

Geoconservation Gathering 2020: Conserving life - past, present and future

<https://www.geolsoc.org.uk/10-gsl-geoconservation-gathering-2020>

## **Session 1 Conserving sites**

### **Statutory conservation of palaeontology in Northern Ireland**

Michael Dempster, Northern Ireland Environment Agency

For its size, Northern Ireland is one of the most geodiverse areas on the planet. With the exception of the Cambrian, all periods of geological history are found at outcrop in the region. The Northern Ireland Environment Agency has the duty to protect the important geological sites found here, including those with palaeontological interest. In many cases fossils provide crucial stratigraphic evidence but there are also sites where the primary conservation purpose is the fossil finds themselves. This presentation will provide an overview of the fossil resource in Northern Ireland and also take a look at several palaeontological Areas of Special Scientific Interest, with a focus on Mesozoic sites and a recent significant find in the Devonian.

### **Skye Nature Conservation Order: an effort to conserve globally significant fossil resources, of high collector value, in a remote location**

Colin MacFadyen, NatureScot

Addressing the issue of unconsented and damaging fossil collecting activity on the Isle of Skye has been a challenge for decades. This has been compounded by the recent discoveries of globally significant vertebrate remains. The Skye Nature Conservation Order (NCO) offers a means of giving maximum statutory protection to these fossils whilst allowing the continuation of research collecting. The NCO has helped raise awareness of the collecting issue and offers scope for engaging with the local community, visitors to the island, scientists and amateur fossil collectors. NatureScot is conveying the message that all those with an interest in Skye's fossils have a role in discovering and looking after this fossil heritage in a joined-up and responsible way that benefits science and education.

### **The Brymbo Fossil Forest Project: The Future Interface of the Public and Palaeontology?**

Tim Astrop, Brymbo Heritage Trust

The Brymbo Fossil Forest is a 314 million year old in-situ, fossilised carboniferous forest representing earths earliest rainforests, the cradle of animal evolution on land and the ecosystems that ultimately responsible for the creation of the coal seams that provided the fuel for the industrialization of humanity. The Brymbo Heritage Trust adopted the fossil forest as it is part of the industrial heritage site of the Georgian iron and steel works currently being protected and restored with the help of Big lottery and Heritage lottery funding. A project to excavate a portion of the forest under a customized building is beginning this spring and is driven by the unique involvement of community-sourced volunteers, indeed the success of this unique project pivots upon community engagement and volunteer retention. The immense amount of new fossilized material is being curated by 'para-palaeontologists', enthusiastic volunteers who are being constantly trained as advocates for the

project and its lofty goals; to become a renowned site of public access into the world of palaeontology and earth science. Discussed here are the myriad problems, challenges and solutions experienced so far in implementing the UK's first publicly led palaeontological excavation and curated fossil collection. Also discussed are the implications that the success of the project will have on the local community, scientific community and the public's perception of earth science and palaeontological collections.

## **Session 2 Conserving collections and public engagement**

### **The Jurassic Coast Collection**

Chris Reedman and Sam Scriven, Jurassic Coast Trust

The Jurassic Coast is one of the world's most famous fossil sites and is visited by millions of people each year. Historically a key locality for the development of palaeontology, the coastline continues to provide new discoveries and offer inspiration to future generations of earth scientists. Whilst the importance of the Site's palaeontology is well established in scientific literature, demonstrating its role within World Heritage presents certain challenges. More could be done to improve access to important fossils and to better emphasise their unique role in the story of the Site. Of the specimens that fully illustrate the World Heritage Status of this coastline, some are stored or displayed locally however many are found in national and international museums. In addition, there are many spectacular and important specimens held in private collections, which have an unquestionable, albeit unrealised, potential to inspire, given a suitable approach to research and public engagement.

The Jurassic Coast Collection Project is a unique opportunity to identify a globally important collection of fossils which explicitly demonstrate the Outstanding Universal Value (OUV) of the Jurassic Coast World Heritage Site. It will provide a new evidence base to energise research and scientific study along the World Heritage Site. It will help identify priority areas for specimen acquisition, promoting further investment and support for the creation of new facilities that expand the collective capacity to conserve and curate the Site's incredible fossil heritage whilst encouraging public interest in and recognition of a network of local museums and visitor centres.

