



## **Earth Science Education Forum (England and Wales)** **Minutes of the 52nd meeting**

Held in the Arthur Holmes Room, Geological Society, London. 1.30pm, 14 October 2014.

### **Present:**

Cally Oldershaw (All-Party Group for Earth and Environmental Sciences)  
Chris King (Earth Science Education Unit)  
David Brook (London Geodiversity Partnership)  
Giles Miller (NHM)  
Isabel Markham  
John Stevenson (BGS)  
Lorraine Craig (Imperial College London)  
Martyn Bradley (Geology Trusts)  
Susan Brown (Rockwatch)  
Tom Hose (GeoConservationUK & University of Bristol)

### **1 Apologies for absence**

Apologies for absence were received from:

Anjana Ford (Jurassic Coast)  
Annette Shelford (NHM Learning Team/Real World Science)  
Cynthia Burek (University of Chester and GeoConservation UK)  
David Bailey (Geologist and science communicator)  
Duncan Hawley (Geographical Association)  
Maggie Williams (Liverpool Uni.)  
Martin Whiteley  
Michael Howgate (retiring from the WEA and withdrawing from ESEF)  
Nic Bilham (GSL)  
Nick Rogers (Open University)  
Nikki Edwards (Oxford and Cambridge RSA - OCR)  
Pete Loader (ESTA)  
Peter Warren  
Steve Brace (RGS & IBG)  
Sylvia Knight (Royal Meteorological Society)

### **2 Minutes of the 51st meeting, 13 May 2014**

The minutes of the 51st meeting were accepted as a true record. A copy has been placed on the ESEF website.

**Action: JS**

### 3 Matters arising

#### 3.1 *National Curriculum (KS3 & 4)*

**CK** reported that the national curriculum consultation went ahead in August 2015; Nic Bilham (GSL) was alerted to the consultation at very late notice (1 day to go) and unfortunately his efforts to lobby the reinstatement of plate tectonics into the Science Curriculum at KS 4 failed. KS3 Geography is now the only place in the curriculum where plate tectonics appears.

This has a direct impact on the ESEU's KS4 'plate tectonics workshop', making it unviable.

#### 3.2 *Training for secondary geology teachers:*

Geoscience Education Summer School, Keele, 19-25 July 2014:

**CK** reported that the Summer School had run successfully with 10 participants taking up the 12 bursaried places on offer – the feedback was excellent.

#### Geology teacher training through PGCE courses

**CK** reported that the science/geology year-long PGCE course at Keele did not enroll any trainees largely because no bursaries were available. However, ESTA council will meet the National College for Teaching and Learning (NCTL) in November to question whether bursaries could be made available for the geology PGCE course in the future.

#### Geoscience Education Academy 2014: Geol Soc. 24-27 July

**CK** reported that the GEA ran over the summer, with Pete Loader and Ian Kenyon leading; the event was very successful and received good feedback.

It was also reported that the number of centres teaching A level geology has increased. The Higher Geology in Scotland is due to close, but lobbying continues for it to either be maintained or replaced by a Higher in Earth Science.

#### 3.3 *Geology for Non-Geologists training 'Geolab':*

This is likely to be a weekend event but precise timings have yet to be confirmed.

#### 3.4 *Destination survey for A-level Geology students:*

Fifteen responses have been returned from A-level geology teaching schools/colleges that indicate that 39% of A Level geology students go on to study geology at degree level.

#### 3.5 *National Geology Database:*

JS reported that it was planned to refresh the BGS Discovering Geology website pages to raise the profile of the GeoBritain map. JS will write an article for inclusion in appropriate newsletters such as GCUK.

**Action JS** to talk to the BGS Chief Curator about the inclusion of suitable entries, that could be included in the GeoBritain map, from the [NATSCA](#) database.

**Action DBrook:** To contact Diana Clements at the GA to enquire whether the GA is producing a similar map of GA guides.

**Action CK** to write to the Geologists' Association (GA) and enquire about the possibility of making GA trail guides available as pdf downloads from the GeoBritain map and/or other similar 'maps'.

### 3.6 *MOU between GeoConservation UK and BGS:*

The MOU was signed off in September 2014. **TH said that** GCUK would like to express their gratitude to the BGS; the benefits to member groups, not individuals, include discounts on BGS publications, but more importantly to work together on matters of mutual interest.

### 3.7 *International Conference on Geotourism 22/23 October 2012.*

Good progress continues.

### 3.8 *'Bus Pass Geology':*

Progress is ongoing but slow

### 3.9 *Earth Science Week:*

ESW runs from 13-19 October: much of ESW had yet to take place at the time of the 52<sup>nd</sup> ESEF meeting on 14th October.

### 3.10 *Geological poster map of the British Isles:*

**JS noted the following update after the meeting:** The BGS scientific map editor is currently working with the GSI and GSNI to reduce the number of geological units shown on the map; scientific editing should be complete by the end of 2014. In early 2015 it will be edited by BGS map production staff and prepared for printing in Spring 2015. Following publication, GIS files of the map will be made available from the BGS website as a resource for teaching. The BGS will be happy to work with ESTA/ESEF members and the Geographical Association to produce teachers' notes and further map downloads (e.g. rivers, cross sections etc.) that could also be made available from the BGS website.

