Lancashire County Council

Evidence and Technical Information

Lancashire Local Nature Recovery Strategy

Table of Contents

Introduction

As the designated responsible authority, Lancashire County Council has led on the production of the Lancashire Local Nature Recovery Strategy (LNRS). However, an inclusive and collaborative approach has been taken to co-produce the Strategy with a broad range of stakeholders. This includes all local authorities in the strategy area, public bodies (Environment Agency, Forestry Commission and Natural England), habitat and species experts from local environmental organisations and Lancaster University. Land managers (including farmers, local authorities, education providers, the NHS, and utilities companies) and members of the public have shared their knowledge, experience and understanding of where nature recovery should be focused, and this information has fed into the production of the LNRS. The Strategy has been developed following the statutory and non-statutory guidance provided by DEFRA and Natural England, taking an evidence-based and locally led approach incorporating data, local expertise, and local opinion.

A timeline of the key milestones is provided in Figure 1. Further details on each of those key milestones, the LNRS development process and sources of information and data used to inform the strategy are described in this document.

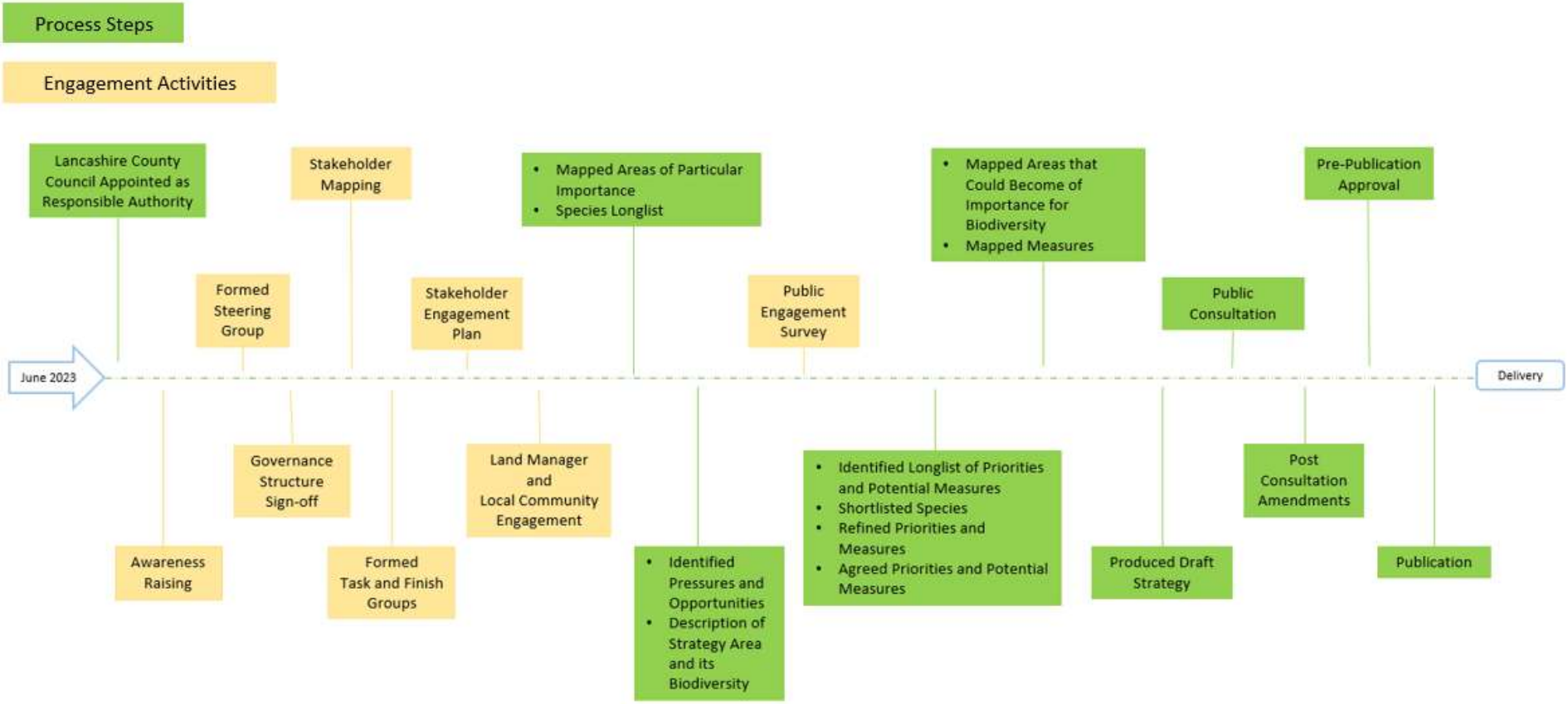


Figure 1: LNRS Development Timeline and key milestones

Development Timeline and Key Milestones

Lancashire County Council Appointed as Responsible Authority

Lancashire County Council was appointed by the Secretary of State to lead on preparing and publishing the LNRS for Lancashire with input from supporting authorities and wider stakeholders on 26 June 2023. We then wrote to the Chief Executives of each of our Supporting Authorities notifying them of their formal role and asking that they nominate a representative from within their authority.

Awareness Raising and Call for Data

In line with the statutory guidance, we set out to involve individuals and groups from across the public, private and voluntary sectors through a collaborative development process. We raised awareness in existing nature recovery networks by attending partnership meetings giving introductions from the nature recovery officer on the Local Nature Recovery Strategy process in collaboration with our Natural England senior officer. This gave members the opportunity to ask questions and hear about Lancashire County Council's approach and initial aims for the development of the strategy. We also asked for data on existing nature recovery initiatives as well as species and habitat condition data on important habitats acknowledging that current understanding of trends is poor.

Groups included:

- Alt Crossens Catchment Partnership (CaBA)
- Douglas Catchment Partnership (CaBA)
- Lancashire Local Nature Partnership
- Lancashire Peat Partnership
- Lancashire Wildlife Trust
- Lancashire Woodland Partnership
- Lune Catchment Partnership (CaBA)
- Morecambe Bay Local Nature Partnership
- Ribble Catchment Life (CaBA)
- Wyre Estuary Group

We identified land managers as an important stakeholder to engage during the development process so that we could gather their concerns and aspirations and with future delivery in mind. In addition, we wanted to build relationships and raise awareness within their community. We contacted the National Farmers Union (NFU) and relayed our hopes and presented to the Lancashire Country Land and Business Association (CLA) Committee at a quarterly meeting. We visited the Claughton Hall Estate owner and met with Wyre Rivers Trust head of science to discuss their joint Calder and Brock Landscape Recovery Scheme (LRS) development project. We also met with the Lancashire Wildlife Trust's West Pennine Moors Partnership project manager, a second Lancashire LRS project in development.

We also organised Arm's Length Body (ALB) meetings with Environment Agency, Forestry Commission and Natural England.

Formed Steering Group

Following the letter to the Supporting Authorities, we presented an introduction to the LNRS at a Lancashire Development Planning Officer Group meeting as we recognised this group would be key to the membership of the steering group. An aim of the LNRS is to identify where action to achieve biodiversity net gain (BNG) will have the greatest impact and encourage action in these locations through the BNG calculations. Involving planning officers in the process enables us to engage with those people in the supporting authorities best placed to deliver this aim. We also invited the Marine Management Organisation to the steering group, through Natural England, as although they were not recognised by DEFRA as a consenting body, we felt their inclusion and input was important.

Governance Structure Sign-off

During development of the governance structure and through North-West Responsible Authority calls, it became increasing apparent that input from environmental Non-Governmental Organisations would be crucial throughout the process, both as nature recovery practitioners and through their wealth of knowledge and experience of the most important local environmental issues. They were also identified as key stakeholders in delivery and by ensuring their involvement during development would lead to a more effective strategy with a greater chance of achieving its priorities. We invited key members from this group of organisations to attend an in-person meeting at County Hall to present the governance structure and ask for input on whether they would be able to support our work. Organisations included: Lancashire Wildlife Trust, RSPB, National Trust, a representative from the National Landscapes, the River Trusts operating in Lancashire, Groundworks and United Utilities. This gave us insight into potential challenges, led to structure refinements and amendments to objectives for the various tiers.

The Steering group provided feedback on our governance structure prior to sign off. Lancashire County Council LNRS Microsoft (MS) Team channels and SharePoint folders were then created as a hub for communication and document sharing between group members. MS Teams was used so that we were able to maintain oversight of communication within groups with external leads. The governance structure is outlined in Appendix One.

Stakeholder Mapping

We ran a stakeholder mapping workshop inviting existing contacts. This expanded our wider stakeholder list to over 400 individuals and organisations. The list of key organisations directly involved in the development process can be found in Appendix Two.

Formed Task and Finish Groups

The Internal Review Group (an internal Lancashire County Council group) identified a list of suitable leads for our Task and Finish groups and created a list of important

habitats building on existing data and datasets from the Data Viewer. Linear infrastructure and network providers from across the North West were identified as being key to delivery. Reached out to Nature North and their Northern Green Connections subgroup for contacts.

Developed a brief for our thematic habitat leads. Included a set of tasks:

1. Describe the strategy area and its biodiversity
2. Identify the pressures on the most important habitats within their group
3. Identify opportunities in Lancashire to address the pressures
4. Identify a longlist of priorities and potential measures
5. Shortlist the longlist
6. Produce a report on the work

We then shared our group lists with the leads and asked if they could identify any missing organisations or individuals.

Stakeholder Engagement Plan

Developed a stakeholder engagement plan to effectively communicate and engage with our stakeholders. Kept this under review to enable adaptive decision making so that we could identify and address any weaknesses. The stakeholder engagement plan can be found in Appendix Three (to follow).

Land Manager and Local Community Engagement

Developed a brief and invitation to tender for consultants to facilitate land manager engagement and produce a report(s) on Land Manager engagement. Commissioned consultants (3KQ) and refined the request to include a Land Managers group of representatives from various networks within the sector and also identified networks to target through engagement events. Used our stakeholder list to identify suitable group and network members. The overall summary report produced by 3KQ can be found in Appendix Four

Worked with Natural England to target the Voluntary, Community, Faith and Social Enterprise (VCFSE) sector. Worked with Natural England to reach the National Health Service Estates and presented to key stakeholders in that sector at a Natural England organised conference. Ran a series of nature recovery roadshows for the VCFSE community across Lancashire to gather their opinions on Nature Recovery and what matters in their networks. A summary report of the roadshows can be found in Appendix Five (to follow, a separate PDF is available).

Mapped Areas of Particular Importance

Requested the following data from our steering group that could inform our Areas of Particular Importance to Biodiversity map:

- National conservation sites
- Local nature reserves
- Other areas which are of particular importance for biodiversity
    - Existing Local Wildlife Sites
    - Areas of Irreplaceable Habitat (The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024)
    - Other areas identified by the Secretary of State as being of particular importance

The returns were then reviewed against the data we already held at Lancashire Environmental Records Network (LERN). Then created the Areas of Particular Importance for Biodiversity map and an ESRI story map to explain its contents.

Species Longlist

The purpose of the species longlisting was to identify threatened and other locally significant species relevant to the strategy area. Our species prioritisation process has been informed throughout by the species guidance issued to Responsible Authorities (criteria developed by NE, EA, FC, and Defra[i]). Our Steering Group members (including our Supporting Authorities), Species group members, Thematic Habitat Group and Lancashire County Council's Ecology and Nature Recovery Team were all invited to add to or comment on species in a live LNRS species longlist spreadsheet via our MS Teams channel to develop a longlist of species which met IUCN criteria and/or are important in Lancashire.

Two spreadsheets were made available, one blank (transfer data and return) and one prepopulated with an initial draft species longlist for Lancashire. The spreadsheet contained the initial list of species split into broad taxonomic groups and included an instructions tab and summary tabs for the longlisting and shortlisting criteria from the National guidance (see Appendix Six).

Initially, the species longlist included those species that fall within a category recommended by the species guidance and filtered to be relevant to Lancashire i.e., are believed to be of native occurrence in Lancashire and those which can be shown to hold an equivalent status by local species specialists. To create the initial long list, we undertook an analysis of data held by the LERN to identify those species that meet these criteria and are relevant to our strategy area. An expert reviewed list of priority species for Lancashire, the Lancashire key Species (LKS) list was used as a starting point.

The LKS is a list of species known in Lancashire that are on relevant English/UK conservation priority lists or have otherwise been designated as of conservation priority in Lancashire based on thresholds of distribution (tetrad scale) e.g., IUCN Red List species relevant to Lancashire, species which have suffered a significant local decline in Lancashire, species which have recently gone extinct, and species which are significant in Lancashire and for which our Biological Heritage Sites may be identified.