### **Rocking the Boat: Museum collections, public engagement and social change**

Liz Hide, Sedgwick Museum of Earth Sciences, University of Cambridge.

More than 6 million rock, fossil and mineral specimens are held by more than 250 museums in the UK; they are visited by many millions of people each year. Geological collections, when facilitated by experienced and knowledgeable staff in accessible and welcoming museum spaces, are a powerful way to engage a wide range of people with Earth science themes, including understanding the natural environment, evidencing climate change and encouraging young people to consider STEM careers.

In this time of social change and increasing social inequality, however, we should also consider how our geological collections can also address wider and more far reaching challenges. We can take the lead from the needs of our audiences and use our collections to achieve outcomes relating to their needs, be they for the benefit of individuals (for example, increasing health & wellbeing), society (such as reducing social inequality), or the future of our planet. By taking a more strategic approach

we can enable deeper and more sustainable public engagement, raise the profile of our collections, and more effectively demonstrate the benefits these collections bring to wider society.

### **National Nature Reserves: telling England's geological story**

Jonathan Larwood, Natural England

National Nature Reserves (NNRs) are among England's best places for biodiversity and geodiversity. There are over 224 in England, about two thirds managed by Natural England. They are places to conserve our natural heritage, foster research, and inspire people. There is a new ambition to tell England's geological history through the NNR network – working with both existing and new NNRs. This presentation will briefly explore the Wrens' Nest NNR (Dudley), Horn Park Quarry NNR (Dorset), Swanscombe Skull Site NNR (Kent) and our newest geological NNR at Saltwells (Dudley) to illustrate the importance of NNRs in conserving the fossil record and their potential to tell England's geological story

### **Session 3 Using the palaeontological resource**

#### **A UK Miocene ecosystem in a hole**

Matthew Pound, Northumbria University

Onshore Miocene geology and the UK are not terms normally in the same sentence! The Brassington Formation is the most extensive Miocene sedimentary succession onshore in the UK. Because of its position on the margin of northwest Europe, the pollen, spores and microfossils from this lithostratigraphical unit provide a unique insight into the response of ecosystems to climate changes that accompanied the Middle to Late Miocene cooling. Renewed exploration has improved our understanding of the dating, palaeoenvironment, deposition and yielded new species. I will present a summary of our latest findings with the hope it will spur some conversations about how we could move from research to geoconservation and, potentially, geoheritage.

#### **Linking Local Geological Sites to explain palaeoclimatic change**

Lesley Dunlop, Berkshire Geoconservation Group, Oxfordshire Geology Trust, Northumbria University

Local Geological Sites (LGS) can be used along with other sites to explain the story of past climate and environmental change over a local area. If sites are viewed in isolation the mistake can be made that there needs to be something exceptional at each one but it is important to realise that linking several can give a much larger picture. This presentation will focus on how one LGS chalk quarry in Berkshire can be used to demonstrate small scale changes but when pieced together with others using the geodiversity audit allows for a much better interpretation of the area. Similarly, several sites along a disused railway line in north Oxfordshire near Hook Norton allow for examination of how the environment changed during the Middle Jurassic.

## **The History of Life and the Planning and Development Control System**

Graham Worton, Keeper of Geology, Dudley Museum and Black Country UNESCO Global Geopark Lead Officer

The development process is often perceived to impact the natural world in a negative way or resulting in net loss of geological amenity. Where planning and development professionals understand the resource and its potential to add value however there can be many useful and practical interactions that are both mutually positive and enduring. This short presentation will give case studies from the Black Country UNESCO Global Geopark demonstrating ways in which the geology and palaeontology have been respected and valued by developers and planners such that they have influenced development design and layout, choice of materials, physical and intellectual access in ways that have created gains for geodiversity, gained knowledge, improved geological collections, created educational and economic opportunities and built trusting relationships that have created the best conditions for further future positive collaborations.