### 3.11 *Future talks*

Ruth Siddall, UCL, confirmed as the guest speaker for the 2 December meeting of the ESEF; Provisional talk title; 'Building Stones'.

### 3.12 *What are the benefits of growing 'British' geologists?*

The group briefly discussed increased competition on jobs for geologists from overseas. It was raised as a future agenda item to explore the topic and whether the UK HE institutions continued to provide the skills that the UK geoscience industry needs to meet current research demands.

## 4 **Finance report**

No change since the 51st meeting.

## 5 **ESEF website ([www.esef.org.uk](http://www.esef.org.uk))**

**CK reported** that he had been in contact with ESEF chair Allan Rogers which resulted in the following actions

1. **CK and Allan Rogers** to be listed as co-chairs of ESEF as of the 14 October 2014 Meeting. **Action JS** to update the website accordingly.
2. **ESEF-Cymru** was no longer active and **JS** should take down the website and archive the content.

**JS reported** that the ESEF website had attracted over 7000 visitors during the period June 2013 to March 2014. Average daily visitors totaled 20 over the same period.

**CO reported** that the All-Party Group website homepage was correct and needed no further updates; the rest of site would be checked in due course.

#### **6 All-Party Parliamentary Group for Earth and Environmental Sciences update**

**CO reported** that David Tredinnick (Conservative, Bosworth) had recently been appointed to the group balancing the ‘members’ to ten ‘government’ and ten ‘others’.

#### **7 Potential collaborative projects**

**JS reported** that BGS were working with Nottingham City of Caves to establish a new geology-led education centre within the Broadmarsh Centre, Nottingham.

**JS reported** that in October 2014 Nottingham University launched a new [Environmental Science BSc](#) degree course in collaboration with the BGS. **Action JS** to send details of the course to TH to publicise in the GCUK newsletter.

**JS reported** that the [BGS School Seismology](#) project continued to be successful and that basic plate tectonics is typically taught as part of physics lessons, where schools are actively using their seismometer equipment.

#### **8 ESEF Achievements (NEW ITEM)**

Nothing to report

#### **9. AOB**

**Action JS** to invite Lesley Dunlop, English GeoDiversity Forum, to join the ESEF

**Duncan Hawley**, Geographical Association, couldn’t attend the meeting but provided a report which is included in these minutes as **Appendix 1**.

The forthcoming William Smith bicentenary in 2015 was highlighted. The group discussed the [Geological Society website](#) and [OU MNH website](#) that includes a wealth of online resources, lectures, guided walks and conferences/event information. **Action: TH** to contact Cherry Lewis, Bristol Uni. HoG to ask her to speak about the educational aspects of William Smith’s achievements at the March 2015 ESEF meeting.

**Dave Brook** reported that the London Geodiversity partnership had recently audited over 50 important geological sites and published details on their website at [Guide to Important Geological sites in London](#)

#### **9 Dates of future meetings**

2 December 2014	Building Stones (Ruth Siddall, UCL)
3 March 2015	William Smith (Speaker TBC)
12 May 2015	<b>Action: Tom Hose</b> to contact Cherry Lewis, Bristol Uni. HoG Geologists’ Association (TBC)

## **APPENDIX 1 Geographical Association**

### **Report to the ESEF meeting on Tuesday 14<sup>th</sup> October 2014 Recent activity linked to the development of Physical Geography education and teaching.**

**Duncan Hawley (Chair, GA Physical Geography Special Interest Group).**

#### **1. Photographic competition – ‘Physical geography around where I live’**

This attracted 126 entries – an encouraging number for a first time running. It was an ‘informal’ competition – aiming to encourage pupils to go and explore and discover physical geography in action in their own area. It encouraged finding evidence of physical geography processes in a local context – rather than photographing ‘classic’ landscapes.

Pupils took photos on their own initiatives rather than as a formal teaching exercise. Winners will be announced at the end of this week.

A winners presentation event is being organized to take place in November – with the sponsors of the competition (Paramo Clothing).

The entries will be analysed to give insights into how pupils perceive and understand physical geography – and it is intended to use this to give pointers for teachers in what might be emphasized to improve pupils’ understanding and ability to apply outside the classroom.

#### **2. Support for geography teachers**

##### **(i) Earth Learning Idea - audit**

The website [www.earthlearningidea.com](http://www.earthlearningidea.com) is an excellent open source store of innovative ideas for teaching aspects of physical geography. To support Geography teachers in teaching the strengthened physical geography requirements the GA Physical Geography Special Interest Group has compiled an audit of the activity ideas available on the website matched for suitability for the physical geography topics that should be taught in the Geography National Curriculum (2014).

The audit is in a downloadable Excel file that goes live on the GA website this week, and which can be sorted to search for activities that match particular physical geography topics that should be taught. New activities are regularly added to Earth Learning Idea and the audit will be periodically updated.

