

**NBN Trust**

Making data work for nature



# **NBN Atlas Accelerator Project Report 2023-2025**

Palmate Newt © David Kilbey

# Executive Summary

The 18-month NBN Atlas Accelerator project was delivered between December 2023 and June 2025, supported by Natural England through the Natural Capital and Ecosystem Assessment program (funded by the UK government) and in partnership with the Environment Agency and the NBN Trust.

The project facilitated and accelerated the NBN Trust's work to enhance the value of the NBN Atlas to the UK conservation community through two complementary streams of work. The first stream implemented high-priority, high-impact enhancements to the platform to improve accessibility and ease of use, helping to mobilise open and accessible biodiversity data. The second stream strengthened a well-connected and functional biodiversity data community and infrastructure, following FAIR and Open Data principles across all sectors of the biodiversity data community.

A landmark achievement of this project was the development of the first NBN Atlas Strategy, which will guide future development of the NBN Atlas for the next five years. The project delivered significant technical enhancements across data sharing, data quality, visualisation tools, and user experience, while establishing robust governance structures through the reformed NBN Atlas Stakeholder Advisory Group. These achievements position the NBN Atlas to better serve its 335,000 annual users<sup>[1]</sup> and support critical decision-making in conservation, policy, and ecological research across the UK.

<sup>[1]</sup> Google Analytics active users for 2025



# Background

## The NBN Atlas Context

The NBN Atlas is the national biodiversity data infrastructure for the United Kingdom. Launched in 2017, it is the UK's largest publicly accessible source of biodiversity data, bringing together data from over 200 organisations into a single portal. This creates access to information that would otherwise be difficult and costly to locate and utilise. The NBN Atlas is visited by more than 335,000 users a year seeking data to inform policy and development decisions, conservation strategies and interventions, and ecological research. As such, it delivers great value for the UK nature conservation community.

