

Sharing Information about Wildlife



A Strategy for the  
National Biodiversity  
Network: 2010-2020

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# Chairman's Foreword

## The National Biodiversity Network (NBN) has come a long way since its foundation in 2000.

Building on a successful beginning, this present document sets out a bold strategy for the next ten years. The challenge is to increase the use of biological records through improving their quality and the flow of data through the system, whilst maintaining and improving the underlying recording and data access infrastructure. This is a significant task and will depend on the members of the NBN maintaining their resolve to deliver our vision of:

**“Making all biological records freely and easily available to everyone”**

The National Biodiversity Network provides an effective, economic and efficient solution for accessing and using biological records to meet user needs. Furthermore, the up to date technology utilised by the NBN can integrate these records into business systems, which enable this valuable resource to be used in new and innovative ways linked to the planning and management of land use. Data, which lead to an understanding of the spread of native and non-native species, will be important in planning for climate change and the impact this will inevitably have on our fauna and flora. By 2020 we want the NBN to be the preferred means of accessing biological records in the UK, whether for local or national use.

It is perhaps not unexpected that, in the minds of many, the NBN has become synonymous with the NBN Gateway. Whilst the Gateway is a new element within the mix, the NBN is the sum of all of its parts. It is vitally dependant for its success on the work of volunteer recorders organised into national societies and recording schemes, as well as the staff of local record centres.

The NBN Trust, fulfilling its leadership role within the NBN partnership, has developed this strategy for the next ten years. The strategy focuses on maintaining the broad coalition, as well as increasing the use made of the NBN and its data.

Following the experience of our first ten years of working in partnership, we are confident that the strategy outlined in this document will be achieved. The strategy will be accompanied by more detailed business plans to shorter timescales. The maintenance and growth of the NBN depends in part on support from public finances. Whilst these resources will be under pressure during the time period covered by this plan, the NBN Trust is confident that the strategy outlined in this document will be achieved by the NBN partnership.

In arriving at this strategy we have taken account of the broad spectrum of opinions within the NBN partnership. We ask all who are dedicated to the task of providing and of using data on biodiversity within the UK to join us so that, together, we can ensure that the objectives outlined in this strategy are achieved.



**Chairman**  
National Biodiversity Network Trust



## The National Biodiversity Network

The United Kingdom ranks amongst the most studied countries in the world from the perspective of biodiversity. This is thanks largely to many volunteer recorders, and the schemes and societies to which they belong; they carry forward a tradition of organised biological recording which in some cases began almost two centuries ago.

The National Biodiversity Network ([www.nbn.org.uk](http://www.nbn.org.uk)) brings together those individuals and organisations who record the UK's biodiversity, with the users of those data, to improve access to biological records. To achieve this we use the best from the rich history of biological recording in the UK; the national recording schemes and societies, local record centres and the national Biological Records Centre, together with the new; the NBN Gateway and its supporting infrastructure. The advent of the Global Biodiversity Information Facility (GBIF), for which the NBN is the UK portal, has meant that we are also able to play our part on the international stage. This has required investment from the public agencies concerned with countryside management and protection, the Natural History Museum, Government itself, organisations with a research focus and above all by the involvement and support of the recording community.

Together, we have shown that a collaborative partnership drawn from the public and voluntary sectors, under the leadership of the NBN Trust, can deliver a new vision for access to, and use of, biological records. This improved data access gives a

higher profile to biological data in the decision making processes that protect and conserve our biodiversity. The 1992 Rio Convention on Biological Diversity brought into sharp focus global biodiversity issues. Since that time the need for access to biological data for research, evidence based local, national and international decision making has grown. The present focus is on the challenges of conserving threatened species and habitats through the UK Biodiversity Action Plan (UKBAP), climate change adaptation, identifying and maintaining ecosystem services, facilitating the use of biodiversity records in decision making by Government, and the impact of invasive non-native species. The NBN is now positioned to meet these demands for its data at all levels.

