



**21<sup>st</sup> National Biodiversity Network Conference  
Wednesday 24 November 2021**

**"Biodiversity data – from collection to use"**

The information shared below is taken from the Google Docs that were available for Q&A during the NBN Conference.

Presenters were able to view and respond to any questions during or after their speaking slot. Questions, answers and general points are summarised below. General "chat" has not been included. Please note that not all questions or points have definitive answers or responses.

The Google Docs were open and shared online with names of contributors visible. Names have been removed from this document.

Further questions and answers can be heard on the individual recordings of each presentation on the [NBN Conference 2021 web page](#).

**General points raised**

- Is there a UK strategy for what biodiversity data we want to collect to inform policy and help protect biodiversity? There could be a danger of collecting lots of extra data (and paying for that collection) that may not actually help us achieve our aims or deliver the outcomes we require in terms of providing evidence and giving information on trends.
- "Data snobbery" can lead to gatekeeping which reinforces the lack of diversity, equity and inclusion in the recording sector. How might we (NBN+) support the recording community to be more welcoming, more inclusive and share the value back with communities?
- Is most of the data used to inform policy/decisions created by citizen science or is there a more scientific regulated monitoring framework?
- Instead of "Open data", can we all encourage use of "Shared Data" (Data can't be free, as it costs to collect/collate/manage/share and to support the technology for managing it)

**Collaboration**

- What we need is a working group to take the geospatial commission report and recent conferences and meetings such as this and find a way forward to work out how we will all work together to achieve these ambitions and outcomes with data etc that we all want. We should have a representative from each area/group and find solutions moving forward. Is this happening? Are we working together as a sector to do this?

NBN Trust response: NBNT is partnering with ALERC, BRC and NFBR to set out how we see our respective roles evolving in light of the Geospatial Commission Report. If there's interest in a wider working group, we'd be happy to help facilitate this. We must make sure that we maintain momentum for change.

## Licensing

- Many recorders may be unaware that by putting a "non commercial" tag on their data they are making it unavailable to bodies they would want to support e.g. Local Record Centres.
- Data licensing can significantly restrict onward utility and re-use of data and the extent of the impact of this is not widely understood. It's important to understand this to make the right licensing choice, balancing between risks from exploitation and harm from less use.

## Local Environmental Records Centres

- At its most basic level - the lack of LRC funding has definitely added barriers to data volume, quality and flows as a product of the lack of staff time which can afford to be dedicated to it.
- There seems to be an assumption that because Natural England (NE) withdrew funding from LERCs that data became inaccessible. In fact, it remains accessible as NE stated at the time that if they needed the data, they would pay for it at commercial rates. They chose to adopt that view and subsequently chose to not pay to access the data.
- There seems to be much about support for various systems, apps, new wheels and so on but little expressed support for LERCs. Is it because LERCs are bad at collecting, managing and disseminating data, supporting local recorders, local authorities, communities etc or is it that there remains competition for funds and personal preferences?
- There can be a tendency to forget the relationship between recorders and data use. LERCs have an immediate interaction with both recorders and users (local, regional, national and international) providing links between the two as well as assisting with data interpretation, manipulation, incorporating habitats, sites and a myriad of other types of datasets that may not be obviously relevant e.g. skateparks, deprivation areas, geology, waste etc.,
- Is local recording being overlooked when it potentially generates most of the site-specific data which is key to on-the-ground management? The NBN data flow model shown shows LERCs as a very minor player suggesting one way data flow and that most recorders put data in through iRecord not the records centres. In practice it seems to be that nearly all local 'experts' / referees/ county recorders and regular recorders supply data directly to LERCs for them to pass on (except for difficult groups with fewer active recorders). Is this bottom-up approach better since it is at the local level that finer grain resolution to records and more timely access to data is needed?

