

## ***Complexity of Biological Data Flow and the Recognition of Volunteer Recorder Effort***

### ***Background/Progress***

There is an increased requirement for access to biodiversity data, primarily fuelled by a need “to understand the impact of planning and development on the natural environment”<sup>1</sup>. These policy based requirements have led many European countries, including France, Germany and Holland, to adopt publicly funded biodiversity recording, capturing data specifically for use by Government. The UK’s approach differs as it uses publicly funded recording mixed with information collected, collated and disseminated by volunteer recorders. This approach provides a low cost option, but is based on widespread rather than targeted survey effort. It relies on the continued motivation of volunteers and reflects the priorities for data collection set by them, rather than those wishing to use the data for decision making purposes. Furthermore, it places an increasing requirement for uniformity on a system developed by volunteers to nurture their interest and understanding of their specialist area of biodiversity.

To establish a path for decision makers to access biodiversity data, the first Local Records Centre (LRC) was established in Wales 10 years ago. This was followed by the completion of a full Welsh LRC network in 2007. During the period following their establishment, LRCs have seen an increased willingness by volunteers to share their data, possibly in an attempt to ensure that it is considered by decision makers, with many of the earlier barriers to data flow being overcome through dialogue and negotiation. Today between 60 and 70% of data across the Welsh LRCs comes from voluntary recorders, and each year the data is fed into an increasing variety of local and central Government decision making processes.

### ***Data flow complexities***

Although data is now flowing to LRCs more than ever before, there are a number of issues which need to be addressed. LRCs sit within a complex web of data managers, which include local and national conservation bodies, local County Recorders and National Recording Schemes and Societies, with the NBN Gateway also aiming to hold a copy of all data at a UK level. Data flow between all these players can be highly complex, and without clear data flow routes being agreed by all parties a number of problems can arise. These include unnecessary duplication of records, and more seriously a lack of clarity as to who holds the master or ‘top copy’ of a record, which can result in two or more different versions of a record being in circulation. LRCs and the NBN Gateway are attempting to provide ways to streamline these data flows, for example the paper prepared by NBN Trust January 2010 on ‘*Developing Efficient Effective Data Flow Relations across the NBN Partnership*’, but their

---

<sup>1</sup> PAMEB (2003) Policy Brief. Environmental Change Institute, Oxford.

presence has inevitably added extra, although necessary, complexity to the system.

LRCs have tended to focus on negotiating access to data through local County Recorders, who collate data for a particular taxonomic group and within a particular geographic area, voluntarily, often on behalf of a National Recording Scheme or Society. This strategy has generally been effective, with Welsh LRCs amassing over 5 million species records, many of these at their most detailed resolution, although there are instances where negotiating access at a regional or national level is more appropriate and leads to more rapid and more uniform access to data.

County Recorders have to deal with ever-increasing complexity in data flows. In the past a local recorder would tend to submit their records to the appropriate County Recorder, who would probably supply annual updates to the appropriate National Scheme and Society. County Recorders now not only have to move data from local to national level within their own discipline, but have to consider how their data are accessed by LRCs and the NBN Gateway. They also need to access data which local recorders and others submit directly to the LRCs. Increasingly there are also a number of online data capture tools being developed, giving an individual recorder even more options on how to submit their data, and crucially to allow their records to be simultaneously accessible to the County Recorder and the LRC.

The complexity of data flow is partly due to a lack of sophistication and uniformity in the way we manage data. The ideal situation would be to use internet portals to allow data users to access records from dispersed databases on a 'real-time' basis, so that all records are drawn 'live' from wherever the master copy is held. It is also becoming possible to enter records in the field using mobile technologies, potentially enabling 'instant' access to records by all relevant players from the moment the species is seen. Technology is still being developed to allow all of this to be possible, and it will require the willingness and ability of all relevant data holders to integrate new ways of accessing data into their systems. However various elements are already being trialled, e.g. WWBIC's <sup>2</sup> mobile cetacean recording, BIS<sup>3</sup> using web services to pull in data from the from the NBN, and County Recorders verifying records held by Cofnod through their Online Recording system. With these systems on the horizon and continued concerted effort from those involved, a mechanism is emerging that will smooth the complexity in data flow over the coming years.

