

Defra Fund for Local Biodiversity Recording – Phase 2: implementation and review

Final report

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Executive summary

The overall aims of the Department for Environment, Food and Rural Affairs (Defra) Fund for Local Biodiversity Recording were to develop the national network of local biological recording and to increase the geographic scope, quantity and quality of biological information available to the general public and key public sector users through the National Biodiversity Network (NBN) Gateway. One of the specific objectives of the fund is to achieve full geographic coverage of Local Record Centres (LRCs) across England.

This report describes the reviews that were carried out within each former Government Region to understand the coverage and consistency of biodiversity data collection and how this is managed. It explains how the results were used to identify strategies to make the processes for managing and using biodiversity data more efficient and sustainable. Follow-on projects were then implemented in each region and projects taken forward included:

- Establishing the Yorkshire and Humber Environmental Data Network as a legal entity.
- Building the capacity of data providers to manage and exchange biodiversity data in the West Midlands.
- Establishing a standard service for data searches by record centres in the East of England.
- Expanding the RODIS online recording systems to additional recording groups and counties in the North West.
- Establishing ERIC as a regional record centre for the North East.
- Improving data products and services for record centres in the South East and Greater London.

It also reports on the series of national projects, which helped develop tools to demonstrate and promote best practice. These included:

- Enhancing and adopting the Recorder 6 software.
- Developing a tool for automating species data validation and verification.
- An on-line system for managing local sites data.
- Automated screening of planning applications for biodiversity.

A small grants scheme was run to improve the capacity and efficiency of data management and support mobilisation of datasets. In the three years from when the grants started 56 projects were awarded over £90,000. These funds were spent on a wide range of improvements including:

- Digitising paper records.
- IT equipment to increase data entry capacity.
- Improved data backup procedures.
- Moth traps, generators and other equipment to help acquire records.

As a result of the investment significant progress has been made towards establishing full coverage of local record centres across England, including improvements to the flow and management of data and the provision of products and services to local authority, statutory agency and private sector users.

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1 Introduction

- 1.1 In November 2008 the Department for Environment, Food and Rural Affairs (Defra) announced an extension to its fund for local biodiversity recording. The overall aim of the fund was to develop the national network of local biological recording, increasing the geographic scope, quantity and quality of biological information available to the general public and key public sector users through the National Biodiversity Network (NBN) Gateway. Natural England was appointed to administer the fund on behalf of Defra.
- 1.2 Phase 1 of the fund, *Capacity Building*, ran from August 2007 to March 2008. It consisted of the implementation of two regional pilot projects in the West Midlands and Yorkshire and Humber, two national demonstration projects and a capital investment fund.
- 1.3 Phase 2 of the Fund, *Implementation and Review*, started in November 2008 and completed in March 2011. This has seen the initiative extended across the whole of England through a series of regional and national projects and a continuation of the capital investment scheme.
- 1.4 The overall objectives of the project are:
 - To enable efficient and sustainable management of the network of Local Record Centres (LRCs), to be achieved within each Government Office region, by:
 1. Mapping existing funding mechanisms and management structures and identifying options for addressing gaps and opportunities.
 2. Identifying actions to secure sustainable funding and efficient management and to address gaps in coverage or consistency.
 3. Implementing high priority actions to further the above objective.
 - To increase uptake of consistent data collection and management standards.
 - To increase the geographic and taxonomic coverage of local biodiversity recording and to make biological records widely and freely available via the National Biodiversity Network (NBN) Gateway. A specific objective of phase 2 was to achieve full geographic coverage of biodiversity recording in England.
- 1.5 The fund was overseen by a steering group with representatives from Defra, Natural England, Joint Nature Conservation Committee, Environment Agency, Hampshire County Council and the National Biodiversity Network Trust.

2 Regional reviews

- 2.1 Within each Government Region a review was undertaken to understand the coverage and consistency of biodiversity data collection and management and to identify a strategy towards more efficient and sustainable processes for mobilising such data. The requirement involved engaging with the LRCs in each region to understand their business processes and with local authorities and relevant regional and national organisations to understand their information needs.
- 2.2 The tender was advertised in the *Official Journal of the European Union* with the review for each region contracted as a separate lot. The lots were staggered over the two and a half years to facilitate management of resources. This also had the benefit of enabling lessons from the earlier reviews or implementation projects to be applied elsewhere.
- 2.3 The preparation of the tender took place between December 2008 and March 2009 and was delayed due to Natural England seeking legal clarification over evaluation criteria for EU tenders. The contracts were awarded at the end of August 2009 to the following consultancies:
- 2.4 RPS Group Plc, an international consultancy providing advice on development, environmental management, natural resources and health and safety.
- 2.5 BE Group, a multi-disciplinary company based in North West England incorporating regeneration, property and planning services.

Region 1	Region 2	Schedule
East of England (RPS)	North West (BE Group)	Aug 2009 - Nov 2009
East Midlands (RPS)	North East (BE Group)	Dec 2009 – Mar 2010
South East and Greater London (RPS)	South West (RPS)	Apr 2010 – Jul 2010

- 2.6 Within each region consultations were undertaken through telephone interviews, questionnaires and meetings with stakeholders. One or two workshops were held in each region for the purpose of engaging stakeholders, identifying issues and refining project proposals.
- 2.7 A steering group was established in each region to oversee the review and assist with the prioritisation of projects. This typically included representatives from local authorities, wildlife trusts, record centres, Environment Agency and Natural England. The final projects proposals were subject to approval by the Defra project manager, advised by a national steering group.

Common findings across the regions

LRC business models

- 2.8 Across the country and also within regions the nomenclature, business models and funding partners of each of record centres vary significantly. County Councils have traditionally been strong supporters and funders of LRCs, but this was seen as potentially threatened at the time of the reviews by local government reorganisation in

some parts of the country and by funding cuts as a result of the recession. Support and use of LRCs by district councils is highly variable across the country and there are few counties where all district councils were actively involved in funding or using their local LRC. The only county with no functioning record centre was Essex, although in Derbyshire the functions of a record centre were partially undertaken by the Derbyshire Wildlife Trust and Derby Museum.

User requirements

- 2.9 An assessment of LRC users and potential users across the country, notably local authorities and statutory agencies, revealed a disparate range of awareness over both the services that could be provided by LRCs and their needs for biodiversity data.
- 2.10 Of those surveyed, the most common uses of the data were for planning and development purposes, spatial planning and biodiversity action plans. Some local authorities used LRCs for interpretation and advisory work, whereas others saw this as the role of the professional ecologists employed by the local authority. Of those local authorities engaging with an LRC there was strong recognition for LRCs to help with the reporting of NI 197¹ and some recognition that they could provide useful information to inform other business plans and decisions. The needs identified in part reflected whether the local authority employed an ecologist. There was a sense that many local authorities did not see the LRC as an essential service or key to providing quality data to inform matters concerning biodiversity. Consultees also appeared to lack insight into the vulnerability of the LRCs and their low resource base.
- 2.11 Data users tended to want information on protected/BAP species, local wildlife sites (LWS) and habitat data. They want species data to be up-to-date and accurately identified and located and for coverage to be as wide as possible. Additional requirements include mapping, contextual/metadata statements and easy-to-use report presentation that identifies or prioritises important species and habitats separating them from the volume of 'run-of-the-mill' data.
- 2.12 Data users are keen to see the LRCs improve data coverage by perhaps facilitating surveys to fill in the gaps, whether they be geographic or taxonomic; and enhancing the amount of data held about LWS. Users, especially those dealing with more than one LRC, such as regional organisations (e.g. utility companies) would like standardised and consistent output and would also prefer to deal with one organisation, rather than several.

Data holdings

- 2.13 The capture of species data by the LRCs was found to be complex across the country with few common pathways. This in part reflected the naturalists and natural history societies present in each county, the county recorders present (or absent) and the willingness (or not) of data providers to submit records. No LRCs were receiving all available data sets. Relationships with both local and national recorders appeared to be strongly influenced by personalities and the effort devoted to developing, and then maintaining, working relationships. Some recording groups (e.g. badger and bat groups) often did not provide records to the LRC because of concerns about misuse

¹ National Indicators for Local Authorities and Local Authority Partnerships: NI 197 Improved local biodiversity – proportion of local sites where positive conservation management has been or is being implemented

of detailed location data for sensitive species and also sometimes because of concerns about loss of income from data search requests.

- 2.14 The number and percentage of records computerised was found to be highly variable across LRCs with one record centre having 80% of its records in paper format and only 20% electronically, whereas others had 99% of their records computerised.
- 2.15 Some taxa (e.g. higher plants, badgers, bats) tend to be well recorded, albeit without complete geographical coverage. Other taxa tend to be less well covered and more reliant on local specialists. Birds tended to be as well, if not more, intensively recorded but these data went to the British Trust for Ornithology and were not always contributed to the LRC. Furthermore there seem to be significant datasets that are not being picked up, in particular from private sector environmental consultants and utility companies.
- 2.16 As the data is so dependent upon recorder and development activity it can only provide a contextual guide to biodiversity in an area, which impacts on the value of the data (both in terms of informing decisions making and securing income). There is potential to use the data in ways that are not happening at present, e.g. using trend data for monitoring of climate change.
- 2.17 In general record centres across the country hold considerably more information on species than on habitats. LRCs tend to lack recent data on habitats and LWS.

Staffing

- 2.18 An LRC needs to have access to skills across a wide number of areas. It has to have environmental knowledge; know about how to manage large amounts of data; be technically proficient in IT; be able to deal with both public sector and private sector organisations; build strong relationships with both individuals and multi-nationals; have management and business operational skills and to excel in sales and marketing. It is not possible for an LRC to possess all this to a high level, especially when they typically only have a few staff.
- 2.19 Some LRCs have full-time dedicated members of staff running the LRC, whereas others are run by a number of members of staff who have other additional duties. A number of LRCs use volunteers to help with data input, etc. Others do not and may be constrained by a lack of time and facilities.

Data management and reporting

- 2.20 Whilst the majority of record centres use similar software (MapMate, Recorder, MapInfo, ArcGIS), they don't all use the same versions and some have developed custom databases. They may also experience technical difficulties and inefficiencies linking species databases and habitats GIS datasets together. LRCs were also found to be working to different service standards, e.g. turn-around times for data requests, charges and the information they provided in response to data requests. Whilst all LRCs have been engaged to submit records to the NBN, the amount of data available on the NBN varies considerably.

East of England regional review

- 2.21 In the East of England the review was undertaken by RPS and covered:

- Bedfordshire and Luton Biodiversity Recording and Monitoring Centre (BLBRMC)
 - Cambridgeshire and Peterborough Biological Records Centre² (CPBRC)
 - Biological Records in Essex (BRIE)
 - Hertfordshire Biological Records Centre (HBRC)
 - Norfolk Biodiversity Information Service (NBIS)
 - Suffolk Biological Records Centre (SBRC)
- 2.22 One of the main issues relating to record centres in the East of England is the lack of an established LRC for Essex. An explicit requirement to agree support for BRIE was reflected in the county's Local Area Agreement 2008-11. Several Essex councils expressed their support for this initiative, although it was not universally supported by all local authorities. Colchester Borough Council for example expressed the view that it did not see the benefits of a county LRC as they have their own museum-based local records centre. The Essex Wildlife Trust indicated they were highly supportive of a countywide LRC and were willing to host such a centre provided there was sufficient monetary support. They were also keen to see any LRC in the county work closely with all natural history societies and clubs, notably the Essex Field Club which already holds a great many records, in a similar way to how LRCs operate elsewhere.
- 2.23 Most recorders consulted in the region seemed to be of the opinion that biological records should be made available to a wider audience through LRCs. They liked the localness of the LRCs which enabled a rapport to be developed, thus engendering greater trust. It was also noted that LRCs offered several benefits to the recording community, such as data storage, analysis and graphical representation, Recorder training and publicity. The main sensitivities expressed over handing data centred on the following issues:
- Financial gain made from the data provided free of charge to the LRC;
 - Loss of control over where the data goes or how they will be used / transformed;
 - Concern over releasing data concerning protected species;
 - Lack of recognition or acknowledgement; and
 - Release of personal information.
- 2.24 Many of the organisations that operate across more than one county expressed the view that they would like to see greater consistency across LRCs in terms of the products offered, format of the products produced (e.g. maps, statement on limitations, compatible with GIS) and charges made.
- 2.25 Local authorities consulted in the East of England were typically using biodiversity data from record centres to help identify what enhancements or biodiversity gains were appropriate rather than to determine overall planning decisions. Those local authorities employing ecologists did not see record centres as having a role in interpreting data. Biological data was used to inform strategic initiatives such as the development of Green Infrastructure projects and river corridor enhancement projects. It was also used in relation to reporting on the condition of LWS, in relation to NI 197.
- 2.26 It was noted that systematic analysis of data held by record centres was required in order to inform key business documents such as the *Core Strategy of the Local Development Framework*. It was important that data was in an accessible form (i.e.

² Since renamed Cambridgeshire and Peterborough Environmental Records Centre

electronic) and its limitations were understood, and that data was considered in the context of how and why it was collected (i.e. fit for the purposes to which it was now being put).

- 2.27 It was recognised that there is a need to think strategically about what services LRCs should provide, so as not to become overly focused on providing data in response to planning applications, but equally ensuring that LRCs do not become overly stretched trying to meet the needs of regional bodies such as the Environment Agency. Anglian Water indicated that for a more strategic partnership to develop with the record centres they would like to see clarity over the roles of LRCs and a regional consistent resource available to them.
- 2.28 Following development of proposals, three projects were taken forward. The first two through the Defra Fund for Local Biodiversity Recording and the third directly by Natural England.
- Project 1: Improvements to data request services for consultants and public bodies.
 - Project 2: Advocacy of the need for, and value of, LRCs to public bodies and data providers.
 - Project 3: Demonstrating the potential benefits of an Essex LRC through a pilot project with Tendring District Council.

North West regional review

- 2.29 In the North West of England the review was undertaken by BE Group and covered:
- Cheshire RECORD
 - Merseyside BioBank (BioBank)
 - Greater Manchester Ecology Unit (GMEU)
 - Lancashire Environment Record Network (LERN)
 - Cumbria Biological Data Centre (CBDC)
- 2.30 The five LRCs across the North West are all at different stages of development and all have different hosting and management arrangements. This affects their performance, efficiency, systems and structures. All the LRCs struggle with securing funding. This is particularly so with agreeing Service Level Agreements (SLAs) with local authority stakeholders. There is considerable variation in the relationship between LRCs and the individual local authorities in the area they cover.
- 2.31 The LRCs only undertake limited marketing activity to raise awareness of their services due to a lack of time and money. Focusing on the needs of potential funders has led to concerns about neglecting the recorder community due to a lack of resources.
- 2.32 Commercial users, including ecological consultants, would prefer similar systems and outputs operating across all the LRCs they deal with. United Utilities stated that they would need to be reassured about the long term sustainability of LRCs before they invested.
- 2.33 Both commercial organisations and local authorities in the region expressed the need for better information on the accuracy of data provided and the usefulness of the data.

Generally data no older than five years is preferred, but historical data can still indicate the presence of an important species, even if none have been recorded recently. It was noted that users would like to see maps provided by the LRCs that can be incorporated into GIS and to have access to data from the NBN Gateway. They would also prefer data to be filtered to highlight protected/BAP species with commercial data responses provided within 1-2 weeks.

- 2.34 Across the region the majority of data held by LRCs comes from public sector sources or from recorders, with LRCs rarely receiving data from private sector environmental consultants. LRCs held limited data on amphibians, reptiles and mammals. It was recognised that these were under recorded groups, but that data from professional surveys, especially for protected species such as great crested newts and water voles, would help to address such gaps. Whilst some local authorities ask consultants and developers to send their survey data to the LRCs, this is not a legal requirement and few consultants do so. United Utilities for example completes approximately 4000-5000 developments in the North West every year with each development requiring a biological survey which produces masses of data. One pipeline development covered 800 ponds along it, each one requiring four surveys.
- 2.35 There is also a variable amount of information available on LWS across the region. Not all counties have formal site monitoring systems. GMEU's major knowledge gap is around LWS ownership information. Merseyside BioBank made the point that the way data is currently managed there is no way of linking species data to an LWS without carrying out an individual site report using a geographic filter. It would like to formalise a system to get data to be recorded against specific sites.
- 2.36 Local recording groups consulted tend to share similar views. They generally believe biological data should be channelled through the LRCs. Those that have relationships with LRCs have good ones and benefit from services such as data storage and collation, recorder training and awareness-raising. Recorders indicated that they would increase the supply of data if submission was made easier, e.g. easier data entry, online data entry or a standard submission format across all LRCs. They would also increase submission if they knew that their data was actually being used, this could be in the form of feedback from the LRC, e.g. newsletter or annual report.
- 2.37 In order to facilitate getting data from volunteer recorders, RECORD has developed RODIS (Record Online Data Input System). This is a web-based system that standardises and automates data input and supports validation and verification checks. RECORD trains recorders and verification experts in how to use the system. It uses a range of local experts, rather than just the vice county recorders, to verify records.
- 2.38 The research and consultation exercise resulted in the generation of five implementation projects for the LRCs in the North West to take forward. Projects 1 & 2 were taken forward as part of the separate Defra / NBN contract. Projects 3, 4 and 5 were implemented as part of the Defra Fund for Local Biodiversity Recording.
- Project 1: Local and regional advocacy of the role of LRCs and demonstrating the value of LRCs to existing and new users.
 - Project 2: Data request improvements.
 - Project 3: Effective capturing of ecological survey data.
 - Project 4: Directing recorders to LWS and developing the recorder base.
 - Project 5: Efficient data submission.

East Midlands regional review

2.39 In the East Midlands the review was undertaken by RPS and covered:

- Derbyshire Biological Records Centre (DMBRC)
- Derbyshire Wildlife Trust (DWT)
- Leicestershire and Rutland Environmental Records Centre (LRERC)
- Lincolnshire Environmental Records Centre (LERC)
- Northamptonshire Biodiversity Record Centre (NBRC)
- Nottinghamshire Biological and Geological Record Centre (NBGRC)

2.40 Within Derbyshire there is no one single organisation providing a record centre function across the county. The roles are divided between the Derbyshire Biological Records Centre, which is part of Derby Museum and Art Gallery Service, Derbyshire Wildlife Trust (DWT) and the Peak District National Park Authority. Derby Museum maintains a register of protected species records for Derbyshire. Derbyshire Wildlife Trust holds a range of species data compiled from local wildlife site habitat and species surveys. The lack of a fully-functioning LRC in Derbyshire was raised by several local authorities as an issue, although DWT do provide ecological advice relating to planning applications to local authorities and are also able to provide information to local authorities for reporting on the national indicator for biodiversity (NI 197) and annual monitoring reports.