Other than for the orders of *Odonata, Lepidoptera* and *Hymenoptera* we struggled to engage with other invertebrate specialists within the timescales available. As such

the long list for most species groups was based solely on a review of data held by LERN and by relevant national recording schemes and societies. Lists of priority taxa held by the JNCC, provided by Natural England and by national societies were reviewed against species data available for Lancashire (which was taken to include the vice-counties of South Lancashire, VC59 and West Lancashire, VC60) as to include only species which can be confirmed as present. A sense check of the returned lists was then undertaken to remove and spurious species (such as those resulting from incorrect data).

Similar processes were followed for fungi (apart from waxcaps where we had specialist input), bryophytes and lichens where we also struggled to engage with specialists.

It was pointed out to stakeholders that the Lancashire longlist is not exhaustive, that people were not constrained to these criteria; and, that if a record was wrong, to state why and provide evidence to support their statement. Species that lack approved Red Lists, were also considered as well as those on National Landscape Species Action Plans, local BAP species, local ‘champion’ species or species which are considered 'iconic'.

An initial on-line meeting was held with the species group to run through the longlist spreadsheet cover guidance, processes, and expectations. A second hybrid meeting concentrating on completing the habitat associations, any specific habitat requirements, and pressures/threats (local and regional factors negatively impacting species) along with shortlisting process was held to feed into the next stage.

A Species Group Teams channel was also used to post updates, arrange meetings, save recordings and evidence and process documents for example the GB red lists and conservation designations lists, red data book lists and other unofficial species lists, specialist reports and 'Species Selection Guidance' from organisations such as Plantlife and the Bat Conservation Trust who provided guidance for LNRS species in their specialist areas – all of which helped to inform the longlisting and shortlisting processes.

Identified Pressures and Opportunities

Due to the diverse range of habitats in Lancashire, we wanted to identify the pressures on the important habitats within the broad habitat types and then also consider the Lancashire-wide pressures on our natural environment. Thematic Habitat Groups worked to identify their pressures and opportunities, and the Land Managers Group who identified constraints and opportunities. Group members worked together through a combination of online or face to face meetings and through the Lancashire County Council LNRS Teams channels to gather information. The group leads then wrote up the information and circulated the report for further comment and input from the group. We also created an interactive online map for group members (including the Land Managers group and our Steering Group) to access and add in known pressures and opportunities. These write-ups and maps were then shared amongst the other habitat groups for comment. This pre-empted any conflicts between groups as in some instances a pressure for one habitat could be an opportunity for another such as woodland creation or grassland restoration in

a single location. This step highlighted these conflicts early so that we were then able to mitigate their impact.

Description of Strategy Area and its Biodiversity

With limited condition data on the strategy area, the most recent complete habitat extent survey and report was published in 1993, we turned to the technical experts and local stakeholders in our thematic habitat groups to provide descriptions of the important habitats which they had been assigned and their biodiversity. We suggested using the National Character Area profiles as the text was accessible and had worked well for Greater Manchester during their pilot. These profiles are listed in Appendix Seven alongside other sources of information on Lancashire's natural environment and biodiversity that were used in compiling the strategy. During drafting of the strategy, we used these descriptions as well as the NCA profiles and included some statistics from our habitat map on area and percentage cover of certain habitat types.

Public Engagement Survey

We launched a public engagement survey to gather preference-based information from the public on nature recovery within Lancashire. The responses to some of the questions were then used during the shortlisting of priorities and potential measures. The results also identified groups that we had struggled to engage with and highlighted areas of the County that we need to target to promote the strategy during the pre-consultation and pre-publication stages. A summary of the public engagement survey findings can be seen in Appendix Eight.

Identified a Longlist of Priorities and Potential Measures

Ran workshops with each of our habitat groups in collaboration with the leads. Introducing the task and reviewing the pressures on the most important habitats. Took the opportunity to review the habitat list and some habitats were added others were dropped and/or assigned to a different group, such as wet woodlands. The workshops were a chance for the groups to create a long list of both priorities and potential measures for the recovery of the most important habitats and related species found within their broad habitat in Lancashire.

During this period, we commissioned consultants to review 198 strategically important documents that had been shared with us by our stakeholders. These documents were considered to be of national, regional or local importance with regards to nature recovery within Lancashire and are listed in Appendix Nine. The consultants extracted recurring pressures, opportunities, priorities and potential measures within the documents. These four categories were identified within the habitat groups and across all of the habitat groups. This gave us detailed insight into the issues on Lancashire's natural environment and allowed us to see if there was likely to be cross-over benefit between habitat groups if progress were to be made in achieving a given priority.

Shortlisted Species

Creating the shortlist involved assigning species on the longlist to the different categories (A – G) described in the National Species guidance document (summarised in Appendix Six). Species that:

A – Needs more / bigger / better-connected habitat

B - Needs targeted habitat management

C - Needs improvements in environmental quality

D - Needs bespoke conservation action/s

E - Needs better evidence base / on-the-ground action is not a priority

F - Needs action outside England

G - Vagrants / occasional visitors.

These categories consider current or anticipated future needs with a view to the specific local context, referring back to evaluating species pressures to help identify those species that LNRS can best support through habitat-based actions.

Meetings were held with individual specialists for example birds, butterflies, moths and *Hymenoptera* were held to work through the shortlisting. Specialists were asked to:

1. Assign a 'Broad Habitat Type' and/or 'Specific Habitat' to each species under their taxonomic group.
2. Add any 'Species pressure(s)/treats', i.e., local/regional factors negatively impacting or potentially impacting species.
3. Whilst considering the longlist species and their requirements/pressures, assign a 'shortlist Criteria' wherever possible to help identify the species on the longlist which LNRS can best support.

Species were shortlisted where:

- They were assigned a category B, C or D (or a combination including one or more of these criteria); and
- Any other species considered to be of significance in Lancashire for example as umbrella species (whereby protecting these indirectly protects many other species) or flagship species (a species representative of a specific habitat or chosen to raise support for biodiversity conservation) by the specialists.

Those species that should benefit from general nature recovery (criteria A) and those where we do not have enough information on their ecological requirements, distribution, the threats they face or otherwise which the broad habitat actions of the LNRS would not be beneficial (criteria E, F, G) were not shortlisted.

For invertebrate species without specialist input, the initial long-list records were 'sense checked' (i.e., considering age, quantity, provenance) to generate an interim short-list. This short-list was then run through Pantheon (an analytical tool developed by Natural England and the Centre for Ecology & Hydrology to assist invertebrate nature conservation in England). Habitat assemblages (see below) were then informed by Pantheon outputs where possible and where not, a literature search was undertaken. These lists were checked and refined, and more information provided on

habitat requirements and pressures by invertebrate specialists at the Species Recovery Trust.
The final lists of Species shortlisted for recovery in Lancashire (by thematic habitat group) can be found in Appendix Ten.

Short-listed species were then split into:

- Habitat-based assemblages (wherever possible, see the 'Integration of species listing with thematic group priorities section below') to be provided to the Habitat Groups, i.e., species that share habitat or other environmental and management requirements are likely to benefit from the same recovery measures and can, therefore, be addressed collectively in the LNRS rather than individually.
- Species that require bespoke measures to enable their recovery (see 'Assigning the Lancashire LNRS Target Species' below).

The short-listed species were then considered in terms of their iconic or umbrella status within their assemblages, the seven criteria listed below, and were given an overall score.

1. Urgency: How soon does species need stabilising action?
2. Deliverability: How feasible to deliver measures?
3. National significance: Is Lancs population of national significance?
4. Cross-boundary considerations: Are there any particular opportunities to join up species recovery plans across LNRS boundaries?
5. Maximising benefits: Would the recovery of a species /assemblage be likely to bring about other biodiversity (e.g., keystone sp.) and environmental benefits (e.g., nature-based solutions).
6. Climate change impacts: Prioritise species / assemblages likely to be particularly affected by climate change; or might be at the limits of their range in the strategy area.
7. Pre-existing initiatives: Any particular opportunities to enhance species recovery gains made recently in the strategy area or beyond or otherwise support species projects?

Urgency and deliverability were given greater weighting.

Integration of species listing with thematic group priorities

To merge the short-listed outputs with the thematic habitat group outputs, species were then assigned to more general and standardised groups based on a combination of biotope and management needs. These artificial **assemblages** brought together species which were similar enough that they could be managed for as a group within certain environmental conditions. A summary table of species assemblages and a brief definition of what that grouping includes along with some additional information as to where the group and species may overlap with other groups can be seen in Appendix Eleven. This was based in part around holistic structural/environmental assemblages used by Pantheon for invertebrates and allowed for the often-niche requirements of threatened species to be better reflected than in traditional habitat or community-based grouping, particularly where mosaic or non-biological factors are of importance.

These assemblages were then assignable to the Priorities generated through the Habitat Group workshops. Where an assemblage has been assigned to a habitat priority the detail of the species within that group can be used to inform the potential measures/actions. This provides a means by which the needs of species can be reflected within the measures and actions that are being used to deliver a priority within the LNRS.

We remained flexible in this process allowing amendments where this was useful in the delivery of more meaningful inclusion of species and related actions to deliver habitat specific measures. We made sure we incorporated assemblages for our flagship/iconic and umbrella species, and for those Lancashire species with populations of National Significance.

Some species appear in more than one group (for example canal & pond assemblage species appear in both Urban and Aquatic & Wetland lists) and others were shortlisted as key food plants for other important short-listed species.

Figure 2 below shows the species process and how species groupings can influence measures and actions of Habitat Group priorities.

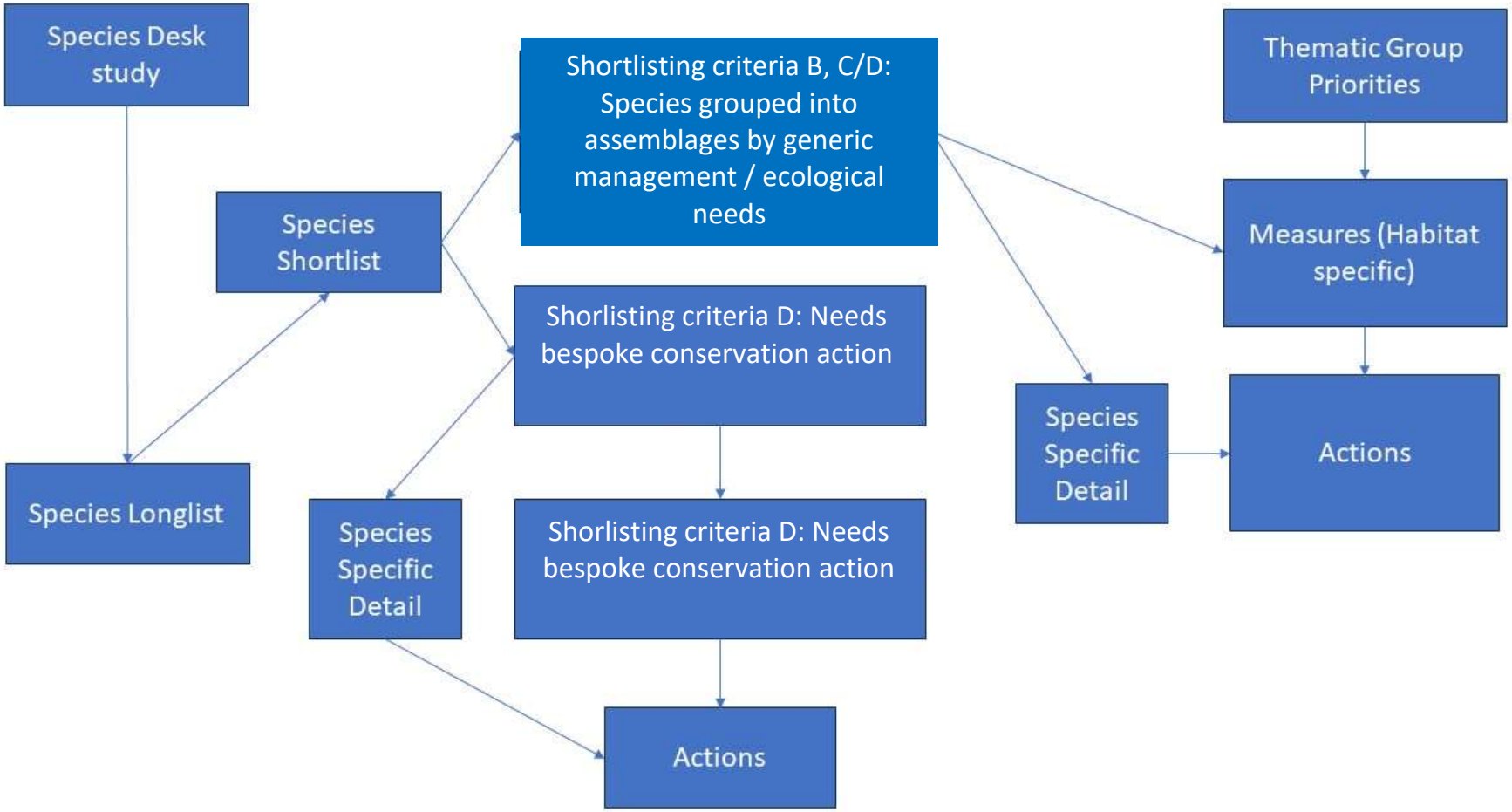


Figure 2. Outline flowchart visualising how species groupings can influence measures and actions of Habitat Group priorities.