## The Challenge

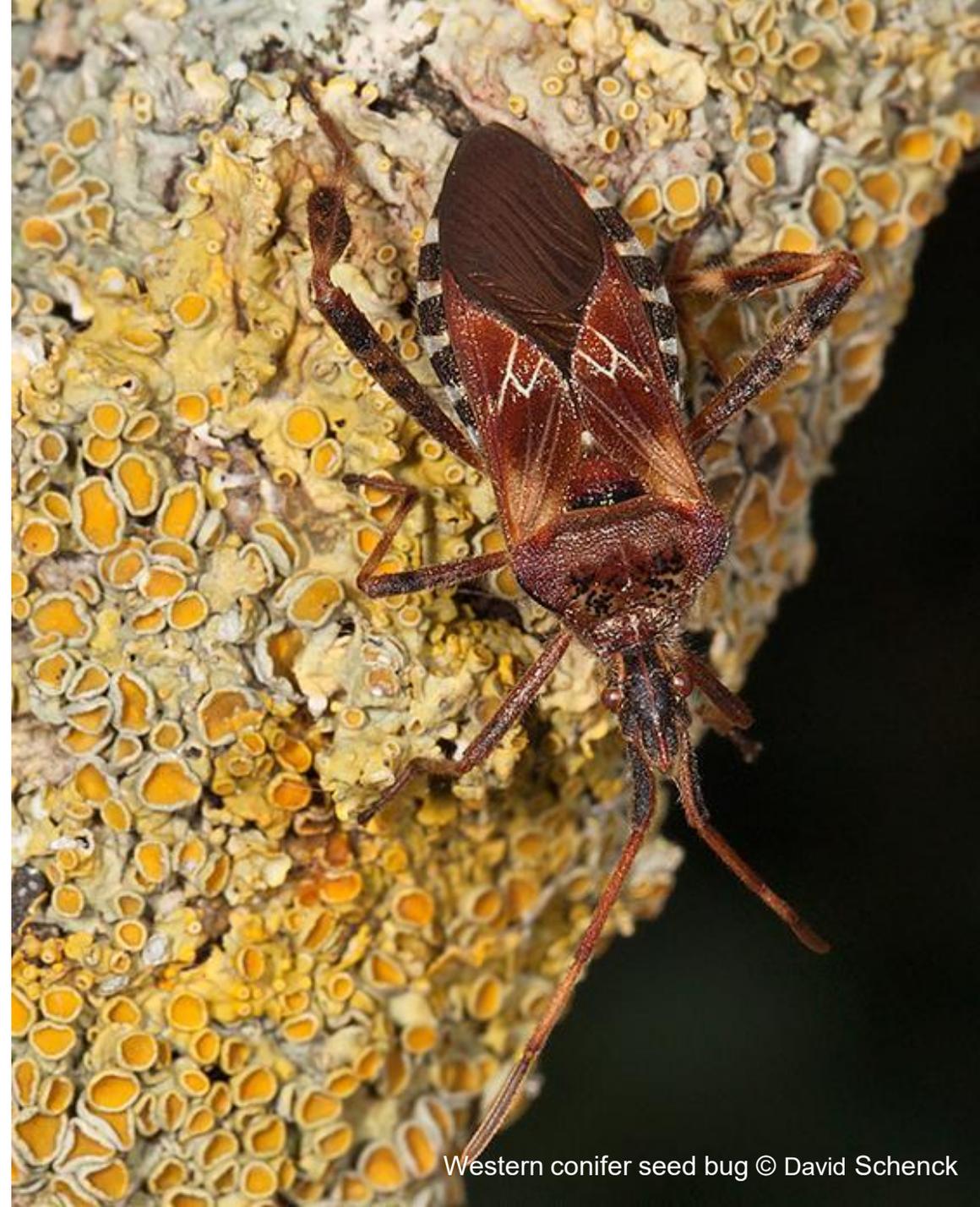
The NBN Atlas is a central component of the UK's species data pathway. However, it has been a long way from realising its full potential. Since the NBN Atlas was built by customising the Atlas of Living Australia, there has been insufficient investment in its ongoing development. The NBN Trust has barely had the resources to maintain the NBN Atlas, let alone enhance it. Of necessity, planning has been short-to-medium term rather than strategic and long-term.

As the data volume grew over time, and as the technology aged, the platform became unstable. By 2021, the NBN Atlas was failing to provide a reliable service. The need for further investment and development became critical.

## The Response: Fit for the Future & Pipeline Projects

In 2022, we commenced the NBN Atlas [Fit for the Future Project](#), a root-and-branch upgrade of the platform architecture and code, bringing all components up to date. From late 2023, the final stage to Atlas upgrades, bringing it back in line with the Atlas of Living Australia, was the Pipeline project, which will greatly enhance the efficiency of data processing. The upgrade was released and completed in December 2025.

Achieving these milestones means that we can now start to look forward: to plan for the future of the NBN Atlas and to implement changes that maximise the mobilisation, use and impact of biodiversity data. The NBN Atlas Accelerator Project was designed to implement high-priority, high-impact enhancements to meet the needs of our stakeholders and develop a Strategy to guide future development building on these major infrastructure upgrades.





Atlantic Puffin by Nik Borrow, CC-BY-NC, iNaturalistUK ©Nik Borrow

# Project Governance and Funding

## Project Structure

The NBN Atlas is supported by both the data and development teams of the NBN Trust, with estimated staff costs of approximately £175,000 per annum to maintain the NBN Atlas in 2023-2024. The NBN Trust receives funding from the Statutory Nature Conservation Bodies that covers 68% of these staff costs. However, this team size and structure is just about adequate for maintaining current levels of data sharing and keeping the NBN Atlas operational; it does not allow us to be proactive and limits our ambitions. This is especially evident when delivering major infrastructure and code updates, which consumes most of our developer time.