2.41 Within Northamptonshire the County Council was the only local authority to financially support the record centre. Some of the local authorities consulted indicated that the data available from NBRC remained largely unsuitable to meet their monitoring needs. There was also confusion as to the roles and responsibilities between NBRC and its host organisation, the Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough. In the case of a biodiversity opportunity mapping project both organisations had provided data, whereas the County Council was working exclusively in partnership with the Wildlife Trust to improve reporting on NI 197.

2.42 Lincolnshire Environmental Records Centre was formed as part of the Lincolnshire Biodiversity Partnership under which LWS and BAP services were also provided. As a relatively new record centre LERC has been focusing on acquiring data. The use of the information to support planning documents has until recently been relatively limited. 75% of the habitat data held by LERC is derived from local wildlife site surveys and 20% from Lincolnshire Wildlife Trust. The area of BAP habitat data held was estimated at 13,200 ha, although it is still being digitised. There was some concern within the region as to the age of the survey information, with many sites not having been re-visited for more than twenty years.

2.43 LRERC, along with DWT, are the only record centres providing advice to planning authorities on the interpretation of biological data. LRERC hold a legacy of paper records which are considered too numerous to computerise in their entirety. LRERC has therefore been concentrating on computerising records of protected species and information required to support specific initiatives. There was a recognised need within the County Council for computer software that enabled the integration of species, habitats and sites data better across partners and that met the needs of users such as planning authorities.

- 2.44 Whilst there had never been a comprehensive field-by-field survey of Leicestershire and Rutland, the 2007 Biodiversity Data Audit represented the best available information on habitats across the county. There were strong demands within the LRERC and BAP partnerships for BAP habitat layers to be made more widely available through Geographic Information Systems. It was also noted that Natural England's data on habitats occurring on SSSI's was not available in an accessible format.
- 2.45 NBGRC, based in Nottingham Natural History Museum, has a primary role in monitoring LWS on behalf of the local authorities. Despite this there were concerns from some local authorities of a lack of comprehensive data on habitats and a need to be better able to link between habitats and species. NBGRC's species data holdings have not increased significantly in the last few years. They had also noticed a 20% decrease in income from data searches since putting data onto the NBN Gateway.
- 2.46 Following two stakeholder workshops and discussion with the steering group and Natural England, costed proposals were developed for the following projects.
- Project 1: Improving the flow and management of data.
 - Project 2: Improving the service provide by Local Record Centres to statutory bodies to help them meet their biodiversity objectives.
- 2.47 Unfortunately neither of these projects were taken forward due to a lack of capacity from the LRCs to engage with their delivery.

North East regional review

- 2.48 In the North East the review was undertaken by BE Group and covered:
- Environmental Records and Information Centre for the North East (ERIC)
 - Durham Biodiversity Data Service (DBDS)
- 2.49 There are two organisations that act as record centres for biodiversity information in the North East. One is the formal regional LRC, ERIC; the other is DBDS, which was set up as a low cost solution (through the Durham BAP Partnership) due to the lack of a regional LRC in the past. DBDS employs 0.5 FTEs whilst ERIC has a team of three.
- 2.50 DBDS covers the local authority areas of Durham, Darlington, Gateshead, South Tyneside and Sunderland. ERIC was established to service these and the other local authorities that make up the North East: Northumberland, Newcastle-upon-Tyne, North Tyneside, Stockton-on-Tees, Hartlepool, Middlesbrough and Redcar and Cleveland.
- 2.51 Although ERIC is the regional LRC, it was not fully performing a regional role. There were two reasons for this, one was that it had only recently been established (January 2010) and needed to raise awareness of its existence; the second was that it was careful to respect DBDS's role in the southern part of the North East region. ERIC had also struggled due to its previous role as the EYE Project, with a number of stakeholders unclear about past activities and how these impact on its current performance.
- 2.52 Local authorities are one of the key users of LRC data, and potential key funding partners. The research identified some priority targets relating to planning screening, the use of biodiversity information or scope to provide interpretation advice, these

were: Northumberland, Middlesbrough, Stockton, South Tyneside, Redcar & Cleveland and Darlington.

- 2.53 It proved difficult to get a baseline position on the extent of biodiversity data coverage across the North East, i.e. the number of records held between DBDS and ERIC. ERIC had a backlog of records on an old version of Recorder as well as a substantial backlog of paper records. DBDS operated a number of databases and tended to target priority species only (due to its limited budget) and held a substantial number of duplicate records. However, the records seem to be reasonably up-to-date, accurate and to have been through satisfactory validation and verification procedures.
- 2.54 Furthermore the users sourced data from a variety of organisations, not just ERIC and DBDS, including the Wildlife Trusts in Northumberland and the Tees Valley. A number of the users also held biodiversity data that could be shared with DBDS and/or ERIC.
- 2.55 There seemed to be consensus amongst key stakeholders (including Durham Wildlife Trust and Natural England) that ERIC and DBDS should be consolidated. However the route map for achieving this consolidation did not appear to be set out, nor any decisive steps taken to achieve it. ERIC needed more support from its board to help achieve this and to overcome the difficult obstacles that remained, e.g. building relationships with stakeholder organisations and agreeing SLAs.
- 2.56 The project identified through the review were as follows. Projects 1 and 3 were taken forward.
- Project 1: ERIC/DBDS Consolidation:
 - Project 2: Surveying LWS
 - Project 3: IT/Database Systems Improvements

South East and Greater London regional review

- 2.57 In the South East and Greater London the review was undertaken by RPS and covered:
- Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC)
 - Greenspace Information for Greater London (GiGL)
 - Hampshire Biodiversity Information Centre (HBIC)
 - Isle of Wight Local Records Centre (IWLRC)
 - Kent and Medway Biological Records Centre (KMBRC)
 - Surrey Biodiversity Records Centre (SBRC)
 - Sussex Biodiversity Record Centre (SxBRC)
 - Thames Valley Environmental Records Centre (TVERC)
- 2.58 Within the South East and Greater London the majority of the LRCs had established a broad funding base, with strong support from the most of the local authorities they covered. However, within Kent and Surrey only three out of fourteen and one out of the twelve local authorities contributed to the core funding of the respective record centre. Some stakeholders noted confusion as to what benefit an SLA with an LRC would bring, especially if they already had a relationship with the local wildlife trust. Others stated that they were not convinced that the record centre for their county was

sufficiently resourced to supply the information to meet their particular demands, such as supporting reporting on NI 197.

- 2.59 The LRCs in the South East adopted a number of strategies for ensuring that they were meeting the needs of users, including consultations with users and seeking feedback. At the time of the review TVERC were trialling a free service enabling users to check for the availability of data for single species' searches prior to proceeding with a full paid data search.
- 2.60 In responding to data requests, information was usually provided in the form of maps produced using GIS, site summaries and species lists. Some LRCs noted that they received enquiries that they were not able to respond to. One of the most common was for digital data on LWS and species information in GIS compatible formats. Restrictions were often due to licensing rules related to Ordnance Survey derived data or where the original data collectors did not wish their data to be made available in this manner.
- 2.61 A number of local authorities identified the value of the Cabinet Member or other champion within a council responsible for biodiversity matters and the need to make sure that this individual was informed and provided with the information needed to help them discharge their role. The transfer of data in its simplest form (i.e. a CD updated on a regular basis) from LRCs was seen as potentially not meeting the true needs of local authority users, especially where they did not have the expertise, or easy access to the expertise (e.g. in the form of a local authority ecologist) to interpret the data being received.
- 2.62 Within Hampshire, HBIC was responsible for an in-house habitat survey team. Based on the information collected they were able to monitor changes in the area of designated sites and habitats by district/borough. In Oxfordshire, TVERC had almost reached the point of having resurveyed all LWSs within the last ten years. As well as collating existing habitat survey information, a number of the record centres had undertaken modelling work to identify potential areas for habitat restoration and re-creation.
- 2.63 Increasingly, conservation work is being carried out on a landscape scale that is not related to political boundaries. Such trans-boundary projects could encounter problems if the LRC involved conducted their business in different ways (e.g. through different products). Although considerable progress had been made on developing a regional framework for managing habitat data, it was recognised there was potential to improve how the LRCs capture and handle information on habitats. There was understandably some trepidation about this (e.g. from Wildlife Trusts who currently hold LWS/Phase 1 records separately from LRCs) but also a recognition that a way forward needed to be developed.
- 2.64 All LRCs in the South East have established data exchange relationships with local groups and individuals. Whilst progress has also been made on co-operating on the development of tools to improve record collection, analysis and availability it was recognised that protocols for handling data within recording groups were important and checking and verifying the quality of data collected was a key area for developing better tools. With few formally agreed mechanisms by which data were exchanged between LRCs and NSSs, much was left to the local network of recorders to decide how best to share their data.
- 2.65 Amongst recorders there continued to be some sensitivity as to how the data supplied to LRCs may be used. This was cited by some in the recording community as a factor potentially contributing to the anticipated decline in numbers of active recorders. It

was also suggested that having accurate, comprehensive datasets compiled by LRCs that could be fully accessible from remote terminals (albeit through passwords and editorial control procedures) would go some way to encouraging more voluntary wildlife recorders to submit records to LRCs.

- 2.66 All LRCs in the region had uploaded data onto the NBN Gateway largely as a result of this being a requirement of Natural England funding. This had led to some tensions. It was often felt that funders didn't appreciate the work required in negotiating agreements with the recording community and preparing datasets and that not all recorders wanted their data to be made available. There was also concern that ecological consultants were bypassing LRCs and relying on potentially incomplete or inadequate data from the NBN Gateway. The lack of promotion by the NBN Trust of the role played by LRCs in collecting and supplying data to the NBN Gateway was seen as something that needed to be addressed.
- 2.67 Following a stakeholder workshop and discussion with the steering group and Natural England, three costed projects were developed that addressed the key issues identified. Projects 2 and 3 were taken forward through Defra funding. Unfortunately the first project was dropped shortly prior to finalising the agreement between Natural England and Amphibian and Reptile Conservation as tangible outputs could not be delivered before the end of the financial year.
- Project 1: Developing effective partnerships for herptofauna in London and the South East.
 - Project 2: Improvements to data products and services to improve efficiency and to better meet user needs.
 - Project 3: Sustainable habitat data collection, management and provision.

South West regional review

- 2.68 In the South West the review was undertaken by RPS and covered:
- Bristol Regional Environmental Records Centre (covering the former county of Avon) (BRERC)
 - Environmental Records for Cornwall and the Isles of Scilly (ERCCIS)
 - Devon Biodiversity Records Centre (DBRC)
 - Dorset Environmental Records Centre (DERC)
 - Gloucestershire Centre for Environmental Records (GCER)
 - Somerset Environmental Records Centre (SERC)
 - Wiltshire and Swindon Biological Records Centre (WSBRC)
- 2.69 The South West region has a well-established network of county-based record centres, all of whom participated in the NBN South West Pilot. Unlike other parts of the country, most of the record centres offer services to screen planning application on behalf of local authorities. This typically focuses on flagging up the presence of a biodiversity record or feature such as a protected verge, rather than highlighting what action should be considered based on the type of development.
- 2.70 All of the LRCs in the South West offer services around habitat surveys, although there was some confusion amongst those consulted over the different roles of LRCs and the Wildlife Trusts, which in many cases hosted them. Despite all the LRCs

contributing to the production of BAP priority habitat inventories as part of the NBN South West Pilot, habitat data were not stored in consistent structure across the region, except through the use of the Integrated Habitat System in a number of counties. There was a recognised need for funding of more systemic habitat surveys across the region.

- 2.71 The LRCs in the South West provided a range of support services to specialist recording groups, including training courses on species identification and data management and the production of handbooks and guidance for recorders. Despite this many recorders did not provide data to the record centres and often provided data directly to national recording schemes, which were not made accessible to the LRCs.
- 2.72 Little of the data collected by professional ecological consultants seemed to make its way to the LRCs, even though some local authorities in the South West requested habitat and species records collected as part of planning applications be copied to the county LRC.
- 2.73 Although two of the counties had monitoring strategies, the information available on species and habitats was often not considered sufficiently robust to assess the impact of Biodiversity Action Plans or planning policies. Interestingly there was support from local naturalists groups for more emphasis on demonstrating long term trends and a recognition for the need for more structured surveillance.
- 2.74 Following a workshop and consultation with record centres and the regional steering group, three project proposals were produced as a result of the review and the first two were taken forward. It was recommended that the third be taken forward as part of a trial of on-line recording once the Indicia tool was available.
- Project 1: Sustainable business and funding development.
 - Project 2: Sharing of best practice, knowledge and skills.
 - Project 3: Improving the flow and management of data.

3 Regional implementation projects

Introduction

- 3.1 Regional implementation projects were run across eight of the nine former Government Regions in England. The projects in Yorkshire and Humber and West Midlands followed on from the pilot of the Defra Fund for Local Biodiversity Recording. The remaining regional projects followed on from the review in each respective region. Generally projects were set up to run for one year, although the start of some projects was delayed pending completion of the reviews. The projects in the South West, South East and Greater London were undertaken in the remaining six months of the fund.

Regional implementation: Yorkshire and Humber

Yorkshire and Humber Environmental Data Network

- 3.2 As part of the pilot phase of the Defra fund for Local Biodiversity Recording, the Yorkshire and Humber Environmental Data Network (YHEDN) was established as consortium of local record centres in the region. One of the key obstacles to the functional development of YHEDN was found to be its project status. Partners were unable to commit full support to the network, either in terms of funding or resources, until the network could adopt a formal legal status, with the prospect of continuation in the long-term. The heterogeneous nature of the individual sub-regional local record centres that make up the network made it difficult to identify what form of legal body would need to be constituted to formalise the existing consortium of local record centres.
- 3.3 The purpose of this project was to engage the expertise of Yorkshire Forward in identifying the most effective and appropriate models by which a sustainable YHEDN could be devolved from the existing YHEDN project. It was also intended that the continued work remained coupled to the objectives of the network: *promoting the adoption of appropriate standards across the region, facilitating engagement with the NBN Gateway, enabling analysis of data gaps and promoting dissemination of data.*
- 3.4 The project consisted of six phases towards the establishment of YHEDN as a legal entity:

	Project Element
Phase 1	Engage with Yorkshire Forward (YF) enterprise support team to identify a process for the most appropriate way to establish the Yorkshire and Humber Ecological Data Network as a legal entity.
Phase 2	Consult with specialist legal firm to consider potential legal entities based on an individual, Trust, partnership and company basis and identify which would be most appropriate for YHEDN.
Phase 3	Production of a costed 3 year business plan for the establishment and early development of the Yorkshire and Humber Ecological Data Network as an independent legal entity.
Phase 4	Legal advisors to draft the documents necessary for the establishment and incorporation of the YHEDN consortium as a legal entity.

Phase 5	YHEDN project staff to negotiate with existing consortium members to establish the acceptability of the documents produced by Phase 4 of the project and to carry out any minor changes to elements that are obstacles to the final establishment of the legal entity. Legal advisors to provide advice and deal with queries including those from partner organisations and clients / funders, and providing re-drafted documents as necessary.
Phase 6	Sign consortium members up to the legal entity and clients / contributors up to SLAs. YHEDN becomes a legal entity.

- 3.5 A number of workshops were delivered to Yorkshire Forward and Business Link staff to promote the concept of establishing a formal legal entity to carry the work of YHEDN forward. Whilst the Yorkshire Forward enterprise support team were very supportive of the process of establishing YHEDN as a legal entity, seeing this as part of securing the sustainability of YHEDN as a biodiversity evidence base for the Regional Spatial Strategy (RSS), they felt that the details of the necessary process were outside their experience and passed the project on to a firm of solicitors.
- 3.6 Bates, Wells and Braithwaite were engaged to produce a briefing for the project steering group, which considered the pros and cons of each of the possible legal entities that could be derived from the existing consortium of LRCs. After sustained consideration by the steering group it was decided to adopt a Community Interest Company (CIC) model, and develop a draft set of Articles, which could be considered by the organisations that owned or operated LRCs in the region.
- 3.7 The YHEDN business plan has been an evolving document over the last 2 years. It has been used to engage both the constituent bodies of the LRC consortium and the prospective users of the network. From the production of the original draft business plan, separate negotiations were ongoing with the constituent bodies and with potential clients. The business plan was iteratively developed after each round of negotiations. The final version of the business plan was due to go to a shareholders meeting of the Yorkshire and Humber Environmental Data Network CIC in July 2011 for adoption.
- 3.8 The CIC model is, in principle, quite simple. However, the drafting of the articles of association and related documents had to ensure that the interests of all LRCs across the region were equally represented and that Yorkshire Naturalist Union was a shareholder, so as to represent the interests of the recording community and this proved to be a far more difficult proposition than previously thought, requiring ongoing iterative negotiation in the light of Phases 3 and 4 of the project. In addition, independent work being carried out in South Yorkshire under Defra funding, aimed at exploring the possibility of establishing LRC services in the Barnsley Metropolitan District, further complicated the negotiations.
- 3.9 Half way through negotiations it was necessary to appoint initiating directors to take forward the incorporation of the CIC. The draft Articles of Association of the CIC limit the number of directors that can be drawn from various stakeholder groups. This further complicated the negotiations as one of the project team assumed the role of a CIC Director, leading on the negotiations with the constituent bodies. By the end of the 2010 financial year, the project had acquired “in principle” agreement from each of the constituent bodies to enter into a joint venture to form the company.
- 3.10 Phase 6 again proved to be far more problematic than was previously envisaged. The company papers were scrutinized by the legal representatives of each of the constituent bodies. The legal representatives of the constituent bodies scrutinized the

establishment of the company which emphasised the potential risk to constituent bodies arising from the establishment of the CIC. This led to a further round of re-drafting of the company papers.