Some of the Earth Learning Idea activities have been contributed by members of the GA Physical Geography SIG and GA members will be encouraged to add to the resource by submitting interesting activities to the editors of Earth Learning Idea.

##### **(ii) What’s the big physical geography idea?**

This resource outlines and suggests essential knowledge and key ideas to be tackled in physical geography that should be taught in the new Geography NC.

A draft was circulated at the last meeting of the ESEF and it has been subsequently trialled in schools - used as a curriculum and lesson planning tool.

It will be added as a resource on the GA website later this term (planned date = November).

### **(iii) Physical Geography Analogies**

A series of analogies that help pupils access and understand physical geography processes is being compiled. The aim is to launch on the GA website in November to support teachers in explaining 'tricky' ideas or features. It will have a preamble that explains how analogies might be used effectively in teaching and cautioning teachers in how they might potentially result in misunderstanding unless the limitations are highlighted.

This will be an evolving resource.

Members of the ESEF – and their organizations – are invited to contribute. Please send examples of analogies that have been used to explain earth science features and processes to [duncan.hawley.geography@gmail.com](mailto:duncan.hawley.geography@gmail.com)

### **3. A level – revision of Subject Content**

A submission was made to the DFE consultation on the subject content proposals put forward in a report by ALCAB. These will form the core subject content in the criteria for developing AS and A level specifications.

With specific reference to physical geography, the strengthening of PG through the two core theme topics, with a focus on a rigorous understanding of physical processes that goes some way to re-balancing the trend over recent years towards a 'softer' approach to physical geography was welcomed.

Support was also expressed for the proposal to re-introduce non-exam assessment of independent geographical investigation which should incorporate an element of fieldwork.

However, whilst there was agreement noted with the general content of the physical geography modules, it was suggested that the wording in the proposals needed to be revised in order to reflect concepts in an accurate manner and using appropriate technical vocabulary. It was argued, using detailed examples, that this would be more in keeping with the intention to develop a more rigorous approach to the study of physical geography. In addition, some of the terms in the proposals are too vague or are unclear as to why they have been chosen.

A copy of the submission was sent to Chris King, who submitted something similar on behalf of ESEF.

### **4. BGS Map 1: 2.5 million map new edition update.**

The GA PG SIG has offered to give further advice/trial the revised map - but no further updates have been received from BGS .

### **5. Classic Landscapes resources**

The GA PG SIG are planning to develop a series of teaching/activity resources based on the successful physical geography resources developed/written for the Worldwide week in 2014.

Development will take place over the next 5 years.

Selection of sites will start later this year – and will focus initially on sites in the GA 'Classic Landforms' Guides.

The aim is for the resources to impact on teaching and pupils in providing a range of resources for teachers/pupils to use that will help them look at aspects of physical

geography and 'classic' landscapes/skyscapes from an interesting perspective and to take their physical geography learning outside the classroom – to apply in 'informal' settings e.g. family outings. We aim to discuss the possibility of working with other bodies e.g. National Trust, in the production and promotion of these resources. They will differ from the 'Classic Landform' guides in having an activity focus and being made accessible for wider age range.

## **7. Publications**

### **(i) Book**

'The Role of Stones: How do rocks shape our world?' – part of the GA KS3 Teachers Toolkit series. ISBN: 978-1-84377-348-1

This book provides a fully-resourced, ten-lesson scheme of work with teaching activities and background material that will enable students to develop their knowledge and understanding of rocks, geological timescales and how the interaction of human and physical processes influences and changes landscapes. Fieldwork opportunities help to connect students' everyday lived experience with what they learn in the geography classroom.

The unit will broaden the students' knowledge from the geology of Britain to our use of rocky landscapes for leisure and the contentious issue of energy supply.

For more details see [http://www.geography.org.uk/shop/shop\\_detail.asp?ID=772](http://www.geography.org.uk/shop/shop_detail.asp?ID=772)

### **(ii) Journal article**

An article on Soils will appear in the Spring edition of Teaching Geography – the GA's journal for Secondary teachers.

The article will provide teachers with essential knowledge about the structure of soils and processes of soil formation - and suggest why understanding of soils is essential to our survival.

## **8. Year of Fieldwork**

The GA is planning for 2015-2016 as 'A Year of Fieldwork'

The year will highlight the values of outdoor learning with a legacy to give fieldwork a higher priority. The RGS, FSC, OS, ESRI and NAFSO have been approached to contribute as partners in the project. There will be a link to other associations e.g. the GA are presenting a joint workshop with the ASE at their conference on fieldwork which will be repeated at the GA conference.

There has been a deliberate attempt to omit any partnership with exam boards as it is felt that the year is about geography values and quality geography and not about GCSE or A levels.

There will be a 'soft launch' of the year at the GA conference in April 2015.

Stronger representation from Earth Science organisations would be welcome – and if any organisation would like to be partners in this project – then please get in touch with Duncan Hawley [duncan.hawley.geography@gmail.com](mailto:duncan.hawley.geography@gmail.com)