Data standards for Local Nature Recovery Strategies

Advice for Responsible Authorities

Version 1. February 2024

Purpose

This advice is to support responsible authorities (RAs) to take a consistent approach to how they present their Local Nature Recovery Strategy (LNRS).

Preparation of LNRSs is locally led so that each strategy can reflect their unique local circumstances in what they prepare and how it looks. It is, however, important that there is some consistency between LNRSs. This is achieved through the legal framework including the Environment Act 2021, the LNRS regulations and the LNRS statutory guidance. It is supported by the advice provided by Defra's Arm's Length Bodies.

Contents

1. Introduction

1.1 Context

This advice is provided to RAs appointed to lead the preparation of the LNRS for their area. It provides advice on how to comply with requirements in legislation and statutory guidance regarding the content and format of their LNRS. These requirements are intended to allow RAs flexibility in how they choose to present their strategy whilst maintaining minimum standards of consistency and accessibility for strategy users and enabling Government to compile all LNRSs nationally.

Regulation 17(4) of the [Environment (Local Nature Recovery Strategies) (Procedure) Regulations 2023](#) (the 'LNRS regulations') requires all final LNRSs to be provided to Government "in an editable electronic format which presents all relevant parts separately, or enables them to be separated, so that those relevant parts may be electronically combined with relevant parts of other local nature recovery strategies". Regulation 17(5) specifies what the "relevant parts" of an LNRS are that must be separate or separable.

Paragraphs 94-98 of [the LNRS statutory guidance](#) provide steers on presenting an LNRS that RAs are legally required to "have regard" to. This guidance applies to both what that RA publishes locally and what the RA provides to Government.

Government requires RAs to provide their LNRS in an editable format purely to enable information from different LNRSs to be readily brought together – the LNRSs themselves will not be amended or changed. These are local strategies, and it is for the RA to prepare and publish the strategy for their area, working within the requirements set in legislation and statutory guidance.

1.2 Terminology used in this advice

This advice uses consistent language and terminology to help RAs understand the nature of the advice being provided.

- "**Must**" is used when stating legal requirements from the Environment Act 2021 and the LNRS regulations, or where there is only one practicable approach to complying with them.
- "**Should**" is used when referring to steers in the statutory guidance that RAs must legally have regard to.
- **"Could"** is used when providing information and steers meant simply to assist RAs in thinking about how to exercise their discretion.

1.3 Links with delivery mechanisms

LNRS will help identify suitable locations for nature recovery activities and build support for the activities to be delivered on the ground. This advice highlights considerations that may

support linkages with a range of mechanisms that will support delivery of potential measures identified in an LNRS, for example Biodiversity Net Gain (BNG).

2. Statement of biodiversity priorities

2.1 Format of the statement of biodiversity priorities

The statement of priorities will be a written statement and therefore in text format. It should be concise and clearly structured. It should be written in plain English.

Regulation 17(5) lists the parts of an LNRS that must be presented separately, or can be separated out, when the LNRS is provided to Government. The list is primarily spatial information, but also includes the "potential measures" which must form part of the statement of biodiversity priorities. RAs must provide the potential measures as a list. Each potential measure should be individually identifiable, so it can be connected with locations identified in the local habitat map.

The statement of priorities must be provided to Government in an "editable electronic format". This means an open or commonly used editable document format. Examples of suitable formats include:

- OpenDocument format (.odt)

- Microsoft word (.docx)

RAs can contact their NE LNRS senior adviser for further advice if unsure whether the format proposed for the statement of biodiversity priorities is suitable for submission to Government.

When publishing on their own website, the format is a decision for RAs. RAs could consider use of interactive software to present their strategy as suggested in paragraph 97 of the statutory guidance, if doing this RAs could also publish the potential measures as a list in an annex or similar.

2.2 Habitat and species naming systems for statement of biodiversity priorities

RAs should refer to habitat types throughout their statement of biodiversity priorities. Appendix 1 provides advice on naming systems for habitats and species that RAs could use to provide consistency across LNRS.

3. Local habitat map

3.1 Format of the local habitat map

Consistency in the format of local habitats maps provided to Government is particularly important to facilitate the data being electronically compared or combined with data from other LNRS. RAs must provide the local habitat map in an "editable electronic format".

An "editable electronic format" means one of several types of geospatial data file formats used by geographic information systems (GIS). Examples of suitable formats include:

- an open geospatial file format, for examples Open Geospatial Consortium (OGC) formats such as GeoPackage

- a commonly used file format that is easily convertible, for example ESRI shapefiles.

RAs must not provide 'raster' type formats where data is presented as an image such as a TIFF or JPEG, or GeoPDFs because these cannot easily be analysed, even when these are georeferenced.

RAs can contact their NE LNRS senior adviser for further advice if unsure whether the spatial data format they propose to use for mapping is suitable for submission to Government.

When publishing on their own website, the format is a decision for RAs. RAs could consider use of interactive software as suggested in the statutory guidance. RAs must not publish the local habitat map with live mapping feeds (dynamic data), the version published must not change until formal review and republication without the written agreement of the Secretary of State.

3.2 Extent of the local habitat map

LNRS areas have clear geographical boundaries which coincide with the boundaries of the local authorities that each LNRS covers, a map of the LNRS areas is available on GOV.UK. The LNRS data layers are available via the LNRS data viewer. RAs must ensure their local habitat map does not overlap into adjacent LNRS areas and it should not extend to other areas beyond the LNRS boundary, for example subtidal areas outside of the local authority boundary.

3.3 Habitat and species naming systems for local habitat map

RAs should use the same habitat naming systems in their local habitat map as those used in their statement of biodiversity priorities. Appendix 1 provides advice on the naming systems for habitats and species that RAs could use to provide consistency across LNRS.

3.4 Specific parts which must be in the local habitat map

Regulation 17(5) of the LNRS regulations sets out the relevant parts of the local habitat map which must be presented separately, or in a way that enables them to be separated, when the final LNRS is provided to Government. For the first iteration of LNRS, the mapped relevant parts are the:

a) location and extent of areas identified as of particular importance for biodiversity

b) location and extent of areas identified that could become of particular importance, this includes both:

    i.   areas that could become of particular importance for biodiversity

ii.   areas where the recovery or enhancement of biodiversity could make a particular contribution to other environmental benefits

c)   locations where potential measures have been proposed.