- 3.11 By the end of the 2010 – 2011 financial year this process was complete for all constituent bodies except for West Yorkshire Ecology and Barnsley Metropolitan Borough. It was decided to move forward to form the company without these organisations as shareholders. The CIC company papers are still being considered by West Yorkshire Ecology. Shares within the West Yorkshire electoral college have been issued to an independent party to represent the interests of the biodiversity community in West Yorkshire. The first shareholders meeting of the newly formed Yorkshire and Humber Environmental Data Network CIC was due to take place in July 2011.
- 3.12 The YHEDN entered into Service Level Agreements with Natural England, Yorkshire Water, Environment Agency and Yorkshire Dales National Park Authority for 2010/11. Yorkshire Water and Environment Agency are using datasets from YHEDN in relation to compliance with the Water Framework Directive and informing licensing decisions respectively. The network is working with Yorkshire Dales National Park to make its data more available, including loading species datasets on the NBN Gateway and to make habitat data available in formats suitable for updating the national BAP priority habitat inventories. The three areas of work prioritised by the network are addressing gaps in priority and invasive species' datasets, based on habitat potential modelling and targeted survey, and updating habitat datasets.

South Yorkshire Biological Recording Centre

- 3.13 The purpose of this work was to harmonise the LRC function across South Yorkshire to ensure full coverage across the sub-region, increase data provision, ensure consistent high data standards and integration into the Yorkshire & Humber Ecological Data Network.
- 3.14 The project was led by Sheffield Wildlife Trust with a steering group of representatives from the Yorkshire and Humber Biodiversity Forum. The work was commercially tendered with the contract awarded to the consultancy firm, BE Group.
- 3.15 Across South Yorkshire the set-up of LRCs varies considerably between the four local authority areas. There was no LRC or ecology team covering Barnsley Metropolitan Borough. The LRC functions of Sheffield City and Rotherham and Doncaster Metropolitan Boroughs were all previously hosted by the museum services. These have been transferred to the respective Parks and Countryside Service; Environmental Planning; and Culture and Leisure Services. All the existing LRC services in South Yorkshire were facing significant funding cuts at the time of the project and there was found to be little understanding, particularly amongst senior management within local authorities, as to what constituted an LRC and why there was a need for one. There was though recognition of the potential benefits of working in partnership, provided this delivered cost savings and shared benefits to all partners.
- 3.16 Consultation with data providers highlighted the need for a close relationship with LRC staff and local authority planning services to provide reassurance that data are being used to protect and enhance biodiversity and are not being misrepresented.

3.17 At a workshop to discuss the harmonisation of LRC services across South Yorkshire the consensus amongst partners was to explore a joint delivery set up. There were concerns with the joint delivery model around the need to retain local knowledge and trust with data providers and ensure fair and equal commitment from all partners. Other ideas emerging from the workshop included the potential to build upon Sheffield LRC's model in some way, and to have one LRC with remote links to a LRC portal in each of the local authority areas.

3.18 Four options were identified as a result of the workshop:

Options	1	2	3	4
Description	Data network only via a shared server (YHEDN) Retain existing set-up in each local authority Barnsley LRC to be hosted by another local authority	South Yorkshire LRC hosted by an existing local authority Funded via Joint Services Secretariat or SLAs	South Yorkshire LRC hosted by an alternative organisation Funded via Joint Services Secretariat or SLAs	Independent South Yorkshire LRC Funded via Joint Services Secretariat or SLAs
Location	Each local authority area	Host authority	E.g. Wildlife Trust, Museum, University or Country Park	Variable
Staff FTE	3.8	3.0	3.0	3.0
Management	Individual local authorities	Host authority/ steering group	Steering group	Steering group
Structure	Part of local authorities	Part of local authority/ legal partnership	Legal partnership	Independent charitable trust
Approximate cost/year	£116,000	£103,000	£103,000	£120,000
Example	YHEDN	Greater Manchester Ecology Unit/ Tameside MBC	West Yorkshire Ecology	North & East Yorkshire Ecological Data Centre

3.19 Following consultation on the above options the implementation group identified option 1 as the preferred way forward. This comprised of:

- One LRC per local authority (Sheffield CC, Doncaster MBC and Rotherham MBC).
- Coverage for Barnsley local authority area (either hosted by an existing local authority or provided in-house following budget review in Autumn 2009).
- All data hosted by the YHEDN on its server or otherwise linked.
- Existing local authorities to maintain existing resources as a minimum.

3.20 The benefits of the preferred way forward were identified as:

- Skills, applications, mapping and expertise provided by the YHEDN (paid for by regional SLAs).
- Reduced in-house IT costs as the YHEDN holds the data on its server.

- Each local authority keeps control of its LRC for its own data needs (as core funders).
 - Data quality is standardised by the YHEDN and shared across South Yorkshire and the wider area.
 - Maintains existing relationships with local data providers.
 - Data is supplied to the YHEDN and the NBN Gateway.
 - Little change is required.
 - Barnsley Local Authority area is covered (allowing full coverage across Yorkshire & Humber).
- 3.21 The findings of the project were presented to budget holders from the local authorities. The outcomes of the presentations were a consensus to support the preferred option and a willingness to be part of YHEDN and for LRC services for Barnsley to be hosted by another local authority.
- 3.22 A position statement was produced to formalise consensus to pursue the proposed option. Representatives of each local authority, Natural England and YHEDN have all signed up to this position.

Development of the relationship with the natural history community

- 3.23 The Mobilisation of Farmland Bird Data Implementation Project carried out as a part of the pilot phase of the Defra Fund for Local Biodiversity Recording investigated how engagement with volunteer naturalists, through the proposed Yorkshire and Humber Environmental Data Network, could increase the number and spatial resolution of species records available to all users and in particular to statutory organisations, through the NBN Gateway.
- 3.24 The results of the initial project indicated that both the quantity and resolution of data relating to the pilot species (lapwing *Vanellus vanellus*) was significantly increased through engagement with local recording groups and that little of the newly available data would have become available to statutory bodies through the NBN Gateway without the intervention of the project.
- 3.25 A follow up project was established to further develop the relationship with the natural history community, ensuring that:
- Data collected through the initiative is made widely available to the National Biodiversity Network, through the Yorkshire and Humber Environmental Data Network (YHEDN).
 - The quality of data and the standards of data management and collation are in line with developing good practice.
 - Key elements of data are retained at all levels of collation (including the conservation of original special resolution and supplementary information which contextualises the record e.g. bird numbers, breeding behaviours etc).
 - Data flows are clearly identified and where necessary rationalised, and that formal exchange of data custodianship is clear and auditable.
 - Appropriate data products are made available to all stakeholder groups through the YHEDN, to facilitate effective and efficient exchange of data.

Local Sites Data Management

- 3.26 The purpose of the project was to define and build a system capable of storing management and monitoring data for local sites systems. A previous contract identified a preferred option to develop a stand-alone sites management tool, based on the Recorder software's data model with extensions for local sites data. This project was to pilot the development of a system for Yorkshire and Humber with the scope of the requirement covering:
- NI 197 reporting.
 - Identifying land ownership and permission to survey.
 - Recording desired management as well as the management activities currently practiced.
 - Recording progress towards management agreements.
 - Managing expiry of management agreements and their effect on NI 197 qualification.
 - Targeting management activity in appropriate areas both in terms of threats and opportunities.
 - Providing an audit trail to management via stewardship agreements or through LBAP partnerships.
 - Assisting in the assessment of candidate sites and the monitoring of designated features.
- 3.27 The requirements identified by Local Sites Partnerships in the Yorkshire and Humber focused largely around consolidating data currently spread across a number of applications into one simple to use application. Potential users were also looking for versatility - the ability to add monitoring data, detect change, target management activity and to create reports which pull the data back out in many different ways.
- 3.28 The project was constrained by a lack of published national standards for local sites data and a lack of willingness to adopt new standardised data management. As the requirement for reporting on National Indicator 197 had started two years previously local sites partnerships had already established their own mechanisms for how they report on the indicator and so were reluctant to consider adopting an alternative system.
- 3.29 The system was developed as a web-based tool designed to assist with managing the processes of local site systems:

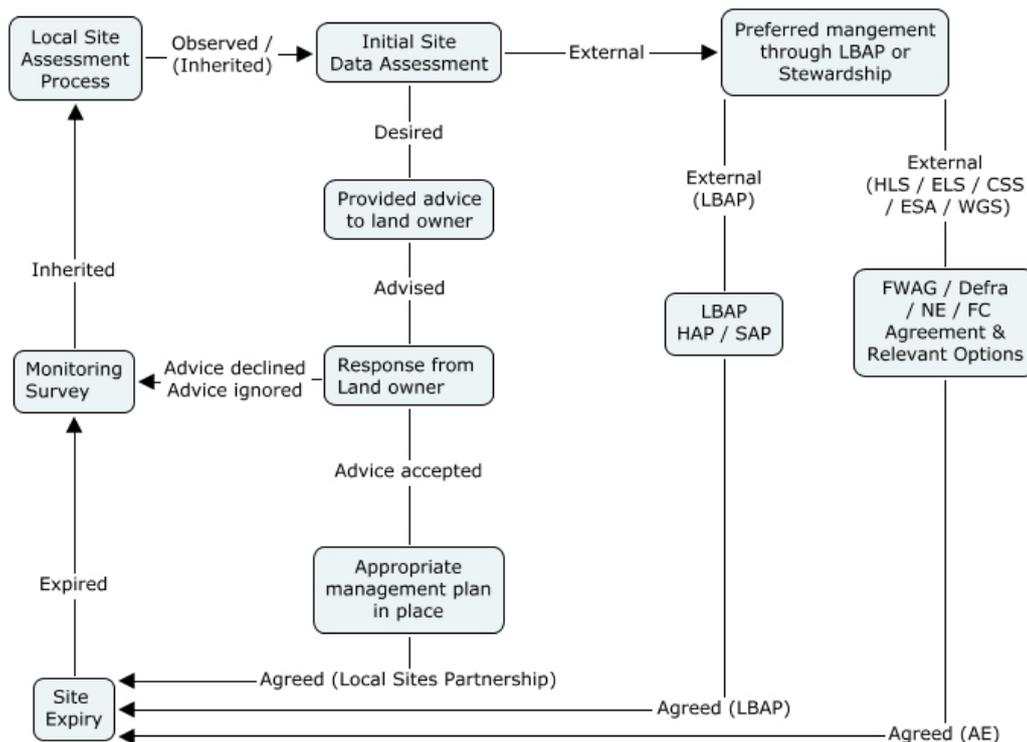


Figure 1: Decision making process for local sites

- 3.30 The tool has been designed to be flexible so that it can be set up to manage different designation types. For example, local sites, key recording sites, hedgerows, roadside verges. The system manages the audit trail of versions and decisions – designation status (candidate, approved) and associated information – meeting minutes, boundary changes etc. Monitoring data is stored in the database and this can be automatically assessed against different scoring criteria that may be used across the country (e.g. number of indicator species, total of weighted scores for indicator species, number of indicator genus). The system can also provide summaries (off-line) across all sites, including highlighting which sites require a full survey.
- 3.31 The system has been adopted by North Yorkshire County Council with the database administered by North and East Yorkshire Environmental Data Centre. Users are able to produce citations for individual sites, from the data held in the Recorder 6 database through a web-interface. This includes species lists from Recorder for the site and an assessment of species occurrence against the specific Local Sites' System's selection criteria. At present the database is updated by NEYEDC with information provided by members of the Local Sites Partnership. The web-interface has been developed to enable end users to manage information directly.

Regional implementation: West Midlands

More effective working between LRCs and local authorities

- 3.32 One of the findings of the review conducted in the West Midlands as part of the pilot phase of the Defra fund for Local Biodiversity Recording was the inconsistent use of biodiversity information by local authorities across the region. The objectives of the project were to:

- Define a best practice model for the region to ensure that local authorities are receiving consistent and efficient access to biodiversity information (to support planning decisions) and to support the sustainable provision of such information.
 - Implement projects that demonstrate to target local authorities how contributing to their LRC can provide a cost-effective mechanism of delivering against their biodiversity duty.
 - Promote results to other local authorities across the region and implement steps to ensure the long-term impact of the project, including links to Local Area Agreements and engagement with regional bodies.
- 3.33 A consultation exercise was undertaken with local authority representatives across the West Midlands. The results indicated that ecological data is an important factor for consideration during the planning process, however how this data was used and ecological issues taken into consideration was found to vary. The study also indicated that there was inconsistency in the range of ecological data being used within each planning function including species, statutory and non-statutory site data.
- 3.34 An evaluation was undertaken of best practice models for ecological data provision from outside of the West Midlands. These included: Greenspace Information for Greater London and Bristol Regional Environmental Records Centre (Planning Screening Tool pilot); Somerset Environmental Records Centre's Econet (species' predictive mapping) and BioPlan (planning screening tool); Thames Valley Environmental Records Centre's species buffer layer; Dorset Environmental Records Centre's Biodiversity Information System; South East Wales Biodiversity Records Centre's planning screening service and Cumbria Biological Data Network's Biodiversity Evidence Base.
- 3.35 The study concluded that any proposed best practice model to integrate ecological data into planning decision making should comprise of an electronic service with the following fundamental requirements:
- Rules derived from a national standard where possible (e.g. ALGE Validation of Planning Applications).
 - Rule base that can be tailored to an individual local authority.
 - Search function for species, habitat and protected areas datasets.
 - A 'plain English' explanation of what was present, implications for planners and applicants, and who should be contacted for further information.
 - Detailed interpretation by ecologists when deemed necessary.
- 3.36 Following on from this research a number of councils were approached to trial a variety of new and existing models to improve the use and ease of ecological interpretation and implementation.
- 3.37 Wolverhampton Council trialled the use of alert maps. They currently receive ecological advice on very few applications, so this would be used as an initial stage to flag up planning applications not usually looked at, with the local wildlife trust then consulted for advice. A series of alert layers based on the Econet methodology were developed to map impact and/or consideration zones for key statutory protected species. Information and advice relevant to each species, based on local information sources, species protection guidance and the ALGE Validation of Planning Applications guidance was included in the alert maps.

- 3.38 Birmingham City Council were included in the trial for BioPlan. Their planning ecologist does not currently have the time to view every application, so this was hoped to improve efficiency. BioPlan was installed in the EcoRecord offices and a sample of planning applications from Birmingham City Council was screened. The idea of using BioPlan as a screening tool was well received by the Council's planning ecologist as having potential to highlight issues that may otherwise not be picked up. It was seen as having particular potential if used at a the pre-application stage though that would mean the local authority would have to make procedural changes to compile either boundary information or a central grid reference (depending on the size of the proposed development/application) at the point of registration of the planning application, which is not done at the moment. The number of applications that triggered a report was initially relatively low. The reasons for this were mainly:
- That keywords are used to identify planning applications to be screened for biodiversity, the list of keywords needs to be refined so that a higher proportion of relevant development proposals are selected for screening.
 - Further development regarding input data sets is necessary to ensure the best use of available data.
- 3.39 Warwickshire County Council Ecological Services trialled BioPlan within the Stratford District Council area to compare the results to manual screening. 303 historic applications were screened and 63 of these (21%) were identified by BioPlan for further ecological assessment. Of these Warwickshire CC Ecological Services had recommended notes for 41, conditions or pre-determination surveys on 12 and no comments on the remaining 10. However of the remaining 240 applications which BioPlan did not pick up Ecological Services recommended notes on 132 and conditions on a further 30. This shows a discrepancy between applications commented on by a human assessor and those flagged up by BioPlan. The reasons for the discrepancies were thought to be due to the need to further refine the keywords used to identify applications, to support buffering of planning application centroids and to incorporate habitat data into the screening.
- 3.40 Staffordshire County Council worked with Staffordshire Ecological Record to implement a new predictive distribution mapping system for protected species. The resulting maps were found to have a good correlation with test datasets not used for training the model. A number of drawbacks were though identified with equating point data to polygons:
- The predictive map can be very significantly changed by only a small error in the source data.
 - The high probability category for species occurrence does not take account of the extent of the habitat present.

Conclusions

- 3.41 The Wolverhampton trial was well received but developments within the council linked to cuts in resources have made it difficult for the trial objectives to be fully realised. This area remains a priority for future development of services and the council remains committed to pursuing a strategy that means biodiversity information is more adequately used to inform planning decisions.
- 3.42 The use of BioPlan as an automated planning screening tool remains of interest by Birmingham City Council, particularly but not exclusively, at the pre application stage.

Further development/investigation will be carried out mainly with regards to the customisation of keywords and the development of input data sets. As a result of this trial Birmingham City Council have requested EcoRecord to develop a series of alert layers (similar to those developed for the Wolverhampton trial) to be made available in the short term to development control planners, particularly for use at the pre application stage. The information associated with these layers will reflect current guidance and will be done in conjunction with the city council's planning ecologist and EcoRecord staff.

- 3.43 Warwickshire County Council recognised the potential of BioPlan, but as an initial screening tool for pre-application advice. At present BioPlan does not provide notes which are regarded as necessary to enable local planning authorities to meet their biodiversity duties.
- 3.44 The results of the predictive species mapping by Staffordshire Ecological Record proved useful in determining the likely presence of certain protected species to planning officers and/or ecologists. The following refinements have been recommended prior to wider release as a tool for use in planning:
- Automating the creation of the layers, which at present have to be created separately by hand.
 - Refinement of the base maps, particularly the habitat character layer which is presently based upon 1 km squares.

Support capacity building of data providers in the management and supply of biodiversity data

- 3.45 The original review in the West Midlands had highlighted issues around records being received by LRCs from volunteers or groups in a variety of formats. Whilst greater standardisation of data supply may benefit LRCs in terms of improved efficiency for data collation, this needs to be balanced against the ability and willingness of data providers to provide the information in a standardised format. The objective of the resulting project was to:
- Work with recording groups in the region to implement improvements in data collection, management and exchange with LRCs that are mutually beneficial.
- 3.46 Each LRC within the West Midlands region supports a variety of recording groups that hold data in a range of datasets, with records managed in differing formats. A regional audit was undertaken to identify opportunities with existing and/or prospective recording groups at both the local and regional level to aid improvements in working relationships and to share best practice.
- 3.47 The recording groups were prioritised on the basis of where opportunities existed to implement improvements in data collection, management and exchange that are mutually beneficial. This included a range of potential barriers that needed to be overcome plus where support may be needed. This list included two regional recorder groups plus two local recorder groups / county recorders from each county. A review of the chosen recording groups was undertaken through local meetings and a questionnaire, the aim being to understand their requirements and obstacles to data management.
- 3.48 Throughout this project each LRC focused efforts to improve relationships and data exchange with the priority recording groups and recorders, by finding out more about each group's requirements. The majority of these efforts were around providing

support and negotiating data exchange agreements, which would allow protocols to be established and encourage a regular flow of data whilst also enabling discussions with groups over the resolution of data and provision of records to the NBN Gateway.

