So, to save space and, to help you form your own judgement why not purchase the volume and with the added bonus of a 10% discount to the GCUK membership? To claim this discount, up to 31st May 2021, quote STRATA10 when purchasing the volume on the publisher's web-site at:

<https://thamesandhudson.com/feed/product-search?q=Strata>

To sum up, this isn't just any book, it's truly a M&S book - it's a lovingly-crafted massive & stupendous volume! On my bookshelves it will fit literally aside my collection of modern UK county floras (that seem to have been getting ever larger and voluminous over the last decade) and some coffee-table photography and art-history books; probably more fittingly with the latter when you consider its superbly reproduced illustrations. Anyway, buy 'STRATA' (or, at the very least, put it at the top of your birthday present list) while you still can. I suspect pre-owned copies will be scarce for some time to come as it's bound to become a collector's item in its own right.

Tom Rose



The Society's YouTube Channel

With no clear end in sight for the Covid restrictions, the Black Country Geological Society (BCGS) is continuing with its on-line talks. These now follow a well-established routine, starting this year with 'Geology in Paradise', a well-attended talk by founder BCGS member Graham Hickman on his experiences of living and working in the Caribbean. This and other talks, can be found on the Society's YouTube channel at:

<https://www.youtube.com/channel/UCu65xWfEmTXicZs7x1Fasg>

So far, four of the talks are available to watch free of charge. Pete Purewal, the Society's Social Media Representative, would like to see more than the current (eighteen!) people subscribing to this, because it would help the profile of the fledgling channel, and it's free!

BCGS Spring Talks Programme

Monday, 15th February (Zoom Meeting):- '*Atmospheric Cave Science*' by Professor Ian Fairchild (School of Geography, Earth and Environmental Sciences, University of Birmingham). Ian's talk will take us from caves and monitoring cave climates over time through the study of stalagmites, to the need for awareness about appropriate room ventilation i.e. CO2 levels. Recently this issue has been covered in the press with respect to Covid-19, and ventilation on planes and trains, so it is timely and also of interest in relation to underground spaces in the Black Country.

Monday, 15th March (Zoom Meeting):- BCGS AGM followed by '*Silurian Rocks of the Dingle Peninsula*' by Ken Higgs (Emeritus Professor of Geology, University College Cork). Dudley and the Dingle Peninsula in Eire have much in common, sharing a common Silurian geology. Professor Ken Higgs was not only born in Dudley, but has also undertaken an extensive study of the geology of the Dingle Peninsula recently published as the '*Geology of the Dingle Peninsula*' by the Geological Survey of Ireland. His illustrated talk will describe the Dingle Peninsula's dramatic 485 million year history of environmental and climate change.

Monday, 19th April (Zoom Meeting):- Speaker: Dr. Stephen Knipe (London, Ontario). This talk will come live from Canada! Gold has been the lure which has attracted many to North America to prospect for it. Dr. Knipe will tell us about gold and other metal ore samples which are sent to AMTEL (the Advanced Mineral Technology Laboratory), from major mines around the world, where they are analysed for the chemical and mechanical processes needed to recover and separate the metals. AMTEL was formed through a multi-million dollar initiative, sponsored by a consortium of eleven mining companies based in Canada and worldwide.

BCGS Future Field & Geoconservation Meetings

Over the past twelve months, the COVID-19 pandemic has inhibited field events from taking place. As the Government's 'Roadmap Out of Lockdown' unfurls we have been developing ideas for some possible summer

events, that will follow Covid safety guidelines. Events being considered include:

1. A joint group canal boat trip into the Dudley Caverns looking at the Silurian geology and historic workings.
2. Some shorter, possibly evening visits, to the local Geopark sites to see what they have to offer and how BCGS members can be involved with improving and maintaining the sites; we intend these events to be more social, with each finishing at local pub for refreshments afterwards!

We will have to restrict attendee numbers for these events, so it is imperative that members sign up beforehand; visitors are welcome to attend these and other BCGS events. However, we cannot guarantee a place for those who do not pre-book. We will ensure that Covid safety measures are put in place for each event and look forward to getting back out on-site. We will notify members as soon as we have any further information.

Andy Harrison



Future Meetings

Except for the September meeting these will be virtual during 2021. All online meetings are free admission to HOGG members via an exclusive weblink for claiming a ticket at the Evenbrite website. A link for each online meeting will be emailed out to members. For membership enquiries please email: pfriches@hotmail.com Meanwhile, guests are welcome to attend meetings for a small admission charge.

