Natural England Habitat Creation and Restoration Spatial Data Audit

Final Report December 2021 - June 2022

Report Verification

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Wildlife Trust Consultancies

Kent Wildlife Trust Consultancy Services

Contents

Executive Summary

Natural England (NE) commissioned Kent Wildlife Trust Consultancy Services (KWTCS) to further a project which aimed to progress the collation of additional spatial information as GIS shape files relating to habitat creation and restoration from a range of national delivery mechanisms and local partnerships. This project is undertaken in relation to past delivery under the England Biodiversity 2020: A strategy for England's wildlife and ecosystem services and the ongoing delivery under the 25-year Environment Plan.

Communications with local partners resulted in eight datasets shared with KWTCS, four requiring digitisation support, with five having an appropriate data license in place. The communications led to further digitisation of Habitat creation/restoration information by KWTCS for five out of thirteen EA regions. Through processing the data layers shared by Forestry Commission, two datasets were produced, one of 13,k947 habitat features and another of 208 habitat features. Several smaller datasets were provided from various other partners.

Barriers to sharing habitat information included a lack of capacity and funding to digitise and prepare spatial data within partner organisations, the partners nervousness to enter into data licensing and sharing information under an Open Government License (OGL), and the previous absence of a national data standard and framework and process for them to enter the data at an earlier date.

Several suggestions were outlined for incorporation into future nationwide habitat data collections and/or audits:

- Future audits to quantify habitat destroyed or lost annually and the reason for this.
- Intuitive data input and management system, this could take the form of an online platform/tool allowing organisations to directly map or upload habitat polygons. Data license and polygons should be reviewed by the host organisation before being made public on the platform/tool under and OGL.
- Greater clarity around the definitions of priority habitat types and when they are created, restored and spatially quantifying the degree of habitat enhancement activity (e.g., habitat outcomes type, extent, condition)
- Consideration around how future audit and/or on-going data input and management systems and wider data ecosystems could be supported and developed. e.g. the EA and the Rivers Trust have their own data management recording systems.

Stakeholder consultation is likely to be a key component in the development of data input and management systems to ensure developments are fit for purpose. In the future, these will need to consider the requirements of the 25 Year Environment Plan, the Environment Act targets, the Nature Recovery Network (NRN) and Local Nature Recovery Strategies (LNRS), and the integration with systems to report the delivery of Biodiversity Net Gain (BNG). The NRN Partnership group in addition to Local Nature Partnerships across the country would appear to be the appropriate stakeholder groups to consult on future methodologies and systems for the type of reporting of habitat.

Introduction

1.1. Project Proposal

Natural England (NE) commissioned Kent Wildlife Trust Consultancy Services (KWTCS) to develop the work undertaken in a pilot to expand on an initial GIS spatial data set in relation to habitat creation / restoration, relevant to the England Biodiversity Strategy and in particular Outcome 1B and the delivery against the 25-year Environment Plan. This project aimed to progress the collation of additional spatial information as GIS shape files relating to habitat creation and restoration from a range of national delivery mechanisms and local partnerships – meeting requirements relating to open data and Common Spatial Data Framework attributes.

1.2 Project Background

Biodiversity Outcome 1B and the 25 Year Environment Plan.

1.3 Project Objectives

Key objectives of this commissioned project:

- Finalising the protype online ArcGIS StoryMap in liaison with Natural England to be used to help with the collection of local partner data.
- Continue to seek feedback from the wider partnerships on a county-by-county basis. This should focus on areas where there is likely to be strong local partnerships such as NPs, AONBs, Community Forests, former Nature Improvement Areas or other landscape scale projects.
- Work closely with a range of National NGOs to ascertain which may hold suitable data and where possible, available mapping. Suggested organisations include; Rewild Britain, RSPB, Woodland Trust, Wildlife Trusts, Rivers Trusts, Buglife, Freshwater Habitats Trust, Plantlife, Floodplain Meadows Partnership. Initial contact should be made with as many organisations as possible, and a priority list of work prepared based on the initial discussions. It is not anticipated that data will be collected from all partners this year as it is anticipated that work will continue in the future.
- Continue to work closely with EA staff to expand the amount of data available as shape files rather than point based data. This is likely to focus on a selection of EA area teams as it is anticipated that this work will continue in future years. The selection of which team area to investigate will be made in close liaison with EA and NE.
- Continue to explore the FC data sets and work with NE & FC to improve the methodology for developing relevant spatial data from their main delivery mechanisms; i.e., woodland creation, woodland management for PAWS, and their delivery of open habitats. Further collation of the data should not be a focus this year, but the report should provide clear recommendations on the best methodology for proceeding in the future.
- Investigate if particular funding organisations or funding streams (e.g., HLF, SITA and any others that have a specific nature recovery element to their operations) hold any useful information.

- A final report will provide clear recommendations on best methodologies for proceeding in the future with respect to funding and data processing.

2. Methodology

2.1 Communications with 'Local and National Partners'

Initiating and managing communications with local and national partners has been central in progressing the audit.