NBNT response: Working with the LERCs to enhance data pathways and remove barriers to data sharing (in both directions - local to national and vice versa) is a key commitment within our new strategy. The bottom-up approach, with data flowing through LERCs to the NBN Atlas is extremely important and we are keen to promote and enhance it - for example by introducing access controls on the Atlas. We're also partnering with ALERC (and BRC and NFBR) to set out how we envisage the species data pathway should work in England (post-Geospatial Commission Report and NCEA programme) - and of course leading the Better Biodiversity Data Project in Scotland. Mandy Rudd from GiGL is on our Board so we are kept abreast of LERC priorities.

## Species lists

- Much of what the recording community does relies on “lists” of species / habitats. For instance, the Natural History Museum maintains one key such list, but unless it’s tied in with JNCC statuses on the back of the latest legislation and RDB assessments etc., it’s almost useless. It’s imperative the JNCC listings for species and habitats are always as up-to-date as possible, which seems to be failing due to lack of resources, hence the need for extra support.

## Morning - Session 1

### **Keynote address - Craig Bennett, Chief Executive Officer, The Wildlife Trusts - “From data to delivery”**

Points raised during the presentation:

- Are there occasions when data at a habitat level or group level rather than species level will be more impactful at helping to put nature into recovery, at pace and scale? This would also alleviate pressure on the limited number of verifiers.
- When Governments sign up to biodiversity commitments the bodies responsible for monitoring those opt for solutions using the data that is there rather than have the confidence to bid for significant funding to design a proper monitoring scheme and get the data they actually need.
- Are there any developments that will ease the verification process through better “triage” of species which can be recognised from images or accepting records from people with expertise - a form of earned recognition?
- What is worse - a rare species recorded as something common or a common species misidentified as something rare?
- Do we have enough social science input to recording?
- Where will funding for Big Data developments come from for recording?
- Could more use be made of economies of scale to fund the work of the Wildlife Trusts?
- We know that ecological monitoring etc., is not always resourced as much as it should be, meaning we don’t always make evidence-based decisions. Can Wildlife Trusts be doing more to improve our approaches to evidence based conservation?
- What is the most significant skills shortage for meeting these ambitions for data collection?
- How much data is enough?
- Gamification of citizen science is valuable, but it is only one part of the solution. From studies about motivation, gamification can be better at getting quick responses (it appeals to gaining a rapid reward) than deepening people’s engagement with nature. Therefore, how do we gain the benefits of this appropriately?
- What funding model would support big open data?
- Regarding the proposed Natural History GCSE, why would we not call it something about nature and living e.g. Natural Environment, or Biodiversity & Ecology?
- In relation to the comment that the UK isn’t likely to face pandemics related to loss of biodiversity, tick borne infections such as Lyme’s disease are a real and present danger - directly linked to over-population of deer which in turn is due to lack of natural predation.

**Lisa Chilton, Chief Executive Officer, NBN Trust - "Making data work for nature"**

**Q:** How do you envision the NBN Trust being in 10 years' time?

**A:** At the centre of biodiversity data pathways in the UK. Being more proactive to enable people to use and share data through data services and products. Using novel ways to communicate and visualise data. Having a bigger role in citizen science and being a voice for citizen science. Being a larger organisation as a result of different income streams, including commercial services.

**David Roy, Head of the Biological Records Centre, UK Centre for Ecology Hydrology - "Navigating the growing diversity of systems to submit, view and share wildlife sightings"**

Points raised during the presentation:

- Is crowd sourced the right way to describe iSpot. Isn't its primary purpose developing ID skills rather than just providing IDs per se.
- Why doesn't iSpot data feed into the NBN Atlas?
- We tend to think a lot about the expert and data flow side of things, but neglect the outward facing side that shows the outside world why this data is important and why they should get involved. Can all the diverse platforms align under some common language and set out their different purposes and audiences rather than fighting over "territory"?
- There seems to be a very National Centric (e.g. top down) approach, with a lack of focus on LERCs and established network of County Recorders
- Linking up various platforms to iRecord is great for bringing verification to a single place for the already stretched pool of volunteer verifiers. Should iRecord be selective regarding which records are imported? (For example, only records from iNat that are for species that are verifiable from images or that have an open licence - i.e. not a Non commercial licence).
- Gamification in biological recording already exists in the Australian app – QuestaGame

**Q:** NBN Trust and BRC occupy a very similar organisational niche. For this reason, following the earlier question about a vision for 10 years into the future, would there be merits in NBN Trust and BRC joining forces into a single organisation?