Assigning the Lancashire LNRS Target Species

With the help of the Species Group and Natural England, 24 species have been identified as Lancashire LNRS 'target species', those that require multiple or urgent bespoke actions that could not be delivered through habitat group measures. These include some of the most scarce, declining, or important species in the County.

Mammals:

- Red squirrel

Fish:

- Atlantic salmon
- European smelt

Birds:

- Hen harrier
- Black-tailed godwit
- Black-headed gull
- Lesser black-backed gull

Plants:

- Yellow Star-of-Bethlehem
- Northern bedstraw
- Wood Crane's-bill
- Melancholy Thistle
- Lady's slipper orchid
- Petty whin
- Dwarf cornel

Invertebrates:

- Duke of Burgundy butterfly
- High brown fritillary butterfly
- Pearl-bordered fritillary butterfly
- Large heath butterfly
- Belted beauty moth
- Least minor moth
- Wall mason bee
- Tormentil Mining-bee
- Bilberry bumblebee
- Red wood ant

Figure 3. Lancashire LNRS Target Species

All short-listed species that been assigned 'category D' under the short-listing criteria were considered. The Lancashire LNRS Target Species where then chosen from each assemblage and a variety of taxon's, taking into account, specialist input, scoring during the short-listing process, for example considering urgency such as the highly localised distribution of some species, the opportunity to join up species recovery plans across LNRS boundaries and deliverability within the timescales of this iteration of the strategy, those flagship or umbrella species and the ability to monitoring nature recovery delivery.

The list was presented back to the Species Group, Supporting Authorities (including Natural England) and the Internal Review Group for review and feedback.

Species Measures and Mapping

The development of the Lancashire LNRS Target Species measures and associated mapping was done through a combination of species specialists support and in-house species and mapping team.

The species specialist for each of the 24 target species were approached with a brief to:

- Draw together a set of actionable 'bespoke Measures' over and above those set out in the broad habitat measures (which were provided) and where those measures would be best carried out.
- Map these measures (see output note below) and support review against future LNRS outputs.

Measures could include:

- Creating new habitat for species.
- Expanding existing habitat to provide more space for species to flourish.
- Enhancing habitat to better support species' needs through new or improved management practices.
- Connecting habitat to enable species to move through the landscape and colonise new areas.
- Actions to mitigate specific pressures impacting species in the local area, such as recreational impacts, poor water quality, or the presence of invasive non-native species.
- Bespoke actions such as localised surveys or conservation translocations.

As per the Statutory guidance, we asked that these should consider:

- Anticipated future pressures likely to influence species or the extent, distribution or quality of different habitat types – including for example recognising the impact of climate change scenarios and anticipated new developments, including house building and infrastructure where appropriate.
- Cross-boundary considerations to be able to plan coherent ecological networks with neighbouring responsible authorities.
- What (if any) existing projects/local initiatives exist and how we could potentially build on those.

We asked that the outputs aligned with the LNRS guidance, and where possible GIS layer (shapefiles), for mapped potential measure locations as polygons, with each polygon identifiable to the potential measure.

The potential measures were developed with the specialist and shapefiles were supplied for the bird, fish, moth and butterfly target species to the requested brief. Mapping for our plant, red squirrel and Hymenoptera species were supported by our in-house team. Species data was extracted from the LERC and relevant other data sources. For the Hymenoptera this included data provision by Bees, Wasps and Ants Recording Scheme (BWARS), for plants this included data sourced from the Botanical Society of Britain & Ireland (BSBI) and for Red Squirrel this included the

Mammal Society and local recovery, conservation and recording projects. Datasets were also accessed from other online repositories including iRecord and iNaturalist where data use licences allowed.

For plants and invertebrates, observations were mapped at their full resolution with records of 2km grid or better used to inform the mapping and subsequently checked for spatial inaccuracies (misplaced), older records were retained as potentially useful for locating opportunities for restoration or reintroduction.

Observations of 100m or better were then used to extract intersecting polygons from the Habitat Basemap where the habitat feature was broadly considered to offer opportunities for the species measures being mapped, this includes potential for restoration or creation in the proximity of the current or historical population. Where no habitat was found in the proximity of the species record a manual check was then undertaken against source data and aerial imagery to assess whether habitat existed but had been misclassified or if habitat may have existed in the past but had been lost and might be restored.

For Red Squirrels, available data and collated species observations were used to identify current active populations in or adjacent to Lancashire and historical populations in the vicinity of current populations. RS1 '*protect existing populations*' was then applied to any woodlands as defined on the Lancashire Habitat Basemap, found to support current or recent populations of Red Squirrel. RS2 - '*Improve and connect existing and suitable areas*' was then applied to any woodlands and wooded corridors (including linear features) where present within 5km[1] of RS1 sites.

Refined Priorities and Measures

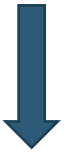
Through the iterative development process, the longlist of priorities and potential measures were reviewed by the Internal Review Group. Those that were deemed outside of the remit of the LNRS were removed. Any that did not contribute towards the aims of the LNRS, such as compliance, monitoring or data and evidence gathering were extracted from the longlists and added as supporting actions . These will support and enable delivery of the priorities. Priorities to overcome recurring pressures that came up across all of the groups were extracted and included in the strategy as a set of Universal Priorities.

Agreed Priorities and Potential Measures

We used a two-stage process for shortlisting our priorities and potential measures.

[1] 5km was used as a dispersal distance to account for the potential for high dispersal of Red Squirrels in the rural environment (The effect of landscape structure on dispersal distances of the Eurasian red squirrel. Hämäläinen *et al*. 2019) while considering the landscape constraints (Ribble Estuary, M61, prevalence of Grey Squirrel and lack of substantial woodland cover).

Stage 1 Thematic Habitat Group shortlisting – considering urgency & impact



Stage 2 Steering group shortlisting – both criteria and preference based

The first stage of shortlisting was with our thematic habitat groups where the pressures, urgency and impact were all given consideration. We ran a workshop with each group and used the top priorities within the group and the top priorities across all groups to rank the longlist. We then used their assigned species assemblages to reword the priorities to include reference to important habitats. The potential measures were then reviewed and expanded giving consideration to creating new habitats, enhancing or connecting existing habitats using the species assemblages. Any additional actions on monitoring, data and evidence, knowledge gaps, engagement, etc such as *improve community engagement* or *land manager resource hubs* were collated. These were subsequently added to the list of supporting actions.

The second stage of shortlisting was done prior to an in-person workshop with our steering group. The stage one shortlist was refined using a quantitative process comprised of two factors: criteria-based and preference-based factors.

Criteria-based factors

1. Thematic habitat group priority ranking
2. Number of short-listed species within habitat assemblages, and the number of which were umbrella or flagship species, i.e., those Priorities that helped address assemblages with the greatest number of species/umbrella or flagship species scored more highly

Preference-based factors

1. People and Nature roadshow reports - included a priority if referenced

2. Public engagement survey – the top 3 environmental issues
    i) building on green and natural spaces
    ii) pollution of rivers lakes and ground water
    iii) decline of animal and plant life

3. Land manager reports - aspirations were used to score the priorities.

This process then gave us a ranked list of priorities which we then reduced using the following reasoning.

- Coastal and Estuarine habitats already had three coastal habitat restoration priorities with the one dropped being the lowest scoring after the prioritisation step.

- Peatland habitats already had six priorities (three lowland and three upland). The one that was dropped was the lowest scoring of the remaining peatland priorities.
- Two Urban priorities were the lowest scoring of the urban priorities except for the one with *People's access to green open space* as the key theme. We decided to include that priority over the two that have been dropped as it directly contributes to a National Environmental Objective (NEO) related to access to green space. There were no other priorities that were solely contributing to that NEO. It included measures on Suitable Alternative Natural Green Space which had been raised as a way to relieve recreational disturbance pressure by two other groups. Improving people's access to green open space was identified as second highest in the Urban within group priorities.

Mapped Areas that Could Become of Importance for Biodiversity

We used a combination of a derived habitat map, habitat suitability modelling, connectivity modelling, datasets relative to the measure, current and proposed projects, and expert opinion to identify areas that could become of importance.

First, we created a habitat map of the current coverage of broad habitats across Lancashire. Then, we conducted habitat suitability modelling as a basis for our resistance raster, which is used in connectivity modelling to identify the least cost path corridors to connect our important nature sites (APIBs). We created three broad habitat network maps – grassland (Figure 4), wetland (Figure 5), and woodland (Figure 6). Using the online map of opportunities and constraints (opportunity/constraints map), we gathered spatial information from our experts in each thematic habitat group. We used these to inform the opportunity mapping post-modelling. Each measure was individually mapped using the above sources of information.

Figure 4: Grassland habitat network

Figure 5: Wetland habitat network

Figure 6: Woodland habitat network

Habitat map

The baseline habitat data was derived from the Ordnance Survey National Geographic Dataset (OS NGD), the Land Cover Map 2021 (CEH), the Natural England Priority Habitat Inventory (PHI), and local field survey data held by LERN. We used OS NGD as the baseline framework since Ordnance Survey is the national standard for polygon definition. We then used the 'tabulate intersect' tool to assess which polygons from the Land Cover Map (LCM) and our field survey data layer overlapped with the habitat map polygons. This table was then exported into Excel. The top three habitats that overlapped the OS NGD polygons were combined, and the area and percentage overlap were calculated. Using the OS NGD unique ID number, we imported this dataset into ArcGIS Pro. We used the 'join' tool to join this dataset to the habitat map using the unique ID as the join. This method resulted in three data sources for each polygon. Where the broad habitat had not changed (i.e., development/woodland creation), local habitat data was used since this was most accurate in the absence of major habitat change. We then prioritised OS NGD, where the habitat classification was unambiguous and LCM for arable and grassland classification. Polygons with unclear classifications were then manually assessed against aerial imagery to determine their closest habitat classification. We replaced the habitat map with the PHI to ensure important habitats were not missed. Once we had our final habitat map, we assigned each habitat to broad and sub-habitat categories for each polygon. A list of the sub-category types for each broad habitat type can be seen in Appendix Twelve.

Habitat suitability modelling

We used MaxEnt in ArcGIS Pro to generate a resistance raster for the connectivity modelling[ii]. MaxEnt is a logistic-based modelling approach to assess the relationship between presence-only species observations with user-defined underlying environmental variables. This presence-only modelling reduces the effect of

sampling bias on the species observations. We generated a species indicator list based on a Species Indicator Database for each broad habitat type (acid grassland, neutral grassland, acid grassland, non-coniferous woodland, and wetlands). This multi-taxon traits database draws together multiple research-based species traits databases and aggregates them. The combined traits are then standardised as much as possible to the EUNIS habitat/land use classification, allowing for broad scale and, where possible, more detailed habitat classes to be identified. We selected the plants from this database and examined the list with our plant expert and county recorder. We then ran a MaxEnt model for each species, with a minimum of 400 records.

Species records were obtained from LERN's Recorder6 database. We restricted records to those with a precision of at least 100m and recorded since 2000. The environmental variables to predict the species distribution models included slope, aspect, terrain, land cover, and soil type. These were transformed into rasters with a cell value of 25m. We trialled several spatial scales and found 25m to be the highest resolution at which the models converged. We took the mean value across all species rasters for each broad habitat to create a single raster for each connectivity model. This raster was inverted and times by 100 to provide a scale of the probability of the species compositions not occurring from 0 to 100, i.e., the higher the value, the fewer species were predicted at that 25m cell. We then combined this with a high-resistance raster for buffered roads, railways, and urban areas, giving them a value of 90.