Overview of the communication pathway for partners (not including FC or EA):

1) Initiated with email exchanges (via introductions from NE or others) or to new 'cold' contacts.
2) Positive responses were followed with a Teams call to understand the format, extent and suitability of the data for the remit of the audit, discuss data license requirements and digitisation support required.
3) On the receipt of an appropriate data license, data sets were shared with KWTCS for review and digitisation where required.

2.2 Habitat Web map

A habitat web map was created to aid organisations in understanding where the habitat data gaps are and as a platform to add and collect reviewed habitat datasets received throughout the audit.

Due to issues with sharing data across ArcGIS online, KWT created two web applications using the 'Shiny' package within the data science software 'R' as the primary webmap, and an alternative suitable for local authority and civil service staff who have higher levels of digital security. These applications have now been archived as ownership has been returned to Natural England. The code creating the webmap has been sent to Natural England and can be re-deployed from their own server if desired.

Using this R package, we created a leaflet webmap which we wrapped it into a web application using the Shiny package within the same language. The webmap works through reading a flat geodatabase - the most efficient way to read in large polygon layers - containing all previously mapped habitat creation or restoration projects. It then styles these appropriately, creates a legend and plots them on a webmap. In order to save processing time, the polygons are only visible at a certain zoom level, before then centroids show as clustered points.

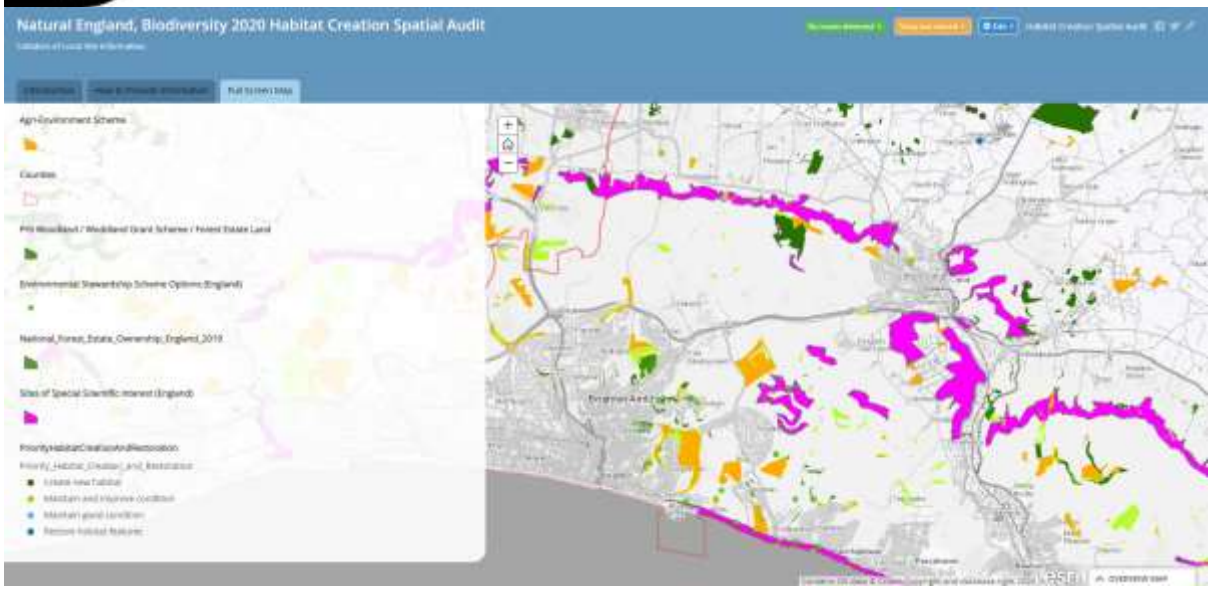


Figure 1: Visual from user inter-face with the webmap detailed for area of Sussex

2.3 NRN Partnership Webinar

The project team presented at an NRN Webinar to over 100 stakeholders from the conservation sector on 27 January 2022. The scope of the project was covered, along with information on how the participants could share their data. A survey was also undertaken, for which the team received 70 responses, detailing which organisations held data on priority habitat restoration and creation, and their status on the storage and shareability of those data. This led to the creation of a list of "warm leads" which the team prioritised for contact. The recording for this webinar was consequently shared amongst key interest groups, for example the Nature Recovery Network focus group within the Royal Society of Wildlife Trusts.

2.4 Public and Government Body Datasets

2.4.1 Environment Agency

An excel spreadsheet of habitat creation and restoration data points for each EA region was shared. As the data provided were in points format, some processing was required before these were useable for the project. Using the sf package within R studio the grid references and approximate habitat areas were processed into 'derived polygons'. This resulted in a circular buffer being created around the grid reference with an area and description matching that of the habitat creation spreadsheet. These were then uploaded into QGIS giving the approximate size and location for further digitisation.

Meetings were requested with each EA regional biodiversity lead whereby the derived polygons were reviewed and edited to reflect the accurate extent and coverage of the newly created or restored habitat.

Where it was not possible to arrange a meeting; PDF/paper maps, reports, any documentation of habitat creation and restoration were requested. These were reviewed and digitised where appropriate.