**A:** NBNT and BRC work together closely, and we're aiming to build on that further in future. I don't know if there would be additional benefits, over and above the benefits of close collaboration, if we merged - but it's a valid question.

**Q:** With the growing diversity of systems and platforms for biodiversity data, our sector could become increasingly reliant on technical data management and software development skills. Is there more we could be doing around this? E.g. in relation to skills frameworks, developing technical communities of practise, and attracting and retaining people with the technical skills, knowledge and experience our sector needs?

**A:** There's real potential for this - perhaps a partnership between NBNT, ALERC and CIEEM?

**Q:** Indicia is heavily reliant on a few developers, is there a role for the BRC to widen this developer network?

**A:** UKCEH has been growing its own developer pool with Indicia experience. We would welcome additional developers getting involved. All the software is open source. I don't feel we have this capacity issue any more than more software systems.

**Q:** Is there any work being done to standardise a data format to allow ease of transmission between systems?

**A:** We have international standards such as Darwin Core. The exchange between Indicia and Birdtrack aligns with this standard as far as possible.

## **Morning - Session 2**

**Mike Morris, Head of programme: eBioAtlas, Nature Metrics -“eDNA: working together to scale up the measurement of nature”**

**Q:** The onus of Craig Bennet's talk was placed on abundance data and not simply presence/absence, are there developments being made on being able to differentiate individuals and provide abundance data?

**A:** At this time, eDNA cannot provide true abundance. It can be used as a proxy, in particular looking at community change, which as Craig discussed, is vital for ecosystem health. Catchment scale modelling that will link eDNA to modelling and AI will move this forward.

**Q:** Perhaps one new role for citizens with an interest in biodiversity is to 'ground truth' results of eDNA surveillance?

**A:** There have been a number of studies looking to compare eDNA technology and other more traditional methods. Work done by DNAquaNet brought together a wide number of eDNA practitioners across Europe to create a standard protocol and consider the importance of this ground truthing. We are currently working on a number of projects with multiple partners comparing things like pitfall traps, camera traps etc. and have also submitted for funding with European partners to do more. Citizen Scientists will certainly have a role in this.

**Q:** Are there plans to put eDNA data on to the NBN Atlases / share with LERCs as these are all presumably valid biological records (with no need for verification)?

**A:** The eBioAtlas is being created to ensure it sits within an interoperable database that uses API to link with other databases. NBN Atlases have not been directly mentioned in those discussions, GBIF has, and I can see what opportunities there are. With regards externally collected data, and historic data, we will work closely with experts e.g. the Natural History Museum to verify the sample.

**Q:** eDNA is still quite expensive. How do you think we in environmental NGOs can best access this technology?

**A:** The example I used in Peru was undertaken for \$50,000 and took three months from start to end. To gain that sort of knowledge of over 600 species distributions in a tropical rainforest would have cost \$m's and taken years using other methods. In terms of expense, I would argue that it is relative - for example, it takes considerably less time to collect the samples, and by non-experts in the taxa of interest; H&S considerations are generally lower and the amount of data is generally more extensive. Thus, the actual cost for the organisation undertaking the surveys is overall lower.

We currently work with a wide range of NGOs including Rivers Trusts, WTs, NTs, local groups to help them provide a greater amount of data knowledge for less funding. Nature Metrics helps to provide any organisation interested to see if it works for them by supporting a sampling strategy within their budget.

**Q:** Having done some eDNA sampling, I have an issue with the amount of single use disposable plastic used for this type of sampling. Is there any work being done to lessen that impact?

**A:** Yes. We have the same concerns and our laboratory and R&D teams are working hard on this.

**Q:** Do you know whether the DNA you collect is from living or dead animals?

**A:** DNA is sampled from faeces, skin, mucous etc. from both alive or dead individuals. This is where the ecological expertise of those people involved will come in.