The parts listed in regulation 17(5) are based closely on what section 106 of the Environment Act (2021) requires that an LNRS must contain. They have, however, been grouped differently in the regulations to align closely with the more detailed explanation of what an LNRS should include provided by the statutory guidance.

RAs must provide each of the relevant parts to Government in three separate (or separable) layers:

- areas of particular importance for biodiversity (APIB) – see [Section 4](#)

- locations where potential measures have been proposed - see [Section 5](#)

- areas that could become of particular importance (ACB) – see [Section 6](#)

We strongly advise that the areas that could become of particular importance, 17(5)(b)(i) & (ii), are combined as a single layer on the local habitat map. This reflects the approach taken in the LNRS statutory guidance and the fact that action for biodiversity will almost always generate wider environmental benefits. There is not expected to be benefit in forcing a distinction between areas that could become of particular importance solely for biodiversity or due to consideration of wider benefits.

Natural England have developed attribute schemas for the three requested data layers to help RAs to meet the legal requirements and enable effective join up with neighbouring areas. Use of the templates will greatly aid Government's ability to electronically combine the data to produce an England-wide map, facilitating delivery by national or regional users. The attribute table schemas are outlined in Sections 4 to 6 and detailed in [Appendix 2](#). RAs are strongly encouraged to use them.

RAs have flexibility in how they chose to present the mapped potential measures in their own LNRS local habitat map and are not required to publish their potential measures as a separate layer. It should be noted, however, that RAs are required to provide Government with a separate layer. See [Section 5.1 Introduction to data standards for potential measures](#) for further explanation.

4. Data standards advice for areas of particular importance for biodiversity (APIB)

4.1 Sites and habitats in the APIB data layer

RAs must provide data to Government for all areas of particular importance for biodiversity. The Environment Act 2021 sets out some types of sites that must be included in the areas of particular importance for biodiversity. Paragraphs 21-29 of the LNRS statutory guidance

explain which additional sites and irreplaceable habitats should also be mapped. Government has provided the national habitat map showing all national conservation sites and local nature reserves via the LNRS Data Viewer. As stated in paragraph 26, RAs should not map any other areas that are not mentioned in paragraph 22 as being of particular importance for biodiversity.

The sites and habitats to be included in this data layer are:

- national conservation sites (see Environment Act 108(3) for details)

- local nature reserves

- local wildlife sites (the local term may be different; this means a locally designated site of importance for biodiversity which is safeguarded in planning policy).

- irreplaceable habitats – this is only habitats in The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024.

4.2 Format of the APIB data layer

RAs must provide the APIB data layer to Government in a vector area (polygon) format. It would be helpful to name this layer '**APIB**'. RAs are strongly advised to use the Attribute schema for APIB (detailed in Appendix 2) as a framework. RAs can add their own further attributes. (detailed in Appendix 2) as a framework. RAs can add their own further attributes.

A single APIB data layer for the whole LNRS area is preferred. All sites and irreplaceable habitats should be kept separate (even if overlapping) within the layer. Further explanation of this is provided in Appendix 2.

Source data layers that are in line or point format must be changed to area format. Examples of where this may be necessary include where:

- linear features of local wildlife sites, such as hedgerows, lines of trees or watercourses are in line data format.

- individual ancient and veteran trees (that are not within other irreplaceable habitat areas) are in point data format.

RAs could use the suggestions in Appendix 3 as a guide to create area data from line or point data.

5. Data standards advice for potential measures

5.1 Introduction to data standards for potential measures

The mapping of potential measures to locations to deliver the priorities is closely related to identifying the areas that could become of particular importance. Statutory guidance says that areas that could become of particular importance should be identified based on their suitability to carry out potential measures. It is possible that the exact same areas will be

identified in both the potential measures layer and the areas that could become of particular importance layer but Government have asked RAs to provide separate area layers for these two "relevant parts" as it is the most practical way to achieve some of the requirements and to support national collation. RAs have discretion over how they display the location of potential measures in their local habitat map, but the statutory guidance says it should be straightforward to access basic information, such as the potential measure proposed in an area that could become of importance.

Key considerations are:

- one or more potential measures can be shown in the same area, that is, potential measures can overlap each other.

- RAs may choose to map potential measures in some areas that have been mapped as already being of particular importance for biodiversity (i.e. APIBs) to restore or enhance them.

- All locations proposed for potential measures in the local habitat map should be mapped as either areas of particular importance or as areas that could become of particular importance.

- it must be clear which specific potential measure has been proposed in a location.

- it should be straightforward to access basic information about the potential measure in the local habitat map, as set out in paragraph 95 of statutory guidance.

- the potential measures attribute schema (Appendix 2) provides optional fields that RAs could use to display how potential measures relate to priorities as part of the local habitat map. We strongly advise this is used as this detail should be available as part of the LNRS.

- there is no minimum or maximum area for potential measures, but RAs should be mindful that indiscriminate or widespread mapping will not help to target nature recovery action where it will have most benefit.

- abstract grids (for example tetrads or hexagonal grids) derived from certain models and computer software are unlikely to be suitable for this data layer.

5.2 Format of potential measures layer

RAs must provide the potential measures layer to Government in a vector area (polygon) format. It would be helpful to name this layer '**Measures**'. RAs are strongly advised to use the Attribute schema for measures (detailed in Appendix 2) as a framework. RAs can add their own further attributes.

A single Measures data layer for the whole LNRS area is preferred.

Emerging mapping is showing that some RAs are displaying separate views of the data aimed at different uses, for example a layer for those using for BNG. RAs should be aware

that when the data layers are collated and published by Government there will be only one layer view for potential measures, so RAs should make sure all the measures can be clearly viewed together.

5.3 Potential measures that should not be mapped

It is recognised that not all potential measures will be suitable for mapping to specific locations. It is also likely that it will not be possible to find suitable locations in which to propose all potential measures. It is, therefore, expected that some potential measures listed in the statement of biodiversity priorities will not be included in the potential measures data layer provided to Government. Further advice on this will be provided separately in the advice for RAs on "mapping of measures".