3.49 After discussions between other West Midlands LRCs a variety of regional and county wide tools were identified to be looked into. The purpose of these generic tools would be to aid recorders in generating more data and to enable LRCs to capture that data more accurately in a format readily compatible with databases. These included an evaluation of:

- On-line recording (Indicia / RODIS).
- Validation and verification tools (RCleaner).

3.50 A major part of the project has been to improve data capture and relationships with recorders. Much of this has been achieved throughout the West Midlands through the implementation of data exchange agreements. This has resulted in an increase in data acquired, these data have been of higher quality due to standardised recording forms available to recorders from LRC websites.

3.51 Improved relationships between recorders and LRCs has, and will continue to, aid understanding of the level of data information required by LRCs and the support needed by recorders. Regionally there has also been an increased effort in validation and supply of records to the NBN Gateway. These opportunities will improve further in the future with other planned tools, such as online recording, available to the whole West Midlands, and nationally standardised validation and verification. Response from recorders has been good and a close working relationship has led to good feedback for future improvements and support.

Implement a strategy for capturing key paper datasets

3.52 In the West Midlands the proportion of data only available in paper form varies between the LRCs, but in all counties at least some of the core datasets comprising protected species records, BAP, rare or notable species records and designated site information are not available electronically. This makes responding to data requests and data interrogation a labour intensive task. It also does not meet users' requirements of data being provided in electronic format. The objective of the project was to:

- Develop a working, prioritised list of key datasets for all LRCs and regional datasets for digitisation and identify methods and costs for capturing this data.

3.53 A regional audit of existing datasets held by each LRC was undertaken in order to identify a prioritised list of key paper datasets which could be captured electronically. The audit identified a total of 227 datasets across the West Midlands, 118 electronic and 109 paper. Out of the paper datasets 39 were identified as being high priority datasets; 41 medium priority datasets; and 27 were considered to be low priority datasets.

3.54 The resource requirements for capturing these prioritised datasets was estimated, taking into consideration: accuracy of site details, legibility of writing, clarity of record, size, format, quality, validation and verification. Possible funding sources were reviewed.

3.55 The project has assisted with prioritising datasets for digitisation and the LRCs in the region have been successful in securing funding for this work from the capital investment scheme and sources such as the WREN³ Biodiversity Action Fund. One issue raised during the project is that whilst capturing legacy data is important, funding specifically related to encouraging an increase in survey effort may be of higher priority.

Regional implementation: North West

Capturing ecological survey data

3.56 Ecological data generated as part of development control accounts for a significant proportion of the ecological data being gathered on a regular basis within the UK. In addition to species records, habitat data (either Phase I or NVC) are also collected. Although data generated through the planning process enters the public domain when the application is lodged with the local authority, it is commonly inaccessible as a summary within a report.

3.57 The objectives of the project were to:

- Adopt a standardised format in which consultants can provide biological survey information captured as part of planning applications.
- Develop an efficient mechanism of transferring survey data into the LRC system.
- Encourage broad uptake by the consultants and local authorities to ensure greater capture of biological data.

3.58 The project was led by RECORD and covered Cheshire and Warrington. A working group was set up to provide steer to the project, this was made up of active consultants from the area and local authority ecologists/biodiversity officers. The project built on the work undertaken in the North East to develop and pilot the capture of ecological survey data through the planning process. This was based on the outputs of a Royal Town Planning Institute and the UK Green Building project that aimed to capture information on environmental change resulting from developments.

3.59 The obstacles that prevented the standard form from being used in the North East were reviewed, a revised version of the form was developed as an on-line tool to enable secure and efficient management of the data. The tool was piloted across three local authority areas: Cheshire West & Cheshire, Cheshire East and Warrington.

3.60 The form consisted of two sections: a raw data entry form and a summary of biodiversity change assessment form. The summary of change form was felt not to be straightforward, whereas the data capture form could in principle be quite easily adopted. The inclusion of 'potential' for BAP species on a site was felt to require additional work beyond what consultants were being contracted for by developers.

3.61 A major barrier to implementation was some kind of enforcement in order to get consultants to complete the form. Concerns were expressed regarding the storage and subsequent use of data for purposes for which they may not be suitable. Also ecological consultants may undertake work on behalf of a developer sometime before the final application for planning permission is submitted.

³ Waste Recycling Environmental Limited

- 3.62 Despite issues raised during the trialling, a number of consultancies within Cheshire have agreed to adopt the system for submitting data to RECORD. This is being pursued to establish a more formalised method of regular submission. One local consultancy has adopted a new opt out system within their terms and conditions stating that all data unless otherwise requested will be made available to RECORD.
- 3.63 The Association of Local Environmental Record Centres (ALERC) are in talks with the Institute of Ecology and Environmental Managers (IEEM) to develop closer working relationships and the NBN Trust and ALERC are in initial discussions over setting up a joint project for a national solution for capturing consultants' data.

Efficient submissions of data

- 3.64 Across the North West region there is a recognised need to standardise how data is exchanged between LRCs and data providers. The LRCs have standardised on the Recorder software package, whilst recording groups will typically use MapMate or provide information in spreadsheets or paper-based formats. Exchange between these formats can be time consuming and problematic. It is also important that there is a clear audit trail and records are subjected to similar levels of validation and verification across the region. In Cheshire and Merseyside, an online system, RODIS, has helped to address some of these issues. There are concerns by recording groups who recognise the benefits of sharing data with LRCs, but rely on the income from data requests or the sale of atlases to fund the running of their groups.
- 3.65 The objectives of the project were to:
- Develop a standard format for data submission across the region and provide assistance to recorders adopting the process.
 - Review RODIS and potential for extending its usage to other parts of the region.
 - Identify mechanisms for providing support to recording groups to address loss of income from providing data to Local Record Centres.
- 3.66 The project was led by Cheshire RECORD and a working group was set up consisting of representatives of recording groups from across the North West, including members from bird societies, fungus groups, mammal groups, ranger services and botanists.
- 3.67 A review was undertaken of data management software in use by societies and groups in the region. Due to the lack of any suitable existing software many groups have developed their own system specifically for recording their specialist group. As a result many systems are not compatible or they require time and resources in order to reformat data passing between them.
- 3.68 Two systems were identified as having potential for use across the North West, RODIS, RECORD's online data input system, and Indicia, a data capture toolkit being developed as part of the OPAL project. It was felt that at the present time Indicia was not at a stage where it would be beneficial to implement it as a standardised system for the North West.
- 3.69 RODIS uses the NBN/NHM species dictionary (through web-services) to search for the current species name. It also allows the user to view images of the species they are entering via a Flickr utility. In addition to validation checks, RODIS checks for duplicate entries as records are keyed in against data within RODIS and RECORD's

main database. Any records entered pertaining to a species of note within the area are directed towards county experts for external verification.

- 3.70 Greater Manchester was chosen as the pilot area for trialling RODIS. As a consequence of the project a data sharing agreement has been established between RECORD and GMEU to address their overlapping boundaries. A website (www.rodiss.co.uk) was set up to provide a single access point for local recorders to enter their data from anywhere across the North West.
- 3.71 RECORD discussed potential improvements to RODIS with representatives from the NBN Trust. The main discussion point was improving data flow from RODIS to Recorder 6 and whether taxon keys could be used to improve the efficiency of data transfer. Eventually it was decided that this was not suitable due to the complexities of the Recorder 6 dictionary system. Without these changes it is necessary for a skilled staff member to ensure that the import of data into Recorder 6 is correct.
- 3.72 Some of the working group members represent societies or groups that earn an income from servicing data requests and this raised the question as to how they could continue to operate if they were to pass data across to LRCs and potentially lose this income. It was proposed that an LRC could provide 'in-kind' support to such groups by managing the data on behalf of the group and develop methods of manipulating the data for annual reporting.
- 3.73 At the end of the project Greater Manchester are continuing to trial the system, Cumbria Biodiversity Data Centre are interested, in principle, in discussing its adoption for their area and Lancashire Environmental Record Network are awaiting the results of the trial before committing. There are a number of tools that have been developed to assist local recorders and groups in adopting the system as well as training events.
- 3.74 Implementation of RODIS within the North West represents a huge saving in staff time within LRCs. Time spent reformatting data and correcting errors before entry into Recorder 6 take up a great deal of staff time. Implementation of RODIS forces correction of errors at the point of entry alleviating pressure on LRC staff. It also ensures that all data is correctly formatted for subsequent entry into Recorder 6. Verifying data at the front end, through RODIS, also cuts down on delays in data being available for use. It also safeguards against any spurious data being used before it gets verified.
- 3.75 Since the start of the project access to data has been granted from the North West Fungus Group, The Woolston Eyes Conservation Group, Altrincham Amateur Naturalists Group as well as an in principle agreement from the Cheshire and Wirral Ornithological Group.
- 3.76 The combined increase in data throughput represented by the above mentioned groups is over 100,000 new records a year. This figure represents a 100% increase on an average years data input for RECORD.

Local Wildlife Sites recording

- 3.77 The scope of this project was defined as supporting volunteer naturalists' recording on local wildlife sites in the North West Region by targeting their recording towards Local Site monitoring. The project was managed by Merseyside Biobank in partnership with Lancashire Environmental Record Network and Greater Manchester Ecology Unit with the Wildlife Trust for Lancashire, Manchester and North Merseyside who were sub-contracted to deliver the project.

3.78 A review of best practice in recording on wildlife sites identified common themes that were needed in terms of improving standards. These were the development of online recording, 'how to' guides for beginners, validation and development procedures and training programmes.

3.79 Three pilots were conducted as part of the project:

- Contacting 38 wildlife recording groups to ask if they could supply any biological records collected during April-September 2010 from the 186 local sites flagged for inclusion in this study.
- Five inexperienced volunteer recorders were recruited via the vacancies section of the Lancashire Wildlife Trust. All the volunteers received a one day training session on dragonfly identification from a dragonfly specialist and had access to field guides throughout the duration of the pilot.
- An advertisement was placed with Job Centre Plus for two wildlife surveyors. Introductory training was given on identification for as many taxonomic groups as possible within the time constraints of the study.

3.80 The results of the pilots were as follows:

	No of Records produced	No of LWS surveyed	Volunteer time (days)	Officer time (days)
Pilot 1	0	0	0	2.5
Pilot 2	69	19	11	4.5
Pilot 3	891	18	48	48

3.81 Of the three approaches to encouraging recording on local wildlife sites tested in this project, none of them, in the form adopted, was wholly successful in terms of cost benefit (where cost is the time invested by LWT staff and benefit is measured by the number of records produced by the volunteers).

3.82 The pilots highlighted important lessons in the way such opportunities are packaged, such that training is not all given up front and there are responsibilities on both sides. Despite the pilots themselves not being particularly successful, the lessons from them have informed the subsequent activities that are now being taken forward:

- Merseyside Biobank is establishing an active naturalists group whereby members receiving training in response to active recording.
- Biobank, LERN and Lancashire Wildlife Trust are submitting a HLF bid promoting biological recording on local wildlife sites.
- GMEU has submitted a HLF bid to establish outreach functions, which has received initial approval.

Regional implementation: East of England

3.83 Two projects were taken forward in the East of England. The first was led by a regional project officer hosted by the Cambridgeshire and Peterborough Environmental Records Centre. The objectives of the project were to:

- To make data providers aware of how data submitted to local record centres in the East of England are managed and how they are used to inform decisions.

- To identify present and coming needs of public bodies relating to biodiversity and the products and services that LRCs need to provide to meet them.
 - To make public bodies across the East of England aware of the availability of products and services from Local Record Centres relating to their biodiversity duties.
- 3.84 The second was led by a regional project officer, hosted by Norfolk Biodiversity Information Service. The primary objectives of this project were to:
- Establish a standard data enquiry service and examine the possibility of a standard charge for all LRCs across the East of England.
 - Work to improve services provided by LRCs to public bodies.
 - Identify a long-term strategy for improving the consistency of data provision across the region.

Advocacy to data providers

- 3.85 The regional review conducted by RPS highlighted concerns by volunteer recorders providing data to LRCs over how their data are used. These concerns have resulted in data considered as being sensitive not being passed to LRCs or only being provided at a coarse resolution. These issues risk decisions being made about the development of land in ignorance of the presence of species and might potentially result in loss or damage to the population. Such concerns typically relate to a feeling of lack of control by data providers over how data is used and a lack of acknowledgement of the original data provider. The messages to be communicated as part of the project included the following:
- How sensitive species are managed (both by the LRC and when made available to third parties e.g. through the NBN Gateway).
 - How data are validated and verified.
 - Case studies of how biodiversity data are used to inform decisions.
 - Benefits of data being available to a LRC as well as a National Scheme (and how this can be achieved).
- 3.86 A written code of conduct was drafted with input from the LRCs and data providers to outline what happens to data when they are received by an LRC, including the validation and verification procedures for records. Regular liaison was made with each LRC to identify issues relating to target audiences and how advocacy could add value to their work, either individually or for the region as a whole. A communication plan was created to highlight the target audiences, issues, key messages and the role of the project officer and LRC in addressing these issues, including a recorders day held in Cambridgeshire which focused on improving communication with recorders.

Identifying the needs of public bodies relating to biodiversity data

- 3.87 Two existing reports highlight the requirements of public bodies for information on biodiversity that are relevant to the region, these are: East of England Biodiversity Data Needs (East of England Biodiversity Forum, 2007) and Biodiversity Needs of Local Authorities and National Parks (ALGE 2006). A review was undertaken of LRC data provision against the needs of local authorities identified in these reports. The main gap in the data holdings of LRCs in the East of England remains that of habitat data.

- 3.88 In summer 2010 Regional Spatial Strategies were abolished and existing Planning Policy Statements are undergoing review. The National Indicator for Biodiversity (NI 197), the measures the proportion of local sites where positive conservation management, was also included a separate review which aimed to rationalise the set of national indicators local authorities had to report on.
- 3.89 An assessment was undertaken of the likely implications of the Natural Environment White Paper and revised England Biodiversity Strategy, Localism Bill around habitat mapping requirements, online data provision, targeted and structured species recording, LRC collaboration and potential loss of income. A set of actions were identified for LRCs in the East of England in order to be able to meet the environmental data needs of their users.

Advocating to public bodies the availability of products and services from LRCs

- 3.90 A communication plan was developed in consultation with the East of England LRCs to advocate to existing and potential public user bodies the direct and wider benefits to public sector users in supporting LRCs. Regular liaison was made with LRCs to identify issues relating to target audiences and how advocacy could add value to their work, either individually or for the region as a whole. A Planning and Biodiversity conference was held in Cambridge, aimed primarily at planners in local authorities. The event was organised by Cambridgeshire and Bedfordshire record centres but had representatives from across the country. Talks ranged from eco-systems services to legislation, wildlife recording and LRCs to using data to assess site sensitivity followed by a mapping activity to highlight the data available from a LRC for use in planning.
- 3.91 Following the event the establishing record centre for Essex added new local authorities to its steering group, liaising with some districts for the first time at the conference. Other meetings were held with local authority representatives across the region. At some of these meetings (e.g. Huntingdonshire District Council) local authorities indicated their intention to establish an agreement with the record centre. In other cases the meetings highlighted the needs of the local authorities (e.g. interpretation of biodiversity data relating to planning decisions) although at the time, uncertainty over funding meant that no commitments could be made. At a regional level UK Power Networks were keen to investigate the data services that LRCs in the region could provide. There remained many issues to be ironed out in order for a regional dataset to be provided. LRCs are disparate in terms of their data holdings, charges, software and technology used, and more commonality would have to be in place for a cross-regional data search to take place.

Improvements to data request

- 3.92 The work on establishing a standard data enquiry service was informed by two workshops, one organised by the IEEM and a second hosted by Norfolk Biodiversity Information Service. Questionnaires were sent out to consultants to supplement the responses from the two events. The main problems identified with existing data enquiry services from LRCs were specified as:
- Having to source datasets from other organisations.
 - Lack of detail and/or completeness of the records held, plus it was sometimes unclear whether all records being provided had been validated.

- Variability in charging and response times between LRCs and being charged when no or very few records are returned.
 - Large datasets being sent out on paper rather than electronically.
- 3.93 Following the consultation, proposals for a standard data enquiry service were drafted and sent to representatives from IEEM, ALGE and Natural England for further comment. The standard response included:
- Notable species records for a defined area of search, including Wildlife & Countryside Act, EU Habitats Directive, UK BAP.
 - Minimum attributes per record: taxon group, scientific and common name, location, grid reference, date, record type etc.
 - Information supplied in Excel, Word or GIS format (as requested).
 - Site information including local Wildlife Sites, RIGS, Roadside Nature Reserves.
 - No charge where no records found.
 - Records from neighbouring county for cross-border searches.
- 3.94 From the 1st April 2011 all record centres in the East of England will be able to provide the standard service. The exception is Essex which is still under development and is still establishing relationships with local recording groups. Norfolk BIS has developed a tool to automate the data enquiry process to reduce the time taken to process requests. The tool is available to any LRC in the region that uses MapInfo. The standard enquiry service is also being promoted to LRCs in other regions.
- 3.95 Improvements to the data enquiry service for consultants also provided benefits to local authorities in terms of the amount of data available and the efficiency of the data enquiry process. The potential of automating the screening of planning applications for biodiversity impacts was assessed as part of the project. This included a review of the existing tools in use across the country (including the GIGL Planning Screening Tool). Local authorities within Norfolk were approached regarding the adoption of the tool, but there was little support from planning authorities without ecologists and at a time of funding cuts. Resources are therefore being focused on online data provision.