Network modelling

Core sites

First, we identified the core sites within a 2 km buffer of Lancashire. This selection of sites was achieved by selecting acid grassland polygons within any statutory Sites of Special Scientific Interest (SSSI) and non-statutory Biological Heritage Site (BHS). Local wildlife sites in the buffer area were obtained from the neighbouring local authority/record centre. These polygons were aggregated to 100m, and if they were greater than 1 ha after aggregation, they were retained as a core site. This methodology was repeated for calcareous grassland, neutral grassland, non-coniferous woodland, and wetlands. In addition to the SSSI and BHS sites, statutory irreplaceable habitats, namely ancient woodland, and lowland fens, were also included as core sites for the woodland and wetland cores, respectively, if they met the same size criteria.

Linkage mapper

We chose 'Linkage Mapper' in ArcGIS Pro to assess connectivity between core sites since other approaches, e.g., Condatis, do not allow for connectivity between core sites but rather a north-south or east-west connection. Linkage Mapper uses core sites and the resistance raster to create a cost-weighted distance raster (the resistance times the cell size of 25), calculated through circuit theory. In functional connectivity, circuit theory considers the landscape by joining each pair of core sites using the lowest resistance, calculated from the resistance raster, and identifying the path of least resistance, the 'least-cost pathway'. It does this by iterating between

every pair of core sites and mosaics the individual corridors to create a single network of linear least-cost pathways and a rasterised corridor map considering nearby values and alternative routes. Essentially, the least-cost pathway is the least cost route between two core sites, considering the cost of travel along the way. This cost is a combination of the cost of the resistance raster to move from one 25m grid cell to another and the total number of cells you need to cross.
We used the corridor raster to select grid cells with a value of up to 4000 to buffer the least cost pathways. This value equated to 160m (4000/25, the cell grid size); hence, the buffer area would be a maximum of 160m where there was no resistance. In addition to the least-cost pathway, we applied this buffer area around the core sites. Therefore, larger buffer areas were created with less resistance and smaller buffer areas with greater resistance. We then used Centrality Mapper, an add-on tool for linkage mapper, to help prioritise important corridors for network connectivity. We removed the top 20% of pathways with the highest cost-weighted 'distance to path length ratio' and the lowest 40% with a low 'current flow centrality' from the centrality mapper output. We combined all three grassland networks into one network for grassland. We then removed any pathways that were greater than 5km.

Mapped Measures

We clipped the habitat map to the relevant network (grassland, woodland, wetland). The polygons from the habitat map were included in the relevant mapped measure, where there was at least 10% overlap between the polygon and the network. For each measure, relevant land use constraints were removed, e.g., cemeteries from wetland creation measures. Land covers inappropriate for the measure was also removed, e.g., woodland creation measures on a semi-natural grassland. Polygons with additional constraints (e.g., known land allocations, mapping on APIBs – excluding irreplaceable habitat, constraints from the constraints and opportunities map, habitat creation measures on priority habitats, and small polygons below a particular threshold (relevant to the measure), were removed. In addition to the opportunities identified through network mapping, we also considered opportunities provided by experts in each of our thematic habitat groups on an online web map, especially for the thematic habitat groups without network mapping, e.g., coastal, peatland and rocky. Where additional methods, constraints and datasets were used to map a measure, these are outlined in Appendix Thirteen.

Coastal

For coastal measures they were only mapped within the restrictions of the following: a 5km buffer of the high-water mark, 25m above sea level or within the Morecambe Bay and Amounderness plain NCA.

Peatland

For peatland measures, we used the peaty soil layer (NE) as the starting point for the mapping of measures using the moorland line to separate lowland and upland measures. Each measure is outline below (Table #). Where a network was used for measure P2.3 and P3.2 this was the wetland network to connect transitional habitats and corridors between peatland sites.

Urban

For the mapping of urban measures, we combined all network maps. We extracted the polygons in the 'all network map' that also fell within 100m buffer of the built-up environment layer (OS) unless the measure focused on grassland, woodland, or wetlands and then the relevant network was used.

Woodland

Since there were few core woodland sites within several of the districts and some districts had few woodland creation opportunities. Therefore, for the districts and unitary authorities with the lowest woodland creation opportunities (Blackpool, Fylde, and Rossendale), we used the original network corridors before running the centrality mapper and removing the corridors above 5km to identify additional woodland creation opportunities on these additional corridors.

Produced Draft Strategy

The strategy was drafted using the statutory guidance[iii] and legislation[iv] as well as non-statutory guidance shared by Natural England throughout the process. The thematic habitat group reports and strategically important documents to Lancashire was used a document source to inform the content. The draft and Areas that Could become of Importance for Biodiversity was shared with the steering group and Core Project Team for early sight in advance of the 28-day pre-consultation window.

Glossary

EA	Environment Agency
FE	Forestry England
Flagship species	A species representative of a specific habitat or chosen to raise support for biodiversity conservation
LCC	Lancashire County Council
LERN	Lancashire Environmental Record Network
NatMap	National Soil Map
NE	Natural England
OS	Ordnance Survey
RPA	Rural Payments Agency
Umbrella species	Protecting these indirectly protects many other species
WT	Woodland Trust
WWT	Wildfowl and Wetlands Trust
YDMT	Yorkshire Dales Millennium Trust

Appendix One: Governance Structure

Lancashire Local Nature Recovery Strategy (LNRS) Governance
November 2023

Introduction

The Lancashire Local Nature Recovery Strategy (LNRS) will be co-produced as a locally led, shared strategy for nature recovery, to show how and where we should all be working towards nature recovery across Lancashire. The governance structure has been designed to ensure that the development process maximises collaboration opportunities across a wide range of stakeholder groups through an open, honest and transparent approach.

As the Responsible Authority for Lancashire, Lancashire County Council will lead on the production of the Lancashire LNRS. In line with statutory regulations and guidance, it is essential that stakeholders, partners, and local communities feed into the strategy to create a shared plan for nature's recovery.

Functions

The various groups sit within one of 4 specific governance structure functions. A diagram of the governance structure can be seen in Appendix A.

1. Approval
2. Oversight & Management
3. Task & Finish
4. Wider Engagement

1. Approval

The approval groups will review, approve and sign-off key milestones in the process. These groups are decision makers and already exist within the supporting and responsible authorities. These groups are likely to be, but not exclusively comprised of, directorate leads and will be a last stop review of the draft and final strategy that will include final consultation with internal cabinet members. These groups will be given regular updates on progress by their steering group representative and will be directly engaged once the draft strategy and final strategy are ready for review.

I. Lancashire County Council Approval Process
II. Supporting Authority Approval Process

Role of the internal approval processes

- receive updates on progress from their steering group representative,
- review, comment on or approve the pre-consultation draft strategy, and
- review, comment on or approve the pre-publication final strategy.

2. Oversight & Management

These groups will provide the strategic direction and offer recommendations on strategy development. They will be established during the initial stages of the process. They will need a clear vision and terms of reference to ensure that: the right members are engaged, they understand their role and responsibilities and the level of input required in developing the strategy.

I. Steering Group

The group will comprise a representative from: the Responsible Authority, the top tier authorities, Lancashire environmental non-governmental organisations (eNGOs), the three Defra arms-length agencies (Natural England, Environment Agency and Forestry Commission), a representative from the Areas of Outstanding Natural Beauty (AONBs), a representative from the Marine Management Organisation (MMO), a nominated member from each of the 12 districts and the Yorkshire Dales National Park Authority (see below).

Members	**Description**
Blackpool LA	Top tier authorities
Blackburn with Darwen LA	
Lancashire County Council	
Lancashire County Council	Responsible Authority
Representative from eNGOs	LWT
Representative from the National Landscapes	A&S or FoB NL Manager
Natural England (NE)	Arms-length DEFRA agencies
Forestry Commission (FC)	
Environment Agency (EA)	
Marine Management Organisation (MMO)	DEFRA agency
Burnley district	Districts
Chorley district	
Fylde district	
Hyndburn district	
Lancaster district	
Pendle district	
Preston district	
Ribble Valley district	
Rossendale district	
South Ribble district	
West Lancashire district	
Wyre district	
YDNPA	National Park Authority

The Responsible Authority will act as the secretariat. Recommendations made will be disseminated to the Responsible Authority LNRS Review Group and the Core Project Team by the Responsible Authority representative for feedback and sign-off. The Steering Group should expect to respond to and have regard to the views and feedback of other Task & Finish sub-groups involved in the governance and sign-off of the Lancashire LNRS (see Annex A), particularly the: Thematic Habitat Working Groups; Species Technical Group; and the Mapping, Data & Evidence Group. Outputs from this group will be shared with the Responsible Authority LNRS Review Group for review.

<u>Role of the Steering Group</u>

- will provide strategic direction and LNRS oversight,

- ensure a high-quality LNRS is developed in line with the Regulations and Statutory Guidance,
- share their approval process and approval timeline,
- set objectives and deadlines,
- advise on the baseline mapping where able,
- share their strategically significant documents,
- share local nature recovery priorities – data & proposals,
- input into stakeholder mapping,
- actively engage in the LNRS development process & champion the LNRS within their organisation and with their sector stakeholders,
- meet deadlines,
- collaborate with neighbouring supporting authorities,
- share knowledge and information on BNG delivery and monitoring to contribute to 'review' phase,
- advise on climate resilience with regards to opportunities,
- share barriers to nature recovery within their organisations,
- support the identification of priorities,
- advise and review the opportunities and potential measures,
- help identify co-benefits and wider environmental benefits,
- review the draft strategy at the pre-public consultation stage and follow their Supporting Authority Approval Process for review and approval, and
- review the pre-publication final strategy and consult their Supporting Authority through their Approval Process for review and approval.

II. Responsible Authority LNRS Review Group

This group is an internal Lancashire County Council group led by the Principal Nature Recovery Officer and comprised of the Planning Principal Ecologist; Mapping, Evidence & Data lead; Nature Recovery Officer and other members of Lancashire County Council's Ecology and Nature Recovery Team. This group will offer internal support and guidance on the strategy development.

<u>Role of the Responsible Authority LNRS Review Group</u>

- internal support on the strategy development,
- support on resource allocation,
- consult with the Defra agency single point of contacts on proposed potential measures to avoid conflict with regulatory consents,
- review the Steering Group recommendations and share with the Core Project Team,
- review the Task & Finish sub-group lead candidates,
- appoint the Task & Finish sub-group leads,
- review the Core Project Team recommendations,
- review any conflicts in the Thematic Habitat Working Group outputs, and
- advise on strategy production.

III. Core Project Team

This group's members will be the 3 arms-length Defra agency single-point of contacts (NE, FC and EA), a representative from the Responsible Authority and the lead of each Task & Finish sub-group (11 sub-groups in total). This team will implement the recommendations made by the Steering Group and RA Review Group and report back with updates on the progress of their Task & Finish group.

Members	**Description**
Natural England	Arms-length Defra agencies
Environment Agency	
Forestry Commission	
Marine Management Organisation	Defra agency
Leads of Task & Finish sub-groups	Mapping, Evidence & Data
	Species Technical
	Land Managers
	Linear Infrastructure
	Aquatic & Wetland
	Coastal, Marine & Estuarine
	Grasslands
	Rocky Habitats
	Peatlands
	Trees & Woodland
	Urban
Responsible Authority	Nature Recovery Officer

Role of Core Project team

- engage and input into the stakeholder mapping,
- identify and invite sub-group members,
- agree on sub-group vision & terms of reference,
- action the recommendations made by the Steering Group,
- steer sub-groups and disseminate information to relevant groups and stakeholders,
- support the development of communication and engagement plans,
- assist in identifying areas of particular importance and areas that could become of particular importance,
- advise on strategy production,
- review Habitat and Species Technical Group outputs,
- support in identifying priorities,
- review the narrative descriptions & share with Strategy Production group.

3. Task & Finish

These are sub-groups that will develop the Biodiversity Statement of Priorities and Local Habitat Map (LHM) content and also 2 internal LCC processes that will be carried out by the Responsible Authority (Strategy Production and Delivery & Monitoring). The sub-groups will be comprised of some existing groups with new members invited to contribute on the development of the strategy while others will need to be created for the specific purposes outlined below. They will be chaired by a facilitator and led by a technical specialist in their field who will use existing groups and relevant contacts with technical expertise to form a group, then cascade

recommendations made by the oversight & management groups to be actioned by the members. The outputs from each group will be shared with the Core Project Team as updates.
The Biodiversity Statement of Priorities content will be created by these sub-groups. A clear set of objectives that the groups will need to produce will be shared and guidance on who the Responsible Authority would like to be included. It is important that group members are appropriate, understand the technical input required and are aware of the commitment they are required to make.