In order to accomplish significant enhancements and work on the strategic direction, the NBN Atlas Accelerator project funding was directed primarily to the creation of two new roles: the NBN Biodiversity Data Manager and the NBN Accelerator Developer. The funding also contributed to the Lead Developer and NBN Atlas Support Officer roles.

## Governance

These positions, together with senior responsible officers from Natural England and the Environment Agency and the NBN Trust CEO, formed the Project Steering Group that met monthly. The Steering Group assisted the team with the prioritisation and additional scoping needed for key deliverables, monitored and strategically assessed progress against project goals, and identified, managed and reported significant risks associated with development.

## Project Funding

The total project cost was £208,000, with funding contributions itemised:

This funding structure demonstrates strong partnership working and significant leverage of Natural England's investment through NBN Trust match funding and Environment Agency contributions.

| Funding Source            | Contribution    | Percentage  |
|---------------------------|-----------------|-------------|
| Natural England/NCEA      | £170,560        | 82%         |
| NBN Trust (match funding) | £22,880         | 11%         |
| Environment Agency        | £14,560         | 7%          |
| <b>Total</b>              | <b>£208,000</b> | <b>100%</b> |

# Project Objectives and Deliverables

Working in partnership with Natural England and the Environment Agency, we identified two key priorities that would deliver maximum impact for users of both the data and the NBN Atlas platform, while giving us the longer-term vision to meet the needs of the biodiversity data community. These were to deliver code enhancements and upgrades to existing functionality under the themes of data mobilisation, Open and FAIR data principles, data quality and data visualisations, and to reconvene the NBN Atlas Stakeholder Group to work collectively on the strategic needs of the NBN Atlas.

## **Objective 1:** Implement High-Priority, High-Impact enhancements to the NBN Atlas

Since the development of the NBN Atlas, we have maintained a list of priority enhancements that have been requested by our stakeholders. These enhancements include new functionality that will facilitate greater mobilisation of data in accordance with FAIR data principles, improve data quality, enable more sophisticated data visualisation and, in doing so, enhance the user experience for data providers and users.

We distilled the list down to a set of enhancements which we believed would deliver the greatest impact, represent best value-for-money, and be achievable within a 15-month period from December 2023 to March 2025.

Note: The initial timeframe for the project evolved with recruitment and retention issues encountered with experienced developers. A decision was therefore taken to extend the project until June 2025.



Common blue © John Sawyer

# Data Sharing and Access Improvements

## Access Controls

As an open access platform, there are limitations to the data resolution that some data partners are able to share without impacting their business models and ability to recover costs in data management. Equally, the need for high resolution data across all species to be available for decision making were the drivers behind [Access Controls](#).

This new function, with the first iteration released in early 2025, enables data partners to share their full resolution data as held, but stipulate that the public open version is generalised to either 1km, 2km, or 10km grids. Users can request the more detailed location information directly from the data providers, who maintain the lists and access controls for each requester directly in the NBN Atlas.

This first iteration allows people with approved access to download the detailed site location and coordinate information, with the plan to roll out further enhancements allowing users to view the full resolution data in the map and map downloads.

## eDNA Data Support

eDNA data is now supported in the NBN Atlas. Working with Natural England and the UK DNA working group partners, a new [template](#) and [full guidance](#) has been generated to make it easier for data partners to share occurrence data derived from molecular-based approaches to biodiversity monitoring.

We have partnered with GBIF to also provide an NBN Atlas compatible [Metabarcoding Data Tool](#) that aids researchers who collate multi-tabular metabarcoding data outputs and turn them into DarwinCore occurrence datasets.