**Q:** Where does the data that forms the reference library come from so you can match the DNA to a species?

**A:** A variety of sources. Older and current sources include natural history museums, research institutions etc. New barcoding information comes from experts in that species from collecting samples e.g. fish scales, fur etc. of species they are confident in their identification.

**Q:** This appears to have great potential to also track the advance and presence of invasive species which frequently use fresh water as a vector to spread. Are there plans to include an invasive species monitoring arm to this project?

**A:** Absolutely. The DNA samples collected will initially look at vertebrates including mammals and fish, but part of the sample will be stored so that should funding be available for wider analysis, we can look at other taxa. This can give a wider understanding of invasive species.

You can see wider information on its use here - [eBio Atlas – Global repository for eDNA-based biodiversity data](#)

**Q:** How long does eDNA persist in the environment?

**A:** It depends on the species and biotic and abiotic factors such as pH, pollution levels etc., but in general it lasts between 2-7 days in freshwater; less in marine

**Q:** You mentioned that eBioAtlas data will be open for use, “with a sustainable financial model”. Is it possible to explain what that financial model is?

**A:** Not-for-profit research and conservation will have full open access to the 30,000 samples under licence; private companies looking to utilise the data for for-profit reasons will also be able to have access for their own means at a charge that will go directly back into IUCN and eBioAtlas to maintain the database and also hopefully allow for further collections.

It is important to note that the samples will be analysed by NatureMetrics at-cost.

**Q:** Lots of clear eDNA application in places lacking information (i.e. internationally). In a UK context, do you expect the cost of molecular analysis to become cheaper to make a more routine option? The experience of pan traps as part of the UK Pollinator Monitoring Scheme suggests that it is still more cost-effective for an expert to identify the catch (and estimate abundance) rather than use DNA barcoding.

**A:** eDNA will not replace all current techniques as some of those may be more suitable for the taxa or species of interest. Costs are coming down across the eDNA sampling community and I would predict that this continues.

**Q:** How does the location on the species record work in eDNA? Water travels through vast areas of landscape?

**A:** DNA of species in a water course tends to breakdown after 2-7 days depending upon the species and biotic/abiotic factors so it is important to have an understanding of the catchment, flow rates, the species of interest (unless it is all species of course) and the budget available to ensure that your sampling strategy picks up as much as possible from any samples. This is where our wider work on modelling and AI comes in to have a better understanding of how to put individual site points into wider ecosystem health metrics.

**Q:** Exciting to see that eDNA is becoming more accessible at a community science level and (presumably?) more affordable.

**A:** It is vital that more communities get involved in collection and using eDNA data as it needs to be available for all. Work such as fisheries management plans, like BART's are a great way of getting communities to engage in the design, collection and implementation of sampling strategies

**Q:** Is there a global eDNA standard so that data is readily transferable no matter if it is NatureMetrics, Universities etc, that is doing the collecting.

**A:** Not yet. There is one being created through the DNAquaNet project and there is a new Southern eDNA Society in Australia and NZ who are looking at following the same principles and protocols. Nature metrics is also speaking with organisations in North America in the same way.

Please see [eBio Atlas – Global repository for eDNA-based biodiversity data](#) for more information about the eBioAtlas project.

**Oli Grafton, Principal Advisor for NCEA (Natural Capital and Ecosystem Assessment) Citizen Science & Partnerships, Natural England “Transforming our investment in England’s biological data infrastructure”**

**Q:** Why are you “reinventing the wheel” by doing the work of LERCs working locally, instead of using that budget to actually support the LERCs and gain access to their data and support the excellent work they do with local recorders?

**A:** We will not be reinventing the wheel, rather we will be framing how we invest more closely to ensure we address the earlier stages of data flow and onward open sharing of the resulting data. We will be exploring how we might make this resource available, but we hope it offers a welcome opportunity for existing groups, like records centres, to resource work engaging and supporting recorders. In the past our support of record centres was focussed on data access and outputs which detracted from investment in active recording.