Regional implementation: North East

- 3.96 In the North East, ERIC (Environmental Records and Information Centre) was recently established as the regional records centre. Durham Biodiversity Data Service (DBDS) was a biodiversity data project run by the Durham Biodiversity Partnership, which had a role similar to a local records centre, but was operated on a smaller scale and budget. It was set up as an interim solution to the lack of a LRC in the area while ERIC was forming but not yet operating. The aim of the project was to establish ERIC as a fully functioning LRC covering the North East region, providing the ALERC definition of core services to key stakeholders. This would consist of:
- The consolidation of the data holdings of ERIC and DBDS to allow better regional coverage by ERIC and allow Durham BAP access to Durham data held by ERIC.
 - Working directly with recording groups to advocate ERIC, and manage the transition of certain groups that have worked with DBDS in the past.
 - Improving the efficiency data provision so as to improve the outputs and outcomes that are trying to be achieved.
- 3.97 The merger of these data services was dependent on the Durham Biodiversity Action Plan (DBAP) funding partners agreeing to transfer the management of their data from

DBDS to ERIC North East following consolidation of the two databases. The following steps were taken in order to achieve efficient and successful amalgamation of the two databases:

- A full audit of data held by both ERIC North East and DBDS was carried out, and areas of duplication identified.
 - A data sharing agreement was developed for DBAP area data providers, incorporating information about the merger with ERIC North East and a request to upload data to the NBN Gateway.
 - Each data provider was approached to discuss sharing data with the future consolidated service with all but one recorder agreeing to share their data.
 - DBDS species data was uploaded into Recorder 6 to ensure efficient transfer onto ERIC North East systems.
 - All species and habitat data was transferred from DBDS to ERIC North East in May 2011.
 - DBAP partners were consulted throughout the process to ensure any queries or concerns regarding data management procedures and services provided by ERIC North East were addressed.
- 3.98 A service level agreement is now in place between ERIC North East and the DBAP local authority partners for data provision.
- 3.99 The regional review by BE Group identified a need for ERIC North East to raise awareness of its existence amongst the wildlife recording community as well as to continue to address recorders' concerns in relation to data verification and validation, data flow and the treatment of sensitive data. The following training events were delivered in order to address these concerns and forge new partnerships with recording groups and individuals across the region:
- Wildlife Recording in the North East Conference.
 - Durham Workshop and Northumberland workshops.
- 3.100 As a result of these events data sharing agreements were established between ERIC and the following organisations:
- North East Reptile & Amphibian Group
 - Moths Count Northumberland
 - Moths Count Durham
 - Butterfly Conservation
 - Big Sea Survey
 - North Pennines AONB
- 3.101 Data sharing negotiations are currently in progress with:
- Darlington & Teesdale Naturalists Field Club
 - Red Squirrels Northern England
 - Alnwick Wildlife Group
- 3.102 A new ERIC North East website has been developed (www.ericnortheast.org.uk) which provides information for recorders on data sharing policy as well as detailing

data request procedure for users. The 'Links' page provides information for recorders with regards to data flow and signposts to the recording groups and societies in the region.

- 3.103 Species data held in Recorder 6 is now linked to the ArcGIS software, allowing report data to be mapped immediately and species designations to be automatically added to each record in the table. This has streamlined the time taken to carry out data searches, allowing ERIC North East staff to spend more time focussing on sourcing and managing new data.

Capturing Biodiversity Planning Data

- 3.104 In addition to the work on establishing ERIC as the regional record centre for the North East, a second project was established with ERIC relating to the capturing of biodiversity data generated as part of planning applications. The project followed on from a working group set up by the Royal Town Planning Institute (RTPI) and the Green Building Council (GBC) to investigate how the assessment and reporting of biodiversity change as a result of development could be aligned with the needs of the planning system. The outputs of this group was a biodiversity summary document suitable for use by local authorities and developers, which provides such information in a standard format. A secondary objective was to enable such biodiversity information to be provided to local record centres.
- 3.105 A pilot project was established with ERIC with the following objectives:
- To adopt standard protocols and procedures to ensure that biodiversity data collected as part of the planning process can be routinely captured by local record centres with the least effort.
 - To promote to both planners and ecological consultants the need for increased capture by record centres of biodiversity data collected for planning purposes.
 - To explore the potential of biodiversity information collected for planning purposes to inform local authority annual reporting on biodiversity change as a result of planning consents and to provide feedback to developers.
 - To increase the flow of useful biodiversity information from local planning authorities to the regional records centre for the North East and to the NBN Gateway.
- 3.106 ERIC North East worked with Hartlepool Borough Council and Newcastle City Council to trial a standard format by which biodiversity information must be submitted by applicants. These local authorities were approached to take part as they had previously shown an interest in working with ERIC North East to digitise paper-based data from ecological surveys attached to planning applications.
- 3.107 ERIC North East staff also met with LRCs in other regions to discuss their relationships with local authorities and ecological consultants with regards to planning data.
- 3.108 A data capture table was developed with a covering letter and explanatory note to be included in the application pack. The Biodiversity and Development Summary of Change form was finalised with representatives from the RTPI Biodiversity and Planning Interest Group and the local authorities. Mechanisms were developed to enable local planning authorities to identify the existence of any new biodiversity reports sent to them and to ensure that electronic copies of the data are passed to the records centre for data capture.

- 3.109 ERIC North East staff liaised with ecological consultants in the region to promote developed procedures and protocols and request constructive feedback as to how these could be improved. The IEEM was also consulted.
- 3.110 A covering letter was produced and added to the planning application acknowledgement packs along with the Biodiversity Summary of Change form and Explanatory Note. The local authorities agreed to send these documents out with every planning application categorised as 'Major' or 'Minor' as these are the type of applications which might require ecological surveys.
- 3.111 The project resulted in a low level of response which was put down to a number of factors:
- The Biodiversity Summary of Change form.
 - Timescales.
 - Lack of applications requiring ecological surveys.
 - Applicant not forwarding information on to consultant.
 - Client / developer permission.
- 3.112 The IEEM Professional Affairs Committee had a number of concerns with the form and considered the information being requested on biodiversity change to be the responsibility of the local authority not ecological consultants to collate. ERIC is following up the work of this project and meeting with ecological consultants to discuss submission of ecological information and additional challenges, such as gaining permission from the client. This will focus on the species and habitat data submission without asking consultants to report on biodiversity change.

Regional implementation: South East and Greater London

Improvements to data products and services

- 3.113 Consultation amongst the South East LRCs revealed that each LRC supplies a variety of species and habitat data to local authorities and other partner organisations, usually on a 6 month or yearly update cycle and usually as a set of GIS layers. Reporting systems within individual LRCs are for the most part well established. Concern was expressed that LRC data is being under-utilised by local authorities due to lack of awareness or lack of GIS facilities. A further problem is a lack of ecologists available within local authorities who can interpret the data present in a LRC report.
- 3.114 The aim of this project was for LRCs in the region to work together to share best practice and to develop added-value products and services that extend their role further along the Data–Analysis–Interpretation–Advice continuum. These products and services would then be made available to LPAs and others so they can make better informed decisions for the protection and enhancement of wildlife.
- 3.115 Having considered the themes revealed by the consultation a common set of goals were identified for the project:
- Increase use of data by partners and at least ensure current level of use.
 - Improve presentation of data for partners.
 - Ease update and delivery of data to partners.

- Make data more accessible for partners (i.e. easier to interpret and therefore more useful for decision making).
- 3.116 To achieve these goals a web-based reporting and mapping solution was proposed. Such a tool would increase the likelihood of use within partner organisations because dedicated GIS software would not be required. Reports could be tailored to look and function as needed. Data updates to partners would be much easier. Such a system could be complex and therefore expensive to build, but exploiting existing open source products such as Indicia, would enable a cost-effective solution to be built. The functionality of the proposed tool (Redicia) was as follows:
- A local authority planner would need to be able to log-in to Redicia and define a search area based on their area of interest.
 - The main user interface would be a map with controls and search field(s).
 - The user would be able to type in a postcode or address to zoom to the approximate area of interest and then refine the search area by drawing a bounding box, a polygon, a point with buffer, or entering an OS grid reference (or range of references).
 - The search area could be restricted with a maximum size in order to maintain acceptable performance.
 - Results would be returned for the search area in the form of a distribution map.
 - Records would be displayed below the map. These results would filter down when points are clicked on.
 - A category listing of statuses could allow for data to be drilled down into (e.g. a search area could have records present that are protected, invasive and BAP).
 - Potentially, habitat and area designations could be included in the map.
 - A summary report should be available, providing information on the number of protected species, BAP species, statuses, habitats and designated areas present etc.
- 3.117 The development of the tool was commissioned and was due to be completed by the end of March 2011.

Sustainable habitat data collection, management and provision

- 3.118 This project was led by Sussex Biodiversity Record Centre and aimed to build on the progress made to date with the development and adoption of the South East and Greater London Habitat Framework. The project aimed to provide a focus for addressing outstanding issues on providing an updated and dynamic regional dataset for the collective management of habitat data in the region. Specifically:
- To confirm the outstanding priority issues with the existing data and how this will fit within the habitat framework, agree solutions and implement them where possible.
 - To identify newly available datasets and integrate these into the habitat layers.
 - Address the outcomes of the initial stages of work to develop specific LRC projects that will further enhance the habitat datasets and the framework tool.
 - To identify any outstanding issues that LRCs have with managing and supplying habitat data to framework standards / specifications and where possible resolve them.
- 3.119 Across the South East, each LRC was consulted to get an up to date understanding of their habitat data holdings; GIS format and habitat classifications; frequency of

update; completeness of coverage (spatial and number of habitats) and extent to which the new inventories have been incorporated into the South East Habitat Framework. From this review the work needed to establish regionally consistent data was agreed.

- 3.120 The Integrated Habitat System (IHS), developed by Somerset Environmental Records Centre, has been adopted as the tool for standardising how habitat datasets are managed in the South East of England. The majority of the habitat data held in the region has been translated to IHS categories, at least for main habitat type attributes. One of the aims of this project was to agree a common and consistent approach to address gaps in IHS categories (e.g. ancient woodland, wet grassland communities and marine habitats). Recommendations for changes to IHS have been proposed and circulated on the ALERC forum for wider consultation.
- 3.121 Within Greater London, habitat survey data (collected by the Greater London Authority) maps multiple habitats per polygon. In order for Greater London data to be added to the national and regional datasets a contract was let with London Wildlife Trust to complete the translation of the GLA habitat classification to IHS.
- 3.122 Translation of habitat data in the South East habitat data framework has been completed for Surrey and Sussex, through a contract with the GeoData Institute, and has been rolled out to Buckinghamshire, Oxfordshire, Hampshire and the Isle of Wight (funded separately). HBIC have been working with each of the South East LRCs to ensure the tool developed to facilitate the management and updating of habitat data within the Habitat Framework will work with their respective data.
- 3.123 A set of rules have been written for populating habitat management codes based on the latest Higher Level Stewardship information. This will assist with reporting on habitat management, such as for NI 197 reporting. This was initially done for Oxfordshire datasets and has been rolled out to Isle of Wight, Buckinghamshire and Berkshire.

Regional implementation: South West

Sustainable business funding

- 3.124 The project focused primarily on local authorities in Somerset, Gloucestershire and Bristol. It aimed to clarify both their current and future needs in relation to biodiversity information and the range of services that Local Record Centres could provide to meet these needs. It was led by a project officer hosted by Somerset Wildlife Trust. The objectives of the project were to:
- Collate a list of contact details for both existing and potential partner organisations at a local, regional and national scale across the South West.
 - Ascertain the importance of biodiversity information in the policy making and activities of the identified potential partner organisations. Co-ordinate a review of existing awareness of biodiversity information needs within these bodies and the current practice in meeting their needs, including whether they are already actively engaging with the LRCs in the South West.
 - Determine a range of services to meet the information needs of the partner organisations that each LRC in the South West could then offer.

- Engage with the ‘sharing best practice’ project to identify improvements LRCs could make to services and products to respond to the needs of potential users.
- 3.125 The project officer initially engaged with LRCs in the South West with the aim of understanding their existing range of services and SLA partnerships. Wessex Water currently held an SLA with six LRCs, therefore a sensible approach was to engage with the wider utility sector. Additional users were also identified based on previous data requests and organisations holding significant land holdings or environmental responsibilities. In general organisations that were approached were aware of their environmental responsibilities but had little understanding of the role and services offered by LRCs.
- 3.126 Within local authorities relationships had generally been maintained with the ecology officer. Local authorities under pressure to reduce budgets were not receptive to discussing enhanced service provision. Within Somerset six SLAs have been renewed, with only one local authority reducing their financial contribution, conversely a renegotiated SLA with FWAG has increased their contribution. The remaining two SLAs with local authorities in Somerset that are due to expire are outstanding.
- 3.127 Utility companies require access to data on protected species and habitats across their operating areas. This highlighted a number of issues in terms of LRCs providing this service:
- A lack of the relevant data held by all LRCs.
 - A lack of a pricing structure for the provision of new services.
 - Sensitivity over releasing this level of data.
 - A lack of commonality regarding the presentation of GIS layers e.g. commonality in labelling schemes, across LRCs.
 - A lack of a regional coordination.
- 3.128 The project officer engaged with Western Power Distribution and Central Networks over the technical specification for a Service Level Agreement with the LRCs in the South West. These discussions were put on hold due to a merger taking place between the two bodies. Discussions were held with Severn Trent Water based on the service provided by SERC to Wessex Water. Severn Trent required that a proposal covered their operating area, which includes LRCs in the West Midlands. Issues surrounding data held, or the level at which it would be released from some centres, slowed progress on negotiations and a lack of a co-ordinating centre for this regional proposal made it impossible to take this forward at this time. These issues have been addressed through the second project looking at how LRCs in the South West could work more effectively together.

Sharing best practice

- 3.129 The project aimed to review data products currently provided by Local Record Centres in the South West and how these are being used by partners. The project was led by Bristol Regional Environmental Records Centre. The objectives were to:
- Review data products currently provided by each LRC and agree a basic suite that all LRCs should be able to provide and priorities for standardising consistency and compatibility (e.g. handling cross border data requests).
 - Identify issues to standardisation in each LRC and produce a plan of tasks that each LRC needs to take (short term, medium term, long term) and mechanism for

implementing these (e.g. adoption of existing practice/technical support from another LRCs or external body).

- Review how products and services are being used by existing partners co-ordinating with related projects, and identify opportunities for better integration with their systems.
- Implement short-term actions and agree a strategy for implementing medium and long term tasks.

3.130 Following a review of the current data products and data holdings of LRCs in South West, the feedback that LRCs have secured from their existing users and the consultation with existing and potential clients from the *sustainable business and funding* project, a number of desirable outcomes from the project were agreed by the LRC managers:

- Adoption of minimum data standards for local wildlife sites, habitat data and species data enabling these to be readily combined into regional datasets.
- Establishment of protocols for regional working.
- Adoption of standard data search procedures across the South West LRCs.

3.131 All of the LRCs in South West were already established record centres providing data search services to environmental consultants and members of the public. They did however recognise the benefit of providing a standard data search across the region including a defined minimum level of service and standard data resources that all LRCs can provide. The design for a standard service for data searches drew on work already undertaken in the East of England as well as feedback that individual LRCs in the South West had received from consultants. In addition the project examined the data resources that individual LRCs could provide for data searches. Whilst the data held by the individual LRCs varied according to local needs and resources, it was established that all the LRCs were able to offer a regionally-consistent minimum set of data for data searches, whilst recognising that individual LRCs use different names to refer to data resources (e.g. 'notable species' or 'species of conservation concern'). These descriptors are often not equivalent terms and this project did not seek to address these differences.

3.132 Agreement was reached on a consistent minimum data search standard for the LRCs in South West of England. This included supplying data within ten days in electronic format with no charge if no data was found and handling cross-border requests. A statement was to be included in data request responses on how data were validated and verified. The minimum data holdings of each LRC included: protected and threatened species; invasive species; habitat data and local wildlife sites. The standard data search service request form was to be made available on each of the LRCs' websites. At the time of the project GCER, which is hosted by Gloucestershire Wildlife Trust, did not have a separate website. It was agreed that these facilities would be implemented on its new website.

3.133 As identified in the *Sustainable business and funding* project, there are a number of potential clients of LRCs, primarily utility and infrastructure companies, who would be interested in specific extracts of data held by the LRCs. Such organisations require data to be in a consistent format across the region. Since each LRC is autonomous, they have developed different methods and standards for storing and managing this data. However, it was recognised that being able to provide data extracts in a standard format would be beneficial to the organisations that use the data.

- 3.134 To facilitate this the LRCs have agreed on a South West-wide standard format for both the priority habitat and local wildlife sites datasets. Four of the seven LRCs in the South West undertook to adopt the standard by the end of April 2011. It was however recognised that this did not address the need for funding for further systematic priority habitat surveys, since there had been no significant investment since the NBN South West Pilot funded by English Nature.
- 3.135 A request by Cotswolds Conservation Board (Cotswolds AONB) to Wiltshire & Swindon BRC highlighted issues with regional working between the SW LRCs. Different LRCs interpreted the request differently, which resulted in a large variation in the quoted costs. Also slow responses from some of the LRCs meant that the preparation of the quote for the client was slow. This project aimed to establish protocols in order to try to address some of the issues highlighted and enable LRCs to provide a combined response for the provision of products and services more quickly and professionally and potentially reduce overheads.
- 3.136 A proposal was prepared and agreed by the SW LRCs after addressing feedback. The procedures set out the roles and responsibilities of the LRCs in bidding for regional work covering the provision of quotations, data collation and supply. The proposal recognised that LRCs need to cover their costs for extracting and providing data for their area and that LRCs are independent organisations, whose costs vary.
- 3.137 The South West LRCs also agreed minimum standards for validation and verification of species data, whilst recognising that procedures vary between individual LRCs. A region-wide standard was also agreed for the treatment and disclosure of sensitive data. Although it was not possible to agree a short list of species considered sensitive within the timeframe of the project it was recognised that this would be advantageous, whilst also recognising locally sensitive species. Finally a regional web page (www.swlrc.org.uk) has been developed to promote common standards and working.