The image shows a 'Narrow your results' filter panel with several categories and callout boxes explaining their functions:

- Taxon:** Allow access for specified taxa, by filtering access by scientific names. If the user is allowed access to all taxa or sensitive species, you do not need to use this filter.
- Attribution:** Allow access for specified datasets. If user is allowed access to all records across all shared datasets, then you do not need to use this filter.
- Occurrence:** Allow access for specified years. If user is allowed access to records across all years, then you do not need to use this filter.
- Location:** Allow access for a specified country/countries or vice county/counties. If the user is allowed access to records in any region, then you do not need to use this filter.
- Sensitive:** These filters are useful for managing access to generalised sensitive species records:
  - Already generalised (449): If the user is only allowed access to the supplied resolution of sensitive species records that were supplied to the Atlas already generalised, then apply this filter. **Note that information supplied for the Locality and Location fields will be made available to the user!**
  - Generalised (338): If the user is allowed access to generalised sensitive species records (i.e., the records have been generalised by the Atlas), apply this filter.
  - Not sensitive (2,448): If the user is only allowed access to non-sensitive species records, apply this filter.

Data partners now have a range of options to give users additional location details for specific records.

The image shows the homepage of the 'Metabarcoding Data Toolkit' website. The header includes the logo and navigation links for 'New dataset', 'FAQ', and 'Login'. The main content area features the title 'NBN GBIF Metabarcoding Data' and a description: 'This tool is to assist organisations and researchers in the UK who are sampling environmental DNA using metabarcoding techniques to process their derived taxon occurrence records into Darwin Core Archives and share their OTU tables with the wider biological recording community, both national and internationally via GBIF.' Below the text is a circular collage of various biological specimens including insects, plants, and marine life. At the bottom, it states 'This tool is a direct descendant of the pilot version of the GBIF Metabarcoding Data Programme'.



## Metrics for Data Partners and Data Uses

We have been working with the Joint Nature Conservation Committee ([JNCC](#)) and Defra on updating one of the [biodiversity indicators](#) that supports UK reporting against the Global Biodiversity Framework. Released this December 2025, the new revised indicator [UKBI - Biodiversity Data](#) is designed to show both the availability and trends in use of biodiversity data in the UK.

## Metadata Updates

Templates for data partners have been revised to clarify required information, whilst online displays have been updated to improve navigation. The new [guidance and help](#) also has details of over 40 Darwin Core Terms that the NBN Atlas supports.

## Data Quality Enhancements

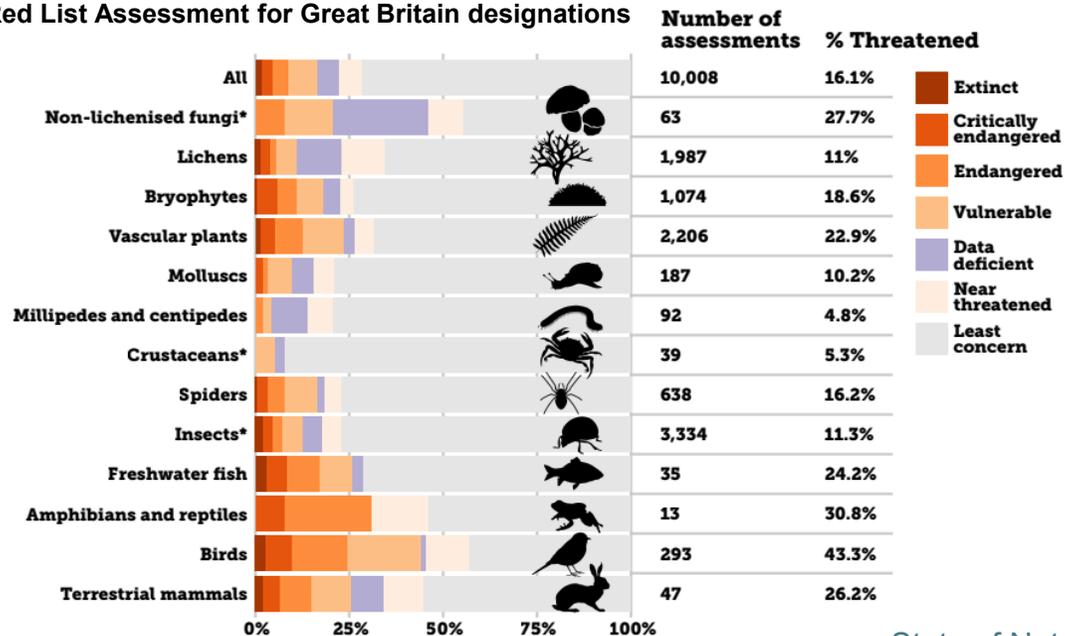
## Citations and References

New fields have been added to link occurrence records to research papers and researcher identifiers, following requests from users for improved citation tracking.