We are already showing how data from the NBN Gateway can be integrated directly into the tools that are used to inform decision making. New technology, in the shape of web services, allows us to integrate NBN data directly into Geographic Information Systems (GIS), and similar tools. These, in turn, allow the biological data to be analysed and viewed alongside other information required to make planning and management decisions. We are already proving the potential of this new approach, which can revolutionise the way in which both current and legacy data are used to meet the challenges of the 21st century.

This document describes the strategic objectives of the NBN and gives examples of the targets we, the members, have set ourselves. These will be more fully covered in business plans to be published later.

## Our achievements and future objectives

### During the last ten years:

- NBN Trust has built a partnership between both statutory and voluntary data providers and users.
- The NBN partnership has provided a focus for the evolution of biological recording in the UK.
- The partnership has used the power of the internet to improve access to biodiversity data.
- It has developed principles and standards that facilitate the sharing of biodiversity data.
- It has developed a species dictionary for the UK as an authoritative source for species nomenclature.
- It has developed guidance that supports recording and data sharing.
- It has implemented new technologies such as web services to open up new ways of using biodiversity data.

### Over the next ten years we will:

- Focus on increasing the use of the NBN including the provision of data for, and UK expertise to, international programmes.

### To do this the partnership will:

- Increase the supply of good quality spatial and temporal biological records to meet user needs.
- Develop examples of use, and deliver training and guidance.
- Maintain and develop the NBN technical infrastructure and Gateway.
- Develop standards and best practice.
- Maintain and develop the partnership.

## NBN Trust

NBN Trust is the formal organisational structure that co-ordinates and leads the development of the National Biodiversity Network. The membership of the Trust reflects the broad partnership that is biological recording in the UK.

### Full members of the NBN Trust are;

Joint Nature Conservation Committee

Natural England

Scottish Natural Heritage

Countryside Council for Wales

Natural Environment Research Council through the Centre for Ecology & Hydrology

Natural History Museum

Environment Agency

National Federation for Biological Recording

Marine Biological Association

Freshwater Biological Association

British Ecological Society

There are presently 25 Associate Members drawn from the voluntary recording sector and commerce.

## Use of the NBN

### Achievements

Local record centres around the country provide a data and information service to local authorities which are used in the Town & Country Planning system.

The NBN started working on planning screening issues with Greenspace Information for Greater London (GiGL) in 2005, through the development and assessment of desktop GIS applications designed to permit easy access to the NBN's data. The aim of that work was to provide planning professionals with species data through the NBN Gateway, which had been supplied and was managed by GiGL.

In 2008 Natural England began a project with GiGL to build on the work with the development of a web-based planning screening tool. The pilot tool uses Gateway web services and data from GiGL's servers to deliver information to help assess the biodiversity impact of planning applications.



**W**e will invest in understanding more fully the compass of the community using biological records in decision making and their data needs.

We will focus on strengthening and increasing the utility of the network. We will demonstrate use-orientated products that were either not achievable before the NBN, or can now be delivered more efficiently. We will endeavour to support all users of the NBN, but our primary focus will be on the use of biological records within decision making at national, regional and local levels including:

**Operational nature conservation delivery;** which includes agri-environment spend and the broad range of casework that might be undertaken by the operational country conservation agencies, or at a more local level, including site selection, citations, site management, condition monitoring, country biodiversity strategies and local biodiversity action plans.

**Strategic assessment of biodiversity trends and threats;** which includes the strategic aspects of agri-environment spend, biodiversity screening assessment, climate change analysis, non-native species monitoring and control, habitat analysis and ecosystem services analysis, nuisance species, and disease vectors.

**Spatial planning;** which includes strategic and local plans developed under the Town & Country Planning framework together with the processing of planning applications.