4 National demonstration projects

National demonstration project: Recorder

4.1 Recorder is a software application for capturing and managing species and habitat records. It was commissioned by JNCC with support from a number of national agencies and now includes a number of European partners. Recorder is the main database application used by the majority of local record centres, although different versions of the software were found to be in use. In 2008 a survey was conducted by JNCC of the usage of the Recorder software by local record centres. The findings of the survey were as follows:

Category	Findings/requirements
Species dictionaries	<ul style="list-style-type: none"> • Taxon dictionaries and version keys being consistently used and available. • Check lists need to be more up to date. • Status lists maintained by JNCC better incorporated and updated with the dictionary. • Better reporting on species designations. • Ability to add our own local status categories. • Consistent and transparent use across the package.
Upgrading to Recorder 6	Over 80% of LRCs use a version of Recorder as their main repository, but almost half of these are still using an older version of Recorder. The obstacles to migration include the cost of migration, staff skills and resources and ability in installing SQLServer and the migration of legacy data.
Exchange with MapMate	More efficient exchange of data with MapMate and Recorder is a priority for a significant number of LRCs. Over half of LRCs use MapMate, with three using it as their main repository. The main reason for this being that MapMate is widely used by the recording community.
Ease of use and time efficient	It was recognised that recent updates to Recorder 6 had improved the system (in particular export to GIS, improvements to taxonomic order and local status). Recorder was seen as being a 'good system' but unreliable, with frequent crashing. The lack of consistent and intuitive behaviour in many parts of the system are a barrier to its uptake.
Local sites/habitat data	Most LRCs use Recorder to manage local sites data, alongside GIS. Better linking between habitat/site boundaries and species / biotope data in Recorder was identified as a requirement. There were also suggestions around linking biotope and taxon observation lists under samples and displaying measurements in the occurrence lists. Getting site descriptions out of Recorder into Excel was seen as difficult.
Data validation / verification	88% of LRCs had data checked by experts (either supplied as paper maps/reports or electronically). Only 36% used automated routines to identify which records need checking. A system for record verification was seen as important.

4.2 Following consultation with Recorder resellers and end users the following list of enhancements were made to the software:

Component	Change
Import wizard	<ul style="list-style-type: none"> • Import wizard code was rewritten to facilitate rapid bulk import of large datasets. • Commit button implemented for saving taxon/location matches in the wizard.
Species dictionary	<ul style="list-style-type: none"> • Taxon facts and codes consistently displayed in the information pane. • Synonyms displayed correspond to the list currently viewed. • Mechanisms for filtering on designations from report wizard and XML reports. • Ability to save one or more designation sets and include local designations.
User interface	<ul style="list-style-type: none"> • Enable all windows to have resizable tabbed contents.
Minor enhancements	<ul style="list-style-type: none"> • Ability to add a determination from the General tab of the observation hierarchy. Survey tag attribute added to the report wizard. • Additional options when right-clicking a polygon in the map window. • Consistency with GIS (drag and drop layers in the map window). • Improvements to the functionality of importing polygons from GIS. • Export to Shape to include attributes in the export and creates projection file. • Editable field in location window (to add external GIS file info for storage).
Tutorials	<p>A set of tutorials were developed covering:</p> <ul style="list-style-type: none"> • Snapshots and views • Linking GIS and Recorder • Data flows and verification

4.3 Support was offered to local record centres with migrating their databases to the latest version of Recorder. This included the following elements:

- Pre-analysis – a one day on site visit to discuss what Recorder 6 can do and scope requirements.
- Data transfer – the transfer of data from earlier versions of Recorder and other legacy databases to Recorder 6.
- System set-up – configuration of SQL Server etc. including liaising with IT departments.
- Training – undertake specific training on Recorder 6 configuration or use.
- Reporting – development or migration of custom reporting applications.

- 4.4 Expressions of interest were invited from LRCs and contracts let with Recorder resellers to undertake the migration. The following LRCs benefited from this programme:
- EcoRecord (Birmingham)
 - Hertfordshire Biological Records Centre
 - Greater Manchester Ecology Unit
 - Northamptonshire Biodiversity Record Centre
 - Herefordshire Biological Records Centre
 - Thames Valley Environmental Records Centre
- 4.5 A further five LRCs migrated their main databases to Recorder 6 with the support of the capital investment scheme.

National demonstration project: Data validation toolkit

- 4.6 In response to the requirement to provide better tools to support species verification a scoping contract was let to review the requirements of such a tool, including existing work in this area, and produce a technical specification for such an application. The contract was let to John van Breda.
- 4.7 The resulting specification was for a standalone tool that could import data from a number of formats, including Recorder 6, MapMate and other databases, Excel spreadsheets and text files. The tool would perform a number of validation checks on the data including:
- Record keys are unique
 - Date format
 - Spatial reference format
 - Species in check list
 - Scientific and common name consistency
 - Valid vice county
- 4.8 The tool would then enable specific verification tests to be applied specific to the species or dataset, e.g.
- Spatial reference in vice county
 - Species in known distribution
 - Terrestrial species
 - Marine species
 - Species against ancillary species list
 - Period test
 - Period within year test
- 4.9 A contract to develop the tool was competitively tendered and awarded to Exegesis Ltd. Separate contracts were let under the Defra / NBN Trust contract to develop rules sets for different taxonomic groups. Further development of the tool has been funded by JNCC.

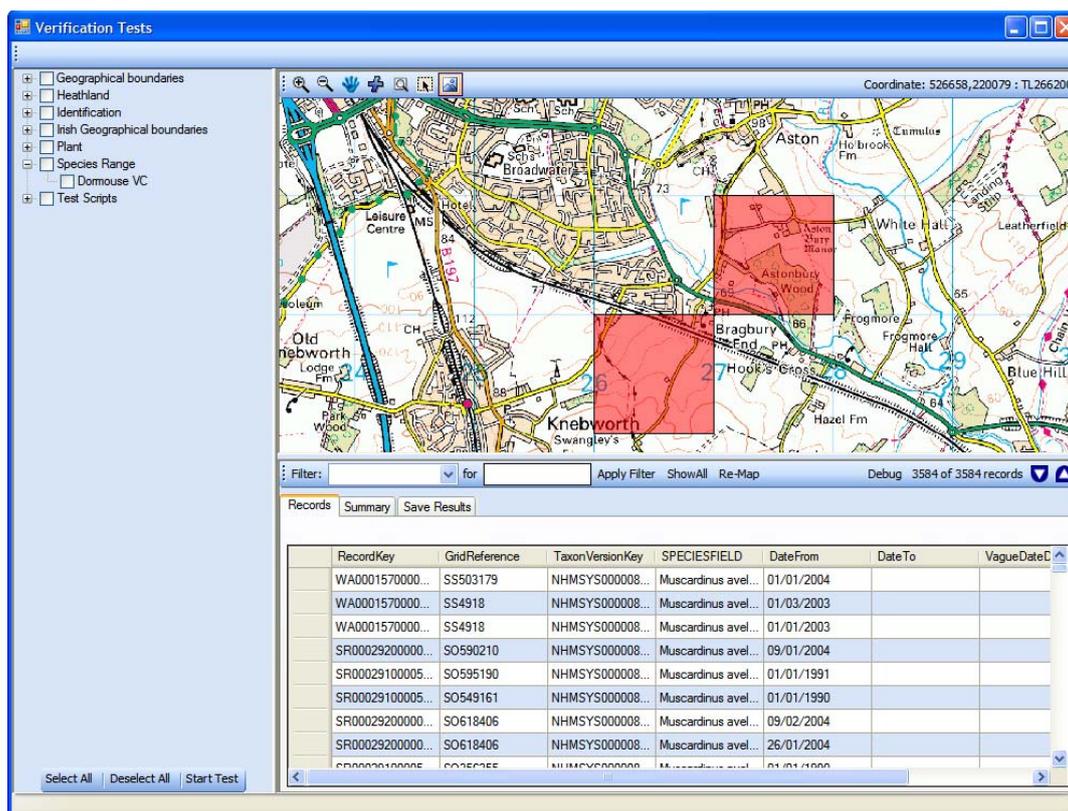


Figure 2: Record Cleaner species' verification interface

4.10 The tool, Record Cleaner, has now been published and over 200 copies have been downloaded since its launch. The rules incorporated into the tool include:

- Botanical Society of the British Isles (identification difficulty, 10 km square distribution, recording period).
- British Trust for Ornithology (identification difficulty, date range).
- Butterfly Conservation: macro moths (identification difficulty, 10 km square distribution, flight periods, year range).
- Hoverfly Recording Scheme (identification difficulty, range, flight period).
- Marine Biological Association: limited number of species (identification difficulty, range).

National demonstration project: Planning screening

4.11 In 2007, a pilot project with Greenspace Information for Greater London (GIGL) and Bristol Regional Environmental Record Centre (BRERC) demonstrated the potential of automatic querying and reporting of biodiversity data for planning applications. In June 2009 a follow-up project was initiated to develop an operational tool for adoption by planning authorities in Greater London.

4.12 The objectives of the project were for the tool to provide:

- Standard guidance of the type a biodiversity officer would provide, which can be integrated with specific advice from the authority's biodiversity specialist(s). Incorporating Natural England guidance and standing advice, when applicable.
- Automated reporting of species records, habitats and designated sites of relevance to planners.

- 4.13 For the purposes of the project, a planning application relevant to biodiversity and nature conservation was considered to be any application likely to:
- Impact negatively on existing features, in particular protected species and sites, and therefore requiring further assessment.
 - Offer enhancement opportunities, which can be pursued through recommendations to the applicant and planning conditions.
 - Offer monitoring opportunities relevant to Local Development Framework and other local strategies.
- 4.14 Consultation with local authority planning officers revealed concerns that introducing new tasks within routine processing of applications would hinder performance related to timescale based targets. Whilst all local authorities recognise the relevance of statutory duties to their planning functions, such duties do not prescribe any specific process or set of criteria for screening planning applications. Also, no specific performance indicators are provided for a local authority to assess whether different approaches should be implemented.
- 4.15 Despite the evident diversity of approaches, the vast majority of local authorities consulted rely on case officers for assessing biodiversity issues and opportunities. Only two of the boroughs consulted implement guidance and/or some form of assisted decision making. For the remaining twenty, limited or no standard criteria are available, the quality of the assessment mainly depending on the experience and biodiversity knowledge of the single officer. The single most widely considered factor is the scale of the development. Another well used criteria is the proximity of the application site to protected sites and also, depending on the authority, of lesser status wildlife sites. It was generally found that habitat data and species records are not meaningful for decision making to case officers with no ecology background.
- 4.16 Provision of advice to applicants before actual submission of the application is a practice strongly encouraged by the government. Aside from providing written guidelines to applicants, many LPAs offer or are in the process of establishing a consultation service. None of the local authorities consulted routinely consider biodiversity at pre-application stage nor to have standard criteria in place for this purpose. Validation is the process of assessing whether certain formal requirements are met for a planning application to be registered and decided upon. In most LPAs, validation follows strictly defined checklists and is mainly performed by admin staff rather than planners.
- 4.17 Most biodiversity specialists within planning authorities do not have access to the back-office system used by development control officers that would enable them to potentially look into any application received by the LPA. If they did it could streamline provision of advice regarding relevant applications. Biodiversity officers often have a whole-borough remit, with duties encompassing a vast range of issues and frequently not explicitly including assisting with development control casework.
- 4.18 All planning authorities routinely export lists of applications from their databases for a variety of purposes. Most of these are geared towards very specific applications and therefore local authorities are unable to produce lists in the otherwise quite standard format required for batch-screening. As a general issue, it was found that no authority holds the level of detail required to screen applications completely automatically based on a full implementation of the ALGE Validation of Planning Applications checklist. The only classification criteria universally adopted by LPAs are the

Statutory Return Codes (PS2), which are intended for reporting and statistical analysis purposes.

4.19 Most LPAs store the application description in digital format, either exactly as provided by the applicant or following rewording by planning staff. Automatic classification of planning applications through a keyword search in the application description was assessed as a potential alternative to relying on the PS2 codes alone, but unfortunately there are two major shortcomings to this approach. At least one LPA was reported to store applications received in paper format, rather than searchable PDF files, which would prevent implementing the screening system. Also, while keywords search has been successfully implemented with BioPlan, a screening tool maintained by Somerset Environmental Records Centre (SERC), the system was not considered further because of the:

- Uncertainty as to whether implementing the system without pre-screening via the ALGE checklist would lead to an unacceptable number of false positives.
- Risk that the keywords set would require significant adjustments to take into account more complex criteria and usage in a densely built city environment.
- Risk that maintenance of the keyword set might be exceedingly complex due to the need for customising the system for individual local authorities.

4.20 There was considerable variability in the format and precision of the applications' details maintained in authorities' digital datasets. Depending on the authority, the location of the application can be stored as full post-code, partial postcode or also as Ordnance Survey coordinates. Depending on the scale of a proposed development this heavily influences the degree of precision to which data searches can be performed.

4.21 All local authorities employ back-office systems, often in conjunction with several additional and/or legacy systems, to manage processing of applications from submission to decision. Across planning authorities in Greater London there are at least nine different systems in use. Whilst these could be modified to export data directly in the required format, an approach to one of the suppliers suggested that there would be a significant cost per local authority to do this.

4.22 During the project an information strategy for relevant stakeholder organisations has been implemented to promote awareness and collect feedback, criticism and suggestions. This has involved presentations and circulation of project outlines to the following organisations:

- London Boroughs' Biodiversity Officers Forum (LBBF)
- Royal Town Planning Institute (RTPI)
- Association of London Boroughs Planning Officers (ALBPO)

4.23 While the focus of the project is on Greater London, a number of organisations outside the area were approached to limit the risk of duplication of effort; ensure that best practise examples were considered and to assess the potential of the tool for subsequent adoption in other regions. The following organisations were contacted:

- National Biodiversity Network Trust (NBNT)
- South-East Local Record Centres group (SELRCs)
- Somerset Environmental Records Centre (SERC)
- Association of Local Environment Record Centres (ALERC)

- Greater Manchester Ecology Unit (GMEU)
- Authorities and other organisations performing screening in the South East
- Biodiversity Planning Toolkit steering committee
- Association of Local Government Ecologists (ALGE)

Implementation of the tool

- 4.24 Final specifications for the screening tool were mainly determined by the following factors:
- Local authorities priorities as highlighted by survey, interviews and ALGE checklist revision.
 - Need to incorporate different revisions of the ALGE checklist, dependent on the preferences of the individual boroughs.
 - Input from the steering committee.
 - Core requirements from stakeholder organisations, in particular the ability to:
 - a. Query data from both NBN Gateway and local species storage.
 - b. Prevent users from screening areas outside of predefined boundaries.
 - c. Direct planners to Natural England guidance and standing advice.
 - d. Requirements from other potential adopter organisations outside of Greater London.
- 4.25 One important point to consider is that adopting the principles behind the ALGE checklist has led to assigning considerably more importance to the nature of the requested activities and significantly less to available data.
- 4.26 The implementation of the screening tool was web-based and designed to support automated screening of a batch of planning applications or single application screening through a form-based interface. Species data were queried from the NBN Gateway with additional data requested from a local PostgreSQL database hosting species and habitat records, sites and priority areas and local authority boundaries. Rule sets for screening applications were created using a desktop application, these included the screening criteria, associated advice and conditions, associated data searches, habitat and sites codes and local authority specific information (priority area codes, PS2 and application type codes etc.).
- 4.27 Separate utilities were created for converting application lists provided by LPAs into the format for batch screening and for encoding information from planning applications into a format used by the screening tool. The project also resulted in a revised version of the ALGE Checklist specific to London.

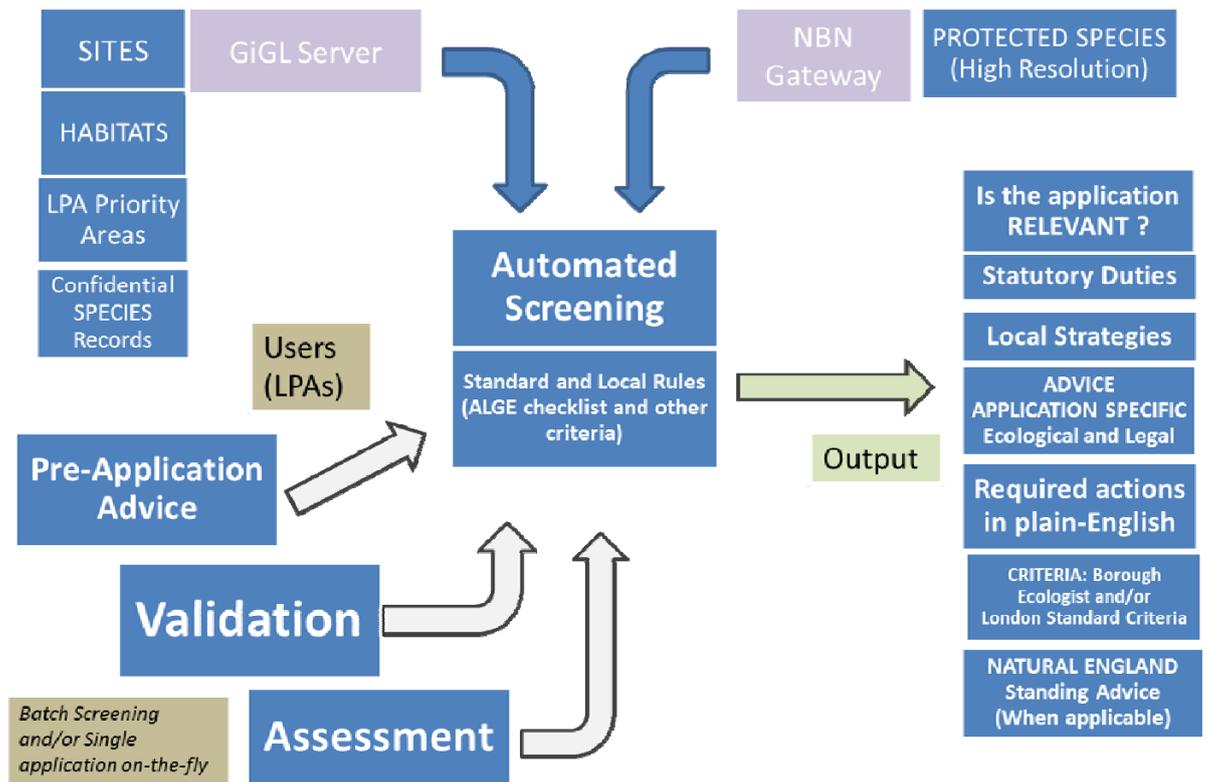


Figure 3: Planning screening tool process diagram

4.28 In contrast with the initial assumptions behind the project, statutory duties are not necessarily a sufficient driver for all local planning authorities to embrace robust criteria for routine casework and to integrate available biodiversity information within the assessment process. Given these findings, the project considerably expanded its original scope and aims by:

- Attempting to introduce a starting point for establishment of standard criteria, through the revision for London of the ALGE checklist and the integration of this with standard pathways for planners to act upon.
- Delivering a screening and reporting system flexible enough to allow diverging considerably from the proposed standard rules - somewhat in contrast with the aim of promoting adoption of standard criteria.