6. Data standards advice for areas that could become of particular importance

6.1 Introduction to data standards for areas that could become of particular importance

Areas that could become of particular importance are identified through the process of mapping potential measures to locations to deliver the priorities.

There is further explanation about this step in paragraphs 73 – 93 of the statutory guidance

RAs should note that:

- there is no minimum or maximum area, but RAs should be mindful that the purpose is to target efforts where they will have most benefit.

- areas that could become of importance must not overlap with areas that are already of particular importance for biodiversity.

6.2 Format of areas that could become of particular importance

RAs must provide the areas that could become of particular importance layer to Government in a vector area (polygon) format. It would be helpful to name this data layer '**ACB**'. RAs are strongly advised to use the Attribute schema for Areas that could become of particular importance (detailed in Appendix 2) as a framework. RAs can add their own further attributes.

A single ACB data layer for the whole LNRS area is preferred.

7. Ensuring an LNRS is shareable

A key purpose of an LNRS is that it is shared with people to focus nature recovery effort in the most important places. The considerations set out below apply to all the elements of the LNRS. RAs will need to consider the need for all the LNRS outputs to be shareable

throughout preparation. This is a particularly important consideration for the Local Habitat Map, but RAs also need to consider copyright and intellectual property rights when producing the text and using images in their strategies. RAs are strongly advised to plan which datasets they use to avoid including data that would prevent publication of the finished strategy. LNRSs are an evidence-based document but incorporating evidence, however good or useful, that would prevent publication or limit future use undermines the rationale underpinning LNRS.

7.1 Providing data licences for the data layers

Government intends to publish an England-wide map showing the relevant parts of all the LNRS (the mapped areas of particular importance, mapped measures and the areas which could become of particular importance). Users need to be able to download these layers in an editable format so they can analyse and use this mapping.

To enable the fullest use of the data possible for the widest audience, it should be published with as flexible a licence as possible. This corresponds to the general expectation that local and national government publish data under an open licence (the OGL) where possible. OGL allows anyone to use the data without restriction. If you anticipate difficulties in being able to publish as OGL, please contact your LNRS senior adviser.

Using the OGL to publish data on your own website and when passing data to Government means that RAs can be confident that their final maps can be:

- published on your own (RA) website

- shared with local partners and stakeholders

- published and shared at a national scale by Government

- used by anyone, who can copy, adapt, distribute and publish the original maps and adapted maps without restriction.

RAs must satisfy themselves that the final maps do not incorporate copyright from the source mapping or data products unless the copyright holders have permitted (licensed) the above onward uses.

RAs should consider whether the source data poses any risks to publication, such as originating from someone else's data without the required permission for onward use.

It is the RA's responsibility to check the licence and supporting information and understand what of the copyright will be incorporated into the final maps to determine whether the conditions of use and any legal protections such as warranties are suitable.

The RA needs to provide the data to Natural England and Government along with confirmation that the terms of the [Open Government Licence](#) (OGL) apply.

7.2 Using data provided in the LNRS data viewer

The [LNRS data viewer](#) provides RAs and interested parties with access to national scale data to assist in the preparation of their LNRS. The datasets accessed from the data viewer are almost all licensed under OGL. This means that you can copy the data into your mapping, though you must also acknowledge that in your copyright statement.

Data licensed for non-commercial use (of which there are several clearly labelled in the data viewer[1]) can only be used in ways which would not breach the terms of the licence. For example, it cannot be copied into a product which is wholly licensed as OGL, as OGL permits commercial use.

Data in other data portals and explorers linked from the LNRS data viewer may be subject to other licensing terms. RAs must check the licence before re-using data, seeking in-house legal advice where required.

7.3 Public Sector Geospatial Agreement, PSGA data

Where RA data needs can't be met by Ordnance Survey (OS) OpenData, OS has a suite of commercial data which public sector organisations and bodies governed by public law have access to via Public Sector Geospatial Agreement (PSGA) membership. The data covered is listed in Appendix 2 of the [PSGA](#).

RAs can provide (or receive) LNRS mapping containing PSGA data to fellow PSGA members including Natural England, Forestry Commission, Environment Agency and Defra (PSGA Appendix 1 clause 5) without an onward licence for the OS content since the recipient's use of data is subject to the terms of their existing OS licence.

There are additional considerations for sharing LNRS mapping with non-PSGA OS-licensees - see Appendix 1 clause 5.

If a contractor is compiling the LNRS mapping on behalf of a RA, RAs can sub-license OS data as per Clause 2.7 (and see [Public Sector Contractor Licence)](#).

Where the data contains copyright other than that of OS, RAs should ensure they have the required permissions for sharing that copyright.

RAs must follow the PSGA processes for publishing the maps as OGL on their own website where they contain PSGA data. Further information is available on the OS website: [Presumption to publish criteria](#).

Government is working with OS towards ensuring the mapping will meet OS's criteria for OGL.

Government will follow the PSGA publishing processes for the national map if and as required.

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[1] The three peat mapping layers (Peaty Soils, Moorland Deep Peat Aerial Photograph Status and England Peat Status Greenhouse Gas and Carbon storage) in the data viewer are provided with a non-commercial licence due to the presence of NSRI soil data

7.4 Further help with data licensing

It is beyond the scope of this document to offer further advice on copyright and licensing.

RAs should use their own in-house legal resource to ensure licences (for both sending and receiving data) are suitable and data uses are compliant with copyright law and licences. Natural England, Forestry Commission, Environment Agency and Defra are not able to give dataset-specific advice.

7.5 Accessibility

Responsible authorities should ensure that they have taken sufficient measures to make their LNRS accessible to as many people as possible, for example consider if the format will work with assistive technologies such as screen readers.

Advice is available on GOV.UK and the relevant team without your authority may be able to support you, particularly with understanding how to make text and images accessible.

[Understanding accessibility requirements for public sector bodies - GOV.UK (www.gov.uk)](#)
[Publishing accessible documents](#)

Maps have several accessibility issues and the accessibility regulation governing public websites specifically excludes online maps, but the relevant team within your authority may be able to support you to make it as accessible as possible.

