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Making Collections Count: natural science collections and biodiversity conservation

- Trevor James, NBN Development Officer for National Societies and Recording Schemes

This paper is about how museum biological collections fit into the bigger picture of biodiversity. Hopefully, it will offer some useful thoughts about what museum biologists (and above all, museum policy makers) can do to enhance the profile of collections, which, all too often, have suffered from neglect, especially since the 1980s.

What is needed for UK BAP?

BAP, of course, is not the only use of wildlife data for conservation, let alone other uses, but it might serve as a starting point. Reference to this table in a recent UKBAP report serves as a useful touchstone for seeing where wildlife data fit in to the BAP process. Above all, it shows that: a) there are problems with BAP delivery for a range of reasons; b) the greatest deficit in support for species action plans in particular lies with inadequate research and survey information. The latter, in particular implies that species data, for one reason or another are either not being collected enough, or properly, or that the basis for understanding what those data actually mean is inadequate. Either way, data quality is an issue. As BAP has a high policy profile, not only in UK terms, but across Europe, this is important.

Lessons from the Past: the Pool Frog

Just one example may help to paint the picture. The Pool Frog has only relatively recently been thought of by most as a native British species. Read any older books on UK amphibians and it will scarcely get a mention. It was recently declared extinct in the wild in the UK, after only having been formally recognised as native for a short time. We seem to have seriously missed the conservation boat! Although steps are being taken to re-introduce it. So, what were the decisions about native status made on? These ultimately relied on DNA tests of a very few historic specimens in museums that seem to have gone unnoticed before. But what about the future of these specimens? How secure are they?

Lessons from the past (2): What is hit is history!

This deeply unfashionable sentiment has long been quoted by old-school naturalists! It underpinned Victorian collections. It also had a serious point, whether we or animal rights people out there like it or not! It may no longer be either necessary or desirable to shoot golden orioles or rock thrushes to prove they made it to Britain, but it is absolutely certain that in other cases, even for reasonable size species, such as these related longhorn beetles, that collection sometimes is both necessary and desirable to ensure: a) correct identification; b) monitoring of changes. In addition, the very existence of historic collections, of things like rock thrushes as well as beetles, means that we still do have a basis for making all sorts of studies with historic perspectives that otherwise would be impossible. So, maybe, the dictum still holds, fashionable or not!

Examples from the present: Countryside Survey

The ongoing Countryside Survey, carried out periodically by the Centre for Ecology & Hydrology, provides land-use policy makers, biodiversity organisations and others with a UK-wide resource to aid them in their work. It also generates a mass of data, including detailed data on species that occur in sampled habitats and 1km squares. At the moment, CEH have not shared much of this data with others, partly for resource reasons. However, the collection of these data also point up other problems, particularly over the potential long-term issue of data quality. If detailed species data from these surveys were to be available, how can users be assured that the data are ultimately reliable? Hopefully they are (and the surveyors are pretty good), but backup in terms of vouchers for records is minimal. CEH has no resources to devote to this, and does not, so far as I know, currently work with any outside organisation to undertake this activity.

Examples from the Present (2): the Harlequin Ladybird Project

Over the last two years, the Ladybird Recording Scheme has been rejuvenated by the advent of the Harlequin Ladybird *Harmonia axyridis*. We managed to get some money out of Government to support a project officer, and set up web recording. Part of the process has been to get specimens sent in to check, especially from beginners. This was very successful and ensured data accuracy. It also provided some live speci-

mens for research. But there has never been any facility for keeping any of these for future reference. This is just one example, potentially, of many throughout the recording schemes, even more so those not run from an institution. It is also something that gets forgotten when such a project is set up – what about the samples being collected? Who looks after them? This in turn can limit future opportunities, and the potential value of having done the initial research or survey.

National recording schemes and specimens

So, how many recording schemes are actually likely to need to collect vouchers to ensure data accuracy? I will give just one example, from one of my own areas of expertise: beetles. There are some 16 beetle recording schemes on the BRC list (of which one or two are currently rather moribund). Of the active ones, 13 are likely to need voucher specimens to be collected, named by specialists, and presumably permanently retained as vouchers. In other words, only the Ladybird Recording Scheme actually does not normally rely on specimens, and even that one needs some, especially for small, nondescript species! Every other scheme needs at least some records to be checked at some stage, especially from beginners.



National recording schemes (2)

But which of these schemes have got some sort of system in place to try and ensure that these vouchers are properly dealt with and housed? On my estimate, only 6 of these recording schemes actually have any central support from a museum for housing specimens, and even for some of these, it is not a core activity. For 4 of these schemes, also, the person running the scheme has either retired from the museum in question, or otherwise left, so that their link with the museum is as a volunteer. In one other case, the scheme organiser’s paid work is not really related to the scheme, and the museum’s role in relation to the scheme is therefore tenuous. So, only **one** beetle recording scheme actually gets real support from a museum in which the member of staff is housed, and even he does other taxonomic work outside the UK as another part of his responsibilities. As for specimens collected by third parties involved in recording for these schemes, there is no information about whether they maintain collections, or if they do, where these are destined to go. Very few museums are apparently actively soliciting their deposition.