**Q:** Is it fair to say that one of the key things DEFRA group could be doing to achieve your aims is to better fund the NBN Trust?

**A:** As long term funders of NBN Trust we are working with Lisa Chilton to understand the unique role of the NBN Trust to better shape what and how we support the Trust in the future.

**Q:** Was data genuinely inaccessible in recent years? Did stopping LERC funding in England influence the lack of data access?

**A:** NE had funded LERCs consistently across England for over 10 years, but we had to make reductions that led to the withdrawal of that investment. When that happened access to data, that had already been mobilised, were withdrawn. There was an impact from that, but it also highlights the access trap I was referring to in my talk. I aspire to a situation where the public sector is able to invest in an active recording community that generates open data. As public finances grow and shrink (as is their nature) the impact will be on the support of active recording, but not impact the data previously gathered and mobilised. That situation would make demonstrating the value of and consistent investment in active recording clearer, stronger and more justifiable.

**Q:** What chances are there of citizens' contribution to support official biodiversity surveillance being 'mainstreamed' into official surveillance programmes AND paid for from official surveillance budgets? Using say 10% of official surveillance budgets in this way would represent excellent value for money.

**A:** Yes, it is really important that the statutory conservation bodies like NE need to recognise and support the role and contribution of citizen scientists, but it would undermine their status if we were to fund them as professional, paid scientists. That does leave room for more support and that is in part what we would like to explore via the work and opportunity presented by the NCEA programme.

**Q:** Why is Marine missing from your final slide? There is a 30 by 30 target for Marine Protected Areas that need to be evidenced. Does NE & Marine Management Organisation data strategy match?

**A:** Marine has recently joined the NCEA programme and reflects the long running challenge of aligning the marine and terrestrial. There are definitely marine citizen science opportunities, but they are at present being addressed by the marine programmes. That may change as we progress, but whilst there is some overlap, the data flows and citizen science opportunities are different.

**Q:** When Governments sign up to biodiversity commitments do the bodies responsible for monitoring those opt for solutions using the data that is there rather than have the confidence to bid for significant funding to design a proper monitoring scheme and get the data they actually need? Mobilising voluntary effort is great, but is it enough?

**A:** Citizen science is, and always has been, an important part of what we know and set as targets and are able to report about the natural environment, but we also have long running surveillance and monitoring schemes. The challenge with the latter is that they typically focus on particular areas of delivery (e.g. Agri-environment schemes) and are structured to report nationally.

**Q:** We need a working group to take the geospatial commission report and recent conferences and meetings such as this and find a way forward to work out how we will all work together to achieve these ambitions and outcomes with data etc that we all want.

**A:** NE has to balance lessons with funding opportunities (programmes like the NCEA). There is a lot to take from the Geospatial commission report, but we also have to work within the parameters of the funding available. Collaboratively we can work through how we might use the interests and resource available to better support biological recording. Onward mobilisation of the data should flow responsibly for wide re-use from that. Over the next year the NCEA will be looking to have these sort of collaborative engagements.



**Q:** We often already have enough data to identify local natural assets, but we don't have the means to put their conservation into effect. As well as more records we need a better legal structure and planning controls to make restoration and conservation real, on the ground.

**A:** That is why it is, and will be for NCEA, important to link mobilisation of data to re-use in conservation delivery programmes like (in England) agri-environment subsidies, biodiversity net gain and local land management decisions (influenced by LNRS).

**Rona Sinclair, Marine Data and Ecology Advisor at NatureScot “Harnessing the value of Scottish marine biodiversity data to benefit nature: streamlining data flows and unlocking marine data sources”**

No specific points to note.

**Clare Blencowe, Chair of Recorder 6 Steering Group and Manager of Sussex BRC - “A strategic perspective on Recorder 6”**

**Q:** How much of the functionality needed for a new recorder system could be delivered by iRecord?

**A:** Both Recorder and Indicia share a common route of the full NBN Data model. But Indicia took a more flexible structure to support the growing diversity in requirements.