Appendix 1 Habitats and species naming systems

1. Habitat naming systems

RAs should refer to habitats throughout their statement of biodiversity priorities. Paragraph 66 of the statutory guidance explains that most potential measures should be ways of enhancing existing habitat and creating new habitats. Potential measures should clearly state the habitat type which they relate to. The statement of biodiversity priorities and the local habitat map should use the same habitat naming systems.

RAs should use openly available habitat naming systems. The following are appropriate for the level of detail likely to be required for an LNRS:

- UK Biodiversity Action Plan (BAP) Broad habitats

- Habitats of principal importance in England priority habitats

The shared origins of these systems mean they can be translated between each other into a single habitat system for the collation of the England-wide map. These classification systems are also likely to be suitable for other spatially targeted delivery mechanisms.

1.1 Using UKHabs habitat classification

RAs should be aware that the biodiversity metric uses UKHab under licence from UKHab Ltd and this does not currently provide an onward licence, this means use of UKHab in the LNRS may compromise the ability to share and use the LNRS.

Find out more about broad habitats and priority habitats on the Joint Nature Conservation Committee (JNCC) website.

Support available to help translate habitats between systems includes:

- JNCC and the National Biodiversity Network (NBN) spreadsheet showing the relationship between the standard habitat definitions most used in UK conservation

- There is a translation tool for registered users of UKHab which allows the relationship between UKHab and other habitat naming systems.

RAs should contact their NE LNRS senior adviser for further advice if unsure whether the habitat naming system they plan to use is suitable.

2. Species naming

LNRS must describe opportunities, set priorities, and propose potential measures for the recovery and enhancement of species. When preparing LNRS, RAs will find that different people and different data sources may refer to the same species by different names. To be able to translate between various names, and to allow national collation, RAs should use the names in the Dictionary of UK species in the UK Species Inventory. This is a database of all UK wildlife, and it provides the taxonomic foundation for most biological recording and analysis systems.

Appendix 2 Attribute Schemas

The fields shown as 'required' are the most useful in assisting the national collation of LNRS and it is strongly advised that RAs include them. Paragraph 95 of the statutory guidance explains that it should be straightforward to access basic information about the mapped locations. The 'optional' fields support this, and RAs are strongly encouraged to include them. Using the 'optional' fields in the format shown will also help the Government to compare or pull together information from different strategies.

RAs can also include additional fields which they would find useful for their own LNRS.

It would be helpful if the suggested attribute table names are used as specified. Similarly, where an attribute value has a range or "domain" of values in the schema, if RAs enter these exactly as specified it will aid consistency between different LNRS. Mapping software often enables the user to be able to set these up as drop-down lists which can aid user productivity as well as improving quality assurance.

1. Attribute schema for APIB

This data must be provided to Government as a vector area (polygon) format. It would be helpful to name this layer '**APIB**'. The schema for the APIB data layer attributes is shown in Appendix 2 Figure 1.

Appendix 2 Figure 1 Attribute schema for APIB

| Field Name	Alias	Type	Is this required?
LNRS_ID	LNRS Area Identification	Integer (1 – 48) see GOV.UK	Required
APIB__ID	APIB identification	RA defined non-repeating integer that is unique at the LNRS Area level	Required
APIB_Type	Site or habitat type	Limited choice of: SSSI SAC SPA Ramsar NNR LNR MCZ LWS IH_AW IH_AVT IH_BB IH_LP IH_CSD IH_SSS IH_MSS	Optional

Field Name	Alias	Type	Is this required?
		IH_LF	
APIB_Name	APIB Site Name	Character	Optional
APIB_Site_ID	APIB Unique Site Identification	Character	Optional

- LNRS_ID - this is the unique identification representing the LNRS area. It will be a value between 1 and 48 and is available on the map of LNRS areas on GOV.UK.

- APIB_ID – this is the unique identification for each part that will make up the APIB data layer. The purpose of this is to provide a unique reference to Government, RAs and stakeholders to refer to areas of land. RAs can define their own APIB_ID system, but each ID must be unique at the LNRS area level. Figure 2 provides an example.

- APIB_Type – this optional field identifies the site or habitat type. Only certain sites and habitats should be recognised as APIBs. When using this field RAs should use the following options.

    o SSSI – sites of special scientific interest

    o SAC - special areas of conservation

    o SPA - special protection areas

    o Ramsar - Ramsar wetlands

    o NNR - national nature reserves

    o LNR – local nature reserves

    o MCZ - marine conservation zones

    o LWS – local wildlife sites

    o IH_AW – irreplaceable habitat ancient woodlands

    o IH_AVT – irreplaceable habitat ancient and veteran trees

    o IH_BB – irreplaceable habitat blanket bog

    o IH_LP – irreplaceable habitat limestone pavement

    o IH_CSD – irreplaceable habitat coastal sand dunes

    o IH_SSS - irreplaceable habitat spartina saltmarsh swards

    o IH_MSS - irreplaceable habitat Mediterranean saltmarsh scrub

    o IH_LF - lowland fens

- APIB_Name – this optional field can hold the site name and help to make it straightforward to access.

Appendix 2

- APIB_Site_ID – this optional field can hold pre-existing designated unique site identifiers if they exist – for example nationally designated sites have unique identification, most locally designated sites will also have unique identification. Including this can help ensure it is very clear which site is represented and facilitate linking to further information, it can be particularly useful where multiple sites have the same or very similar names, for example Abbey Wood SSSI (in Greater London) and Abbey Wood, Flixton SSSI (in Suffolk) or Barrington Pit SSSI and Barrington Chalk Pit SSSI (both in Cambridgeshire).

