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Author(s): Gill Stevens

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However, though I feel confident and knowledgeable with the Law, I know that with some wildlife issues I need to work with experts. People who are able to identify species, who have knowledge about their subject, who can advise on the condition, best practice, habitat, housing the list is endless and Clare has been able to offer advice on many occasion, and was a real asset on a raid the Wildlife Crime Unit carried out in connection with endangered species being sold via the internet.

This partnership also developed when I set up a CITES training day. Clare was able to provide an excellent venue for a 'hands on' look at some of the endangered species we had talked about before hand. The partners who attended were able to see first hand just what an excellent resource the museum was and I know from feed back just how valuable everyone found this partnership working.

The conference was an excellent opportunity for me to explain how I need your support and how happy I am to support you all and to show partnership working is undoubtedly the way to go, to provide the expertise and knowledge we need to get the message across and move forward.

I am also delighted to say that as a result of the conference I now have two booking for talks at Castle Cliffe, Bradford - thanks Gerry!!

# 'Making progress through partnership – examples of public engagement with science through the creation of novel networks'

Dr Gill Stevens, Head of UK Biodiversity, The Natural History Museum (Contact: G.Stevens@nhm.ac.uk)

We are living in a time when environmental issues are high on the public agenda and we as scientists and the science-based institutions have a critical and unique role to play in building a scientifically literate public. If we are to take full advantage of the opportunities for improving the quality of life offered by scientific knowledge and discovery, it is crucial that we bring scientists and the public closer together in a constructive dialogue to explore issues such as the quality of local environments.

Due to the special situation afforded to institutions such as the Natural History Museum, as both a collections-based research institute and a major visitor attraction, the 'museum community' has many opportunities to be involved and indeed lead public engagement activities. These include public surveys of charismatic species, development of publicly accessible identification guides, providing training and speaking to our visiting publics.

In this article, I share with you just a few practical examples of projects that have successfully 'extended the reach' of the institution in which I work in and how this work has integrated, or will be looking to integrate, the expertise of both professional and non-professionals in the search to 'know nature'.

I will introduce several examples of these initiatives which have involved experimenting with new ways of engaging the knowledge and enthusiasm of a wide variety of actors in nature and how fostering interaction at the science-society interface has helped new audiences better understand the world we live in.

Over the last 10 years, the Natural History Museum has been spear-heading a programme of research and associated activities focusing on UK Biodiversity; documenting, understanding and very importantly, communicating to a wide variety of audiences, the interest and relevance of our subject. This has been a gradual journey and has proved to be a rich learning experience for all involved. It has meant taking experimental approaches and adjusting our motivation and ambition along the way.

The experiment began on a fairly small scale and initially focused on very specific publics – the amateur experts – the national schemes and societies and voluntary groups where we had a common interest. The original drivers behind this work were rooted in conservation policy, when there was a clear recognition by the statutory agencies for conservation that the biodiversity knowledge needed to feed the BAP process, was embedded within the amateur community, a domain that they had hitherto largely neglected.

This is when we began working to rebuild the relationship between these two communities, taking on the role of 'honest broker' in a variety of partnership projects. A few examples of which are given here.

#### ElmMap:

The Elm Map project was one of the first of the NHM's UK Biodiversity initiatives. We launched it in 2003 with the Ramblers Association and it has since expanded to embrace 12 partner organisations. We asked wildlife enthusiasts to locate and survey the few remaining elms that have survived the ravages of Dutch Elm Disease – some 200 mature elms have now been recorded and databased. The information is being used for a number of purposes, one of which is to support the Conservation Foundation with their project to raise new trees from Britain's native stock. The Ancient Tree Hunt is continuing to encourage people to map 'old, fat trees' across the UK.

http://www.nhm.ac.uk/nature-online/biodiversity/elm-map/elm-map-index.html http://www.ancient-tree-hunt.org.uk/