## Conservation Designations

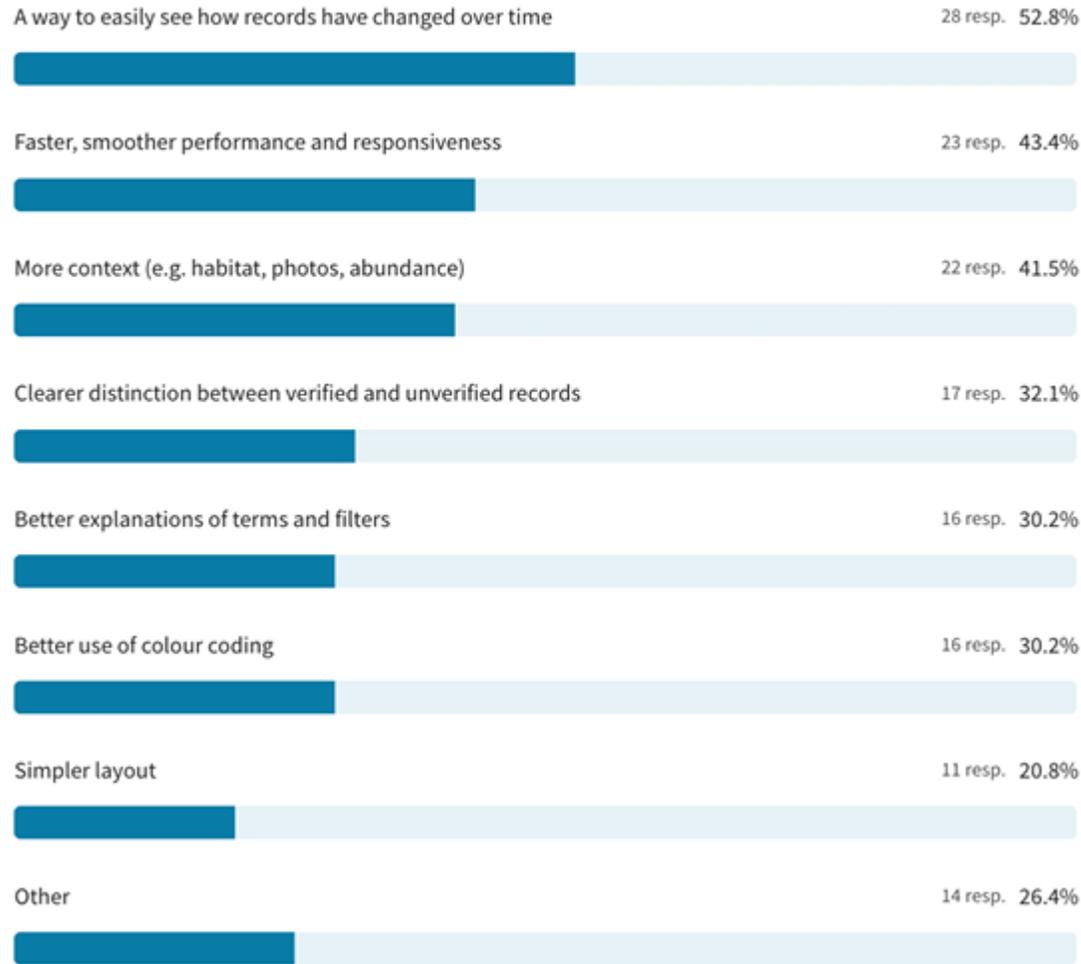
Species pages have been updated to include clearer information about conservation status, showing [UK Red List status and Nationally Rare and Scarce designations](#), for example see the [Barbastelle bat species page](#). Additionally, updated processes are now in place to maintain current species designation information. There is still work to do in upgrading some of the more manual tasks in updating the taxonomic backbone of the NBN Atlas to the UK Species Inventory (UKSI), on which we continue to work with the Natural History Museum.