Wednesday, 12th May, 2021 (11.00 start – 17.00 finish):- '*The Geological Society's Map: understanding George Bellas Greenough and his 1820 geological map project*'

This international online conference is the re-scheduled meeting marking the bicentenary of the publication of the first edition of the Geological Society's map of England and Wales (in 1820) - commonly referred to as the Greenough map - that was postponed due to the COVID-19 pandemic. The conference aims to shed light on G. B. Greenough's formative years, the construction and colouring of Greenough's map and subsequent geological maps.

The revised programme comprises ten papers; organised in blocks of two presentations of 25 minutes each (including question and discussion time) with a short break between each block and a lunchtime break. It is hoped this will make it more comfortable for those attending and enable a healthy level of screen concentration over the day. The event will start at 11am in order to accommodate presentations from international contributors, and will finish at 5pm. We will be joined by former members of the Greenough Club, the student geological

society at University College London.

Thursday, 17th June, 2021 (Lunchtime: 13.00-14.00):-

'Treasures from the Archive of the Sedgwick Museum' with Sandra Freshney.

Thursday, 29th July, 2021 (Lunchtime: 13.00-14.00):-

'Geology & Medicine' (full title tbc) with Dr. Chris Duffin.

Friday - Sunday, 10th - 12th September, 2021:- Field Meeting 'Malvern Rocks: Geology in a Victorian Health Resort'

Tim Carter is organising a meeting in Malvern to look at how the complex geology of the Malvern Hills and their surroundings was investigated and came to be understood during the nineteenth century. Geology and fossil collecting were popularised through local field naturalists clubs. They also became one of the attractions for visitors to what was a premier resort, with its famous 'water cure', based on the springs flowing from the hills. More details will be available shortly. The event is being planned to enable social distancing, should this still be recommended in September.

Thursday, 14th October, 2021 (Lunchtime: 13.00-14.00):-

'The History of Petroleum Exploration' (full title tbc) with Tony Spencer.

Friday, 19th November 2021 (Lunchtime: 13.00-14.30):-

HOGG AGM followed by 'The 'Discovery' of the Silurian: following in the footsteps of Murchison' with Duncan Hawley.

the bad news that the monitoring should be completed by the end of January 2021. Natural England's records were out-of-date and efforts to gain owners' details and obtain permissions for access onto private land and working quarries in order to prevent casual visits was time consuming.

In the end, the deadline proved unrealistic. However, it was an opportunity to put into practice the experience gained through the Conservation Committee in condition monitoring WGCG's Local Geological Sites (LGS). Max Down (CC Chair) looked after the task of liaising with Julie Harrauld and Natural England. When the survey is completed, we anticipate that there will be more detailed accounts of the monitoring in the WGCG Autumn Newsletter and on its website.

Brian Ellis



Geotrails on the GCUK Website



The first batch of cyclists' geotrails, covering areas north of London can now be found on GCUK's website at:

<https://geoconservationuk.org/geotrails/>

The five trails, based upon long past Geologists' Association excursions (to Bedfordshire, Buckinghamshire and Hertfordshire) are aimed at leisure cyclists. Hence, they include a mixture of geology, local and social history, and railway history (*see right*). Whilst they can be printed, they are particularly intended to be used on tablet and smart-phones. They all start at railway stations: Bedford, Flitwick, Leighton Buzzard, Luton, and Tring - an idea for a 'Bikeweek' trip? As a measure of their routes' lack of difficulty, the fieldwork for them was undertaken on either a single-speed 20"-wheel or a seven-speed 700c-wheel folding bike. Meanwhile, at least one other Hertfordshire cyclists' geotrail should be uploaded to the website by the summer.

There are also three pedestrian geotrails, as PDFs of the original printed leaflets, for Staffordshire on the website; these cover Hamps and Manifold valleys, Churnet Valley (*see right*), and Cannock Chase.

This is just the start of a collection of geological trail guides. If you would like to add a guide to this collection please use the website's contacts page.