In the meantime we must rely, in most cases, upon negotiating access to data at the most appropriate level and storing multiple copies of data within the system. During this period it is essential that we clearly define ideal data flow between all the relevant parties, so that those involved are able to gain rapid access with minimum increased effort. An example of this is the ideal data flow model which is emerging from discussions between LRCs and plant recording societies in Wales. It must be recognised that this is not a

---

<sup>2</sup> West Wales Biodiversity Information Service

<sup>3</sup> Biodiversity Information Service of Powys and the Brecon Beacons

straightforward process, and it may take several years to sort out the complexity of data flow which has evolved over decades and in some cases centuries. It is also likely that there will always be local and regional variation in the ideal data flow scenario. It is crucial that we think about data flow elements when new data capture tools are being developed, furthermore that new work generating biodiversity data should, wherever possible, map out and agree where data should flow at the earliest possible opportunity.

### **The recognition of volunteer recorder effort**

As is evident from the discussion above, the UK's system for managing biodiversity data has volunteer effort right at its heart. It is estimated that there are approximately 100,000 amateur naturalists in the UK, with a large proportion of these actively involved in biological recording. Together, volunteer recorders account for around 70% of all biodiversity data, with certain activities, such as bird monitoring, obtaining as much as 90% of data from voluntary sources<sup>4</sup>. Although significant amounts of data are created by professional recorders, volunteer experts still have an important role to play in reviewing data and ensuring its quality and completeness.

Recent research carried out by the University of Birmingham concluded that a monetary value of up to £5 could be placed on each biological record. Thus the records in the Welsh LRCs would stand at £25 million, with approximately £17.5 million coming from voluntary sources. In the creation of *New Atlas of the British and Irish Flora* it was estimated that volunteer effort amounted to nearly £7 million, with this being coordinated by one paid officer. Furthermore it is estimated that it would cost over £30 million just to replace the UK model with one similar to that adopted in Germany<sup>5</sup>. So in a time when Government has less money to spend, the case for supporting volunteer recorders seems clear, especially if Government wishes to access the data they create.

### **Plan/Proposals**

The huge contribution that volunteer recorders make to the increasing body of biodiversity data needs to be acknowledged. Furthermore, there should be recognition that data collected through voluntary recorders is often of equal or sometimes better quality to that collected by professionals. This is especially true of data which has an established and defined route of expert review to ensure that data quality is maintained.

Volunteer recording must be adequately supported by Government, given its reliance on the data it produces. Long term training and coordination has a key role to play in supporting volunteer recorders. Although Wales has recently created paid coordination posts with two major recording societies (British Trust for Ornithology and Botanical Society for the British Isles), the funding for these is short term and there is likely to be a requirement for similar roles across other interest groups.

---

<sup>4</sup> *What counts? Volunteers and their organisations in the recording of biodiversity*, Bell et al., Biodiversity Conservation 2008, 17 3343-3454

<sup>5</sup> *A top-down or bottom-up model of biological recording in Britain – which is the most sustainable?*, Sarah Whild, Director of Biological Recording Programmes, School of Biosciences, University of Birmingham.

There are often conflicts between what volunteer recorders wish to collect and what policy makers want from the data. These issues need to be more strategically resolved so that those volunteers who are willing and able to assist can better help collect data which will address policy-makers' requirements.

It is hoped that increasing negotiation with national representatives alongside local volunteer recorders, and the increased adoption of models to describe the ideal flow of data, will decrease the data flow complexities discussed above.

Those who are helping to manage data from point of collection to use must be supported. LRCs in Wales are uniquely placed to offer assistance in managing the flow of data; however some of the solutions are technical and may require investment from Government to ensure systems develop maximum public benefit for minimum effort.

It is important that if Government wishes to access biodiversity data from voluntary sources it must demonstrate its ability to share its own data both internally and externally. The Wales Environmental Data Sharing Charter, developed by the Wales Environmental Information Forum, endorsed by WBP and sanctioned by the Welsh Government sets out principles by which this can be achieved.

### ***Decision Points***

- WBP to investigate methods of supporting volunteer recording in Wales, especially long-term support for volunteer co-ordination.
- WBP to ensure that data generated by volunteers are used to support decision making.
- WBP members to adopt the Wales Environmental Data Sharing Charter and work with LRCs to ensure practical solutions to ensuring better data flow.
- WBP to support where possible the development and adoption of technological solutions to ease the complexity of data flow.

### **Roy Tapping**

Manager, Cofnod – North Wales Environmental Information Service