Common Data Framework for Nature-based Solutions and Nature Recovery

May 2026

In the Mainstreaming Nature-based Solutions (MNbS) context, the "Common Data Framework" is the design of a database or spreadsheet that holds information about NbS projects, interventions and management. Working with the Rivers Trust NbS Hub, we are proposing the uptake of a single data model so that NbS projects are recorded and reported in a consistent way, referred to as the Common Data Framework. This will create considerable efficiencies in the way that projects are planned, designed, implemented, managed and reported. This version will need further development to be applicable to a wider range of projects. It is presented at this stage to demonstrate the direction of travel as a common basis for those developing data management strategies for NbS, nature, landscape and catchment management projects.

It will make it easier for:

- Delivery organisations to deliver the right NbS in the right place and ensure that they are managed, maintained and valued as a component of our critical national infrastructure.
- Collaborative delivery and management of NbS.
- Water companies and other agencies to plan projects because all the options are presented in a consistent format and can easily be compared. This would facilitate project appraisal.
- Landscape managers and planners to create large scale change because projects and interventions can be easily combined to create an overall programme for a landscape.
- Landscape and catchment managers to manage and report on the portfolio of projects they oversee with a range of different funding and regulatory requirements.
- Government agencies and asset owners to collate data on their oversight of nature recovery and nature-based solutions that contribute to Nature – Catchment – Landscape recovery.
- Investors in nature to set up programmes and ensure that they get the reporting they need without providing excessive burden on the project which may already have a range of other reporting requirements.

Currently there is no consistency in the reporting requirements of different organisations and so project managers must provide reports in different formats for

different organisations. The negotiation of data reporting slows down the creation of new projects, and the multiple reporting creates an excessive demand on management of projects. The CIRIA Asset management of blue green infrastructure (AMBGI) project has drawn attention to management of the whole life cycle, identifying that data is needed for management as well as reporting.

The lack of a common data framework is undermining progress in promotion of nature positive outcomes. Defra's Discovery Report "Nature Recovery Network Environmental Outcomes: Sharing and accessing data related to nature recovery" (Natural England 2025) states that:

> *There is no clear, centrally agreed and widely communicated common direction relating to sharing and accessing data on nature recovery. This means that policy requirements can remain siloed and disjointed with separate data systems being developed across Defra and externally. Delivery partners need to collaborate to achieve scale and impact, and leverage private finance, which is challenged by a lack of mechanisms to share information on nature recovery projects.*

The report recommends that a clear common direction towards sharing and accessing information on nature recovery activity is identified, including the development and operationalisation of a data framework. The report also states that this approach needs to be mandated by Defra to ensure integrated reporting from its Arm's Length Bodies.

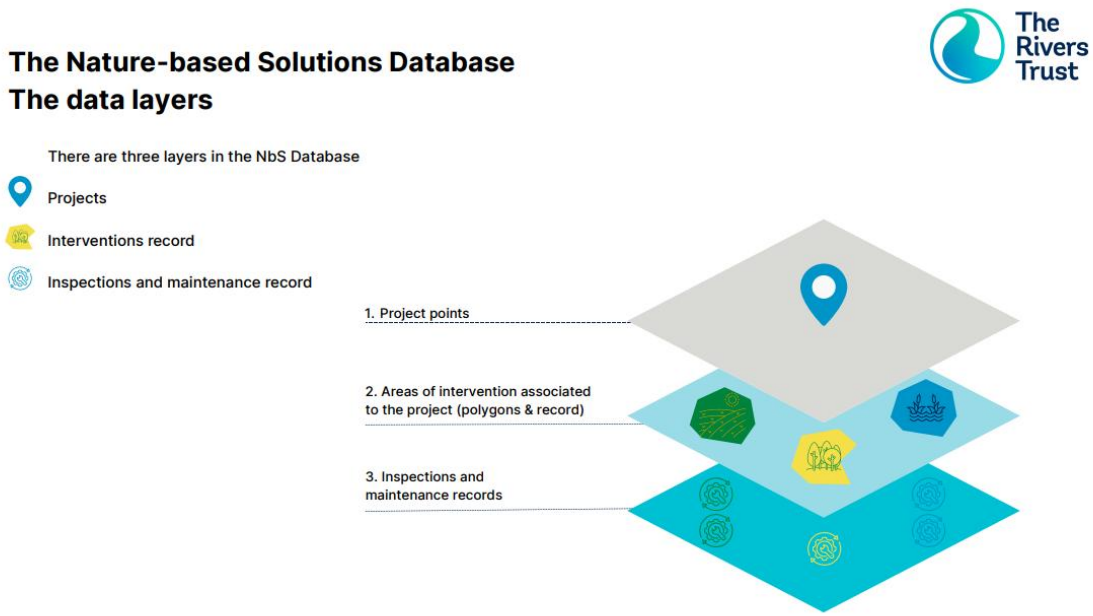
What is the Common Data Framework?

The Rivers Trust's NbS Hub has been working on the evolution of a data model for an extended period, most recently as part of the Catchment Systems Thinking Cooperative (CaSTCo) project. This data framework aims to manage NbS as assets that are part of critical national infrastructure. The core user needs it will support include nature recovery (catchment & landscape), catchment recovery, landscape recovery and water company programmes such as The Water Industry National Environment Programme (WINEP), Drainage and Wastewater Management Plans (DWMPs) and Water Resources Management Plans (WRMPs). At this stage the data needs for BNG and LNRS are core to the work. Additional work will be done on these key planning processes. The data framework emphasises the importance of using a shared dictionary to make collaboration easier and ensure that all stakeholders are speaking the same language.