I. Thematic Habitat Groups (THGs)

- support Species Technical Group in identifying species of concern,
- support the identification of areas that could become of particular importance,
- support the description of the strategy area & its biodiversity,
- share nature recovery constraints,
- suggest knowledge gaps,
- collaborate on identifying priorities and developing potential measures,
- provide narrative description of strategy area & opportunities, and
- share evidence of wider environmental benefits provided by your habitat.

II. Land Management Groups

- share your future nature recovery opportunity aspirations and data,
- provide any operational constraints to nature recovery,
- champion nature recovery within your organisation and networks,
- review the outputs from the THGs,
- identify opportunities for LNRS implementation and delivery, and
- advise on the areas that could become important for biodiversity.

III. Species Technical Group

- follow the methodology and criteria outlined in the non-statutory Species guidance,
- review techniques used in the 8 LNRS species pilots,
- develop a species group of local species specialists and engage stakeholders to identify species of local significance e.g., through THG leads,
- collate local species data to identify species meeting the criteria which are geographically and ecologically relevant to the strategy area,
- identify threatened and other locally significant species relevant to the strategy area,
- determine which of these species should be prioritised for recovery action,
- Stage 1: Create a LNRS species longlist,
- evaluate species pressures,
- identify species that LNRS can best support,
- group species into habitat-based assemblages, and
- Stage 2: Create a LNRS species priorities list – combination of individual species and species assemblages.

IV. Mapping, Data & Evidence Group

- set up an effective file sharing system,
- general data & spatial support,
- map the areas of particular importance,
- data analysis on nature recovery & wider environmental benefits,
- ensure best practice data management ensuring there are no data licencing issues,
- facilitate a collaborative process,
- set up an online nature recovery EOI & public interest map,
- spatial support in describing strategy area and opportunities for recovery,
- data analysis on nature recovery opportunities & wider environmental benefits,
- identify 'areas that could become of particular importance', and
- ecological network modelling informed by wider ecological benefit data.

V. Strategy Production Process

- produce an accessible, aesthetically pleasing and non-technical strategy,
- incorporate the Local Habitat Map and Biodiversity Statement of Priorities,
- incorporate the opportunities and their narrative description,
- include the current knowledge gaps in each of the thematic habitat opportunities, and
- incorporate the potential measures and their narrative description.

VI. Delivery & Monitoring Process

- manage the nature recovery EOI map,
- ensure that wider stakeholder delivery is shared,
- ensure that LCC receives BNG delivery data and monitoring reports from the supporting authorities,
- share the nature recovery progress with the supporting authorities, and
- engage with LCC services and supporting authorities to ensure the LNRS is embedded within local strategically significant documents.

4. Wider Engagement

A Stakeholder Engagement Plan will be produced to support the Responsible Authority in engaging with a range of partners from the private, public, and voluntary sector and encourage collaborative working. The Stakeholder Engagement Plan will outline who the Responsible Authority intends to engage with and how to ensure under-represented groups and wider partners and communities are engaged and have opportunities to contribute to developing the strategy.

This function consists of Local Nature Partnerships (LNPs) & wider stakeholders which includes organisations and in some instances members of organisations who are not directly engaged through the Approval, Oversight & Management or Task & Finish groups. These are important groups to engage with and to communicate updates on the development of the strategy as they are well connected throughout the region. Members of these groups will be sent the public consultation survey.

I. LNPs

Individuals and organisations with technical expertise will be invited to Task & Finish sub-groups, i.e. the CLA, farmer clusters, land agents through the Land Managers Group lead. The LNPs will raise awareness, share and communicate updates on progress to their stakeholders. A key role of the LNP will be to form an LNP People & Nature sub-group bringing together less represented stakeholders, i.e., faith groups, friends of groups, Parish & Town Councils, green social prescribing projects, health & wellbeing community workers, link workers, etc.

Role of LNP

- share strategically significant documents,
- share nature recovery habitat, species and project condition data,
- engage in the work of the Task & Finish sub-groups,
- create a sub-group for under-represented stakeholders, and
- communicate updates to their organisations, stakeholders/wider partners and members.

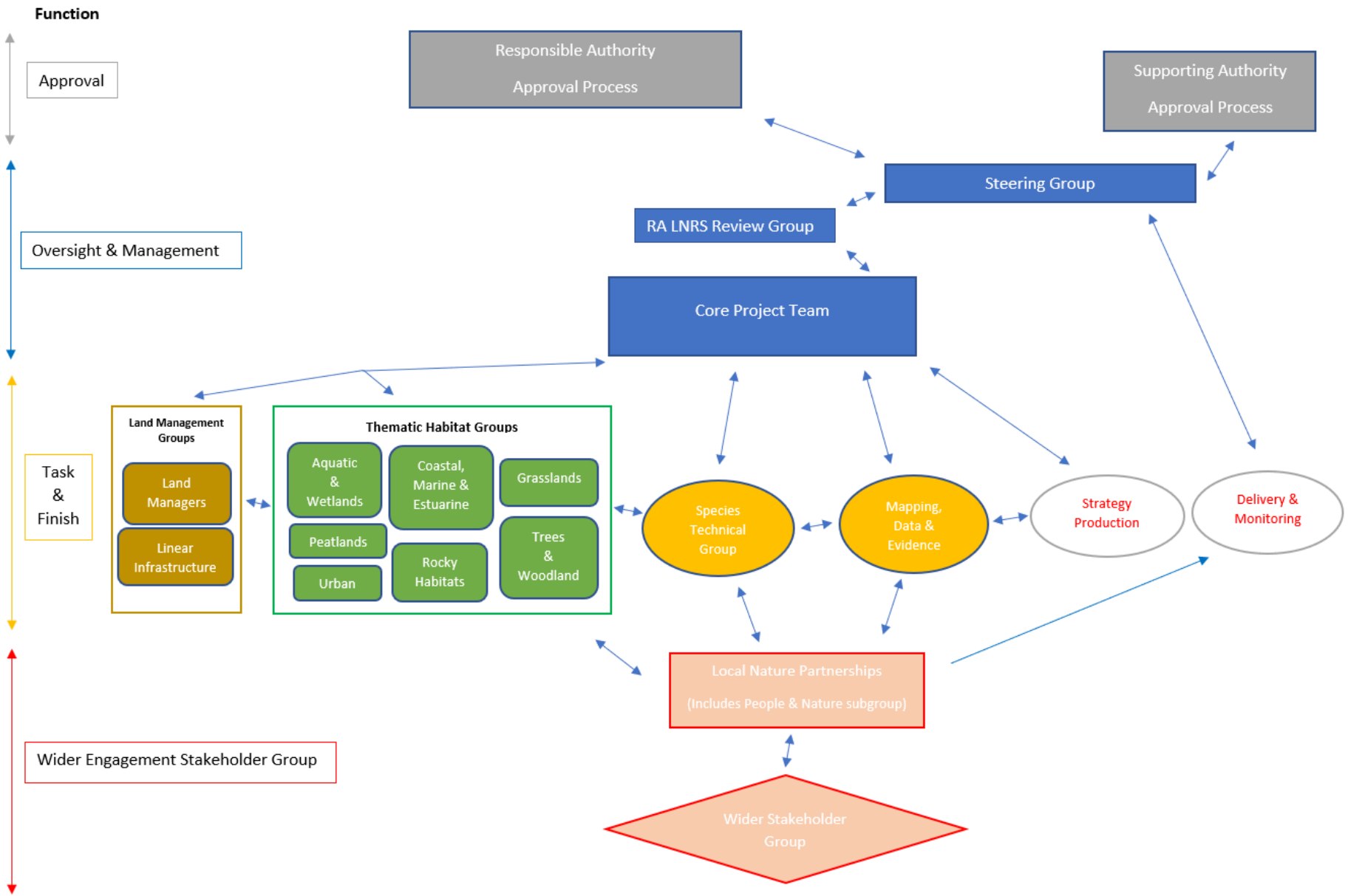
II. Wider Engagement Stakeholder Group

The list of Wider Engagement Stakeholder members will come from the stakeholder mapping workshop. This group should be made up of partners and decision-makers for nature and the environment including eNGOs, local communities and volunteers. It is important that engaging with members of this group is routinely reviewed to ensure that effective comms and engagement are maintained throughout as the strategy develops. Members of this group should be invited to join the Task & Finish sub-groups once the sub-group leads have been assigned.

Role of Wider Stakeholder Group

- share hopes and desires for the LNRS through the public engagement consultation,
- contribute and input into the areas that could become of particular importance for biodiversity, and
- engage in the public consultation.

Annex A – Governance structure diagram



Appendix Two: Lancashire LNRS Stakeholder Acknowledgements by Group

Table 1. Aquatic and Wetland

Organisation
Amphibian and Reptile Group of Lancashire (ARGL)
Clitheroe Angling Association
Douglas Fisheries
Douglas Valley Catchment Partnership
Environment Agency
Floodplain Meadows Partnership
Freshwater Habitat Trust
Fylde Borough Council Ranger Service
Groundwork
Ian Fairey - Volunteer at Friends of Worden Park
Irwell Catchment Partnership
Lancashire County Council Ecology & Nature Recovery Team
Lune Rivers Trust
Lytham Wildfowlers
Mersey Rivers Trust
Natural England
Nature Space
Ribble Fisheries Consultative Association
Ribble Rivers Trust
Ribchester Environment and FLAG
Sea Life Blackpool
Steve White – Vice County recorder for Dragonflies, recorder for the Lancashire and Cheshire Fauna Society (LCFS) and British Trust for Ornithology (BTO)
Stormwater Shepherds
The Royal Society for the Protection of Birds (RSPB)
United Utilities
Whalley FLAG
Wildfowl & Wetlands Trust (WWT)
Wyre Borough Council Countryside Service
Wyre Rivers Trust

Table 2. Coastal and Estuarine

Organisation
Arnside and Silverdale National Landscape
Blackpool Borough Council
Cumbria Wildlife Trust
Eden Project (Morecambe)
Environment Agency
Fylde Bird Club
Fylde Borough Council Ranger Service
Lancashire Badger Group
Lancashire County Council Ecology & Nature Recovery Team
Lancaster University
Lune Rivers Trust
Lytham and District Wildfowlers Association
Marine Management Organisation
Morecambe Bay Partnership
Morecambe Bid
Natural England
RSPB
Sea Life Blackpool
The North Western Inshore Fisheries and Conservation Authority (NWIFCA)
UK Centre for Ecology & Hydrology (UKCEH)
Wyre Borough Council Countryside Service
Wyre Borough Council Our Future Coast Programme
Wyre Rivers Trust
Wyre Waters Catchment Partnership

Table 3. Grassland

Organisation
Arnside & Silverdale National Landscape
Blackburn Borough Council
Bowland Haytime Initiative (NL/YDMT)
Caring for God's Acre (CFGA)
Claughton Hall Estate
Environment Agency
Floodplain Meadows Partnership
Forest of Bowland National Landscape
Fylde Borough Council Ranger Service
Graeme Skelcher Ecological Consultant **(Group Lead)**
Lancashire Country Council Ecology & Nature Recovery Team
Lancashire Wildlife Trust
National Farmers Union (NFU)
National Trust
Natural England
P Jepson Ecology
Plantlife
Prospects Foundation
RSPB
Suzanne Perry **(Group Lead)**
Tenant Farmers Association
Wyre Borough Council Countryside Service

Table 4. Land Managers

Organisation
3KQ (**Facilitator**)
A representative for Commercial Horticulture
Arnside and Silverdale National Landscape
Catchment Sensitive Farming Advisor
Claughton Estate (representing large estates)
Downham Estate
Duchy of Lancaster
Environment Agency
Forest of Bowland National Landscape
Forestry Commission
Forestry England
Halsall Estate
Knowlmere Estate
Knowsley Estate
Lancashire Association of Town and Parish Councils,
Lancashire County Council - Countryside Services
Lancashire County Council - Estates and Assets
Leck Estate
National Trust
Natural England
NFU
NHS
RSPB
Stanley Estate
Taylors Contracting
Tenant Farmers Association
The Crown Estate
United Utilities

Table 5. Linear Infrastructure

Organisation
Cadent Gas
Canal and Rivers Trust
Electricity North West Limited
Highways England
Lancashire Badger Group
Lancashire Country Council Ecology & Nature Recovery Team
Lancashire County Council Highways & Assets Team
Lancashire Wildlife Trust
National Grid
Natural England
Nature North
Network Rail
Sustrans
United Utilites
Wyre Borough Council Countryside Service