Tom Rose



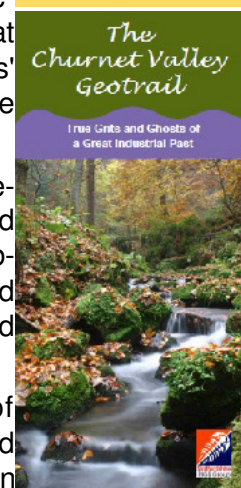
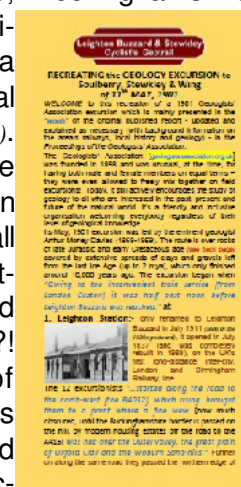
Monitoring Five of the County's Geology SSSIs

Towards the end of October 2020, we learnt that Natural England (NE) was about to offer contracts to monitor many of the English geology Sites of Special Science Interest (SSSI). The approach to take up the opportunity to bid came through the Geology Trust (GT) which is a consortium of local geology groups. Julie Harrauld acted as overall coordinator and carried a huge burden to liaise with NE on behalf of County groups across England. WGCG were contracted to monitor five sites in Warwickshire: Griff Hill Quarry, Napton Hill Quarry, Cross Hands Quarry (*see below left*),



Wolston Gravel Pit, and Ryton and Brandon Gravel

In return for the monitoring, WGCG will receive a small income from fees and expenses. The downside is that we received a large amount of briefing paperwork and



Only in China?!

In 2018, a giant undulating shelter was constructed over the Peking Man cave, a major archaeological and palaeontological site in China, in an effort to protect it from weathering. The cave is part of the Zhoukoudian Peking Man Site, 42 km south-west of Beijing, a series of caves situated at several levels, which mostly span the Pleistocene era, from which several significant archaeological discoveries including a collection of fossils of *Homo erectus* skeletons dating back 750,000 years and collectively as Peking Man. The site's arresting local name is Longgushan, 'Dragon Bone Hill'. It was inscribed as a UNESCO World Heritage Site (WHS) in 1987.

The shelter was commissioned after the cave system was damaged by flooding due to a severe rainstorm. However, concerns about the site's fragility, with fears that individual caves might collapse after excavation, date to at least the early-1990s. Indeed, a 1999 UNESCO conservation report drew attention the site's lack of maintenance, the for investment in visitor facilities, and the inadequate research facilities and funding; over \$50,000 of foreign funding was actually made available for site maintenance. Interestingly, up to the mid-1990s there was considerable investment in the UK's heritage sites and their interpretation - numerous trails, museums and visitor centres were developed (for an engaging account see Robert Hewison's *'The Heritage Industry: Britain in a Climate of Decline'* published in 1987) - and the like of such hasn't been seen again!

The shelter was designed by the Architectural Design and Research Institute of Tsinghua University (THAD). It spans over 54 metres in width and over 77 metres in length. It's a steel structure with a double-layer skin made up of 825 panels covering about 3,700 metre². It's supported by just two rows of foundations, placed on flat rock formations at the north and south of the cave.

The shelter (*see right*) blocks rain and wind from entering the cave, thereby creating a buffer to reduce changes in temperature and humidity. Its panels are positioned in an overlapping arrangement to ensure efficient



rainwater drainage; small gaps between them allow fresh air and daylight to enter. Internally, the panels are made from fibreglass and finished with textured surfaces that emulate the rock faces inside the cave. The shelter also provides space for scientific work

and observation. Additionally, the cave has been fitted with two new platforms for observation and an elevated footpath. These walkways link to an existing ramp and steps leading in and out of the cave. A series of digital displays have also been introduced, which project details about excavation processes and research findings on the walls of the caves. Surprisingly, images of the shelter and the scheme have only just been released.

With its undulating form it is modelled on estimates of the original geography of the landscape before it collapsed to form a cave, the shelter is designed to blend into its verdant site. Hence its outer aluminium panels incorporate planters to help them blend into the site. Whether that works can be judged, although perhaps a few more years are needed for the planters to reach some maturity, from the site overview image.

What the shelter shows is how much investment China is now prepared to put into its WHS and geopark localities, some of the world's most visited such places; whether it's on a scale and in a style truly appropriate to such localities is another issue - but the pressure visitors place on such localities has to be managed somehow to avoid their potentially detrimental impacts. We might, for example, compare the general style of visitor facilities at similar popular UK WHS localities such as say the Dorset & East Devon Coast and the Giant's Causeway & Causeway Coast sites; likewise, we might compare their overall financial support by Local Authorities and Central Government.