2.4.2 Forestry Commission

The Forestry Commission provided several datasets for the project. After a lengthy period of negotiation and demonstration Natural England and KWTCS were able to isolate the useful datasets and sign a contractor's license to access the data for Kent only. There is more detail in section 3.1.3, but in summary, these were determined to be datasets on felling licenses, habitat change and planting, and habitat creation/restoration activities were isolated from these through a series of algorithms checked by Natural England staff. The datasets provided were then checked for relevance and usefulness, and if needed formatted to match the project brief using R Studio and supplied back to Natural England.

This data set (known as 'Formatted_Subs2010_2021_data.shp dataset' for the purposes of the project) contained only line data already identified as restoration or creation projects, but the original dataset does not state which is which. Therefore, it was necessary to determine a basic way of deciding this.

The method used was simply to get the R code to check if the 2010 habitat and the 2021 habitat both had "wood" in the name and if this is yes then it was a restoration and if not then it was assigned creation. Therefore, in some cases, the 2010 is conifer and the 2021 is Broadleaf, this is still restoration. This is similar to Biodiversity Net Gain guidance and methodology[1] where, if you are not changing the broad habitat type it falls into enhancement rather than creation. The Priority Habitat then assigned is the 2021 habitat listed in that data set and the 2010 is removed.

This is the bit of code used\;
Assigns "restoration" where the broad habitat is the same, otherwise it assigns "Creation". So changes from Conifer to Acid Grassland would be creation. But Conifer to Conifer, or Conifer to Broadleaved would be restoration.

```
case_when(Habt_2010 == Habt_2021 ~ "Restoration",
grepl("wood", Habt_2010) & grepl("wood", Habt_2021) ~ "Restoration",
grepl("heath", Habt_2010) & grepl("heath", Habt_2021) ~ "Restoration",
grepl("grass", Habt_2010) & grepl("grass", Habt_2021) ~ "Restoration",
TRUE ~ "Creation")
```

It needs to be acknowledged that this approach does not meet the standards required by NE for collating data and also does not support the extraction of important PAWS restoration data as it stands. Further is required to convert the data into the common standard framework using the correct target definitions. This is a planned phase from the outset of this audit project by NE.

2.5 Data Licensing and Metadata Templates

Local and national partners were requested to share data and information under a creative commons license agreement[2]. The creative commons license will allow Natural England to publish under an Open Government Licence (OGL).

[1] https://cieem.net/wp-content/uploads/2019/02/C776a-Biodiversity-net-gain.-Good-practice-principles-for-development.-A-practical-guide-web.pdf)
[2] Creative Commons — Attribution 4.0 International — CC BY 4.0

A completed 'Publishing Metadata Template v2' that is returned with datasets will assist Natural England in understanding the lineage of the dataset ahead of publishing datasets under an OGL.

2.6 R Studio

R packages sf, dplyr, and readr were used to format various datasets received into the relevant attributes given by NE. Using the data provided, each dataset was investigated to determine which columns were useful and could be matched to NE attributes, where there might be gaps or where the information could be reasonably assumed and extrapolated.

In each case, the code was slightly different but followed a general method. The data was read into R and columns were then mutated (renamed). Each one was either given an automatic fill, for example CollatedBy was autofilled with "KWTCS", or pointed at an existing column in the data set to rename (SiteArea = Area2). The select function was used to then only keep the NE specified attributes. The final dataset was then outputted into a newly named shapefile. For some smaller data sets from the same provider, these were bound together before outputting.

A few required further editing, the largest of the FC datasets "Subs_2010_2021_larger05ha.shp", required filtering to remove lines that would not give enough data to be meaningful. For example, those that had "not surveyed" or "surveyed; unknown habitat". The case_when function was used to assigned UKHab codes based on the habitat provided in the "PriorHab column".

The code used to do this work is provided with the report and others appendices.

3. Results

3.1 Summary and Outputs of Communications

A summary of all communications with local and national organisations undertaken during the project, in addition to appropriate contacts and details within each organisation; can be found in the Appendices.

3.1.1 Positive Communications and Datasets Shared with Local Partners

Datasets from the organisations were shared with KWTCS for inclusion in the audit (not including Environment Agency and Forestry Commission). Not all data received were supplied with the appropriate license or all have landowner permission secured; in these cases, it has been supplied to KWTCS for initial review with appropriate license and notification that all landowners permissions is in place to follow. Due to the lack of information within some of the datasets some generalisations had to be made to populate missing data. Where possible these have been filled in with reasonable confidence using the data provided. It has been possible to successfully digitise some datasets using the above process and then get a license for publication. Details in the table below.

All data license agreements and completed metadata templates can be found in the Appendices.