Red List Assessment for Great Britain designations



## What would improve your experiences using the maps?

53 out of 55 answered



## Data Visualisation Enhancements

### Web Map Service (WMS) Features

New [Web Map Service](#) capabilities are available in beta version to help users integrate NBN Atlas maps into GIS applications. As this is an area relatively unexplored by the team, we are keen to work with GIS users and welcome feedback via the embedded links to the [NBN Forum](#).

### Embeddable Map Service

An advance prototype of a new embeddable map service has been developed. This is to replace the outdated legacy EasyMap service. It provides a strong foundation for a production-ready service which will be backward-compatible, offering immediate visual improvements for existing users.

### Site-wide NBN Atlas Maps

Working with [FuturesWild.com](#), we undertook a user discovery workshop and gathered feedback from NBN Atlas users on the current mapping functionality. This resulted in FuturesWild creating new designs for the map components to enhance the navigation, usability and download options, addressing issues raised that we can look to implement in 2025/26.

### Spatial Portal

A major upgrade has been tested and will shortly be rolled out to this powerful analysis tool.

### My Profile and Saved Searches

We have upgraded the My Profile section of the NBN Atlas to make it easier to navigate and allow users to [save their search](#) criteria, so that they can run the same search another time to help check and gather any new observations recorded over time. The My Profile area also allows you a quick glimpse to all your species lists, annotations and details in one place.

## Objective 2: Reform the NBN Atlas Stakeholder Group and create the first NBN Atlas Strategy

The NBN Atlas is a complex digital platform that provides a service for a large and very diverse community of beneficiaries including statutory nature conservation bodies, national and local charities of all sizes, Local Environmental Records Centres (LERCs), community organisations, consultancies, universities and research institutes. Identifying, prioritising and planning the implementation of enhancements, while at the same time ensuring alignment with the NBN Trust's strategic ambition, is not straightforward. The emergence of new data sources such as eDNA and AI-enabled acoustic sensors, and new purposes for biodiversity data including ESG and green finance, adds further complexity to the task.

Following the upgrades of the NBN Atlas infrastructure, making the platform more stable and responsive, we can now look beyond day-to-day delivery and take a long-term, strategic view of our users' changing needs and priorities. To address this, we reconvened the NBN Atlas Stakeholder Advisory Group.

### NBN Atlas Stakeholder Advisory Group

The NBN Atlas Stakeholder Advisory Group is an informal group established to advise on the direction and specific actions needed to improve the overall NBN Atlas project. It advises and provides recommendations on the use, usability and direction of the NBN Atlas to the NBN Trust CEO and the NBN Trust Project Committee.