Appendix 2 Figure 2 Example of APIB data layer
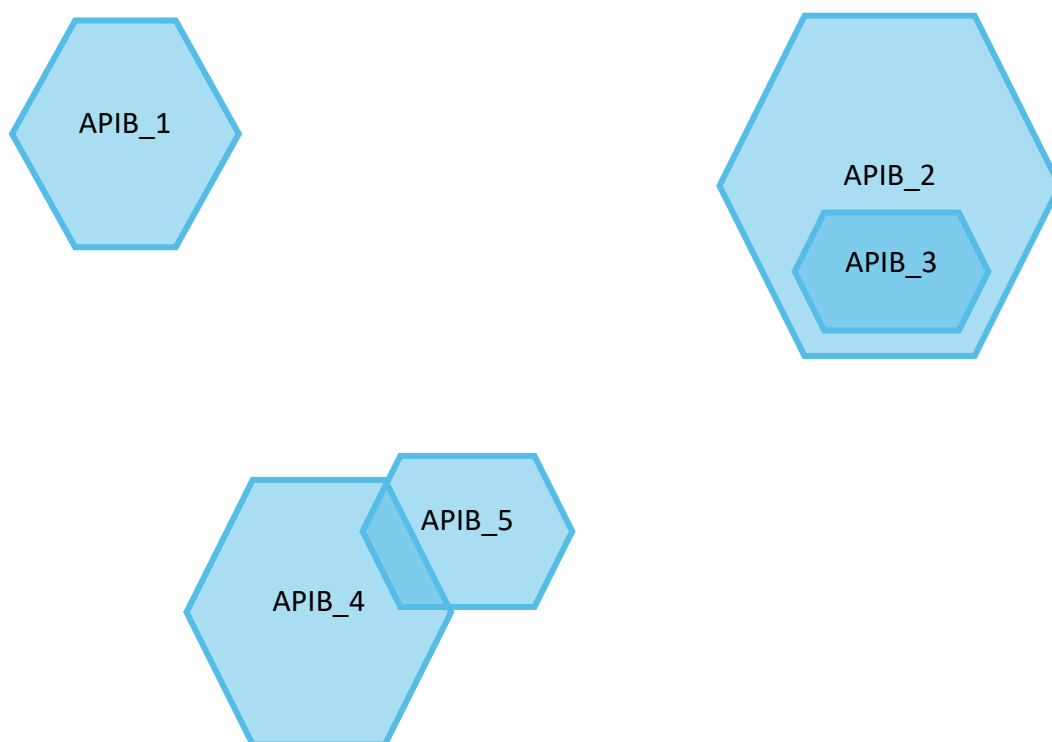
The APIB layer is one vector layer containing all the individual APIB sites of all relevant site types represented as areas. This means SSSIs, SACs, SPAs etc are all within one APIB data layer. Each of the individual sites will have its own APIB_ID (1,2 etc). Some APIBs will overlap each other, in this example APIB_3 in entirely within the extent of APIB_2, and APIB_4 and APIB_5 have an area of overlap. All sites and irreplaceable habitats should be kept separate within the data layer, even if overlapping.

Appendix 2

Appendix 2 Figure 3 Example of attributes for APIB 1

LNRS_ID	02
APIB__ID	1
APIB_Type	SSSI
APIB_Name	Low Wood
APIB_Site_ID	1003975

It would be useful if RAs record how the APIB layer was created as they need to be able to show how decisions have been made, and what the basis for them is. Information recorded could include:

- all data sources used, including the version and or date.

- how any data layers have been manipulated, for example details of how any line or point data has been handled in developing the area data layer, or what data layers have been used to clip data.

This information could be recorded as part of the metadata for the layer, metadata standards in Appendix 3.

2. Attribute schema for potential measures data layer

This data must be provided to Government as a vector area (polygon) format. It would be helpful to name this layer '**Measures**'. The schema for the Measures data layer attributes is shown in Appendix 2 Figure 4.

RAs can add their own bespoke fields to these for their own LNRS.

Appendix 2 Figure 4 Attribute schema for Measures data layer

Field Name	Alias	Type	Is this required
LNRS_ID	LNRS Identification	Integer (1 – 48) see GOV.UK	Required
PM_loc_ID	Potential measure location identification	RA defined non-repeating integer that is unique at the LNRS area level	Required
PM_ID	Measure identification	RA-defined integer that is unique at the LNRS area level and non-repeating	Required
PM_Desc	Measures description	Character	Optional
Priority_1	Priority 1	Character 250	Optional
Priority_2	Priority 2	Character 250	Optional
Priority _3	Priority 3	Character 250	Optional

Appendix 2

- LNRS_ID – this is the unique identification representing the LNRS area. It will be a value between 1 and 48 and is available on the [map of LNRS areas](#) on GOV.UK.

- Potential measure location ID – this is the unique identification for each part that will make up the Measures data layer. The purpose of this is to provide a unique reference for Government, RAs and stakeholders to refer to areas of land, for example when linking areas to potential measures. It allows the same measure to be allocated to different locations. RAs can define their own ID system, but each PM Location ID must be unique at the LNRS area level.

- Potential measure ID – this is a unique ID representing a potential measure in the list in the statement of biodiversity priorities, this will allow users to find more detailed information about a potential measure and the priorities to which the measure relates. This approach is proposed because within their LNRS RAs should include enough information about their potential measures so that non-experts can understand their purpose and be able to seek further guidance or instructions to confidently carry them out independently. This level of information is unlikely to be suitable to easily represent via a map, although we strongly advise a potential measure description within basic information is included.

- Potential measure description – this optional field is for a description of the potential measure. This is the suggested method to ensure that basic information about the potential measure proposed at a location is straightforward to access. RAs are strongly encouraged to use this field. It will be helpful if this includes information about the potential measure and the habitat type to which it relates so users can access this information from the local habitat map independently of the statement of biodiversity priorities. In particular, BNG users will require this information.

- Priority – this optional field could be used by RAs to identify which of the LNRS priorities the potential measure is seeking to contribute to. This is the suggested method for achieving the requirement to link priority and potential measures but is an optional field to allow RAs flexibility if they wish to pursue alternative approaches. To show how a potential measure can achieve multiple priorities, three optional priority fields allow the RA to indicate up to three priorities that the measure could achieve (RAs can add further fields if needed). The numbering of the fields (priority_1, priority_2 etc) is solely to allow multiple priorities to be linked and is not intended to represent a hierarchy for the priorities.