**Regulatory functions;** which includes licensing of activities.

**Outreach;** which includes education, public appreciation and involvement.

**Recording;** which satisfies the particular requirements of data contributors, and that relate to sustaining the efficiency and effectiveness of recording as an activity.

**Application of UK data to international programmes;** the NBN is the UK node of the Global Biodiversity Information Facility (GBIF). We will work with GBIF to ensure that UK data are updated regularly. We will work with Government and others to ensure that data, experience and knowledge of best practice are available from the NBN to aid international monitoring, reporting and policy development.

### Targets for the first five years

Data derived from the NBN will be used by all statutory nature conservation bodies.

The NBN will be a key source of biological records for strategic assessment analysis.

All UK strategic planning that requires an understanding of species distribution will use data, or data summaries, derived from NBN hosted records.

The NBN will be recognised as having a key role in the provision of tools, standards and information for effective regulatory control.

The NBN will be seen as a primary source for information on UK biodiversity.

The NBN will be recognised as having a key role in the provision of tools, standards, data and information to support applied and pure research.



Image © Natural England

## Increase the supply of good quality biological records to meet user needs

### Achievements

The NBN guidance document on 'Improving Wildlife Data Quality' is regarded by many as the definitive guide on the subject.



Building on an early proof of concept, the NBN Gateway was developed in 1999, and initially gave access to 1.8 million records held in 5 datasets. By early 2010, the Gateway had given access to 50 million records from over 400 datasets.

Voluntary recorders organised into local and national recording schemes are the bedrock of the NBN. They are supported by local record centres and national societies who may also have local experts (vice-county recorders). The member organisations of the NBN, will work together to ensure that biological recording, data collation and management in the UK is supported, and will facilitate the full engagement of biological recorders in the network. We will ensure that the recorders, and the organisations that represent them, derive direct benefit from the evolving NBN infrastructure. The Biological Records Centre, run by the Centre for Ecology and Hydrology, has a key role to play in this, as do the other public conservation and environmental agencies that support recorders. This broad public/voluntary partnership is working together to evolve and improve upon the flow of data through the system from recorder to user, whilst safeguarding data quality.

We envisage that all biological records, from all sources, will be accessible from the NBN Gateway, either directly or through the means of web services. Expertise in the local importance of the data will be through local record centres. National synopses will be provided predominantly by national societies.

Users need to be in a position to make informed choices about the data they use for their specific purposes; the quality assurance processes to which the data have been subjected must be transparent. To this end, the quality of the data available from the NBN Gateway will be classified against published criteria to allow users to make informed choices about which datasets most closely match their requirements.

We will work with recorders to ensure that the tools they require to undertake their task are as effective as they can be. We will promote best practice, and work with the recording community to evolve new tools to improve the digitisation and management of quality assured data in order to make new records available to users as soon as is practicable. Specifically, we will introduce tools that help data providers to validate their data as part of the drive for improved quality.

We will also work with national schemes and societies to highlight those taxa which are inherently difficult to identify and where enhanced

### Targets for the first five years

Have 50% of National Schemes and Societies regularly sharing high quality data through the NBN Gateway.

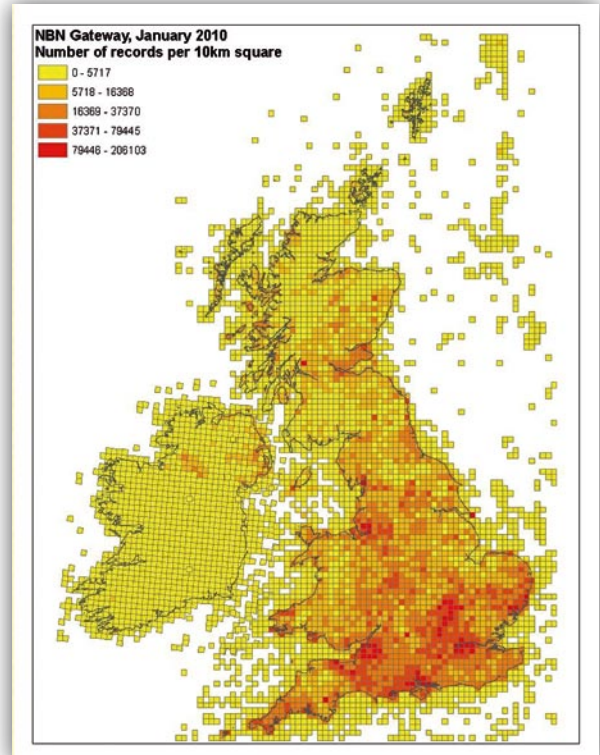
Ensure that the tools available meet the basic requirements of data providers and ensure efficient data management across the network.