NBN recommendations in support of data quality

The National Biodiversity Network Trust, among others, has been concerned about support for recording since its inception. We have recently issued guidance to those involved in recording and data management about things they could be doing to improve the reliability of wildlife data. These suggestions have included getting the recording schemes and societies involved to “up their act” in relation to the way they uphold data quality – identifying in particular for which species, if any, they would accept records from different people with different levels of experience, and whether a particular species record should be supported by vouchers. We have also suggested that these organisations **actively** look to set up agreements with institutions such as museums to receive and maintain collections.

NBN recommendations in support of data quality (2)

At the same time as focusing on the recording schemes and their volunteers, we have also addressed proposals to organisations that are responsible, one way or another, for financing and organising data. For example, over the last 20 years, local records centres have burgeoned (albeit in a piecemeal fashion, and with patchy financial backing). The result has often been that they have become divorced from the museum that at one time had the staff and money to support them. There is, therefore, a need for such bodies to reconsider what they do about making sure their data are reliable. In some cases, museums are still involved, but how much have their governing bodies considered the relationship between the data being collected and their museum collection policies?

Another group of organisations is potentially involved, though. Biodiversity is becoming a vital part of Government-funded activity, even though the Government sometimes appears to be reluctant to admit it. As a result, Government conservation agencies, research institutions etc., are all realising that the infrastructure supporting biodiversity data is shaky. Ironically, as a result, there may be opportunities here for collections managers to seize an opportunity for support, beyond the usual sources that museum people tend to think of.

So what are people doing about data quality?

Progress can be painfully slow about implementing guidance, but here is just one example, with which I am familiar. From the perspective of one scientific society, responsible for very important data, the BSBI has begun to think these things through and put in place some actions of its own to help. It is re-visiting the question of herbaria – those deeply unfashionable collections of dried plants that so many museums over the last 50 years have quietly “lost”. In 1983, the Society published the second edition of its listing of UK herbaria (the original was issued in 1958). Every collection worth the name in some form of institution was indexed. It is now re-examining these, and the evidence so far is that a considerable proportion of even those that had survived, moribund, until 1983 have since vanished, or been subsumed elsewhere. As for **active** curation, that is another matter still. How many local museums have anyone even faintly knowledgeable about the plants in their care? However, the BSBI is going to promote those herbaria that are still active. It is also working to produce clear guidance for anyone doing recording which species need to be supported by specimens, and on how to go about ensuring their survival. The likelihood is, therefore, that regional museums will be approached by more people about housing important collections. The Society is also working with existing active curators to help them get their collections properly documented – through an on-line documentation project involving its own members. Ultimately, though, the success of all this depends on the museums recognising they have a vital role to play, and seeking ways to support it.

So what are people doing about data quality? (2)

A final example can come from the world of biological recording organisations at the local level. Hampshire has one of the best local records centre set-ups in the country. It is not only VERY active, it also has a high level of staffing, a wide programme of survey, voluntary sector engagement, and gives biodiversity data support to all the relevant authorities in its large, very biodiverse area. In order for this to work, it has entered on a big programme of development – both in terms of who it is serving, as well as sorting out the infrastructure to do the work. Part of this has been to put in place a very wide-ranging, active partnership, both of voluntary sector organisations and statutory bodies. Among these, note that the Hampshire Museums Service is one. It means that the Museums Service has a stand-alone high profile as a vital part in the business of collecting and ensuring the quality of biodiversity data in the County.

It is early days for this partnership, but the signs are good that, at last, people outside museums are beginning to realise that biological collections are absolutely vital for biodiversity data support.

What are the benefits?

The benefits for biodiversity data collection and ultimately conservation are that we are acting on sound information, properly backed up by facts. But what are the benefits for museums and their collections? I believe they are potentially many, and only partially tapped by a few museums: a broadened base for potential financial support; engagement with communities of people who do not normally consider working with museums; hence a higher public profile in ways that challenge the usual public view of museums; which can then engender political support because museum collections are seen to have broader public benefits – meeting needs identified elsewhere, such as broader community engagement and sustainability. Ultimately this can only benefit museums themselves, by helping to ensure their future as an integrated part of community endeavour. This way museums guard against the inevitable disasters that can befall them, and especially highly vulnerable and ultimately irreplaceable natural science collections.

***The EYE Project: Environmental Recording in the Museum Context*
Naomi Hewitt, EYE Project Co-ordinator, Tyne & Wear Museums**

Exploring Your Environment, or the EYE Project, is a three year, joint partnership project between Newcastle University and Tyne and Wear Museums. It aims to encourage people to think differently about the environment they live in through active involvement with biological and geological recording. At the same time, it aims to develop a regional bank of information about the biodiversity and geodiversity of the North East of England, in order to inform the future planning of the region’s natural environment. It is funded by the Heritage Lottery Fund, Northumbrian Water, Newcastle University, Tyne and Wear Museums and the North East Regional Museums Hub, Natural England, Northumberland Wildlife Trust and Tyne and Wear Museums Business Partners Fund.

The first aim of EYE is to increase public knowledge and understanding of biodiversity through environmental recording. As the project title suggests, EYE is about encouraging people to think about the environment around them by recording the animals and plants that they see, thus developing positive attitudes towards the natural world. The Project works closely with Newcastle University’s Department of Civil Engi-