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Appendix 2

Appendix 2 Figure 5 Example of Measures layer
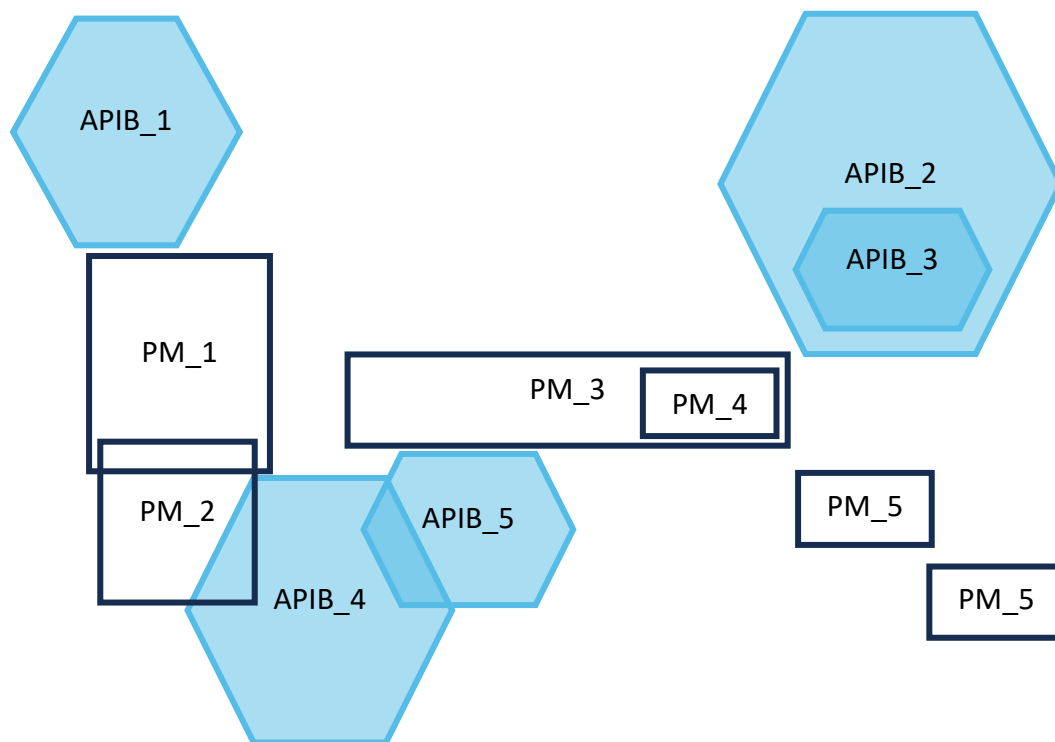
One or more potential measures can be mapped in the same area. Figure 5 provides examples of:

- an overlap of some of the measure area in PM_1 and PM_2
- a potential measure (PM_4) nested inside another potential measure (PM_3)

The same measure could be applied in more than one area, in Figure 5 there are multiple areas shown as PM_5, each of these will also have potential measure location identification so the location and measure combination is unique.

RAs may choose to map potential measures in APIBs, in Figure 5 PM_2 overlaps with APIB_4. This may be particularly helpful for areas such as local wildlife sites or irreplaceable habitats that generally do not have existing management plans or are subject to legal management requirements. For other types of protected site, RAs should take care not to propose potential measures that conflict with or duplicate existing plans or legal requirements.

3. Attribute schema for areas that could become of particular importance

Areas that could become of particular importance must be provided to Government as a vector area (polygon) data layer. It would be helpful if this is named '**ACB**'. The attribute schema for this layer is shown in Figure 6.

RAs can add their own bespoke fields to these for their own LNRS.

Appendix 2 Figure 6 Attribute schema for ACB

Field Name	Alias	Type	Is this required?
LNRS_ID	LNRS ID	Integer (1 – 48) see GOV.UK	Required
ACB_ID	Area could become of particular importance identification	RA defined integer that is non-repeating and unique at the LNRS area level	Required

- LNRS_ID is the unique identification representing the LNRS area. It will be a value between 1 and 48 and is available on the map of LNRS areas on Gov.uk

- ACB_ID is the unique identification for each part that will make up the ACB data layer. The purpose of this is to provide a unique reference for Government, RAs and stakeholders to refer to areas of land, for example when linking areas to potential measures. RAs can define their own ID system, but each ID must be unique at the LNRS area level.

4. How the three layers work in the LNRS process

Map areas of particular importance for biodiversity (APIB), this is step 1 of LNRS preparation.

Appendix 2 Figure 7 APIBs
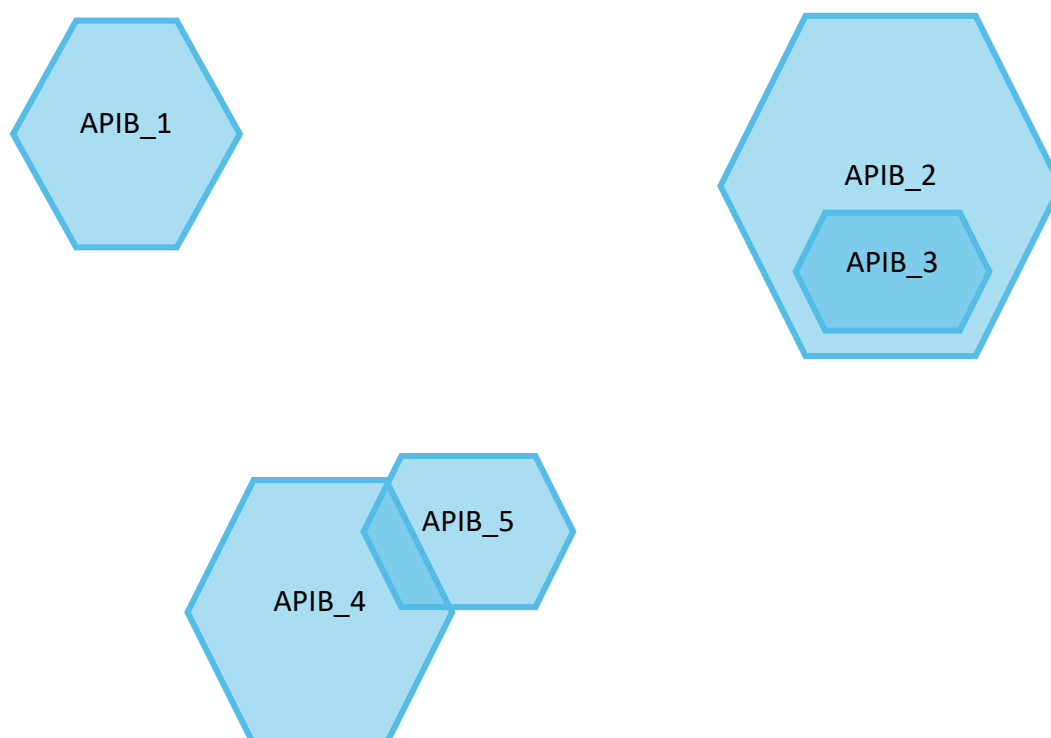
Appendix 2

Map locations where the potential measures (Measures) from the statement of biodiversity priorities could be carried out in a way that contributes to the strategy's priorities, this is step 5 of LNRS preparation.