Develop and roll-out a new suite of tools and guidance to streamline the validation and verification of biological records.

Undertake a pilot study to bring together data suppliers and data users within a specific geographic area with the objective of improving data flow.

data assurance protocols are required to ensure high quality data.

We will work with local record centres to ensure they derive maximum benefit from the NBN partnership in delivering local access to quality assured data for their clients, whilst supporting local recording.



## Develop examples of use and deliver training and guidance

### Achievements

In support of the needs of the NBN, we have produced an eclectic set of guidance on aspects of the NBN including setting up and running a local record centre, data exchange principles, metadata, providing data to the NBN, improving data quality, setting up a recording scheme and many other aspects of the NBN and biological recording.

NBN Trust has also initiated a range of activities to encourage and help partners to use the outputs from the NBN. These include training events for data users and contributors, the provision of technical guidance for the implementation of web services, and seminars/conferences aimed at stimulating understanding of the way that NBN data may be used.

The NBN will work with the research sector and others to promote new and innovative ways of using the available data to understand the challenges that face us from climate change, understanding and managing for ecosystem functions and services, improving environmental quality and managing the impact from non-native invasive species. We will also work with public agencies and those involved in land management to use the NBN more effectively. Planners are required not only to avoid, mitigate or compensate for harm, but to seek ways to enhance and restore biodiversity. To achieve this they require information; the broad partnership represented by the NBN will help planners to access, in new and innovative ways, the biodiversity data they need to make decisions.

The NBN partnership is generating new ways of working and rationalising existing practices. These are captured and articulated in a variety of guidance publications. Training courses and one-to-one training have been found to be effective ways to roll out examples of best practice. They will be developed further to ensure that the NBN remains an efficient and cost effective way of accessing biodiversity data.

The participation of the public in biological recording, and the use that they can make of the NBN, presents new challenges. The NBN will offer guidance and tools to facilitate public participation and understanding of records and recording.



### Targets for the first five years

We will run at least three training courses per year to increase understanding of the NBN.

We will provide web services and advice that will help our partners use the Internet to inform the public about biodiversity.



## Maintain the NBN technical infrastructure and Gateway

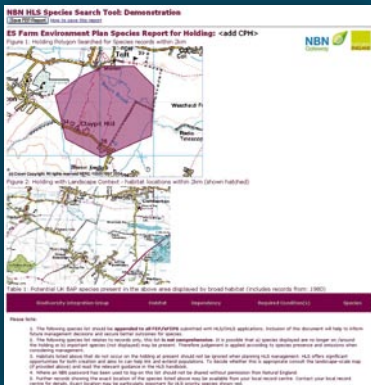
### Achievements

In 2008, The NBN began work on a tool to help evaluate High Level Scheme (HLS) applications. The tool uses a simple rule-based system based upon species parameters set out in the Farm Environment Planner's (FEP) handbook.

The system allows users to draw a polygon to represent their holding. Then, via a series of rule-based filters, it is run against NBN Gateway data to produce a list of species records found on or near their holding, that are relevant to agri-environment scheme delivery. These are then displayed by likely occupied habitat niche.

It is hoped that an operational system will be linked to habitat inventory data. A series of standard reports, for inclusion in FEPs are generated from the system.