4.29 Thanks to the proactivity of London borough ecologists the following London boroughs contributed to the design and/or trialling of the planning screening tool: Camden, Kensington & Chelsea, Redbridge and Wandsworth. Independently from the project several LPAs have introduced, or are in the process of introducing, biodiversity screening criteria for use by development control departments. This was confirmed for boroughs such as Barking, Bexley, Camden and Hackney. Other boroughs, including Kingston upon Thames, Sutton and Kensington & Chelsea, have in recent years consulted with planners and introduced criteria or alternative approaches.

National demonstration project: review of LRC business models

- 4.30 One of the objectives of the Defra Fund for Local Biodiversity Recording was to enable efficient and sustainable management of the network of local record centres across England. LRCs are run on a not-for-profit basis and receive funding from a number of sources. There are substantial overheads associated with running an LRC in addition to the normal costs associated with running any organisation (management, accommodation, office facilities etc). A fundamental requirement is to maintain and update the collation of species and habitat data which have been collected within the area. These overheads may or may not be explicitly underwritten within the LRC funding agreements. Where they are not underwritten the LRC needs to attempt to recoup these either through providing products which are charged for, and/or through the use of volunteer staff time to assist with the digitisation of the sources.
- 4.31 The purpose of this piece of work was to gain an understanding of the data management overheads associated with running a record centre and the uses/services that are underpinning this. It was also intended to identify uses to which the data are not being applied and to identify a 'tipping point' where, if the LRCs were adequately resourced the number of uses to which the data are applied significantly increases due to financial barriers being removed.
- 4.32 The review involved consultations with data users over a number of potential areas where LRC derived data could be used. Many of these activities, particularly involving national agencies, require nationally consistent data on habitats and species and designated sites. Issues around data coverage and the variable quality of habitat and species data (identification, geographic precision) means that data derived from local sources often are not used. The time taken for datasets to go onto the NBN Gateway is an issue for both national and local users in providing a comprehensive picture of available species records.
- 4.33 Local record centres can provide a local context to data, linking species records to habitats and sites. There is potential to use modelling of species distributions to address gaps in data coverage. Robust monitoring with a focus on regular sampling and consistent locations based on habitats, stratified by major biomes would be required to effectively meet a number of the requirements.
- 4.34 Twelve LRCs were interviewed as part of the review, either face-to-face or by telephone, using a semi-structured questionnaire. A major part of the survey was for the LRC manager to complete a staff activity schedule. On average the LRCs consulted spent approximately 29% (1.3 FTE) of their time on data collation, management and engagement with data suppliers; 15% of time (0.7 FTE) on data reporting; 17% of time (0.7 FTE) on administration and 39% of time (1.7 FTE) on project work. Whilst there is considerable variation in the percentages, in terms of staff time the variation is relatively low, with the exception of staff time allocated to project work.

Activity	Proportion of time spent* (%)	FTE
Management, governance, training, business development	17%	0.75
Collating and Inputting Data into Electronic Database, including Validation & Verification/NBN Upload/IT management/ etc	14%	0.62
Building & Maintaining Relationships with Recording Community	10%	0.44
Sourcing Data and Managing Data Agreements /Building Relationships (non Recording Community), i.e. LAs, Regional Agencies	4%	0.19
Responding to Requests for Data – Consultants (incl. Invoicing and Producing Reports)	10%	0.44
Responding to Requests for Data – LA/SLAs (incl. Invoicing and Producing Reports)	5%	0.24
Enhanced Functions & Project Work	39%	1.72
*Weighted mean	100%	4.4

- 4.35 LRCs have a range of funding agreements, mainly with local authorities (but often not with all of them within the area they cover), Natural England, Environment Agency and water companies. Where wildlife trusts contribute it is typically in-kind. Other organisations with whom agreements are held more rarely include national park authorities, FWAG, Forestry Commission, regional development agencies, biodiversity partnerships and transport/highways agencies.
- 4.36 The individual SLAs with local authorities can range from £2,000 to £50,000 per annum. There seems to be no clear correlation between the value of the SLA and size of the local authority or the extent of services provided. Most SLAs involve the provision of GIS layers in conjunction with the offer of bespoke data searches, although these activities are a relatively small proportion of LRC time and therefore local authority funding contributes significantly towards the underpinning data management.
- 4.37 Approximately 20% of LRC funding comes from responding to ecological consultants data requests. The information provided, and pricing structures, varies considerably across LRCs, in part reflecting their differing cost-bases and relationship with different data holding organisations. The average time to produce a report (including clarifying the requirement and invoicing) is 1 hour and 40 minutes. The full economic cost, taking account of the proportion of LRC time spent on data management, is £65-75 on average.
- 4.38 Often LRCs don't know how their data are being used and indeed whether they are being used at all. The following table summarises the proportion of LRCs consulted supplying data for the uses specified.

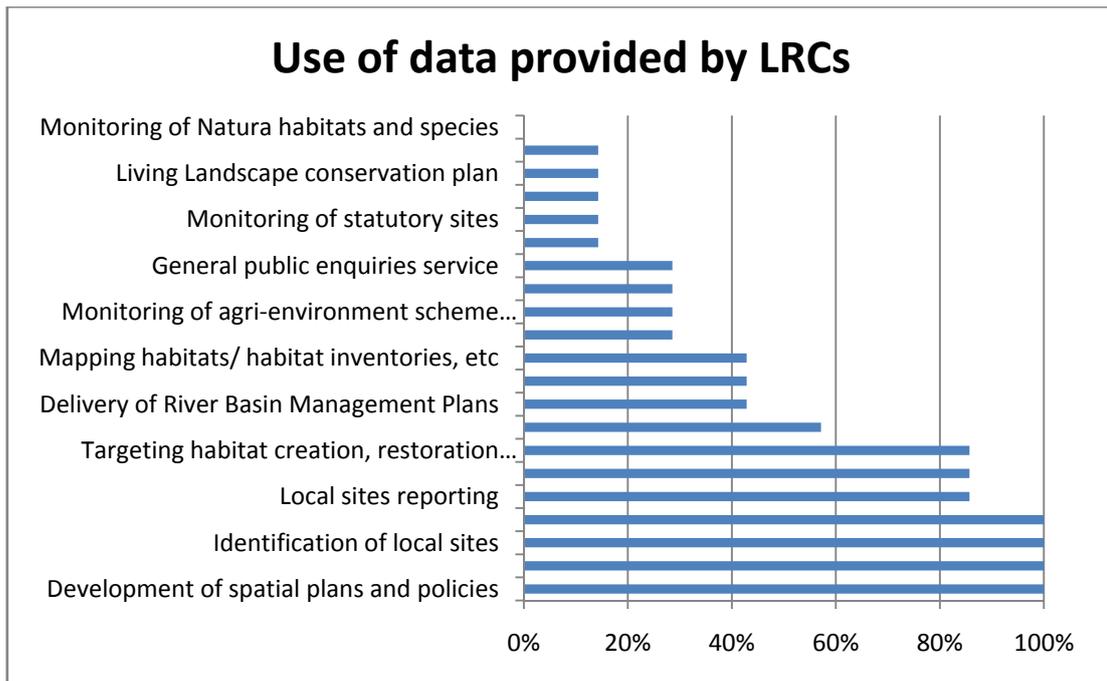


Figure 4: Proportion of LRCs providing data for specified uses.

4.39 Overall the report highlights the strengths of LRCs in terms of providing information on biodiversity in context to support local decision making. There is little consistency in how LRCs are run, the information they provide and how it is used. Often the information from LRCs isn't used to support many potential applications due to the inconsistent nature of the datasets. The report suggests that less than a third of time is spent by LRCs on data collation and management and the remainder of activities relate to servicing incoming generating activities.

National demonstration project: LRC accreditation

4.40 A proposal for an accreditation system for LRCs was originally prepared by Charlie Copp as part of the Wildlife Trusts' Linking LRCs project (2001). At the time the proposal wasn't progressed further as funding was not available to take this forward. In 2009 the Association of Local Environmental Record Centres (ALERC) was formed. One of its objectives was to develop and promote accreditation systems for local record centres and their staff.

4.41 In January 2010 Natural England let a contract to develop an accreditation criteria for LRCs (co-funded from the Defra Fund for Local Biodiversity Recording) and to propose a process for their accreditation. The contract was competitively tendered and awarded to WGB Environment, with the work steered by representatives from Natural England and ALERC. The anticipated benefits of supporting the development of an accreditation system were:

- The measurable improvement in the ability of local record centres in England and the rest of the UK to deliver products and services to inform decision making around protecting and enhancing biodiversity and geodiversity.

4.42 The contract resulted in two sets of criteria being produced, a standard set and a draft set of advanced criteria.

Section	No.	Criteria
Organisation fundamentals	1	The LRC is partnership led.
	2	The partnership includes, as a minimum, local authorities, statutory agencies, conservation NGOs and voluntary recorders.
	3	Impartiality is demonstrated in its constitution and policies.
	4	The LRC complies with the Environmental Information Regulations.
	5	The LRC has the legal status to be able to enter contractual agreements, either as an independent incorporated body or a part of a larger organisation.
	6	The LRC is accountable and transparent for its business and financial performance.
	7	The geographical area covered does not overlap with any other LRC.
	8	The LRC proactively engages with its users and providers.
	9	The LRC employs sufficient professional staff, including a manager or equivalent, to maintain efficient and effective service to its users and providers.
	10	<i>The LRC is a Process Orientated Organisation</i>
	10.1	Independent process steps are identified
	10.2	Tasks, responsibilities and authority of individuals are known
	10.3	Continuous improvement of processes
	10.4	All staff undertake Continuing Professional Development
Data Custodianship	11	The LRC manages species (flora and fauna) and habitat data for its area.
	12	The LRC is responsible for datasets custodianship, and management of dataset copies, by agreement with its partners and data providers.
	13	In its custodianship responsibilities, the LRC observes the Data Exchange Principles of the National Biodiversity Network. These include provision for Data access (13.1), Confidentiality (13.2), Metadata (13.3), Authority transfer (13.4), Transparency (13.5), Personal data 13.6), Charging & Resourcing (13.7).
	14	The LRC ensures quality control of its species and habitat data through validation and verification systems.
	15	The LRC acts as a secure archive for the data in its care in perpetuity.
Products and Services	16	The LRC offers a basic suite of products and services to its users, defined as follows:
	16.1	GIS data search of a project area showing statutory and non-statutory sites and recorded BAP/ legally protected species.

	16.2	GIS data search of a project area showing recorded habitats.
	16.3	List of all recorded BAP priority and legally protected species in a defined area.
	16.4	List of all recorded BAP priority habitats in a defined area.
	16.5	Records distribution map of any recorded species for area.
		In delivering these products and services, the following standards are met:
	17	Species
	17.1	Species reporting naming conforms to NBN Species Dictionary, while retaining recorded name.
	17.2	Records are available at variable precision in GIS, but held electronically at most geographically precise level recorded.
	17.3	Records are linked with a source.
	18	Habitats
	18.1	Habitat reporting includes Biodiversity Priority Habitats in GIS, while retaining original records in any classification recognised by the NBN Habitats Dictionary.
	18.2	Habitats are mapped in GIS by habitat parcel, one category only per parcel.
	18.3	Habitat records are available at variable precision, having been digitised at the most geographically precise level recorded.
	18.4	Records are linked with a source.
	19	Sites
	19.1	The LRC holds, and reports on, a current copy of the local wildlife sites (Local Nature Conservation Sites in Scotland) boundaries and short descriptions for its area.
	19.2	The LRC holds, and reports on, a current copy of the Local Geological Sites boundaries and short descriptions for its area. (not applicable to Scotland).
	19.3	If the LRC is the agreed custodian of the local wildlife site (local nature conservation sites in Scotland) dataset for its area, it complies with the principal national guidelines for local wildlife sites' systems.
	19.4	If the LRC is the agreed custodian of the Local Geological Site dataset for its area, it complies with the principal national guidelines for Local Geological Sites. (not applicable to Scotland).
	20	The LRC promotes high quality species and habitat recording.

4.43 A second follow-on piece of work was set up to trial the proposed accreditation system with two pilot LRCs and to produce guidance to assist record centres with

meeting the criteria. LRCs were invited to submit expressions of interest in participating in the pilot and the following were selected:

- Lincolnshire Environmental Records Centre
- Cambridgeshire and Peterborough Environmental Records Centre

- 4.44 A further five LRC managers participated in the Guidance and Training Group, three from England, one from Wales and one from Scotland. The guidance was drafted online by the contractor which allowed members of the group to read the latest text and contribute comments and real examples throughout the preparation period. It also facilitated linking to online resources, such as the NBN guidance. The guidance produced reflects examples of current practice within LRCs, although these may not necessarily match the requirements of each criteria. Users are therefore referred to the precise wording of the criteria when in doubt.
- 4.45 The two pilot LRCs completed a baseline self-assessment against the twenty standard criteria. They both assessed themselves as falling short of the required standard, but reasonably confident that they could achieve the baseline standard within the timeframe.
- 4.46 The accreditation process included the role of mentor to work alongside each LRC in the preparation and application process. The role of mentor for Cambridgeshire ERC was fulfilled by the manager of the North and East Yorkshire Environmental Data Centre, while the role of mentor for Lincolnshire ERC was undertaken by the contractor. Both pilots appointed an internal accreditation team as recommended, comprising representatives of partner organisations.
- 4.47 ALERC decided that the emphasis should be on standards, as expressed through outputs, rather than standardisation. As a result of this no tools are made mandatory in the LRC Accreditation System. The accreditation system report had recommended a six month process between registration of an application intention and the actual application, which wasn't possible in the time available for the pilot. Furthermore the project specification asked for guidance to be prepared in parallel with the pilots' work, with the consequence that the pilots had no documented guidance at all in the early stages and changing guidance through the period. The pilot LRCs commented that they would have liked to have seen more definite accounts of the evidence that should be submitted by applicants.
- 4.48 As part of the pilot a questionnaire was circulated to all LRCs to identify potential barriers to accreditation so these concerns could be addressed in any planned role out and also to help prioritise future training. The main concerns raised related to resourcing, both within LRCs and ALERC. One of the findings of the pilots was that tasks needed to meet the standard criteria are designed to improve efficiencies, improve data management and communication and therefore may reduce staff time needed on organisational tasks in the medium to long term, whilst requiring extra resources in the short term.
- 4.49 The ALERC board of directors decided to appoint its chairman as the assessor for both pilots, and a sub-group of the full board to act as the Accreditation Committee for the pilot. Both LRCs submitted dossiers of documentation to ALERC by the deadline and were visited by the ALERC assessor who made recommendations to the Accreditation Committee. The ALERC Accreditation Committee confirmed that both pilot LRCs had reached the accreditation standard and approved their applications. They will now be accredited for three years, and will be able to describe themselves as accredited in publicity and promotional material.

5 Capital Investment Scheme

- 5.1 In addition to the national and regional projects, the Defra Fund for Local Biodiversity Recording included a capital investment scheme providing small grants to support data management improvements and data mobilisation. The objective of the scheme was to:
- Increase the number of records available over the NBN Gateway by providing capital grants to improve the capacity and efficiency of data management and mobilisation, focusing on local sites data and priority species.
- 5.2 The scheme was designed to support steps towards meeting the overall objective, including providing better data access for local authorities; digitising paper data for local sites or under-represented taxa; and upgrading data management tools and services. The scheme also supported LRCs in migrating to the latest version of the Recorder software, which included enhancements to facilitate more efficient data management, and assist with improvements to the quality of data holdings.
- 5.3 The capital investment scheme was open to all LRCs (or their equivalents) in England and supported joint bids with other organisations, such as local recording groups. An annual amount of £30,000 was allocated to the fund for the three years. Individual grants were typically between £1,000 to £2,000. LRCs were invited to submit proposals for relevant capital expenditure (e.g. purchase of computer hardware, data entry costs or securing contractor time). These were then evaluated against the objectives of the scheme. Those best meeting the criteria, within the total value of the fund, were awarded funding.
- 5.4 The summary over the three years is:

	2008/09	2009/10	2010/11	Totals
Number of bids received (no. LRCs)	34 (22)	21 (16)	22 (18)	77 (31)
Total value of bids received	£75,727	£36,791	£55,484	£168,002
Number of bids awarded (no. LRCs)	18 (17)	17 (14)	21 (12)	56 (25)
Total value of bids awarded	£36,965	£30,256	£29,737	£96,958

Summary of outputs from capital grants

2008/09

County	Type	Outcomes
Bedfordshire	Database upgrade	Migration of database to Recorder 6.
Birmingham	Data collation	Estimated 100,000 bird records collated. Data exchange and data access agreements established.

Cornwall	Data collation	134,203 Lepidoptera records and 261,182 macro moth records for Cornwall loaded on the NBN Gateway.
Cumbria	Data digitisation	1,188 bird records digitised.
Devon	Database upgrade	Migration of database to Recorder 6.
Dorset	Data digitisation	Over 14,000 macro-moth records (850 taxa) digitised.
Essex	Data capture tools	Tool for importing scanned recording forms into MapMate.
Essex	Data digitisation	Coleoptera data digitised.
Gloucestershire	Database upgrade	Migration of database to Recorder 6.
Hampshire	Data digitisation	13,800 hoverfly records digitised.
Herefordshire	Data digitisation	36,000 macro moth records (~540 taxa) digitised.
Manchester	Database capture tools	IT equipment to increase data entry capacity.
Merseyside	Data digitisation	Protected species paper records digitised.
Northamptonshire	Data digitisation	Digitisation of bird records.
Oxon and Berks	Database management tools	Tool for extracting data forupload to the NBN Gateway.
Shropshire	Data digitisation	5,972 lichen records digitised.
Warwickshire	Data digitisation	16,100 hymenoptera records digitised.
Wiltshire	Database upgrade	Migration of database to Recorder 6.
Worcestershire	Data digitisation	Species and boundary survey data for 154 LWS digitised.
Worcestershire	Database upgrade	Migration of database to Recorder 6.