Licence for fact sheets (Creative Commons) :: The UK Copyright Service
Licenses for data sharing: Creative Commons | Library Services - UCL – University College London

KWTCS continues to have positive ongoing communications with several organisations to better understand the data they might hold and that might be suitable for this habitat creation/restoration data audit. In many cases, these organisations do hold habitat creation/restoration datasets and are keen to share it, but due to staff resources and work priorities have not been able to share it within the timeframe required before this report deadline as detailed below with RAG key:

	Shared data sets with License
	Data shared with KWT but in a position to share with NE
	Available data sets outside the scope of this part of the project

	Organisation	License for publication	License status	Comments
Wildlife Trusts	Cumbria Wildlife Trust	Yes	License for Public Use	Completed and sent to NE
	Surrey Wildlife Trust	Yes	License for Public Use	Completed and sent to NE
	Dorset Wildlife Trust	Yes	License for Public Use	Some information missing, but available information sent to NE
	Herefordshire Wildlife Trust	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.
	Isles of Scilly	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.
	Essex Wildlife Trust (RSPB Essex)	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.
	Suffolk Wildlife Trust	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.
	Kent Wildlife Trust	Yes		Awaiting some permissions and shapefiles: Please refer to appendix 1 for status of communication and contact details.
	Lancashire, Manchester & North Merseyside	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.
	Lincolnshire WT	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.
	Shropshire Wildlife Trust	No		Awaiting scanned copies: Please refer to appendix 1 for status of communication and contact details.
	Worcestershire WT	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.
	Derbyshire WT	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.
	BBOWT	No		Awaiting shapefiles: Please refer to appendix 1 for status of communication and contact details.

Infrastructure & Utilities	HS1	Yes	-Line of license permission – exchange of emails – under CC license – for PuDL	Work done to date with attribution on the data we hold
	Southeastern	No		KWT CS in process of creating shapefile
	Northern Rail	No		Awaiting license and data
	Northumbrian Water (includes Suffolk and Essex Water)	No	License for KWT to view	Data still under review: Please refer to appendix 1 for status of communication and contact details.
	Southern Water	No	License for KWT to view	Completed: awaiting confirmation of OGL
	Portsmouth Water	No		Awaiting license and data: Please refer to appendix 1 for status of communication and contact details.
	Biffa	No		In process: Awaiting Biffa departmental permission to use
Councils	Northumberland County Council	No	License for KWT to view	All received datasets and supporting information will be shared with NE as part of handover
	London Borough of Lambeth	No		No data received: Please refer to appendix 1 for status of communication and contact details.
	North East Lincolnshire Countil	No		No data received: Please refer to appendix 1 for status of communication and contact details.
Other Organisations	Floodplain Meadows Partnership	Yes		Completed, not all landowner permission granted
	West Cumbria Rivers Trust	Yes	License for KWT to view	Received on 14 July 2022 so not possible to format. Datasets and previous data collection forms will be shared with NE
	NE – Hoveton Wetland Restoration Project	Yes	License for Public Use	Completed
	Rewild Britain	No		No data received: Please refer to appendix 1 for status of communication and contact details.
	RSPB	No		No data received: Please refer to appendix 1 for status of communication and contact details.
	Plantlife	No		No data received: Please refer to appendix 1 for status of communication and contact details.
	Groundwork	No		No data received: Please refer to appendix 1 for status of communication and contact details.
	Foresight Group	No	License for KWT to view	Data needs permission for use

3.1.2 Data outputs from Environment Agency

Of the 13 Environment Agency regions contacted, 11 responded. Habitat creation/restoration information was digitised by KWTCS for five regions;

- Thames
- East Anglia
- Greater Manchester, Merseyside, Cheshire
- Kent, South London, East Sussex
- Hertfordshire & North London

Digitisation to improve the representativeness of spatial data was possible after consultation generated further useful information for the above regions. In most cases, this led to approximately half of the points being fully digitised. The digitised habitat polygons can be found within the 'Formatted_EA_CF_V2.gpkg' supplied with this report. This shapefile contains the original derived polygons which are simply buffered points as these are useful to understand the location and scope of a habitat restoration or creation project.

3.1.3 Data outputs from Forestry Commission

Multiple datasets were received from FC which were checked for their applicability to this project. It is also worth noting section 2.4.2 with reference to the validity of data in its current state. These are listed below and in the next phase of work, it will be essential to standardise the data and extract important PAWS restoration data.

The EIA data was unusable as we could not link the ID provided with any in the Case Tracker, and therefore could not add any additional data to the dataset. R Studio was used for the primary method of formatting as this is quicker and easier to correct mistakes than QGIS (see section 2.3 for summary of use of R). Due to the lack of information within the datasets some generalisations had to be made to populate missing data. Where possible, these have been filled in with reasonable confidence using the data provided. These are explained further below for each dataset.

The ''Kent_Felling_Data.shp" dataset listed 484 areas where felling was approved. Of these, 100 had been noted as "Regeneration Felling" and therefore were considered relevant to this project. In their attributes these features have been classified as "restoration" and status "approved" rather than completed or underway. For the "Kent_Woodland_Creation.shp" all 108 were considered relevant to the project. In their attributes these have been classified as "Creation" and status "Complete". The two edited data sets were combined into "Formatted_FelledCreation_data.shp" and due to the lack of accompanying data they have been given the Priority Habitat "PH_woodland" and UKHab code of "w" as we cannot categorise them further than this.