The system is being formally tested in England and demonstrated in other parts of the UK.



The core technical infrastructure of the NBN will be maintained. The NBN Gateway, and the web services it supplies, will be maintained and developed to exploit new technologies and to meet the needs of users in terms of content and reliability. We will:

- Improve data discovery by providing tools making it easier for users to identify relevant and suitable records.
- Improve access to use NBN records.
- Develop ways to rapidly use NBN data through plug-and-play technology which can be adopted and adapted rapidly to integrate relevant NBN data into applied tools and uses.

Web based information technology is developing new mechanisms that can be applied to the presentation of environmental data. The NBN will review these evolving technologies and apply them if they deliver a better service for our users, and help to make data available to a wide audience. We will develop online recording and the use of new platforms such as mobile phones to view records.

The NBN Gateway will continue to make available a range of biological records; from those that have been subjected to a rigorous checking procedure, to those that have not. Following the classification of datasets by quality criteria, we will introduce a mapping interface which allows users to choose the quality of the data they view.

The Species Dictionary will be maintained and developed; in particular the website will be completely redeveloped to offer better functionality in line with user needs. Links with the Electronic Catalogue of names being developed by the Global Biodiversity Information Facility (GBIF) will be explored.

### Targets for the first five years

Ensure that the Gateway website and associated services are available 99% of the time, that the data are held securely and fully backed up.

Develop the Gateway website as an easy to use tool that allows priority users:

- to see what data are available and the quality of the data
- to have the necessary functionality to supply and manage their own data
- to interrogate and visualise their own data
- to download the data for use

Create a single, consistent, fully documented interface for the Gateway web services that exposes the full suite of Gateway functionality and can be readily integrated into the major technologies, with good reliability and appropriate speed of service.

Maintain a reliable and responsive service to both data providers and users of the NBN Gateway and to ensure that data are loaded in a timely fashion any required help or support is provided.

Develop the ability to hold and visualise habitat data on the NBN Gateway.

A new Species Dictionary website will be developed.

Species Dictionary web services will be developed.



Image © Natural England

## Develop standards and best practice

For sharing of data to be effective, it must be underpinned by agreed principles and standards. These provide a framework within which users can be certain how they are able to use the data, and data contributors can be assured that their data will be used wisely. These include exchange principles so that everyone using the NBN infrastructure is aware of their rights and respects the rights of others. Certain standards must apply to all data being shared across the NBN; these include electronic exchange standards, metadata standards and exchange agreements or licences. The NBN aims to share agreed best practice wherever possible rather than be overly prescriptive.

Whilst much of the work that underpins the basic operation of the NBN is complete, we have still to tackle such issues as recommended data flows across the system. Users often require the data they access to be the most recently available. The NBN will work with the recording community to promote best practice aimed at getting new records to users as soon as is practicable and consistent with maintaining high quality. Not all of the data available are of the same quality; we will introduce a simple and transparent classification system, which will be applied to datasets to indicate what data quality assurance protocols have been applied.

The NBN recognises the concept of sensitive records where access must be controlled to protect the species. Organisations that are providing data to the NBN need to be assured that their understanding of 'sensitive species' is shared by those who access and use their data. The NBN partnership will move toward an agreed standard of species sensitivity.

The NBN is a UK based initiative, however, the standards used should also be compatible with wider scale initiatives such as INSPIRE and GBIF. We will monitor these wider scale initiatives, and, where required, will ensure cross compatibility with them. Furthermore, where the experience gained by the NBN is seen to be useful, we will also work with larger scale initiatives and share our knowledge with them.

### Targets for the first five years

Review existing standards to ensure they are still fit for purpose.

Have all data supplied to the NBN conforming to published data flow principles.

Publish dataset quality criteria.

Develop a single exchange agreement for the NBN.

Agree a list of sensitive species for the NBN.