**Q:** Would a new replacement for Recorder, not be yet another data entry route/platform? Would greater use of the Indicia software for a recorder replacement not be a better approach, using a system that many organisations are already adopting?

**A:** Potentially, but perhaps Recorder is aiming to be a data management/reporting system rather than aimed at data capture? Every technical system comes at a cost and is hard to maintain. We should concentrate effort on fewer systems if we want long-term solutions. Particularly since Indicia is starting to offer more report and data management functionality as part of BRC's support for recording scheme data management.

**A:** The R6 steering group will come back to the community with a piece on R6's 'niche' in relation to other systems.

**Q:** Can a part of the funding collected for the maintenance of Recorder from the annual fee be used for in-house support to Recorder users? There are users of the front-face of Recorder who do not understand the software and cannot resolve issues despite any posts on the forum.

**Afternoon – Session 1**

**The Sir John Burnett Memorial Lecture - Professor Rosie Hails, Nature and Science Director at the National Trust - “Renewing Biodiversity”**

Points raised during the presentation:

- Spatial priorities for habitat restoration fit with local nature recovery strategies and local nature recovery maps
- Collaboration or opportunity for partnership with the Woodland Trust, forestry commission, and forest service on tree planting targets?
- Factoring climate change projections into the restoration plans
- Contribution to Local Nature Recovery Strategies
- Is net zero realistic for National Trust?

- Protocol on woodland ecological condition from the National Forest Inventory already exists.

*“Evidence of the current state of woodland ecological condition and how it changes over time is required to inform the targeting of resources and woodland management in support of biodiversity and ecological resilience. The following provides a statistical assessment of 15 indicators of woodland ecological condition and a further classification of woodland habitat into its condition status of favourable, intermediate and unfavourable.”*

<https://www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/what-our-woodlands-and-tree-cover-outside-woodlands-are-like-today-8211-nfi-inventory-reports-and-woodland-map-reports/nfi-woodland-ecological-condition/>

More resources on Atlantic Rainforest -

<https://savingscotlandsrainforest.org.uk/rainforest>

The full reference for Maskell et al 2013. Journal of Applied Ecology 50 p.561 is: [Exploring the ecological constraints to multiple ecosystem service delivery and biodiversity - Maskell - 2013 - Journal of Applied Ecology - Wiley Online Library](#)

**Michael Pocock, Senior Researcher, UK Centre for Ecology & Hydrology - “Recording nature where it matters: The DECIDE Project for precision citizen science”**

**Q:** Will Decide be mobile accessible, perhaps as an app? Recorders on the ground would react better to something portable.

**A:** The tool is designed as “mobile first”, so if you have a good enough signal, it will work. We needed the flexibility of a web tool to rapidly adapt through co-design. The thinking is that it is more likely to be used as a tool for people planning on where to record, rather than for people in the field deciding where to go next.

**Q:** Would you be open to undertaking local area-based assessments with a wider groups of species than just Lepidoptera?

**A:** Yes, absolutely - that is part of our ongoing plans. We’ve designed the whole process in a ‘high throughput way’, so the species distribution models could be run for many species in a batch.

**Q:** Do you see an opportunity in future to expand this project to the tropics?

**A:** Yes!! I think it is especially useful in places that are data poor. The question of where to go recording is even more important in these places.

**Q:** Presumably when you are looking at where records have been made, you take into account times when people may have tried to record species but didn’t find anything?

**A:** We (i.e. many of those in the NBN Network) don’t have ways of recording absences, except in specific formal surveys. In ‘occupancy modelling’ (as used in State of Nature) we have ‘inferred absences’ based on other species being recorded, and used modelling approaches to correctly account for imperfect detection (i.e. a species was present but not seen, or not reported). That doesn’t answer the problem of where no butterflies at all were seen, for instance.

Recording absences is such an obvious thing to do, that I think it is instructive to wonder why we don’t make it possible to record absences. Personally, I think it is related to people’s

motivations for recording. For instance, I haven't seen a butterfly for several weeks, but wouldn't be bothered to record an absence of butterflies in all the places I've been. So, then I am only motivated to record an absence where I would expect to see something - but is my expectation sensible?