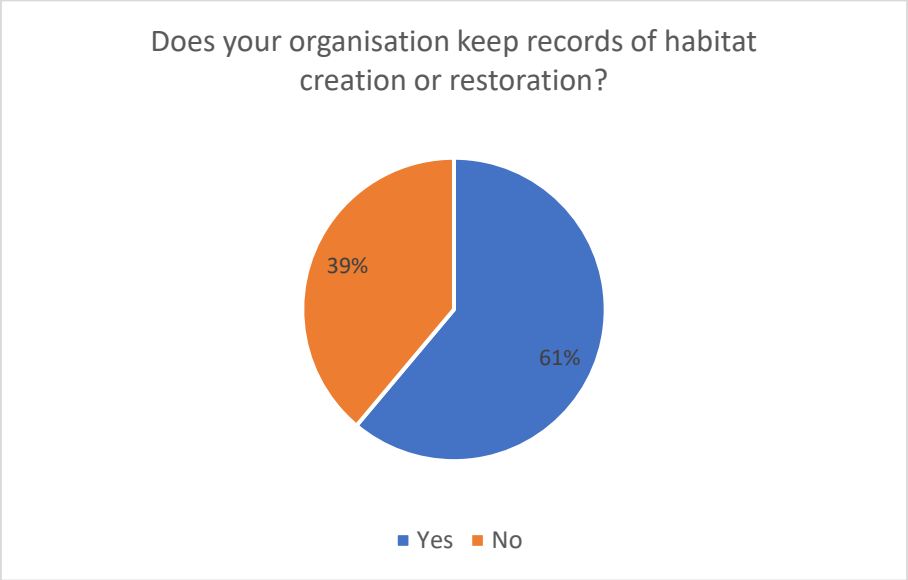
The 'Subs_2010_2021_larger05ha.shp' shapefile contained data that was formatted separately for the webmap, then again more generally into the NE specifications. The shapefile contained 67335 habitat difference data from 2010 to 2021, plus shape area and geometry. Any data listed as "not surveyed", "boundary & linear features", "unknown", "surveyed; unknown habitat" was filtered out of the dataset. This left 13947 features. A crude format to determine restoration or creation was

created by isolating whether the 2021 habitat had the same words as the 2010 one. For example, woodland and woodland would be considered restoration but woodland to heathland would be creation. Status was assigned underway for all. Without any clear project information, the ProjectID attribute was assigned the "luse_2021" attribute from the original source. The meaning of these codes can be found in appendix 6. The StartDate attribute was given as "Jan, 2010". The PriorHab attribute was given the 2021 habitat and then the relevant UKHab code was assigned. Those that could not be done to down to Priority habitat were left at Level 3 UKHab code. This left a total of 13947 features in the final layer "Formatted_Subs2010_2021_data.shp".

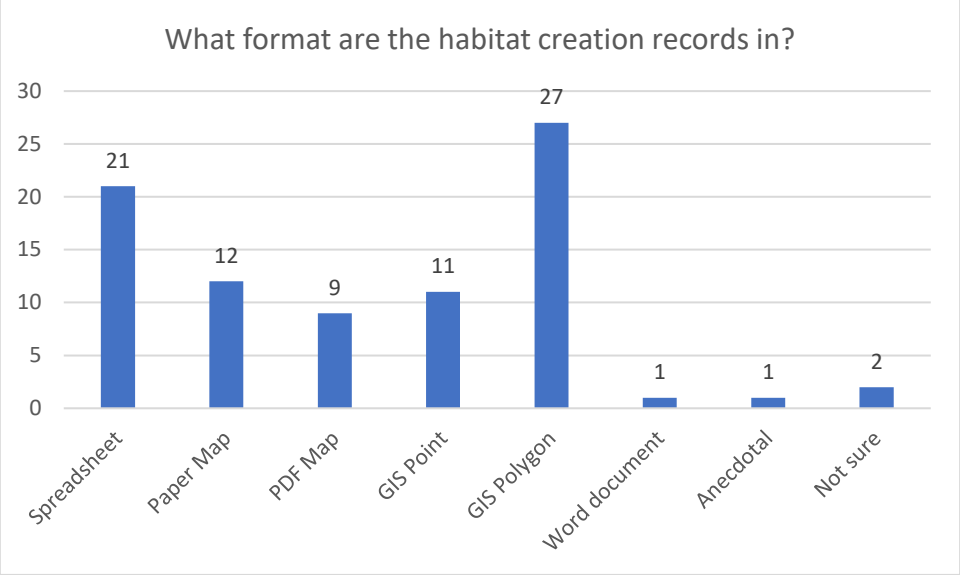
3.1.4 NRN Partnership Webinar Outputs

Questions raised by attendees during the webinar were noted with answers to these circulated following the webinar. The survey circulated to NRN Partnership stakeholder generated 70 responses. The noted questions and answers, raw survey information and webinar registration report can be found in the appendices. The survey questions and results are as follows.

1) Does your organisation keep records of habitat creation or restoration?