## Achievements

One of the first issues tackled by the newly formed NBN Trust was the development of Data Exchange Principles to ensure an equitable and secure basis upon which the exchange and use of data through the NBN could be achieved.

1) Biodiversity data should be easily accessible to enable their use for not-for-profit decision-making, education, research and other public-benefit purposes.

2) Making biodiversity data available should reduce the risk of damage to the environment. If it is likely to have the opposite effect, availability may need to be controlled.

3) When biodiversity data are supplied, accompanying information (metadata) on its ownership, methods and scale of collection and limitations of interpretation, should be provided. In general there should be sufficient metadata to allow biodiversity data users to assess the scope and potential uses of their information holdings.

4) A clear transfer of authority should be made when a biodiversity data resource is put together, to allow biodiversity managers to act on behalf of the biodiversity data owners.

5) Managers of biodiversity data should make their framework of terms and conditions publicly-available, allowing biodiversity data owners to have confidence that control will be exercised in the management and use of their data.

6) Personal data must be managed in accordance with the principles of the Data Protection Act 1998 and/or any subsequent legal provisions.

7a) Managers and funders of biodiversity data should make basic facts freely available (except for handling charges if needed) for not-for-profit decision-making, education, research and other public-benefit purposes.

b) Biodiversity data suppliers should try to arrange resourcing of information provision so that charges for not-for-profit uses are minimal and charges for commercial uses are realistic but do not prevent the use of biodiversity data.

c) Biodiversity data users should expect to contribute to sustaining the provision of biodiversity data through contributing either in kind or financially to the collection, collation and management of biodiversity data, or at the point of use.

## Maintain and develop the partnership

The NBN is a very broad partnership across the public, voluntary and commercial sectors; it reflects the many organisations and individuals involved in biological recording, and the broad range of uses to which these data are applied. Whilst these organisations share a common objective – the sharing of biodiversity data – their individual agendas and priorities vary. We will invest in understanding these priorities and react to them through our development programme to ensure that the service we provide is appropriate, cost effective and fit for purpose.

The NBN partnership is dynamic and growing. The organisations that presently provide the data found on the NBN Gateway are a fraction of those who actually hold biodiversity data; the tens of millions of records now available also represent a fraction of the information that exists. Easier access to biological records, and the web services provided by the NBN Gateway, open up new areas of use. The NBN will continue to grow as new organisations recognise the value in sharing and using biological records.

We will work with potential partners in research, environmental consultancy and the commercial sector to develop their understanding of how they can become members of the NBN, and how they can derive benefit from their participation. We will ensure that we offer a range of membership options to meet the needs of the broad community of data contributors and users

that comprise the NBN.

The participation of the public in biological recording, and the use that they can make of the NBN, presents new challenges. The NBN will respond positively to these and offer guidance and tools to facilitate wider public participation and understanding of records and recording.

Above all we will listen to data contributors and data users. We will also communicate our aims, progress and achievements.

### Targets for the first five years

A new membership scheme will be introduced which has a primary aim of growing membership by encouraging new participation and investment.

Explore new ways to communicate with new and existing data providers, data users, members, and other targeted groups.

Maintain our website to the highest standards.

Communicate with our members and others in the most cost effective way.



Image © Natural England

### Achievements

Core communication across the NBN is carried out through the NBN e-Newsletter, which is circulated to over 2,000 individuals on a monthly basis.

The NBN website integrates stories, news and events from across the network.

A number of information leaflets and guidance documents are available for anyone to order or download.

Since 2000 we have run an annual NBN conference.

SNHi is a new web development designed to engage with the Scottish and visiting public. Its fresh new look is based on the latest web-based GIS technology and show cases how feature rich applications can be developed using data and information from different sources. The species data from the NBN Gateway sits alongside protected areas, landscape, geology and SNH administrative information.



# Annex: The NBN Partnership

The NBN partnership encompasses all those who gather, use and share biological records.