The data framework is split across three areas:

1. **Project information** indicating information such as location, outcomes, costs and wider aggregated benefits of a collection of interventions.
2. **Intervention** related data such as intervention type, habitat data and the benefits of the individual intervention e.g. for flood risk or water quality.

3. **Inspections and maintenance** related to design condition, monitoring and management actions.



To be suitable for this wide range of purposes, and consequently different types of projects, the framework has a degree of flexibility. The fields are designed as follows:

- "Mandatory" – required (for example, to demonstrate regulatory compliance).
- "Optional" – field can either be left blank or filled in.
- "Recommended" – good practice to fill in, but not mandatory.
- "Autogenerated" – generated automatically.

For the regulatory categories, we have indicated only mandatory fields, to be clear what has to be filled in to meet regulatory requirements. For the collaborative working category, we have indicated what is optional or recommended for good practice as well. The optional and recommended fields will be categorised according to different project types. The MNbS project has identified the following categories or thresholds of project driver (and therefore project type):

- **"High integrity" markets**: The use of NbS in high integrity markets will come with a higher potential spend on verification and data management to achieve its "high integrity" status. "Good verification" means an acceptable quality to withstand scrutiny to support an investible product compatible with the "high integrity" label. This perception of quality is part of the tradeable commodity in the same way that trustworthy brands of vehicle are bought and sold at premium prices. These projects may have the largest data management requirements and the highest spend on data collection and management. The framework currently sets out an indicative representation of data requirements which will be refined in future iterations.

- **Regulatory compliance**: Much of the work in the water sector ultimately requires environmental outcomes to be compliant with regulatory thresholds. There is no benefit in spending money on verification to a higher standard than is required for regulatory compliance. “Good verification” means sufficient as is required to demonstrate regulatory compliance. The data requirements may be specific to the policy frameworks to which the projects relate.
- **Collaborative working:** Where projects have a local focus and are motivated in part by the common good and collaborative working, then verification criteria may be less stringent than the categories above. In these cases, there is an element of motivation for the common good and an element to which social capital (trust) is part of the project rationale. “Good verification” is good enough for the network of actors involved.

Adopting these categories will allow a modular approach to the use of the framework. For example, more or less complex options for project phases may be adopted for the different thresholds - some projects are a single transaction and have relatively straightforward data requirements whereas other projects have more complex project phasing. This combination of flexibility within an overall standard framework is core to the value of this framework.

In this first release of the framework, we have indicated data requirements for collaborative working and High Integrity markets based on consultations with relevant actors. In the regulatory compliance category, we have indicated data requirements of the Statutory Biodiversity Metric for calculating biodiversity units and for projects that form part of Local Nature Recovery Strategies (LNRS). Additional material will be added over the course of the MNbS project.

Further development and use

The framework requires further development and refinement:

- The framework should be used on an incremental basis across catchment and regional planning and management projects. Feedback from use of the framework in the MNbS Regional Tests, CastCo project and other pioneers should be collated to allow for ongoing development of the framework across the project types described above.
- The framework should be assessed for development towards use across the Defra group to provide the integrated approach to reporting advocated in the NRN Environmental Outcomes report.
- Impact reporting needs to be added to the Common Data Framework at the intervention and the project level. The framework could include those aspects using both the Common Value Framework developed in MNbS while also enabling alignment with EA Natural Capital Evidence and Metrics where possible.

- Further cost information needs to be added to the framework at the project level to align with business planning reporting requirements.
- The Common Data Framework currently incorporates multiple habitat systems due to different uses across reporting frameworks, e.g. the Statutory Biodiversity Metric has its own habitat system based on UKHab, EUNIS, WFD and Natura 2000 which does not align perfectly to the UKHab system. This version of the framework has incorporated both but this is an example of where standardised reporting is required.
- The Common Data Framework has been developed by the MNbS and AMBGI projects in collaboration with CaSTCo. The adoption of the NbS categorisation developed in the standardisation workstream for MNbS has been proposed. This provides a standard categorisation of NbS (and similar related non-NbS interventions). This categorisation will be included when it has been finalised following the current round of consultation and review.
- Enhance the documentation of the Common Data Framework in-line with industry best practice including, but not limited to:
    - ***Data principles*** - these set out the guardrails for data collection and use.
    - ***Data model*** - this is a content table summarising Entity, Entity Name, Description, Entity Type, Obligation and Multiplicity.
    - ***Data entity diagram*** - detailing the structure of the data model and associated vocabulary.
    - ***Data model visualisation*** - a communication tool to explain the data structure and data flow for a non-technical audience.
    - ***Data standards*** - these define what each entity is and how it should be estimated or calculated.
    - ***Data management*** - including quality control/assurance, Intellectual Property Rights, GDPR and licensing. This will include terms and conditions, licenses and ownership, data protection including trademarks and any agreements required to satisfy GDPR.
    - ***Platform requirements*** - these define how the data should be collected, stored, backed up and protected.
    - ***Risk register*** - this is a live document that allows the 'owner' of the data model to manage and mitigate risk.
- Instances of potential duplication across the framework will be resolved in future iterations e.g. number of trees captured at the intervention level and for BNG reporting requirements.
- Further refinement of maintenance level reporting requirements are also planned for future iterations of the framework.