The solution of 'recording absences' seems to quickly unravel as a simple thing to do!

**Q:** Can this be used to target City Nature Challenge - at least for more experienced people who might not otherwise engage?

**A:** Yes! Loads of options for this.

**Q:** Can this system be adapted for use by local eNGOs for a list of indicator species they would like people to record?

**A:** Yes, but it would require a little more thought. When considering specific species, it would be possible to optimise the species distribution models (rather than doing a 'high throughput' approach as we did in DECIDE) - and it would be reasonable to do this in a way that linked to a specific project recording absences, e.g. gamifying recording.

**Q:** The Channel Islands are often excluded from National Schemes. Does the DECIDE tool extend to the Channel Islands because it looks fantastic and as we are such small locations we have significant data gaps.

**A:** We've not included the Channel Islands. Sorry. There is work on pollinators in Guernsey, so the potential to do great things is recognised. In a smaller area such as Guernsey I'd be inclined to think more about an experimental approach to citizen science, linking to informing action.

**Q:** The DECIDE tool looks a fantastic aid to recorders. What plans do you have to sustain it after the project funding ends?

**A:** We have designed it to persist with only modest input, including automating the updating of the species distribution models via UKCEH's Data Labs and High Performance Computing. Elements could be adopted as the 'business as usual' for some systems.

**Q:** Do you also record recorder effort? It would seem key to being able to profile actual species information not reflecting just where people have been recording.

**A:** We don't do recording - we chose NOT to create another recording tool (we have enough good ones already), so DECIDE is to support recorders deciding where to go. But we are interested to know how/whether the DECIDE Tool has influenced people, so happy to hear via the gold Feedback button in the Tool!

Have a look at the DECIDE Tool. Feedback is encouraged:

[https://decide.ceh.ac.uk/info/decide\\_info](https://decide.ceh.ac.uk/info/decide_info)

**Lisa Chilton, Chief Executive Officer, NBN Trust and Ellen Wilson, SBIF Co-Chair  
"Scotland's Better Biodiversity Data project"**

Points raised during the presentation:

- What does 'building a data management system' actually mean? What is to be created, and for whom? The timeline is very short to do both fact-finding and implementation
- What does the word 'hub' mean for this project? Are we thinking physical or virtual?
- Where is the local authority funding?

- One model might be a central government obligation placed on LAs to engage at a basic SLA level as part of their statutory biodiversity duties. Existing working relationships between LERCs and LAs for higher levels of service delivery shouldn't be bypassed. It is not clear whether "passing-through" LA revenues from central to local level would add any value, however it would risk the perception (whether true or not) of competing for, or siphoning off of, funds prior to reaching the LERCs. The story is different when dealing with more geographically dispersed organisations spanning several LERC areas, such as RSPB, Water authorities, forestry, etc.

**Q:** Will the many Scottish museums that hold vital Scottish biodiversity data be included as partners?

**A:** Yes and National Museum of Scotland is on the SBIF Advisory group

**Q:** Why would Local Authorities deal with a central hub over a local LERC where the LERC already has local knowledge and existing relationships?

**A:** They wouldn't - contact would continue to be through the relevant LERC for data etc, and the LERCs would be acting as one for funding arrangements and then the hub would act as a single point of contact potentially

**Q:** Are the framework agreements mentioned applicable to LAs? EG. one agreement for all LA's where this increases overall revenue potential?

**A:** Potentially, all to be worked out as part of the project, but the ambition is to improve the funding arrangements from the perspective of all parties.

## **Afternoon - Session 2**

### **Sophia Ratcliffe, NBN Trust Data Manager - "Highlights from the NBN Atlas"**

**Q:** Government Agencies (which was only a very small bar on the chart shown in the presentation) hold some very large databases of verified species records e.g. plant pests and pathogens. A conversation would be useful to seek sharing these records.

**A:** The figure was only of records added and updated in the last 12 months. The NBN Atlas does hold a substantial number of records from Government Agencies; they just haven't been updated this year.