In a seminal report, *'Biological Recording in the United Kingdom: Present practice and future Development'* published by the Department of the Environment in 1995, the Co-ordinating Commission for Biological Recording (CCBR) noted that the major effort in recording came from volunteers. These were associated with many different recording schemes and national or local societies. Whilst this had much strength, there were also weaknesses. The CCBR went on to make a series of recommendations to address the identified weaknesses.

The National Biodiversity Network was created to address the issues highlighted in

the CCBR report. It brings together those individuals and organisations who record the UK's biodiversity with the users of those data. Data is shared across the network using a new web based infrastructure based around the NBN Gateway.

Naturally, such a complex network requires a way to co-ordinate its activities and champion its vision. The National Biodiversity Network Trust provides this mechanism, and, in particular, offers leadership, facilitates discussion and offers specialist advice. The

Trust also oversees the development and maintenance of the NBN Gateway.

The Chairman and Board of the NBN Trust develop the strategy for the development and maintenance of the NBN. The Chief Executive, working through the Strategy Implementation Group, is charged with delivering this strategy. The Strategy Implementation Group brings together the Trust's staff with the broader partnership to map out and co-ordinate the activity required to deliver the strategy.

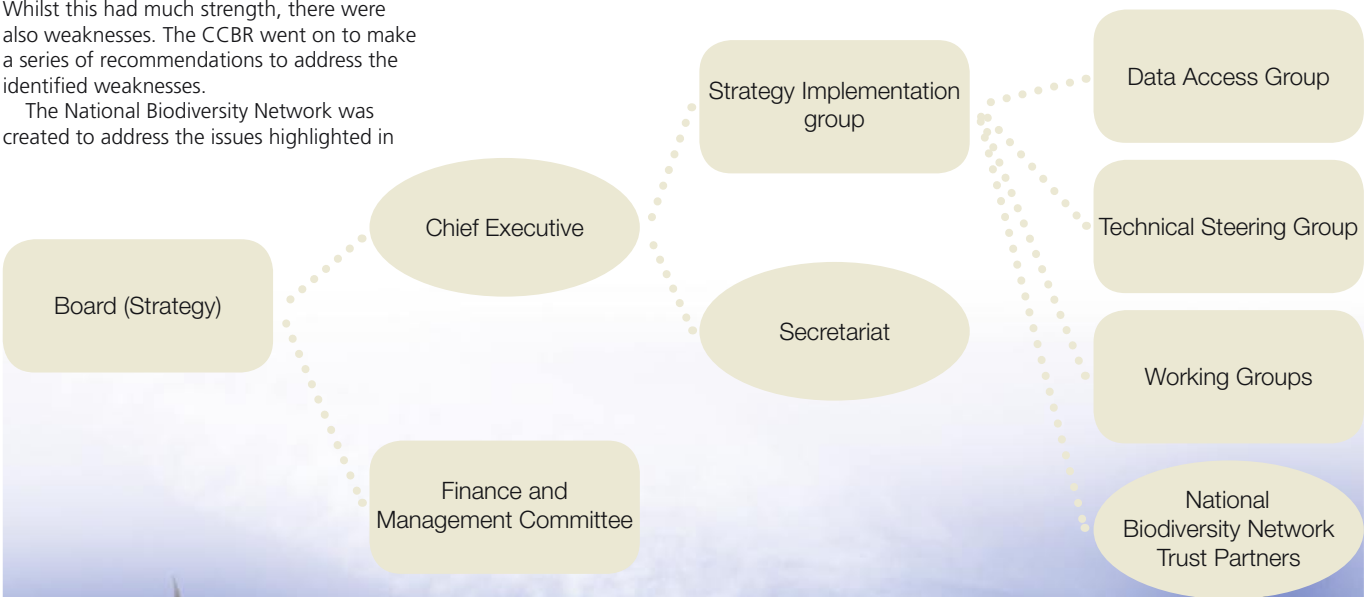


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