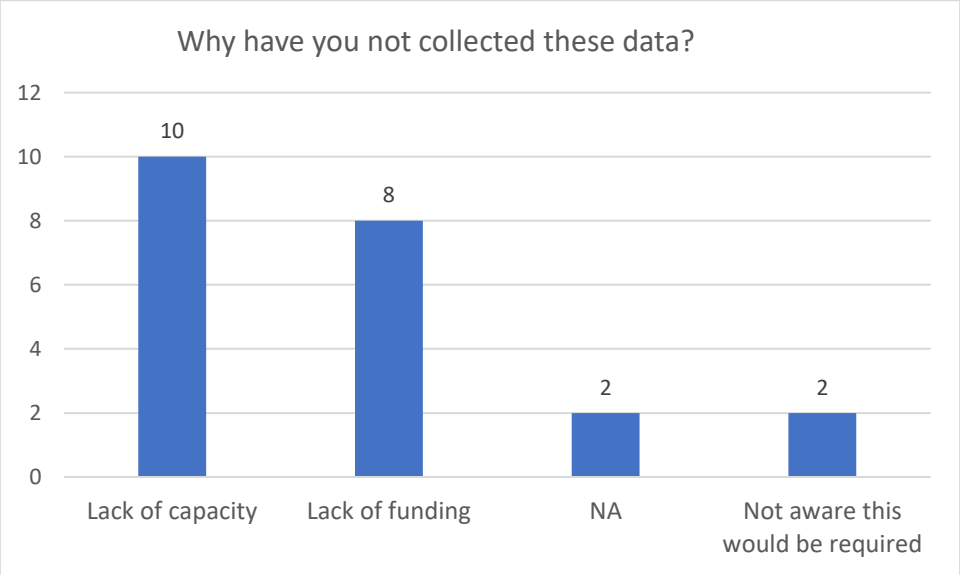


2) What format are the habitat creation records in?



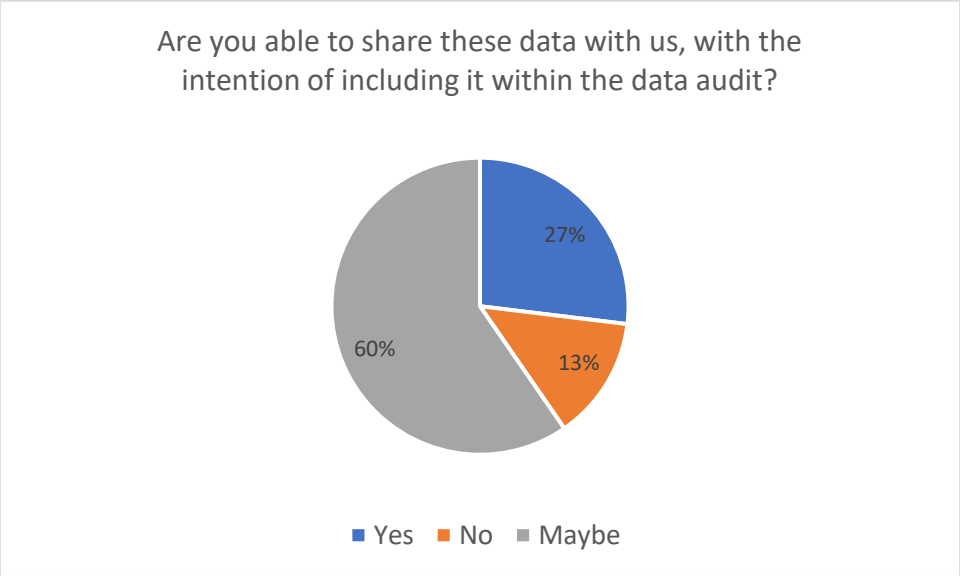
It is positive to see that survey results show 'GIS Polygon' is the most common format to record habitat creation records. However, the total of the remaining results associated with the other formats is double that of 'GIS Polygon'. This indicates habitat creation records across the conservation sector are not 'GIS ready' and will require varying levels of review and digitisation before inclusion within national datasets.

3) Why have you not collected these data?