Table 6. Mapping, Data and Evidence

Organisation
Butterfly Conservation
Chorley Borough Council
Cumbria Wildlife Trust
Environment Agency
Forest of Bowland National Landscape
Forestry Commission
Greater Manchester Ecology Unit (GMEU)
Lancashire Badger Group
Lancashire County Council Flood Risk Management Team
Lancaster City Council
Lune Rivers Trust
Natural England
Nature North
Ribble Rivers Trust
Rossendale Borough Council
South Lancashire Bat Group (SLBG)
UK Centre for Ecology & Hydrology (UKCEH)
Wyre Borough Council Countryside Service
Wyre Rivers Trust

Table 7. Peatland

Organisation
Blackburn With Darwen Council
Blackpool Borough Council
Bleasdale Estate
Cantab
Chorley Borough Council
CPRE (The Countryside Charity) Lancashire
Edwin Thompson Ltd
Environment Agency
Forest of Bowland National Landscape
Fylde Borough Council Ranger Service
Groundwork
Grosvenor Estate
Lancashire County Council Ecology & Nature Recovery Team
Lancashire County Council Flood Risk Team
Lancashire Fire & Rescue
Lancashire Wildlife Trust **(Group Lead)**
Liverpool John Moore University
Lords Hall Estate
Lune Rivers Trust
Manchester Metropolitan University
National Farmers Union (NFU)
National Trust
Natural England
P Jepson Ecology
Ribble Rivers Trust
RSPB
South Ribble Borough Council
Stephen Martin
TJ Morris Ltd
United Utilities
West Lancashire Borough Council
Wildfowl & Wetlands Trust (WWT)
Woodland Trust
Wright Farm Produce
Wyre Borough Council Countryside Service
Wyre Rivers Trust

Table 8. People and Nature Sub-Group

Organisation
Active Lancashire
Activity Alliance
Allotments LessUK
Blackburn With Darwen Borough Council
BLC (Burnley Leisure and Culture) Group
Canal and Rivers Trust
Edge Hill University - Lancashire Climate Action Network (LancsCAN)
Environment Agency
Forest of Bowland National Landscapes
Groundwork
Lancashire Association of Councils for Voluntary Service (LACVS)
Lancashire County Council
Lancashire Wildlife Trust
Natural England
NHS Lancashire and South Cumbria Integrated Care Board (ICB)
Preston City Council
Ribble Rivers Trust
South Ribble Borough Council
UCLAN - School of Health, Social Work and Sport
Wyre Borough Council
Yorkshire Dales National Park Authority

Table 9. Rocky Habitats

Organisation
Eden Project (Morecambe)
Environment Agency
Lancashire County Council Ecology & Nature Recovery Team
Lancashire Wildlife Trust
Lancaster University **(Group Lead)**
National Trust
Natural England
RSPB
UK Centre for Ecology & Hydrology (UKCEH)
Vice County Recorder (BSBI)
Wyre Borough Council Countryside Service

Table 10. Species

Lancashire LNRS Target Species Specialists
Ben Deed – LCC, Senior Ecologist
Ben Hargreaves – Lancashire Wildlife Trust, Invertebrate Projects Officer
David Earl – LCC, County Recorder, BSBI
Justine Patton – UKCEH and County Moth Recorder for Lancashire and Cumbria.
Martin Wain – Butterfly Conservation Trust, Conservation Manager North of England
Philip Miller – RSPB, Conservation Officer
Sonja Ludwig – RSPB, Species and Habitats Officer
Stephen Palmer, Lancashire Vice County Recorder, Lancashire Moths
Steve White – British Trust for Ornithology
Thomas Myerscough – Wyre Rivers Trust
Organisation
Amphibian and Reptile Group of Lancashire (ARGL)
Bolton & Bury Swifts
British Trust for Ornithology (BTO)
Claughton Hall Estate
David Walter - Very active red squirrel volunteer
Environment Agency
Fylde BC Ranger Service
Graeme Skelcher
Lancashire Badger Group
Lancashire and Cheshire Fauna Society (LCFS)
Lancashire County Council - Ecology & Nature Recovery Team
Lancashire Environment Record Network (LERN)
Lancashire Wildlife Trust (LWT)
Merseyside Environmental Advisory Service (MEAS)
Merseyside and West Lancashire bat group
National Trust
Natural England
Ribble Fisheries Consultative Association
RSPB
South Lancashire Bat Group (SLBG)
Species Recovery Trust
The Mammal Society
UK Centre for Ecology & Hydrology (UKCEH)
UK Squirrel Accord
Wyre Rivers Trust

Table 11. Steering Group

Supporting Authority
Blackburn With Darwen Borough Council
Blackpool Council
Burnley Borough Council
Chorley Council
Environment Agency
Forestry Commission
Fylde Borough Council
Hyndburn Borough Council
Lancaster City Council
Marine Management Organisation
National Landscapes representative
Natural England
Pendle Borough Council
Preston City Council
Ribble Valley Borough Council
Rossendale Borough Council
South Ribble Borough Council
Tameside Borough Council
West Lancashire Borough Council
Wyre Borough Council
Yorkshire Dales National Park Authority

Table 12. Trees and Woodland

Organisation
Blackburn Borough Council
Bowland Deer Group
Caring for God's Acre (CFGA)
Claughton Hall Estate
David Walter - Red Squirrel Volunteer
Forestry Commission
Fylde Borough Council Ranger Service
Lancashire Badger Group
Lancashire County Council Ecology & Nature Recovery Team
Lancashire Wildlife Trust
Lancashire Woodland Partnership
National Farmers Union (NFU)
National Trust
Natural England
Network Rail
Prospects Foundation
Ribble Rivers Trust
Rossendale Borough Council
RSPB
Tenant Farmers Association (TFA)
The Fairfield Association / Fairfield Millennium Green and Community Orchard
TilHill Forestry
Woodland Trust
Wyre Borough Council Countryside Service

Table 13. Urban

Organisation
Blackburn Borough Council
Bolton & Bury Swifts
Fylde BC Ranger Service
Hyndburn Borough Council
Lancashire Badger Group
Lancashire County Council Ecology & Nature Recovery Team
Lancashire County Council Landscapes Team
Lancashire Wildlife Trust
Lancaster City Council
Natural England
NHS Lancashire and South Cumbria Integrated Care Board (ICB)
Rossendale Borough Council
RSPB
Wyre Borough Council Countryside Service

Appendix Three: Stakeholder Engagement Plan

(to follow)

Appendix Four: Land Manager Engagement Summary Report

Local Nature Recovery Strategy for Lancashire
Farmers & Land Managers Stakeholder Engagement
Summary Report July 2024

Introduction

Underpinned by the 25 Year Environment Plan (2018) and the Environment Act (2021), Local Nature Recovery Strategies (LNRS) are a new system of plans for nature recovery covering the whole of England. They are a key mechanism for planning and delivering the National Nature Recovery Network. The outputs to Defra will consist of a habitat map of areas that could that become of particular importance for biodiversity and nature recovery and a Statement of Biodiversity Priorities. This will include prioritisation based on a number of factors including local and national environmental objectives, urgency, spatial factors and wider public benefits.

Independent facilitators 3KQ, on behalf of Lancashire County Council (the Responsible Authority), convened a series of in-person meetings around the county with existing farmer, landowner and land manager groups to help build their views into the LNRS to ensure the best chance of delivery.

This is a summary report describing the wider engagement that took place, and outlining the feedback received from stakeholders. Individual reports with more detailed records of discussion are available separately for each individual event.

The aim of the farmer and land manager stakeholder engagement:

As part of the wider engagement plan, to provide farmers and land managers an opportunity to find out about the Lancashire LNRS, and offer input during development of the strategy.

Objectives of the engagement:

- To explain the concept of LNRS across the country and discuss the LNRS development process and opportunities in Lancashire.
- To gain a better understanding of existing work being undertaken to support nature on farms in the area.
- To discuss and explore enablers and barriers in relation to:
  Nature friendly farming and increasing biodiversity on farm.
  Supporting the environment and biodiversity in other types of land management.
- To demonstrate the LNRS public map so that stakeholders are able to submit information in their own time.

Farmers and land managers involved in this work were highly appreciative of the opportunity to be involved in discussions at this early stage of the development of the strategy, and the

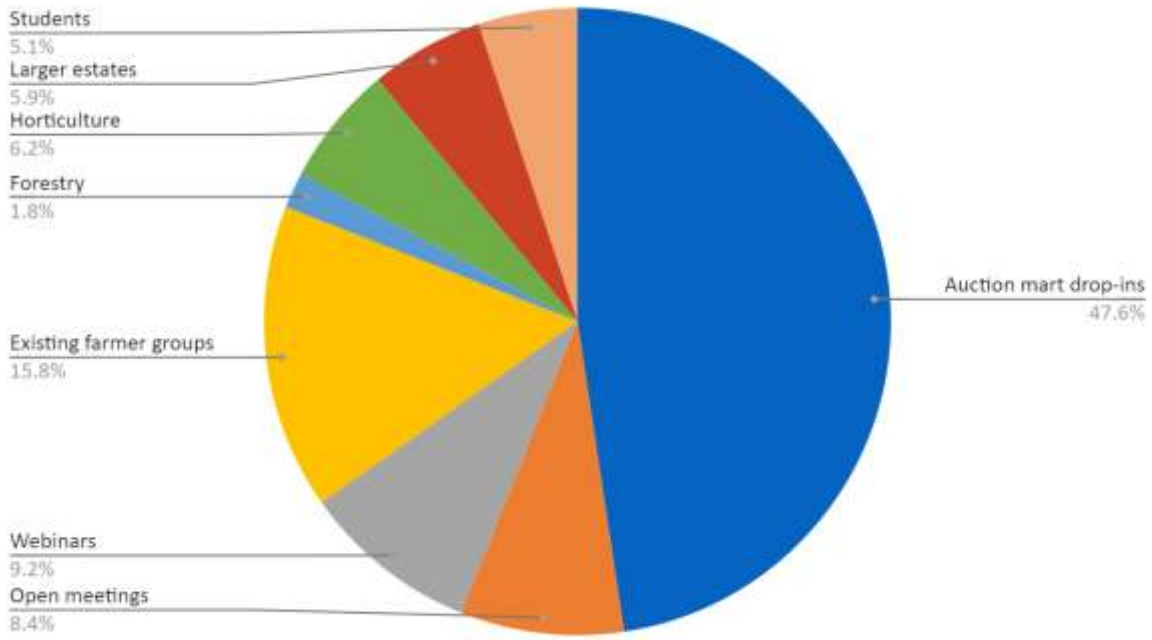
acknowledgement that they will be key in terms of implementation. It was noted in discussions at every meeting that these discussions are happening at a challenging time for farmers and land managers in a period of rapid change, but nevertheless nearly all were keen to explore ways that farming and nature recovery can be increasingly developed alongside each other in the future.

The Engagement Process - What did we do?

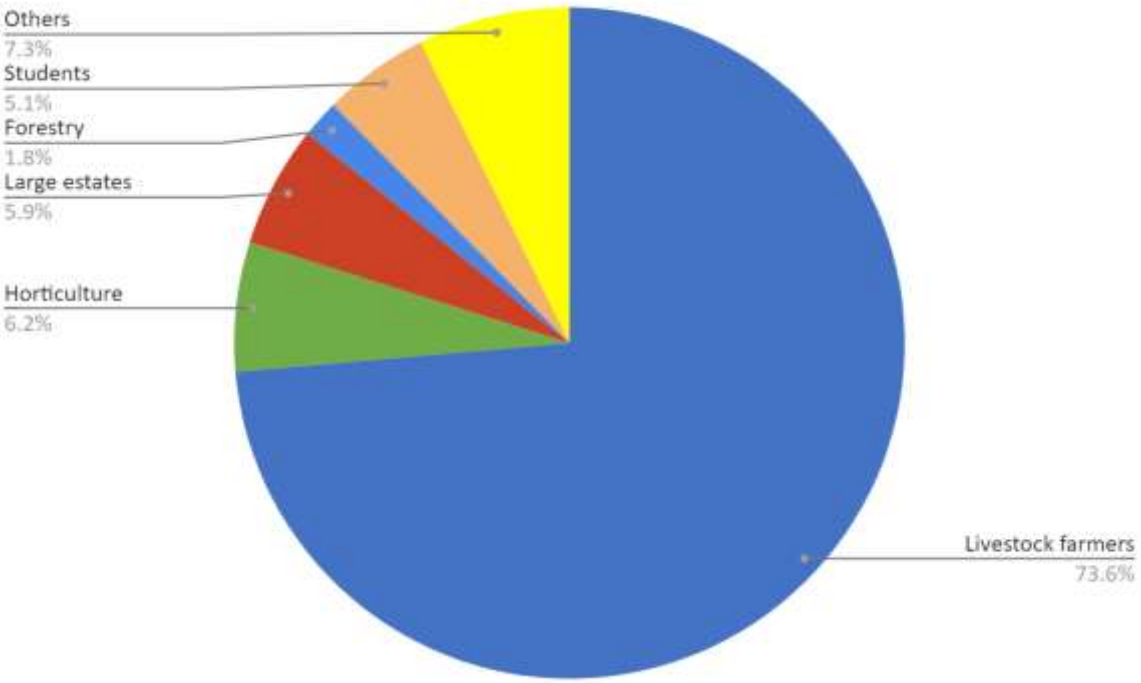
Summary statistics

A series of workshops, webinars and auction mart drop-ins were conducted around Lancashire, with the first workshop taking place on the 21st May and the final one on the 20th July. In total, there were 9 face-to-face workshops, 2 online workshops, 2 webinars and 3 auction mart drop-ins (a full list is provided in the Appendix).