#### Survey of the Bryophytes of Arable Land

Arable land is known to support a distinctive bryophyte flora but our knowledge of this group of organisms is poor. Few bryologists had focussed on the arable habitat, particularly in recent years. It was suspected that along side major changes in the abundance and spectrum of vascular plants in this habitat, that the bryophyte flora of arable land was also changing and the widely held opinion is that it was generally in decline but hard data were lacking. In response to this The NHM, Natural England and the British Bryological Society (BBS) embarked upon a survey of mosses, liverworts and hornworts of arable land. BBS volunteers were involved in this national recording scheme over a three year period. In June 2005, the survey was completed, resulting in 825 completed record cards covering 812 arable fields. The results can be found on the society's website. (http://www.jonathan.sleath.btinternet.co.uk/SBAL/intro.htm)

#### The Riverfly Partnership

The Riverfly Partnership is another project that is demonstrating the value that amateurs can bring to biodiversity conservation. The Partnership enables anglers to get together with scientists and environmental organisations to build expertise and address declines in riverfly populations. In the three years since its launch, the Partnership has organised riverfly training workshops, published guides to the riverfly groups for non specialists, and developed a methodology enabling fly fishermen to monitor water quality which has been adopted by the Environment Agency. (http://www.riverflies.org/)

These partnership projects targeted particular specialist groups to work with and to meet particular targets, or to provide or help compile a checklist for particular groups of organisms.

Building on our experiences to date we are now embarking on a programme to extend this approach to reach a much broader range audiences and attempt to look at the wider topic of natural history. This is part of a drive to increase the breadth of our science public dialogue – and build a scientifically literate public.

This outreach work is being driven by the development of a new Centre for UK Biodiversity study at the NHM. It is part of our new Darwin Centre building that will open Autumn 2009. This will hold large parts of our entomology and botany collections and is designed such that museum visitors can get a better idea of our research work and the collections that we house. The ground floor contains the centre focusing on UK natural history; it will have lab space and is in close proximity to our wildlife garden with its richness of urban biodiversity, so ideal for training and education. It will provide easy access to key UK specimen collections, museum staff and their expertise.

Our more recent projects are engaging with a more diverse audience and we have taken a new approach, exploring the potential for members of the public to help contribute to a programme of science research:

#### Bluebell survey

Bluebells are one of Britain's best-loved wild flowers yet little is known about the distribution of the different species and the impact of climate change and hybridisation. A research team has been working to establish taxonomy through molecular and morphometric analyses of new collections made across the species range. But in Spring 2006 the Museum called on the public to help with this research programme. We asked people to search for, identify and record bluebells in their local areas. An easy-to-use identification guide and online recording forms allowed everyone, from children to scientists, to contribute.

This approach of developing web-based public participation to help assess the bluebell status in the UK has informed both scientific and public audiences. We view this as a model for public engagement with science,

backed by exemplary specimen based cutting edge research. The survey is repeated annually. <a href="https://www.nhm.ac.uk/bluebells">www.nhm.ac.uk/bluebells</a>

Our most ambitious project to date builds on our previous experiences and will be a combination of all our previous approaches, but on a much more grand scale......

#### The Open Air Laboratories Network - Inspiring discovery and celebration of the natural world

The Open Air Laboratories (OPAL) network is an exciting new initiative which received a grant from The Big Lottery Fund in August 2007. OPAL is encouraging people to get back in touch with nature by enabling them to explore and study their local environments. Through partnerships nationwide, OPAL is running projects which anyone can get involved with.

From playing fields and window boxes to bus stops or beaches, all spaces are different and all are important. The five year programme will bring scientists and the public closer together, allowing environmental issues to be explored which have both local and global relevance. OPAL aims to create a new generation of nature-lovers by getting people to engage with the natural world around them.

What is OPAL? OPAL is an exciting new initiative that is open to anyone with an interest in nature. Whether you are an amateur naturalist, a school student, part of a community group, or simply interested in learning more about your local wildlife and environment, there is something for you. OPAL participants around the country are discovering nature near them and learning how it can be enjoyed and protected

Nature needs you! Wildlife faces a growing number of pressures with populations of many of our most familiar animals and plants changing at an alarming rate. In partnership with Imperial College and the Natural History Museum, five national centres and nine regional universities will be running a

wide range of events to engage the public with nature. By joining us in OPAL activities, you can help to build a detailed picture of the environment local to where you live, and learn how to identify and monitor the wildlife that you find.