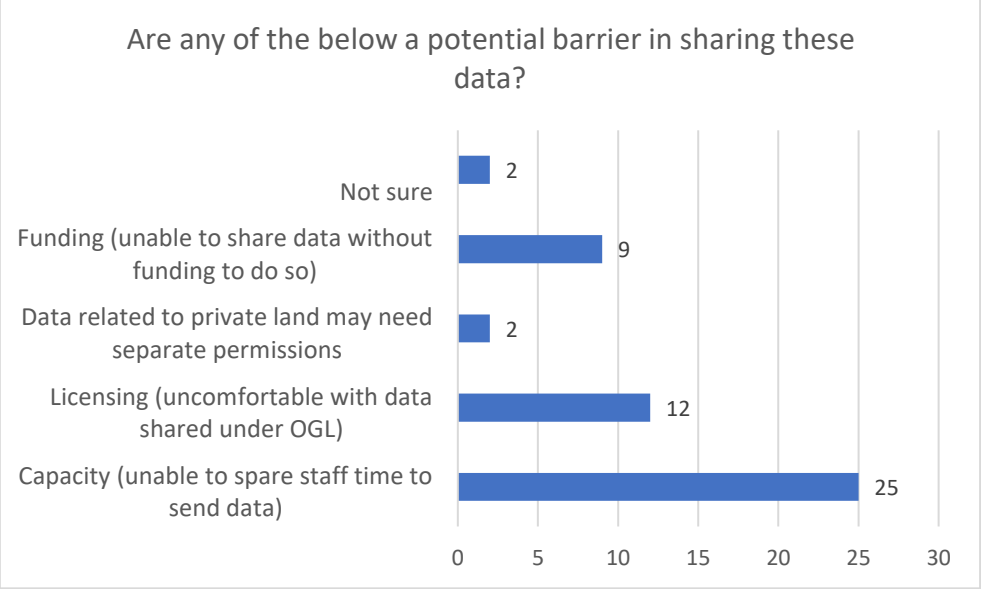


Considering the response to question two; a lack of capacity and funding as the most common reasons for not collecting habitat creation data indicate that significant support is required to enable organisations to efficiently record habitat creation and restoration data for inclusion in a robust national dataset. It is likely that further consultation with stakeholders is required to understand whether this is possible internally (funded or un-funded); or whether external support at a regional or national level to record habitat data is more suitable.

4) Are you able to share these data with us, with the intention of including it within the data audit?



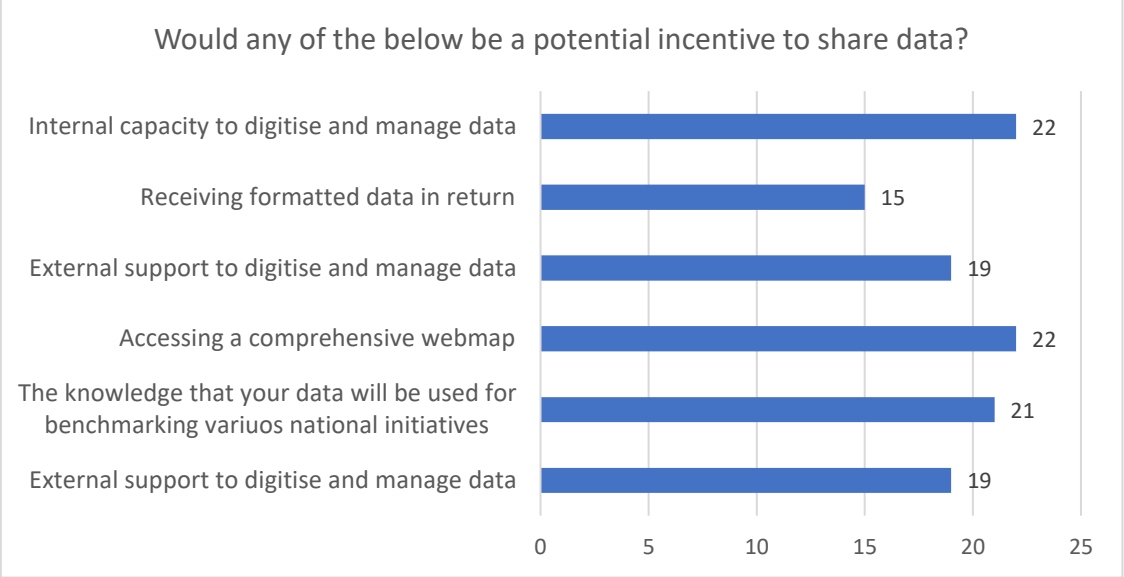
5) Are any of the below a potential barrier in sharing these data?



Leading on from responses to question three; capacity and funding have been reported as frequent barriers to sharing habitat creation data. Results show the second most common barrier is licensing. Common creative licenses have been used to share data with KWTCS for the purposes of the audit with the understanding that data will then be published under Open Government Licence.

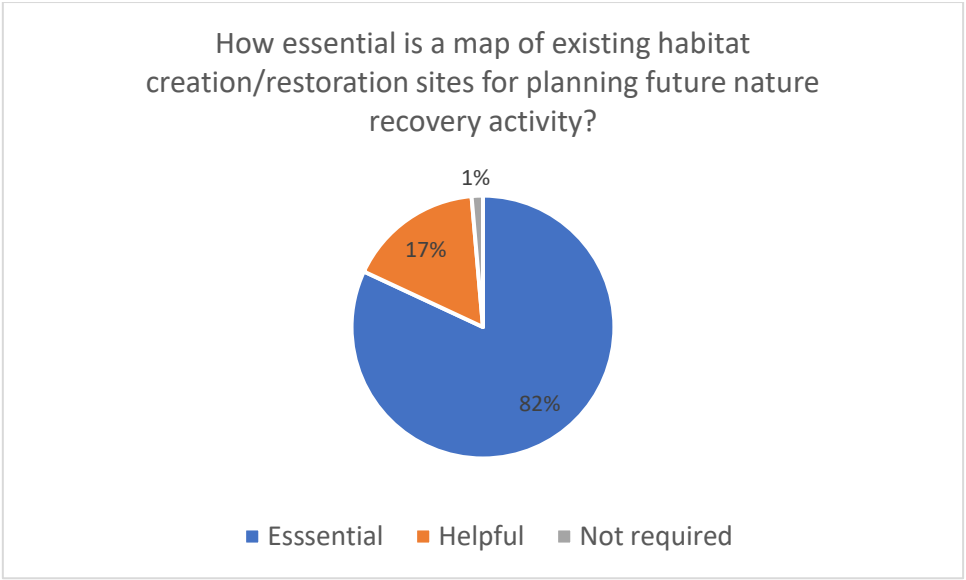
It is likely that further consultation with stakeholders is required to understand whether alternative licencing options are possible.