Appendix 2 Figure 8 APIBs and Potential Measures
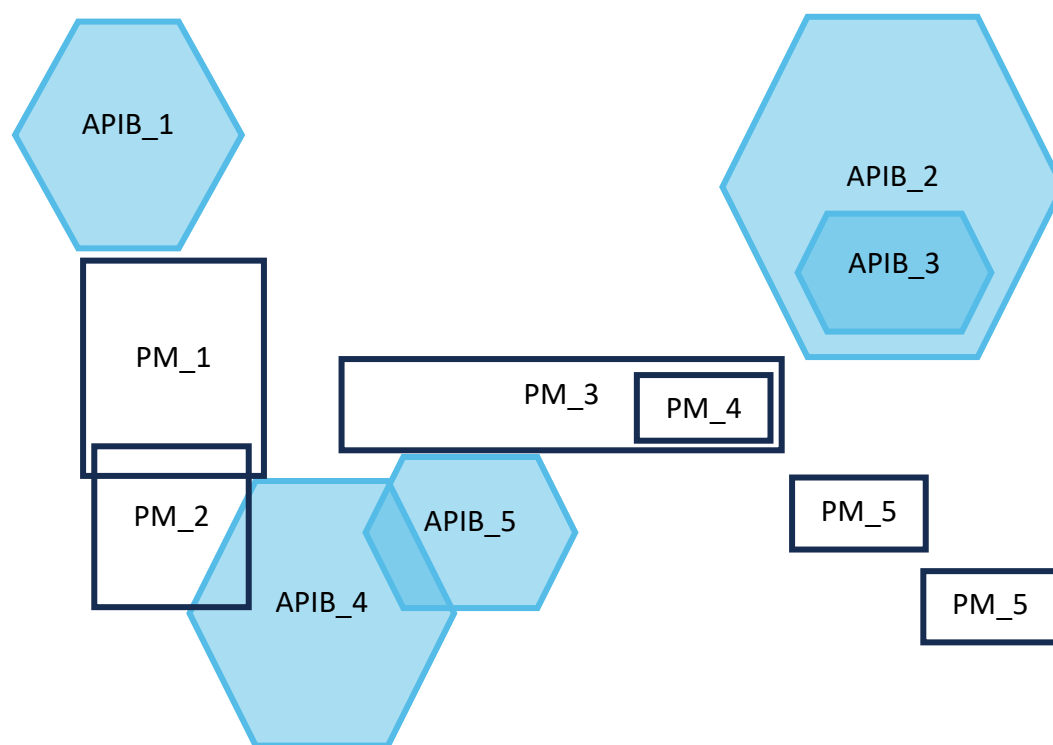
Map areas that could become of particular importance (ACB) – these are the locations of the potential measures, excluding any measures in APIB.

Appendix 2 Figure 9 APIBs and ACBs
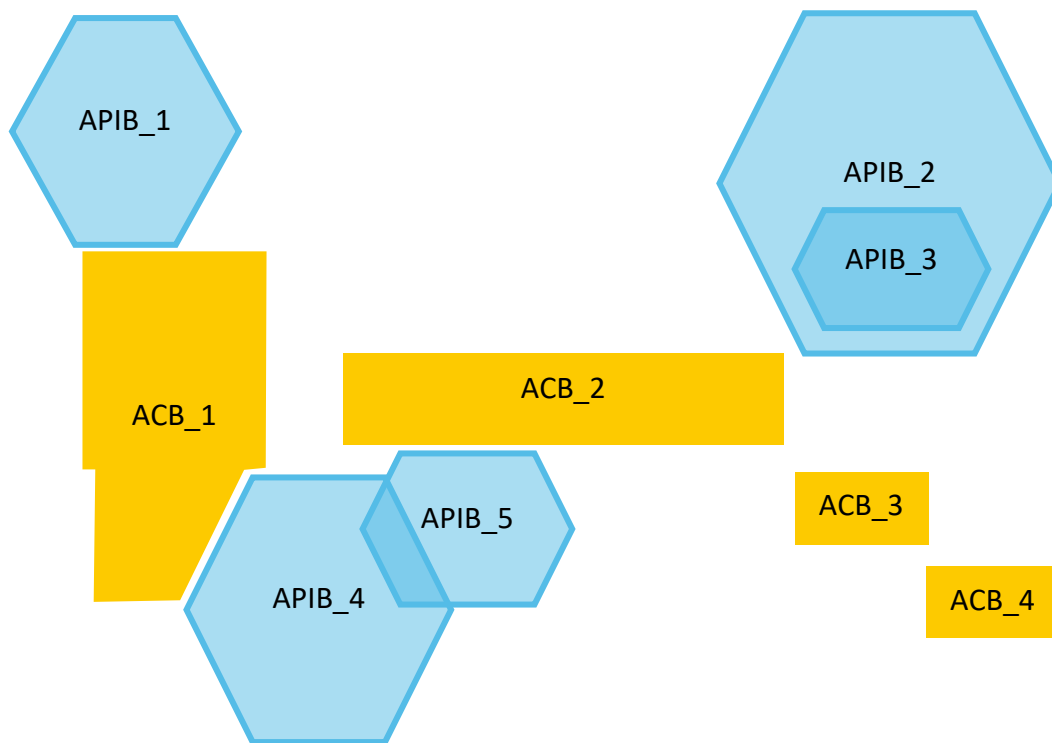
APIBs and ACBs do not overlap each other.

Appendix 3 Practical mapping considerations

The following advice is designed to give RAs some basic standards for the creation and presentation of the content of their local habitat map.

1. Mapping co-ordinates and projections

To aid the collation of a national LNRS map it is strongly recommended that the OS British National Grid co-ordinate system be used for all map layers provided to Government. Specifically, OSGB36, OGC/ISO projection number 27700.