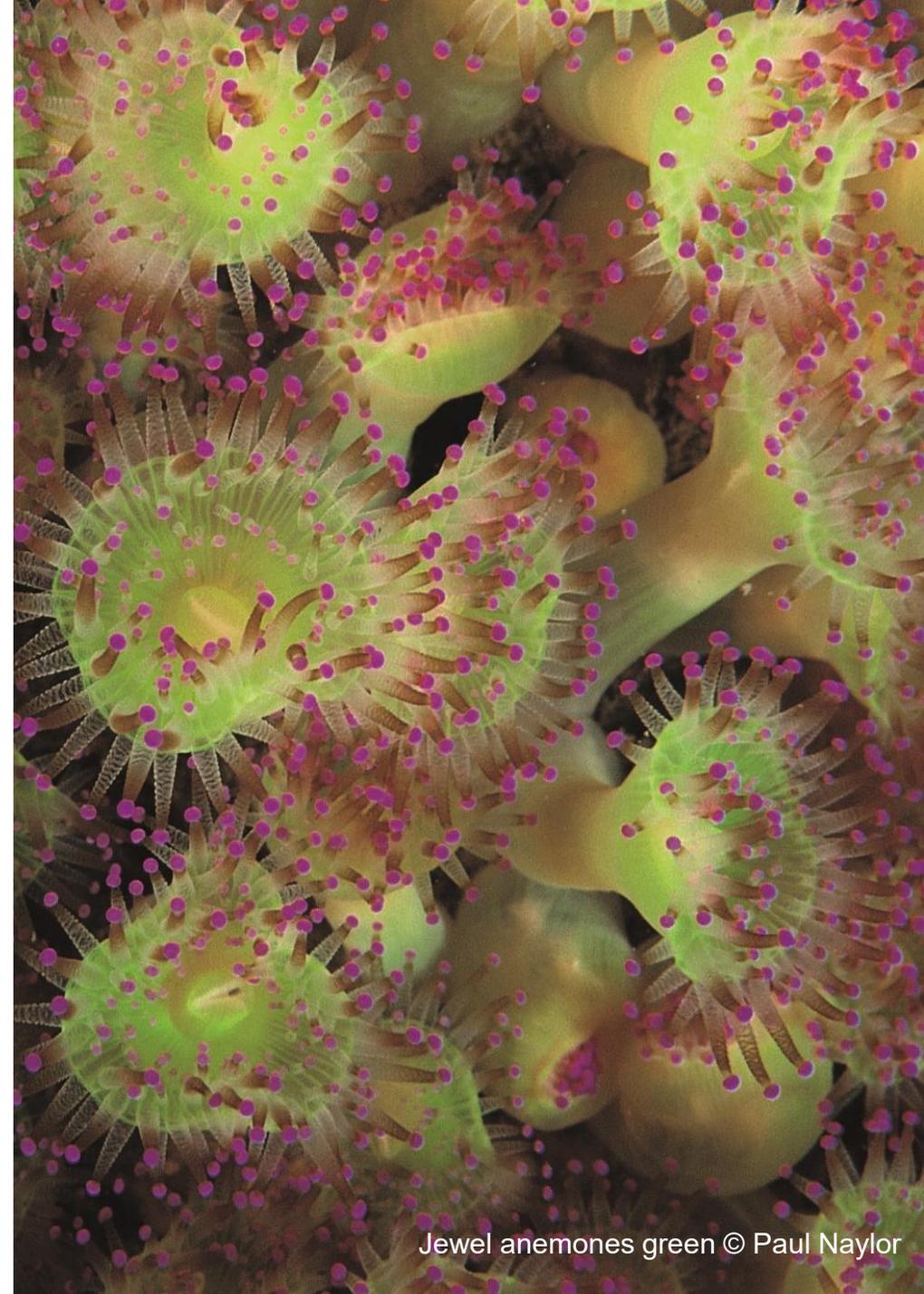
### Purpose

The Stakeholder Advisory Group ensures that the NBN Atlas aligns with the NBN Trust's strategic goals, meets high standards of scientific accuracy, usability, and relevance, and supports the needs of users.

### Scope of Work

The Stakeholder Advisory Group:

- Provides expert advice on the priorities for development and implementation of the NBN Atlas
- Reviews and recommends areas for improvement around data quality, data integration and metadata collation
- Evaluates and advises on NBN Atlas data interrogation and visualisation tools to enhance user satisfaction and increase community understanding of data sharing pathways
- Identifies and recommends strategies for data integration and interoperability with other relevant databases and tools
- Suggests improvements and updates to keep the NBN Atlas current with scientific advancements
- Fosters collaborations and partnerships with other scientific institutions and stakeholders.