I suspect that, despite the valiant endeavours of various management teams and facilities, it really would be found wanting; just call to mind the geoparks in England and Scotland that have either contemplated or have withdrawn from UNESCO recognition. Recall too the tortuous road that eventually led to the Black Country Geopark - surely, an area deserving, as much as Ironbridge Gorge, of possibly even WHS status?

So, we need to carry on lobbying for our rich geoheritage and seek rising investment in it as 'staycations' might well become the norm; at least they might continue in their popularity after being forced upon us for two major holiday seasons, for some time to come. Of course, there are those of us who have long appreciated a UK landscape vista, reached with boots and back-pack or bike and panniers, through the unzipped door of a tent or a Youth Hostel garret! *Tom Hose*

"In February many a curious trick of light and shade is seen among the hills. From this rocky height a dun mist blocks out all view of the deep valley, while a dense bar of cloud trails along the mountains overhead. Yet there, beyond Troutbeck, the young sun smiles on a moorland, setting its snow wreaths in silvery defiance to the dull ivory of the clouds, to the sombre pall of vapour below." (William T. Palmer, undated, p.36)

A Jumbo Limestone Train

In mid-March, the heaviest freight train to ever travel on the West Coast Mainline made its 203-mile (327-km) debut run from Tarmac's Tunstead Quarry, in the Peak District, to Wembley Yard in London with construction materials. The so-called Jumbo train, of 39 wagons hauled by a Freightliner Class 66 and Class 70 with a combined length of 590 metres, hauled 3,600 tonnes of aggregate. It was carrying materials for roads and major projects - such as HS2 - in South-East England. Does it mark a north-south geological divide, with all that infrastructure investment based upon rich northern, raw and part-processed, geological resources?



On arrival in London, it was split in two, with 20 wagons heading for Battersea and 19 wagons to Paddington New Yard. Network Rail, Freightliner and Tarmac were able to test the long freight train whilst fewer trains were running on the West Coast Main Line during the current lockdown.

Tim Shakerley, Managing Director of UK Rail Services at Freightliner, commented that: "Freightliner has worked closely with Tarmac and Network Rail to demonstrate the viability of running jumbo services from the Peak District." Further, Chris Swan, Head of Rail at Tarmac, said: "We're delighted to see the successful trial our first 40 wagon train transporting essential construction materials from Derbyshire to London as part of our ongoing commitment to supporting the delivery of low-carbon built environment."

Bikeweek

Whilst its theme this year is 'health and wellbeing', and cycling remains a great way to keep fit and active, it's also a great way to explore the UK's geoheritage - just think of all those cyclists' geotrails. So, why not appreciate this century-old plus form of sustainable transport, get 'on yer bike' that week, and visit those LGS/RIGS sites near to home? We'd love to see those photos of you doing just that in the next issue of [GEONEWS](#)!

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"Geologists and Archaeologists, those instruments of consciousness who are engaged in reawakening the memory of the world, have one guiding principle for their work. It is called the Law of Stratification, but it is as simple as falling downstairs - and, indeed, resembles it in that both are inevitable results of gravity.

If instead of one apple falling on the head of Sir Isaac Newton a heavenly orchard had let tumble a rain of fruit, one of the greatest of men would have been overwhelmed and then buried. Anyone examining the situation afterwards in a properly scientific spirit... would be able to prove that the man was there before the apples." (Jaquetta Hawkes, 1978, p.26)

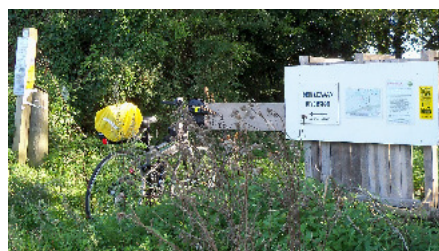
Get involved
bikeweek.org.uk

30 May-5 June 2021

Bikeweek

Rights of Way & Geoconservation Work

Rights of Way (RoW) in England and Wales are the main routes by which anyone undertaking geological fieldwork gains legal access to the countryside. However, they cannot be taken for granted. I and colleagues have found during the pandemic lockdowns, even when we were restricted to our home territories, that surprisingly many are difficult to find or follow, are physically obstructed, and now even temporarily closed - to seemingly



prevent infections (apparently of humans and livestock) in farms - until the pandemic is over (see left). In some, but not all, such latter cases alternative routes have been provided; this should not mean that the original routes aren't restored when the pandemic restrictions are removed; though after a year's vegetation growth (see right) this could be a challenge - one most likely to fall on volunteers rather than be taken up by the landowners and their tenants who are legally responsible for maintaining RoW. Anyway, on my recent walks and rides I've found it most useful to carry a pair of folding secateurs!