### **Charlotte Martin, Scotland's Rural College - "A Glowing Report for Scotland"**

Points raised during the presentation:

- Suggested that scout camps / youth camps could be a great way of increasing data. Possible partnership with scout association or Duke of Edinburgh Award Scheme.
- Links: <https://www.gofundme.com/f/glow-worms-scotland> and <https://gofund.me/b800c1b9>

## **Holly Woo, The Open University - “Using historic records to identify changes in ancient woodland flora in a new urban landscape”**

Points raised during the presentation:

- Potential to include the ancient woodland called Prehen in Derry city, Northern Ireland in future research studies, as well as for collaboration on two ancient woodland projects in the Bristol region.
- Other data sources mentioned: Woodland Trust “Back on the Map” data; The NI Environment Agency - datasets and maps for ancient woodland; CEDAR.

**Q:** Is there any overlap with the work that you have undertaken and the work of Joanna Francis within the woodlands of Milton Keynes?

**A:** Yes, Jo Francis did thorough surveys of the three Milton Keynes ancient woodlands in the 1990s and I’m using the data from her surveys and more recent ones in my analyses of woodland flora. The data I’m presenting today is at a broader scale, but I’ll be looking in more detail at the frequency data within the woodlands as I continue with my project.

**Q:** In relation to the graph shown – is the % increase of AW indicator species in actual woods since 1990s to do with recording effort?

**A:** Yes, recording effort will play a role in these results so future statistical analysis will be used to confirm these trends taking into account numbers of records from each of the woodlands. If there are fewer other species (perhaps ruderal species) in the species lists, the proportion of AW indicator species will increase.

## **Genevieve Barrett, University Centre Sparsholt - “Hedgerow Heterogeneity and Management, the Influence on Breeding Populations of Yellowhammer (*Emberiza citrinella*)”**

No specific points to note.

## **Daniel Salliss, Research Associate, University of East Anglia (UEA) - “Optimising landscape scale conservation interventions through Biodiversity Auditing”**

**Q:** Would it be feasible to do an audit for each natural character area (159 in England) or is it always going to be a niche project for special areas because of the effort involved?

**A:** I believe the short answer is yes, it can be! It’s relatively low cost as the data is already out there and available through local record centres and organisations like NBN. The plan for Norfolk is after the coastal habitats, to extend the audit to look at the arable landscape. There is strong belief in the team at UEA that this should be implemented regionally across the UK as part of the LNRS.

**Q:** If the audit quantifies benefits what sort of format/s does the audit take and provide these as (is it a collection of tables, species list etc?) and is this set up/ methodology something that could be shared for others to use in due course?

**A:** The main output of the Breckland Audit was maps of the different guilds (shared habitat resources), to highlight where to target management, however it’s a very extensive report with many outputs, including a detailed methodology, which can be found here:

<https://www.norfolkbiodiversity.org/assets/Uploads/Absolutely-Final-Report-Appendices.pdf>

**Tim Hirsch, Deputy Director, Head of Participation and Engagement, GBIF Secretariat**  
**- “Sharing data on a global scale: how records submitted to the NBN Atlas are used globally through GBIF”**

Points raised during the presentation:

- One use that gets overlooked is being able to show recorders their data on a global map. It helps to encourage them to submit their records. Also having data noted in citations encourages interest and advocacy from funding partners, councillors etc
- What is the ideal data flow model for UK recorders to GBIF – via LERCs? via NBN? Via national recording schemes? Does duplication of records matter? Is NBN already feeding everything it receives upwards?
- Are there any alternative systems to GBIF or is it the only go-to source for global biodiversity data?
- How much of a difference does the licence of a record have on a record's use?
- Are there guidelines for private sector reforestation companies on how to best collect data/useful tools to collect data / and feed data into GBIF?

**Q:** Is the dataflow with GBIF two way? i.e. do datasets on GBIF work their way to the NBN Atlas such as eBird dataset.

**A:** No, at the moment we don't take records from GBIF.