The following groups were directly targeted for engagement:
Livestock farmers
Small-scale horticulture
Commercial horticulture
Forestry
Larger estates
Agriculture/ land management students (Myerscough College)

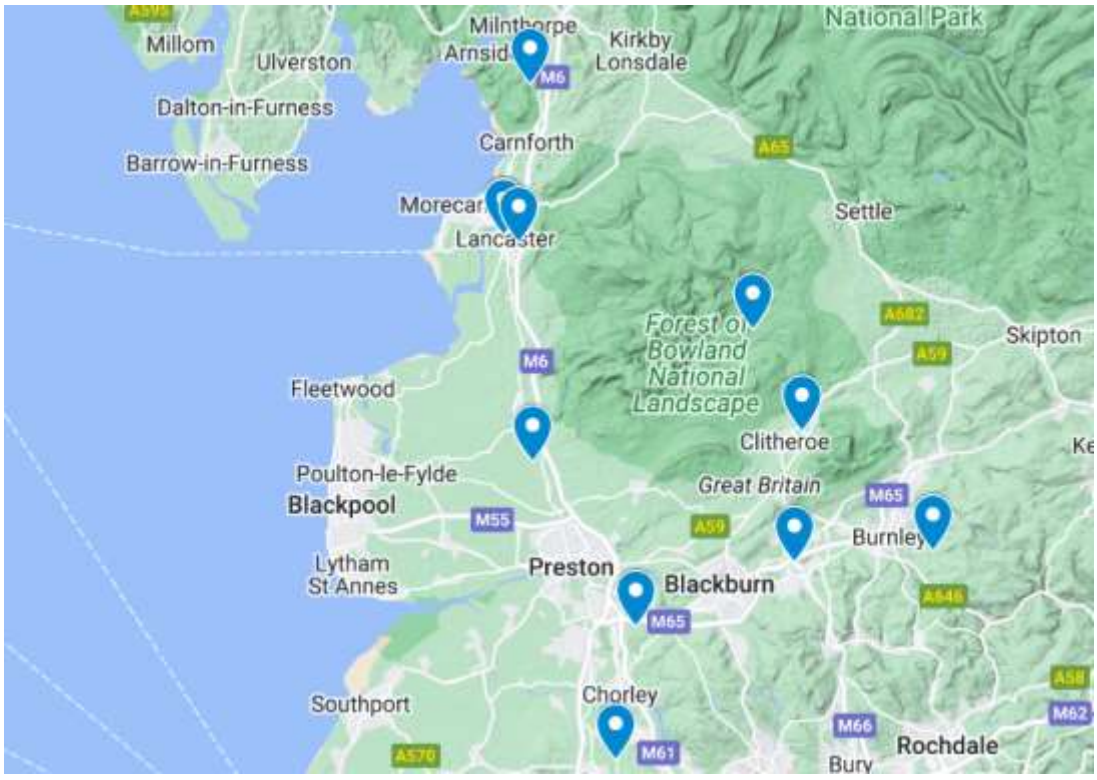


A chart showing the proportion of people engaged - by engagement method. Although the auction mart drop-ins engaged the most people, it is worth noting that this engagement was usually very brief – comprising a conversation and provision of a leaflet. In comparison, the other engagement methods included a presentation, Q&A session and facilitated discussion.



A chart showing the proportion of people engaged - by sector. The "others" section comprises people who were not directly involved in land-based professions, e.g. local authority staff, who joined the webinars for more information on the LNRS.

Geographical spread of face-to-face meetings



Blue markers indicate the locations of face-to-face meetings. In addition, an online meeting was held for commercial growers based on the Fylde Coast.

Face-to-face workshop format

The face-to-face workshops generally lasted for 1.5 - 2 hours, starting with food. After a short (20 minute) presentation from a member of the LNRS team, there was a question-and-answer session, followed by a facilitated discussion around tables of no more than 6 people.

During this session, participants were asked to consider the questions:
"What has helped (or might help) you carry out nature-friendly farming activities?"
"What have been the barriers?"
Participants were also asked to provide any survey data or species records that they might have for their farms or land.

Webinar and online workshop format

Online meetings lasted no more than 1.5 hours. Following a presentation from a member of the LNRS team and Q&A session, participants were put into break-out groups to discuss the barriers and opportunities to nature-friendly actions. If there were fewer than 8 attendees, all participants remained in the plenary session, and if there were a large number of questions, the barriers and opportunities section was not covered.

Auction mart drop-ins

Vouchers for free tea or coffee were handed out alongside LNRS leaflets to help initiate conversations. The facilitators gave a brief outline of what the LNRS is, and how it might help farmers access opportunities in the future. They also signposted people to the website, public mapping tool and the opportunity to participate in webinars or more detailed workshops.

Main messages from the participants – what did we learn?

Commonly asked questions

- How often will the Strategy be updated/ reviewed?
- How will actions be monitored to feed into the review process?
- How will the Strategy take account of the lack of baseline data across the county
- Could more be done to bring together existing data nationally e.g. information held by Defra in relations to actions taken as part of agri-environment schemes?
- Who is ground-truthing the information on the public map?
- How does Biodiversity Net Gain work?

Key themes – opportunities

One-to-one advice

Many participants described support offered on a one to one basis as key to helping them undertaking actions to support the environment and biodiversity on their farm. This was often via organisations such as local Rivers Trust, Woodland Trust or other NGOs such as RSPB. It was acknowledged that this type of tailored support has been more available to those within National Landscape areas, particularly recently with a range of projects funded by FiPL. More resource for this type of approach by locally knowledgeable organisations, including outside protected landscape areas, was seen as very positive.

Single, trusted platform for information

This was seen as important to allow farmers to navigate the complex funding landscape and access appropriate knowledge and skills. Many participants stated that they would like the LNRS to be an umbrella for accessing other support, and hoped it would provide a "one-stop-shop" for help and advice.

Simpler, more accessible agri-environment schemes with higher payment rates and funding to maintain, not just create habitats. The new SFI application process was mentioned as being an improvement by a good number of those that had tried it although many had not yet done so.

Personal interest in nature – this was considered crucial, and the vast majority of the participants across all of the workshops displayed a clear pride in, and knowledge of, the wildlife on their land. This results in many farmers taking action to support nature and biodiversity on their farms outside of any support or funding structures, and many examples of this were given. Students at Myerscough College made the point that unless children are exposed to nature at an early age, they will not grow up to care about it in the future. They felt it was vital to build an education strand into the LNRS (see below).

Education, training and upskilling were seen as key opportunities to enable farmers, growers and other land managers to enable nature's recovery. Also to train a new cohort of ecological surveyors.

More baseline data – access to free/affordable surveys would help farmers and land managers supply data that could drive action in the best places for nature.

Opportunity for joined up thinking – farmers could see the potential value of the LNRS in mapping the bigger picture, and enabling them to see how they could best contribute on their farms.

Key themes – barriers

Insufficient support – both in terms of trusted advisors and financial support – was the most consistent barrier to nature-friendly farming and land management.

The complexity of the current funding landscape, and the financial pressures on farmers following the loss of the Basic Payment Scheme (BPS) and uncertainty around agri-environment schemes. Many farmers have been put off applying for funding owing to historically prescriptive schemes, and more recently by 'changing goal posts' as new schemes have been in development.

Difficulties achieving nature-friendly goals – the impacts of deer and grey squirrels on young trees, and of predators on ground-nesting birds, were commonly cited here. Non-native species were specifically highlighted as being of concern.

Farmers are concerned about food production – although all the farmers and land managers were happy to see wildlife on their land, some were frustrated that it was so hard to have an economically viable farm business purely based on food production. They also expressed concern that good quality land could be taken out of production, impacting on the ability of the country to be self-sufficient in food or timber crops.

Landlord-tenant relations – tenants expressed concern that it could be more financially rewarding for landlords to take land back in hand to access grant schemes than to rent it

out. A lack of trust in these relationships also impacted on the ability of both parties to access grants and funding. The potential implications on inheritance tax and tenancy agreement obligations could also be seen as a barrier to changing land management away from production.

Planning policy and development pressures – participants were concerned about inappropriate development removing valuable wildlife habitat. A lack of infrastructure to support new housing – such as functional wastewater treatment works – also created detrimental effects on farming and wildlife.

Participants raised concerns over the LNRS potentially preventing small-scale on-farm developments which would enable sustainable farming communities to thrive.

Public access – There was widespread concern about greater public access, particularly in sensitive areas, and particularly in relation to disturbance caused by dogs. Whilst understanding of the benefits of access to nature for people's well-being, many farmers and land managers had examples of challenging experiences of dealing with public access issues. This will need to be addressed within the strategy to ensure goals for public access are achieved without negative impact on nature and biodiversity either directly through disturbance or at worse dog attacks, or indirectly through farmers being reluctant to encourage public access without more support to encourage/enforce sensible behaviour.

Additional opportunities

Contractors were highlighted as being important conduits for information as well as helping with practical work to support nature e.g. pond creation, fencing off areas, hedge laying etc. The fact that farmers have trusted relationships with contractors mean they are a potentially powerful agent of change, or indeed a hindrance. This suggests that contractors could be a key audience for the LNRS delivery team to consider in terms of briefing/training etc.

Farmers working outside of protected landscape areas was identified as having had less support than those within protected landscapes in terms of nature recovery activities as mentioned above. There is therefore likely to be more 'untapped' opportunities for progress in these areas.

Additional barriers

Perceptions and areas of public debate were identified as having an impact, some examples are as follows:

- The negative associations with 'messiness' on a farm or growing plot and the fact that such untidiness is looked down upon even though it may be beneficial for nature
- Re-wilding – this term and public discussion of it was highlighted in a few meetings and was felt to be unhelpful in terms of polarisation in relation to farming and nature.
- Focus on tree planting, particularly in relation to carbon measures, was felt by some to have eclipsed wider discussions on nature and biodiversity.

And finally….

As mentioned at the start of this document, individual reports were compiled for each meeting held. Drafts of these were circulated to participants who were offered the chance to suggest any necessary amendments/additions/corrections. The final versions of these

individual reports are well worth looking through given that we have been unable to include all the specifics in this summary. This is particularly the case for the forestry and horticulture meetings. Finally, we are aware that although overall responses to the public consultation on the LNRS were high, the number of responses from the youngest age group was relatively low. For this reason we specifically approached Myerscough College for the opportunity to discuss the LNRS development with a cohort of their students. Having access to the insight and experience of this group was a highlight of this consultation and their views as described in the specific report for that meeting deserve wider consideration.

Ruth Dalton and Jenny Willis from 3KQ would like to thank all those who helped to organise the events and encouraged people to attend, as well as the participants themselves for sharing their time, insight and experience to try and make the LNRS for Lancashire as relevant and effective as possible. Without exception participants asked to be kept informed and will prove a valuable cohort during the next steps of the process.