6) Would any of the below be a potential incentive to share data?



Results indicate all incentive options would be well received. Building on responses to question three, it's likely further consultation between NE and stakeholders will be required to determine appropriate systems, data sharing/viewing platforms and funding to allow all organisations who create and restore priority habitat to submit data for inclusion in national datasets.

7) How essential is a map of existing habitat creation/restoration sites for planning future nature recovery activity?



4. Discussion

4.1 Challenges, barriers and issues encountered

Organisations were identified that might hold data suitable for this audit, but in many circumstances the challenge was reaching the **correct contact** to engage in communications regarding data held and data sharing. For example, due to staff turnover, staff within organisations were often not aware of who was dealing with habitat creation/restoration data. Considerable time was invested to source appropriate contacts.

One of the main barriers encountered for sharing data was **lack of funding** and **resources** due to a variety of reasons such as no resources to collate data if no funding is provided, or that there was very little notice and a relatively short time frame to digitise and format habitat data. An example being that this would mean diverting staff away from funded projects or core work (e.g., Wildlife Trusts and LERCs). In some instances, resource/funding will be needed to digitise data that is still in PDFs or paper maps or to track and record priority habitat focused projects under one dataset. We also received some reports of data being lost due to staff turnover and this would take additional resources to investigate.

It is worth noting, this section is restating in more detail what many of the organisations had mentioned in terms of the funding and resources limitation around habitat creation and restoration (more detail referenced in appendix 1) mostly around 3 specific areas a) continuity and skills in-house to record and store such data b) their current funding not giving the flexibility to focus on this area of work c) timing of the request not quite aligning to the organisations capacity and plans, but there being a willing to do this at a future date d) all of these areas being compounded from residual effect of furlough and redundancies following lock-down.

In the case of LERCs, it is perceived that not only the funding and resource is a barrier to share data but habitat data forms part of their core business. Furthermore, it is also perceived that the **Open Government Licence (OGL)** sets another barrier for LERCs being unable to share data without compromising business model. Certainly, there is a cost associated with looking for and extracting the data, however, it may be the case that many do not hold the specific relevant data and also typical LERC clients would most probably not pay for such data. Either way, the most overriding feedback from 'The Wildlife Trusts' hosting LERCs is that these organisations seemed to not have been involved in a conversation on providing such information as there wasn't such a system in place, which is a separate issue outside of the scope of this project. However, this has led to LERCs perceiving the request for data as an additional task that could not be properly supported without further resource and/or funding and the next phase of the handover of communication from this phase of the project and communications for the next phase of the project can to some extent mitigate for such perceptions up front.

With other organisations, consultation also noted the OGL as a barrier because of **landowner permission** to publish data openly.

Since the BARS reporting system has been closed there has been an absence of **data standards** and a standardised framework nationally for reporting habitat creation/restoration which means data are processed and kept in many different formats and not necessarily reporting specific habitat

creation/restoration areas or even any habitat data. For example, EA regions have only been asked to report areas and grid references as per the EA dataset and although we were able to successfully expand the amount of data available as shapefiles rather than point based data with some EAs, other EAs simply do not have further information (please reference appendix 1 for further details).

Once data were received there were further complications. As mentioned above, data format varied considerably and this meant that one process could not be used equally for all. The process had to be adapted for each dataset received which is a key issue, that a common approach for future reporting is essential. Furthermore, missing or unclear attributes meant that in some cases assumptions had to be made. For example, for EA data in some cases it was unclear whether habitat creation had been completed or not, and the contacted EA staff were also unsure, so actions are recorded upon commencement, but not the outcomes. Classification of habitat and date formatting also varied considerably and for some it has not been possible to fully format these to the NE specifications.

Mapping Linear features was also a significant discussion area. This is because linear features are clearly important in terms of habitat creation and restoration, but not part of the main scope of the focus of the project. It is a challenge to accurately measure the area of certain linear features and it may be that length and condition is probably more applicable. It may be that having shapefiles for linear features 'only' is a next step, but other options should be investigated (i.e. how to display such features). Looking at the framework attributes, information on linear features may still fit within the original scope of the project, as long as the length of an associated field or compartment was added. But the area vs length question still remains.

4.2 Lessons learnt

Although some of the complexities of discussing data licenses was understood at the inception of this stage of the project, the limitations of data sharing when landowner permissions are not in place was not fully considered at the outset. The next stage of the project could allow more time for communications and support for organisations to seek landowner permissions and discuss data licenses.