# NBN ATLAS STRATEGY

## 2025 – 2030



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### **Membership and Governance**

The NBN Atlas Stakeholder Advisory Group consists of representative members of the National Biodiversity Network from across the UK with diverse expertise in biological sciences, bioinformatics, data management, and related fields. Members can self-nominate to be on the Stakeholder Group from an annual call out. Numbers are capped at one member per organisation to ensure the group can manage effectively, with 10 organisations represented each year.

The group meets twice a year as a minimum, either in person or online, with additional meetings called as necessary. The NBN Trust Project Committee has oversight of the Stakeholder Group, with the NBN Atlas Biodiversity Data Manager preparing summarised reviews, action logs, and an annual report summarizing activities, findings, and recommendations.

### **NBN Atlas Strategy 2025-2030**

Through the Stakeholder Advisory Group and consulting with the wider NBN member base, we have developed the [NBN Atlas Strategy 2025-2030](#) that will guide and inform the development of the platform for the next five years. Future meetings of the Stakeholder Advisory Group can now use this Strategy and the annual implementation plan to ensure we can achieve alignment between our respective strategies, objectives and work plans.

# Next Steps

## Completing Current Development Work

Whilst the major pipeline processing upgrade has been completed, several additional Accelerator enhancements have been developed, but are yet to be released. These include the upgraded spatial portal, embeddable maps, global search, and a major user experience upgrade to allow data users to more easily navigate data quality filters. These releases are planned for the coming months.

## Building on Success: Accelerator Phase 2

The scale of the work achieved through the Accelerator project has highlighted how much more can be accomplished to serve the biodiversity data community. We have started work on the next phase of development, including the next iterations of Access Controls, upgrading the Explore My Area functions, and additional enhancements identified through our stakeholder engagement process.

## Strategic Implementation

The NBN Atlas Strategy 2025-2030 provides a clear roadmap for the platform's development over the next five years. Implementation will be guided by the Stakeholder Advisory Group, ensuring that development priorities continue to align with the evolving needs of the conservation community, emerging data types and technologies, and the broader biodiversity data landscape.

## Partnership Development

We will continue to work closely with key partners including UK Centre for Ecology & Hydrology (UKCEH), the Association of Local Environmental Records Centres (ALERC), and other stakeholders to achieve alignment between our respective strategies, objectives and work plans. This collaborative approach ensures that the NBN Atlas remains integrated within the wider UK biodiversity data infrastructure.





Sedum acre Langamull © John Sawyer

# Summary

The NBN Atlas Accelerator project has successfully delivered significant enhancements to the UK's national biodiversity data infrastructure, positioning the platform to better serve the conservation community for years to come. Through the implementation of access controls, eDNA data support, improved metadata and citation capabilities, enhanced visualisation tools, and user experience improvements, we have made substantial progress in mobilising biodiversity data in accordance with FAIR and Open Data principles.

The establishment of the NBN Atlas Stakeholder Advisory Group and the development of the NBN Atlas Strategy 2025-2030 represent equally important achievements, providing the governance structures and strategic direction needed to guide future development. This project demonstrates the value of partnership working, with Natural England, the Environment Agency, and the NBN Trust combining resources and expertise to deliver maximum impact.

The foundations are now in place for continued enhancement of the NBN Atlas. With stable infrastructure, strategic direction, engaged stakeholders, and a clear development roadmap, the NBN Atlas is well-positioned to meet the evolving needs of its 335,000 annual users and to support critical decision-making in conservation, policy development, and ecological research across the United Kingdom.

# Acknowledgements

We gratefully acknowledge the funding and support provided by Natural England through the Natural Capital and Ecosystem Assessment program and the Environment Agency. We also thank the members of the NBN Atlas Stakeholder Advisory Group for their expert guidance, the wider NBN community for their continued engagement and feedback, and the dedicated NBN Trust project team who delivered this ambitious programme of work.



Hay meadow with wood cranesbill © John Newbould, Yorkshire Naturalists' Union