Of course, there are restrictions legally in place on some RoW, but these, for instance, do not - seemingly unless the landowner actually asserts this (see below) - include preventing cyclists walking with or carrying their bicycles on footpaths, provided it is safe. As I frequently use a single-speed small-wheel folding bicycle for fieldwork, on geotrails in particular, I've found that there is no real case law on the matter! However, 'Cycling UK' notes (<https://www.cyclinguk.org/sites/default/files/document/migrated/info/public-footpaths5ebfr.pdf>):

1. *Bicycling [that is riding!] without permission on a footpath normally constitutes an act of civil trespass...*
 2. *As the status of many countryside paths is simply due to quirks of history, some footpaths are indistinguishable from bridleways, whilst others may actually be more suitable for cycling.*
 3. *Cyclists (and horseriders) have access to only 22% of the RoW network in England and Wales...*
 4. *The 1968 Countryside Act permits people to bicycle on bridleways as long as they give way to equestrians and pedestrians.*
- Further, 'Cycling UK' believes that it's not illegal to push a cycle on a footpath because of the following points:
1. *Crank v Brooks 1980: In this case, a motorist was prosecuted for*

injuring a cyclist who was pushing a cycle on a zebra crossing. In his judgment Lord Waller said: "the fact that the injured party had a bicycle in her hand did not mean that she was no longer a pedestrian" .

2. *The Department for Transport: In a letter written in 1994, the DfT confirmed "... that a cyclist pushing a bicycle on a pedestrian facility is regarded as a pedestrian". A footpath is, arguably, a pedestrian facility in the same way as a zebra crossing or footway, and there is no obvious reason to differentiate between pedestrian facilities that form part of a vehicular highway, and those which do not.*

However, 'Ramblers'/'Open Spaces Society' in 'Rights of Way - a Guide to Law and Practice' state: "It is submitted that a bicycle is not a 'natural accompaniment' of a user of a footpath, and to push (or carry) one along a footpath is therefore to commit a trespass against the landowner"; but this is based upon the case of *Regina v Mathias* decided in 1861 - before the bicycle was invented. As a keen walker and leisure cyclist, I understandably feel somewhat conflicted on the matter!

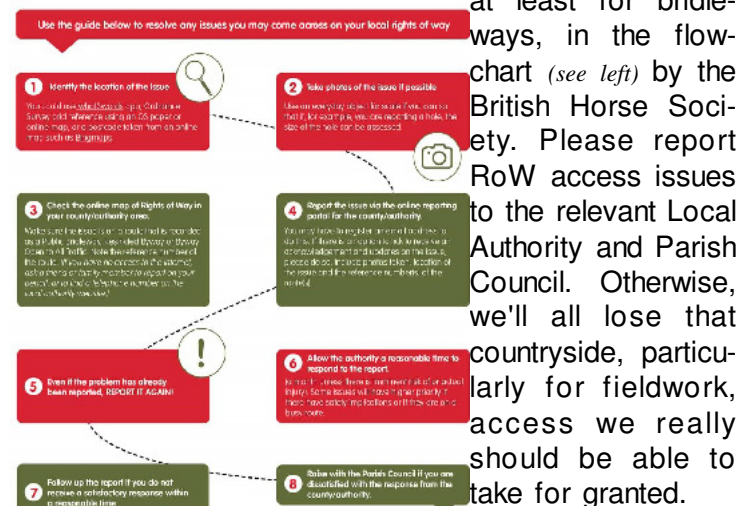
Now the relevance of all of this to geoconservation fieldwork is that the new Policing Bill could potentially criminalise any perceived such bicycle or other countryside trespass; as the 'CPRE' notes, it: "...includes new trespass and protest offences, which risk putting a 'do not enter' sign across the country and further limiting access to the green spaces that enrich all of our lives."

Meanwhile, if you find an obstructed RoW you can take

Reporting issues on Public Rights of Way in England and Wales

Reporting issues on Public Rights of Way helps to protect and improve equine access. If there is a problem on your rights of way network - a fallen tree, broken gate, narrow banking or anything else that makes it difficult or dangerous to use - you MUST report it to your local Highway Authority.

The British Horse Society



Tom Hose

Copy for the next GEONEWS issue, for July 2021, must be the Editor by 16th July, 2021 at the very latest!



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