2009/10

County	Type	Outcomes
Bristol	Data validation	Backlog of 15,000 records validated and verified. Improvement of processes.
Cheshire	Data digitisation	9,326 records digitised for 93 LWSs.
Cornwall	Data digitisation	Species and habitat data captured and summary sheets produced for 498 LWS.
Cornwall	Data digitisation	Audit of reports for species and habitat data capture.
Herefordshire	Data digitisation	Over 6,500 records regarding 99 LWS.
Isle of Wight	Data digitisation	16,090 Isle of Wight records of Hymenoptera, Diptera & Coleoptera digitised.
Manchester	Database upgrade	Now using Recorder 6 as main database. Addressed number of issues with datasets prior to uploading to the NBN.
Merseyside	Data collation	c800 Natterjack records collated and 'a review of natterjack toad monitoring' completed.
Merseyside	Database management tools	Improved data backup procedures.
Merseyside	Data digitisation	2,793 records digitised.
Norfolk	Data digitisation	40,000 moth records digitised.
Northamptonshire	Data validation	56,191 bird records validated. Around 300 locations being checked.

Oxon and Berks	Data collation	c900-1000 notable and BAP macro moth records to the collated.
Shropshire	Data collation	Data from 60 surveys extracted.
Somerset	Data exchange agreements	Established arrangements with four local recording groups and re-established relationship with butterfly group.
Warwickshire	Data digitisation	4,221 Agromyzidae records digitised
Wiltshire	Database management tools	Established processes for efficient data capture by temporary staff.

2010/11

County	Type	Outcomes
Birmingham	On-line recording tools	RODIS on-line recording system installed on dedicated hosting for the West Midlands LRCs.
Birmingham	Data validation	EcoRecord moth database has been verified, resulting in 30,758 confirmed records. Roles and responsibilities have been agreed with local moth groups and Butterfly Conservation.
Cheshire	Data management tools	A tape drive has been purchased to enable for off-site backup of RECORD's databases.
Cheshire	Data management tools	A MapInfo 10 licence has been purchased for the record centre.
Cornwall	Data collation	Spider records have been collated for verification and a spider ID guide has been produced.
Cornwall	Data validation	Quality assurance of the updated land cover map for Cornwall has been completed.
Cornwall	Survey equipment	Purchased equipment to undertake dives to monitor the potential of invasive species being introduced from ships and yachts arriving from abroad.
Herefordshire	Database upgrade	Herefordshire Ornithological Club database has been imported into Recorder 6 allowing improvements to the efficiency of data entry, verification and exchange with Herefordshire Biological Records Centre.
Isle of Wight	Data digitisation	All post 1970 non-digitised lichen records (7,134) for vice-county 10 have been entered into Recorder 6 and data shared with the British Lichen Society.
Kent	Data capture tools	Two laptop computers and Microsoft Office 2010 have been purchased to enable digitising of dormouse and local wildlife site records and allowed the record centre to host more volunteers.

Merseyside	Survey equipment	A bat detector, sound recorder and GPS have been purchased so as to participate in iBats UK project.
Sheffield Sheffield	Data digitisation	15 days have been spent on digitising mammal records and 20 days on coleoptera records from Sorby Natural History Society's card index, with the remaining records being entered by volunteers. Future records will be captured electronically.
Sheffield	Data digitisation	Signal and white-clawed crayfish records (including absence) for Sheffield have been collated and digitised.
Shropshire	Data validation	Data set of 420,000 records for Shropshire has been checked and uploaded to the NBN Gateway.
Somerset	Communication	Somerset Environmental Records Centre hosted a recorder conference which provided a broad overview of the type of biological recording that occurs across the country, upcoming surveys and how this information is used. Seventy-nine people attended the event which has helped SERC to start building better working relationships with recording groups.
Staffordshire Staffordshire	Database upgrade	Laptops were purchased for the fungus group and the bryophyte recorder and data holdings for mammals group, moth group also transferred to Recorder 6. This will facilitate direct exchange between Staffordshire Ecological Record and these groups and is being extended to the invertebrate, badger and spider groups.
Staffordshire	Survey equipment	Purchased two moth traps and generator for Staffordshire Moth Group.
Wiltshire	Data capture	37 known sites used for butterfly transects have been identified and corresponding data (11,500 records) have been collated and entered onto Recorder
Worcestershire	Data capture	Data for new Special Wildlife Sites added to the county's Recorder database and GIS layers.

6 Summary of outcomes

Outcomes of projects delivered as part of the Defra fund for local biodiversity recording

Project	Approximate cost (£)	Summary of outcomes	Opportunities for further projects
Regional reviews	162,000 (27,000 per region)	Five of six regional reviews identified projects which were taken forward through the implementation phase of the Defra Fund. In two of these (East of England and the North West), additional projects were taken forward by Natural England and the NBN Trust. The review in the North East was the most successful, identifying a route map for consolidating the two existing centres. The East Midlands was least successful due to a lack of engagement by stakeholders to taking projects forward.	The reviews were intended to assess the status of biological data collation in each region, to engage with stakeholders to confirm projects to address the aims of the fund. This work has been completed and there is no need to repeat this process, although some projects identified have not already taken forward, for example in the East Midlands (see table below).
Yorkshire and Humber			
Yorkshire and Humber Environmental Data Network	30,000	YHEDN established as a Community Interest Company with membership including representatives from the constituent LRCs/LPAs and the Yorkshire Naturalist Union. Service Level Agreements negotiated with Natural England, Environment Agency, Yorkshire Dales National Park, Yorkshire Water, A1 Plus (total value over £100,000). Network is facilitating mobilising data onto the NBN Gateway.	Natural England already planning to work with YHEDN on habitat surveillance pilots, but may be opportunities to engage on more structured species surveillance.
South	24,000	An agreed position for the	Engage with YHEDN

Yorkshire Biological Recording Centre		harmonisation of LRC provision across South Yorkshire was signed up to by all local authorities. Barnsley DC have signed up to the YHEDN although they have not yet funded a post within a neighbouring LRC.	directly.
Development of relationship with the natural history community	10,000	The project achieved its objectives of mobilising volunteered data for specific taxa, but involved considerable effort for the data secured which was of limited use. Issues remain around the interests of a small number of individuals restricting the flow of data.	YHEDN are pursuing more structured surveillance programmes building on the work of OPAL and also securing consultants data. Lessons learnt from this approach could be built on elsewhere.
Local Sites Data Management	18,000	An on-line system has been implemented and is administered by the North and East Yorkshire Environmental Data Centre on behalf of North Yorkshire County Council. The system is capable of assessing site selection against varying species criteria.	Whilst the system is very effective, other local authorities have already developed solutions for managing local sites data. There may be potential though for wider adoption.
West Midlands			
More effective working between LRCs and local authorities	28,000	The project reviewed the use of ecological data by local authorities across the regional and piloted best practice approaches, including the use of SERC's BioPlan system for screening planning applications and biodiversity alert maps. A number of local authorities are looking to adopt these tools or requirements for further refinement have been identified.	Support the adoption and refinement of tools and promote the benefits more widely.
Support capacity building of data providers in the	22,500	A major part of the project has been to improve data capture and relationships with recorders. Much has been achieved through	Potential to engage with wider adoption and integration of on-line recording systems.

management and supply of biodiversity data		the West Midlands through the implementation of data exchange agreements. A West Midlands' implementation of the on-line recording system has been adopted.	
Implement a strategy for capturing key paper datasets	37,000	The project has enabled the auditing of paper datasets held by LRCs across the West Midlands and resulting prioritisation of data capture. The project has been less successful at securing additional funding for this capture and therefore can be seen as not having offered value for money.	Target capital investment scheme to capture priority datasets.
East of England			
Improvements to data request services for consultants and public bodies	26,000	A standard service for data searches has been established across the East of England (with the exception of Essex where the LRC is still under development) and a MapInfo tool developed to reduce the time taken to produce these reports.	The recommended actions from the project identified the need for targeted species surveys which fits in with the objectives of the new Defra fund.
Advocacy of the need for and value of LRCs to public bodies and data providers	27,000	The project identified a range of obstacles and best practice to data sharing across the region and developed communication products and recommended approaches to address these. It also looked at future requirements of public bodies and what LRCs are doing to meet these requirements.	There are a number of outcomes that can be built upon, particularly relating to data sharing between LRCs and NVSRS and provision of information to support Green Infrastructure initiatives.
North West			
Effective capturing of ecological survey data	9,500	A number of consultancies within Cheshire have agreed to adopt the on-line system for providing data to the record centre. One local consultancy has adopted	ALERC are in talks with IEEM to develop closer working relationships, and discussions are underway with the NBN Trust over setting up a joint project for a

		an opt-out clause in their terms of conditions for data to be supplied to the record centre.	national solution for capturing consultants' data.
Directing recorders to local wildlife sites and developing the recorder base	17,000	The project demonstrated important lessons which are being taken forward through the establishment of an amateur naturalist group for Merseyside and HLF bids promoting biological recording.	Opportunity to further engage with recorders on more structured recording (reference sites).
Efficient data submission	15,500	The RODIS system is already used in Cheshire and Merseyside, but with additional recording groups engaging throughput of data is likely to double on that currently received in Cheshire. Greater Manchester, Cumbria and Lancashire are either trialling the system or considering its adoption. The system significantly improves the efficiency of data capture and validation.	Explore option for expanding use of RODIS and its integration into a wider national system.
North East			
ERIC/DBDS Consolidation	13,000	All species and habitats datasets were combined and transferred to ERIC and data providers approached to agree future sharing arrangements. Existing partners were consulted throughout the process to ensure that any concerns about service provision were addressed.	ERIC is in a position to engage with projects on piloting structured species surveillance and on-line recording.
IT/Database Systems Improvements	10,000	The ERIC database system was linked to ArcGIS, enabling automated reporting. The website was updated to provide information for recorders and users.	
Capturing consultants data	15,000	Despite local authorities agreeing to send out 'biodiversity summary of change' forms with every planning application that	Follow up through national pilots with IEEM.

		may require an ecological survey and wide consultation, no responses were received back from consultants.	
South East and Greater London			
Improvements to data products and services to improve efficiency and to better meet user needs	18,605	An on-line reporting system was developed (Redicia) which enables tailored reports to be produced by end-users.	Look at potential of rolling out solution more widely.
Sustainable habitat data collection, management and provision	24,840	Habitat data for the South East has been consolidated into a standardised format through which LRCs can now maintain inventories compatible with BAP priority habitats.	Engage with Natural England's habitat surveillance proposals (outside of the Defra fund).
South West			
Sustainable business and funding	29,000	A number of local authorities and potential new partners were approached to understand their information needs and how LRCs in the South West could respond to this. Outside of local authorities, whilst there was potential interest the LRCs (including those from other regions) were unable to respond effectively within the timeframe available.	Potential to follow up leads although this may be difficult without additional staff resource and there is a significant chance of this not leading to satisfactory outcomes.
Sharing of best practice, knowledge and skills	29,500	The project established protocols for how LRCs in the South West respond to potential projects covering more than one county and for standardising data provision.	
National demonstration projects			
Recorder development	54,000 IT Development 23,000* software	The vast majority of LRCs now use the latest version of Recorder and significant improvements	Whilst there remain outstanding issues with Recorder, the software is now fit for the

	migration	have been made to improve the efficiency and consistency of performing basic management tasks.	purpose it is intended for. The focus should now be on the development of complimentary (on-line) systems.
Data Validation Toolkit	66,000 ⁺	The software has now been published and incorporates rules for birds, butterflies and moths, plants, hoverflies and some marine species. The software works with Recorder, MapInfo or other formats (Excel, text).	There is a need to develop rules for other taxonomic groups and tools to enable such rules to be generated easily and to be maintained. The validation and verification procedures should ideally be incorporated into on-line recording systems such as Indicia.
Planning screening	58,000 project officer 33,500, IT development	The project resulted in a biodiversity planning screening checklist for Greater London and an on-line tool for automating the screening of planning applications. A number of LPAs have now introduced criteria for use by development control departments to flag up applications to be reviewed by ecologists. Where the automated tools are being adopted it is by the ecologists rather than the planners.	There is an opportunity to promote the tool more widely, although local authority ecologists rather than planning departments are more likely to be receptive.
Review of LRC business models	14,000	The report highlighted that less than a third of LRC time typically focused on data collation and management with the remainder focused on incoming generating activities (servicing data requests and project work).	There is a need to look at how LRCs can operate under a reduced funding regime and increased focus on engagement with recorders and the adoption of on-line recording. The future model for LRCs could range from a part-time facilitation post per county to being embedded as part of an ecological advice service. Habitat surveillance partnerships may be

			coordinated at a geographic scale covering multiple counties.
LRC Accreditation	29,816 [^]	Two LRCs have been accredited by ALERC as a result of the project (Cambridgeshire and Lincolnshire). Accreditation criteria, a guidebook and options for adoption were also produced.	Whilst the accreditation does outline the minimum standards that LRCs should be working to, it doesn't necessarily take account of a more dispersed model of data sharing and potential changes in business models. ALERC are currently exploring funding for an accreditation officer with IEEM.
Capital investment scheme			
Capital investment scheme	97,000 (average 1,700 per grant)	56 grants were awarded covering data collation and digitisation and the upgrading of database management tools.	The competitive grant scheme has been an effective mechanism of achieving the objectives (increasing data availability and improving data management) and the approach could be applied more widely.

*Excludes migrations funded through the capital investment scheme

+Excludes additional funding from JNCC

[^]Excludes additional funding from Natural England

Projects identified by regional reviews but not taken forward

Region	Description	Opportunities for further projects
South East	Developing effective partnerships for herptofauna in London and the South East	This project was unable to go ahead as there was insufficient time remaining after clarifying the details of the work and contracting to deliver tangible outcomes. This project has been superseded by plans to contract the piloting of on-line recording based around ponds and amphibians.
South West	Improving the flow and management of data	Two other projects were prioritised over this project for the South West, given the time and resources available. It was proposed that the project could proceed as a regional trial of Indicia, with LRCs engaged in steering its development. At

		the time Indicia was insufficiently developed to proceed with this approach. There is still an opportunity for the South West LRCs to engage with the piloting of on-line recording.
East Midlands	Improving the flow and management of data	Neither of the projects in the East Midlands proceeded as there was generally a lack of buy-in from the LRCs to the projects and no one could be identified to lead them. It is probably not sensible to proceed with the specific projects although the East Midlands should be engaged in the overall approach of the fund.
East Midlands	Improving the service provide by Local Record Centres to statutory bodies to help them meet their biodiversity objectives	As above

7 Glossary of terms

ALERC – Association of Local Environmental Record Centres
ALGE – Association of Local Government Ecologists
AONB – Area of Outstanding Natural Beauty
BAP – Biodiversity Action Plan
BLBRMC – Bedfordshire and Luton Biodiversity Recording and Monitoring Centre
BMERC – Buckinghamshire and Milton Keynes Environmental Records Centre
BRERC – Bristol Regional Environmental Records Centre
BRIE – Biological Recording in Essex
CBDC – Cumbria Biological Data Centre
CC – County Council
CIC – Community Interest Company
CPERC – Cambridgeshire and Peterborough Environmental Records Centre
DBDS – Durham Biodiversity Data Service
DBRC – Devon Biodiversity Records Centre
DERC – Dorset Environmental Records Centre
DWT – Derbyshire Wildlife Trust
ECORECORD – The Ecological Database for Birmingham and the Black Country
ERCCIS – Environmental Records Centre for Cornwall and the Isles of Scilly
ERIC – Environmental Records and Information Centre for the North East
FTE – Full Time Equivalent
GCER – Gloucestershire Centre for Environmental Records
GIGL – Greenspace Information for Greater London
GIS – Geographical Information System
GBC – Green Building Council
HBIC – Hampshire Biodiversity Information Centre
HBRC – Hertfordshire Biological Records Centre
HLF – Heritage Lottery Fund
IEEM – Institute of Ecology and Environmental Management
IWLRC – Isle of Wight Local Records Centre
FWAG – Farming and Wildlife Advisory Group
GMEU – Greater Manchester Ecology Unit
GLA – Greater London Authority

IHS – Integrated Habitat System
JNCC – Joint Nature Conservation Committee
KMBRC – Kent and Medway Biological Records Centre
LERC – Lincolnshire Environmental Records Centre
LERN – Lancashire Environment Record Network
LPA – Local Planning Authority
LRERC – Leicestershire and Rutland Environmental Records Centre
LRC – Local Record Centre
LWS – Local Wildlife Sites
MBC – Metropolitan Borough Council
NI197 – National Indicator 197
NBIS – Norfolk Biodiversity Information Service
NBN – National Biodiversity Network
NBRC – Northamptonshire Biodiversity Record Centre
NBRGB – Nottinghamshire Biological and Geological Record Centre
NHM – Natural History Museum
NEYEDC – North and East Yorkshire Environmental Data Centre
NVSRS – National Voluntary Societies and Recording Schemes
OPAL – Open Air Laboratories
RECORD – Biodiversity Information System for Cheshire, Halton, Warrington & Wirral
RODIS – Record OnLine Data Input System
RSS – Regional Spatial Strategy
RTPI – Royal Town and Planning Institute
SBRC – Suffolk Biological Records Centre
SBRC – Surrey Biodiversity Records Centre
SERC – Somerset Environmental Records Centre
SLA – Service Level Agreement
SxBRC – Sussex Biodiversity Record Centre
TVERC – Thames Valley Environmental Records Centre
WREN –
WSBRC - Wiltshire and Swindon Biological Records Centre
YF – Yorkshire Forward
YHEDN – Yorkshire and Humber Environmental Data Network