Regional activities Across England, OPAL is busy developing a wide range of activities suitable for different age groups. You could be measuring minibeasts or learning about lichens, surveying wild flower meadows or finding out about the wildlife of your local pond or park. Keep an eye on the OPAL website to find out what's happening near you.

National surveys OPAL is also running a series of nation-wide surveys, each examining a different aspect of the environment.



There will be studies into soils, biodiversity, water, air and climate which anyone can participate in. The first of these surveys will be soils and earthworms launching in spring 2009. These events and surveys will help to generate new research information, whilst developing skills and inspiring communities to explore, study and enjoy the local environment.

Please visit the OPAL website, a resource that will be developing into a dynamic forum for online recording and discussion, encouraging participation and engaging new audiences.





We are fortunate in the UK that our biodiversity is one of the best documented and understood anywhere in the world. But it is constantly changing. If, as a society, we are committed to tackling the environmental challenges ahead then scientists and the public need to face the future together. Unless we engage with and help equip the wider publics, there is a danger that we won't be able to assess what is happening or understand how wildlife responds to environmental change. We know that there is an army of enthusiasts ready to come to the aid of the natural world – and we are doing everything we can to mobilise it.

#### Developing a collections centre in partnership with a specialist supplier

Katherine Andrew, Principle Heritage Officer, Herefordshire Heritage Service

#### Herefordshire and its museum service

Herefordshire Heritage Service, the County Museum Service for Herefordshire came into being in 1998 with local government re-organisation. In the first ten years of operation, the re-established county has gone through major change, undertaking major development and rationalising use of buildings.

#### Museum service buildings and collections

In the late 1990s, with collections stored in more than twelve different locations across at least eight different buildings, the need to create a single collection facility was recognised. Time wasted in travelling between sites, over-crowded and therefore inaccessible storage with conditions varying between acceptable to totally unsuitable (for example the Wye Street store regularly flooded to a depth of a metre) were the major drivers to achieving this goal.

The acceleration of an idea into reality was accelerated with the re-development into a supermarket of the Grimmer Road store for the social history and archaeology collections. The viability of Churchill House Museum, housing period room settings, the Brian Hatton Gallery and the stored textile and decorative art collections was also, at this point, called into question and plans were put in place to close this site, with the site vacated in the summer of 2002.

#### The Friar Street site

The service had been unsuccessfully trying to locate a suitable replacement building for some time. In 2000, it was given a few weeks to purchase a redundant telephone repeater station in Friar Street, central Hereford.



Fig 1. New storage for the taxidermy specimens, no longer in overcrowded shelves.

This L shaped building consisted of two five-meter high large rooms, a two storey block of smaller rooms and a basement containing a nuclear bunker and the boiler room.

#### The Museum Resource & Learning Centre project

A tender for phase 1, a basic refurbishment of one of the large rooms to create a store, was let in 2001. A Heritage Lottery bid was also being developed, but time scales meant that a rapid refurbishment was needed to allow collections to be re-housed and so allow the Grimmer Road site to be demolished.

Ocean Design won the tender for the initial fit-out, designing a basic system of ten compactor units with shelves at 750mm pitches and about 20 drawers for small objects. The archaeology bays were designed to take the standard sized archive deposition box, three deep per shelf. Compactor rails were installed to run the full 20m length of the store, a cost effective investment, worth making in order that additional compactors could be added later. The second large room was filled with re-used wide span shelving from the Grimmer Road site.

#### Phase 2

The Heritage Lottery Fund awarded the project a grant of £585,000 in the summer of 2002. In October 2002, store 1 was filled, with 17 compactor bases (33 aisles) in total in order to accommodate the costume and textile collections from Churchill House Museum.