2. Metadata standards

Government intends to publish an England-wide LNRS map using the current UK metadata standard for geospatial data – Gemini 2.3. This is based on the standard for non-spatial data (ISO 19139) extended for geographical information. RAs could follow the same metadata standards for their own geospatial data and non-spatial data. This will help ensure that the data produced for LNRS confirms to the FAIR principles (Findable, Accessible, Interoperable and Reusable).

3. Mapping scales and base maps

Many map features (nationally designated sites for example) will have already been captured and are provided in the LNRS Data Viewer.

It is preferable that RAs capture new features (for example the potential measures and areas that could become of importance) against OS mapping where possible, using a map scale that allows the capture of site boundaries that follow topographic features such as hedges, fences and other sorts of field boundaries where appropriate. It is recommended that RAs include details of what base mapping and capture resolution was used when submitting data layers.

4. Symbology

RAs do not need to apply any specific symbology to the data layers submitted to Government. This advice does not specify any required symbology because the look of the LNRS is a decision for RAs, but RAs could apply the symbology used in the multi-agency MAGIC application to display sites that make up the areas that are of particular importance for biodiversity, for example SSSIs, SACs and SPAs. This may assist LNRS strategy users by providing familiar and consistent symbology.

5. Feature capture guidelines

There are several considerations when capturing new map features for LNRS:

- Follow OS linework if possible (such as field boundaries). This will aid the clarity of maps and support linkages with a range of mechanisms that will support delivery of potential measures identified in an LNRS.

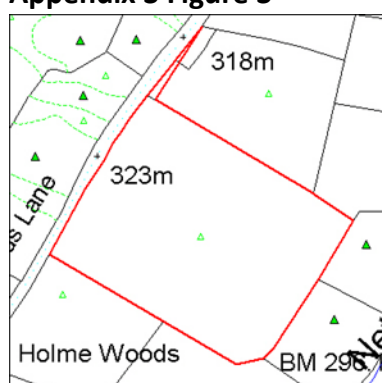**Appendix 3 Figure 1a and 1b**

 NOT
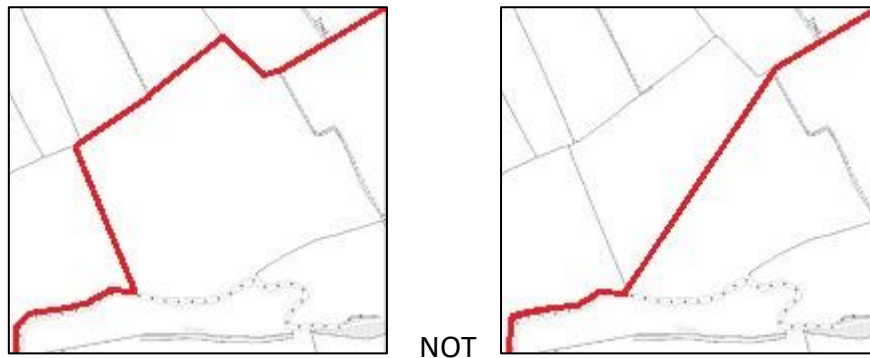
- Avoid "stream" digitising of features. Stream digitising is the process of manual digitising, of lines or regions, where vertices are automatically placed at pre-set intervals based upon distance or time. This can greatly increase file size, which could negatively impact upon the creation of a national dataset.

- Avoid self-intersecting polygons. This is where a polygon intersects itself and continues to cross itself. In Figure 2 the digitised field has a "bow tie" caused by a polygon crossing itself.
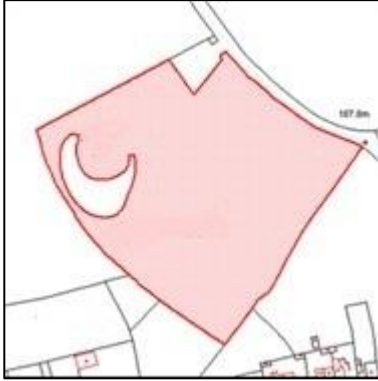
Appendix 3 Figure 2

- Avoid digitising "spikes". In Figure 3 the digitised field has an inappropriate spike.

Appendix 3 Figure 3

Appendix 3

- Holes in polygons need to be correctly linked with the outside area, as shown in Figure 4.

Appendix 3 Figure 4

- Where two parts of the same site or mapped measure are separated by a feature such as a road they can be linked together as a multi-part feature. The diagram in Figure 5 shows a feature linked in this way so that when one part of the feature is selected, both are highlighted.

Appendix 3 Figure 5
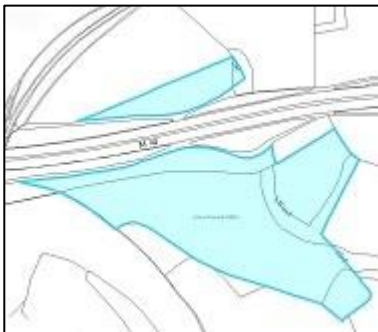
- Some mapping systems allow mathematically defined Bezier curves and B-Splines within the geometry. To aid compatibility we advise against the use of this type of geometry.

- Final versions of the data to be "cleaned" before being submitted to correct any geometry errors using the tools available in the chosen mapping software. This will aid the collation of the national dataset and eliminate some potential issues such as self-intersecting polygons.

6. Creating area data from line or point data

Source data layers that are in line or point format must be changed to area format. RAs could use these suggestions as a guide to create area data from line or point data.

For watercourses, any buffer of a river centre line to create a river area could aim to encompass the riparian zone because this will support features which influence the hydrological, geological and biological functions or processes within the watercourse channel. As a guide, in the statutory biodiversity metric, the riparian zone is considered to be 10m from the top of each bank for rivers, streams and canals, and 5m from the top of each bank for ditches.

The standing advice from Government for ancient and veteran trees suggests a buffer zone around ancient or veteran trees of at least 15 times the tree's diameter, or 5m from the edge of the tree's canopy if that area is larger. RAs could use this as a guide for an appropriate buffer to apply to individual ancient and veteran trees.

It would be good practice for RAs to record how they have adjusted the source data.

Appendix 3