Annex A – list of stakeholder engagement events

Date	Name of Group	Numbers attended
21/05/2024	East Lancs Facilitation Fund	8
21/05/2024	Webinar 1	15
12/06/2024	Myerscough College - agriculture and land management students	14
12/06/2024	Hyndburn Farm Cluster - Ribble Rivers Trust	6
13/06/2024	Open meeting - Brindle	11
17/06/2024	Lancaster Auction drop-in	27
18/06/2024	Clitheroe Auction drop-in	48
19/06/2024	Webinar 2	10
26/06/2024	Forest of Bowland Farm Cluster	13
28/06/2024	Lancaster Auction drop-in	55
02/07/2024	Trawden Farm Cluster - Ribble Rivers Trust	16
03/07/2024	Larger Estates - Lancaster Castle	16
10/07/2024	Open meeting - Yealand	12
18/07/2024	Small-scale horticulture - Lancaster	12
25/07/2024	Forestry (online)	5
30/07/2024	Commercial horticulture (online)	7
	Total numbers	**275**

Appendix Five: People & Nature VCFSE Summary Report

(to follow – separate PDF available)

Appendix Six: Long listing and Short-listing Criteria from National Guidance

	List of criteria for long-listing
Critical to consider	
1	Any native species[1] which have been assessed as Red List **Threatened** against IUCN criteria[2]
2	Any native species which have not been formally assessed against IUCN Red List criteria but where strong evidence is provided to show that they would meet the criteria for Threatened status (note: such species may fall into the category of 'other species of local significance' inputted by stakeholders – see section 4.3 below)
3	Any native species considered to be nationally extinct that re-establish themselves or are rediscovered
Important to consider	
4	Any native species which have been assessed as Red List **Near Threatened** against IUCN criteria
5	Any native species which NE suggest as suitable candidates for conservation translocation, or any native species already subject to translocation efforts (aligning with Reintroductions and other conservation translocations: code and guidance for England) that, on NE's advice, need to be scaled up to maximise success

1 'Native species' means any species which naturally occur or have in the past naturally occurred in England, and include regularly occurring migratory species (breeding and non-breeding), natural colonists (species that have arrived in England of their own accord and have become established), and species that have been reintroduced in England following past extinctions.

2 That is, species which have been assigned to Vulnerable (VU), Endangered (EN), or Critically Endangered (CR) categories in approved GB IUCN Red Lists. See Outcome Indicator Framework for England's 25 Year Environment Plan: D5 Conservation status of our native species, 2022 - NERR124 (nepubprod.appspot.com) for a list of all species for which an IUCN assessment of extinction risk in Great Britain has been completed (data sheet) and explanation (technical document).

List of criteria for short-listing

Category	Description	Benefit from LNRS?	Suitable LNRS species priorities?
A: Needs more / bigger / better-connected habitat	Species likely to markedly benefit from general creation, expansion, and improved connectivity of good quality habitats in the strategy area Species with high recovery potential that do not require specific or targeted recovery measures	Yes	Probably not – species are likely to benefit from LNRS measures generally and do not need to be singled out for specific LNRS measures
B: Needs targeted habitat management	Species with specific requirements for habitat quality, structure, conditions, or processes above and beyond category A - Species may require specific configurations or complexes of connected or nearby habitat/s, either at site level or across large areas / multiple sites. This may include habitat connectivity measures for species needing support to track climate change. - Causes of decline can be addressed with new or improved management practices	Yes	Yes
C: Needs improvements in environmental quality	Species primarily limited by one or more pressures beyond site level that can be mitigated at LNRS scale or wider scales through collaboration with neighbouring RAs For example, better catchment water quality, improved spatial planning of air pollution sources, mitigation of recreational disturbance	Yes	Yes
D: Needs bespoke conservation action/s		Yes	Yes

E: Needs better evidence base / on-the-ground action is not a priority		Unknown	No
F: Needs action outside England	Species with low (or very low) recovery potential due to factors constraining recovery beyond English borders Evidence shows that action in England is highly unlikely to improve species' prospects This category is likely to apply only to migratory species (e.g., Afro-Palearctic migratory birds affected by hunting)	No	No
G: Vagrants / occasional visitors	Species currently outside their normal breeding or wintering range or normal migration route, without an extant population in the strategy area, and which are not suitable for conservation translocation	No	No

Appendix Seven: Information Sources - Lancashire's natural environment and biodiversity

- An atlas and guide to some of the fungi of the Arnside & Silverdale AONB, Weir & Weir, 2015
- Biological Heritage Sites, Lancashire: BHS guidelines for site selection - Lancashire County Council
- Bowland Fells, National Character Area profile 34
- Bowland Fringe and Pendle Hill, National Character Area profile 33
- Jepson P (2013) *West Pennine Moors survey report* (unpublished).
- Lancashire and Amounderness Plain, National Character Area profile 32
- Lancashire Coal Measures, National Character Area profile 56
- Lancashire County Council (2000) *A Landscape Strategy for Lancashire*. Landscape Strategy
- Lancashire Valleys, National Character Area profile 35
- Manchester Pennine Fringe, National Character Area profile 54
- Morecambe Bay Limestones, National Character Area profile 20
- Morecambe Coast and Lune Estuary, National Character Area profile 31
- Sefton Coast, National Character Area profile 57
- Skelcher G (2015) *Notable and characteristic species in the Arnside & Silverdale AONB*. Report for Arnside & Silverdale AONB Partnership, Arnside.
- Southern Pennines, National Character Area profile 36
- Yorkshire Dales, National Character Area profile 21
- Environmental Records for Lancashire: LERN - the Lancashire Environment Record Network - Lancashire County Council
- Further information on Lancashire's environment is available here: Environment - Lancashire County Council

Appendix Eight: Public Engagement Survey Summary

Lancashire LNRS Public Survey Summary

Through a public survey at county level, we collated 963 responses, which has ensured that the strategy is locally led.

How often is time spent in nature?
It is not surprising that almost 50% of respondents spend time in their own garden on a daily basis, which was the most popular choice (fig 1). On the flipside, only 7% visit a nature reserve or conservation area daily though almost ¾ of respondents said that they feel that there are no barriers to nature. This is likely owing to the fact that many members of the public choose to spend most of their time out in the garden when accessing nature. However, there is a consensus of other barriers including but not limited to: safety, poor public transport, loss of nature to development, landowner restrictions and bad weather.

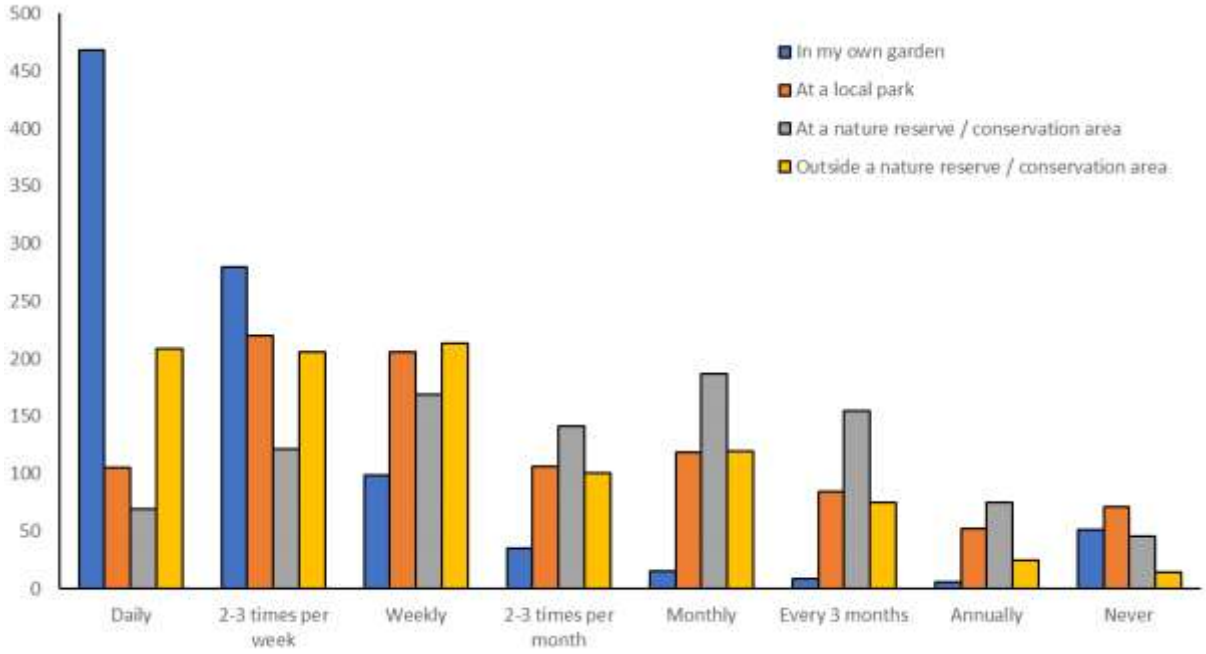


Figure 1. Time spent in nature in Lancashire (LCC Public Survey, 2024)

56% and 39% strongly agreed nature is a good place for mental health and wellbeing and provides good opportunities to see nature respectively. Though, only 30% strongly agreed that nature is of a high enough standard to want to spend time in, highlighting the importance of a bigger, better and more joined up approach to nature recovery in Lancashire.

Why is nature important?

When asked this question, the top reasons were natural beauty/cultural heritage and improvement of mental and physical health (fig 2). There is also a need for a diverse range of plants and animals as well as preserving nature for future generations. This is reflected by the fact that almost half of respondents are concerned about the state of nature in Lancashire albeit 55% believe that nature in Lancashire is in at least a 'good' state.

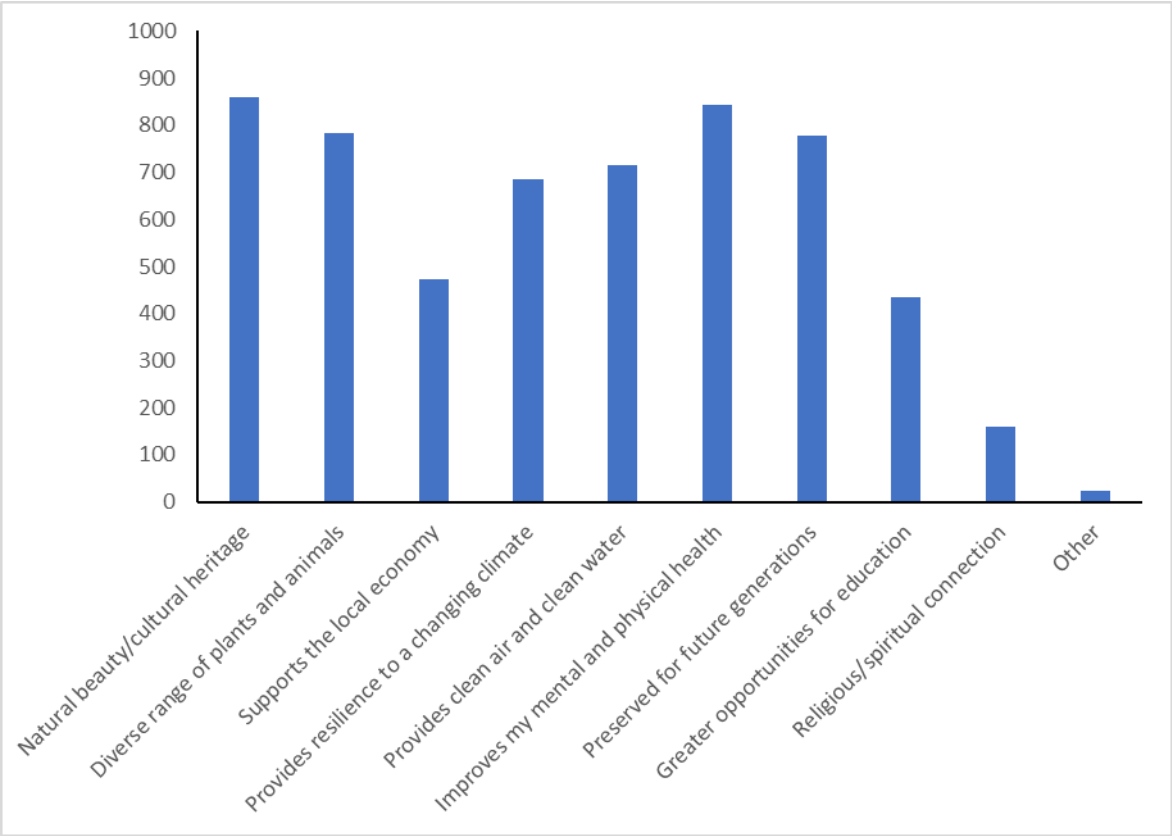


Figure 2. Why is nature important? (LCC Public Survey, 2024)

Environmental Issues

When asking the public about the most important environmental issues in Lancashire, 'building on green and natural spaces' came out on top (804), followed by 'pollution of rivers, lakes and groundwater' as a close second (784) (fig 3). Meanwhile, 'frequent droughts or floods' and an 'increase of invasive species' were categorised as low importance (fig 3).

Other notable issues being raised are housing developments on greenbelt land, vandalism, a need for better environmental education and insufficient support for species recovery to name just a few.

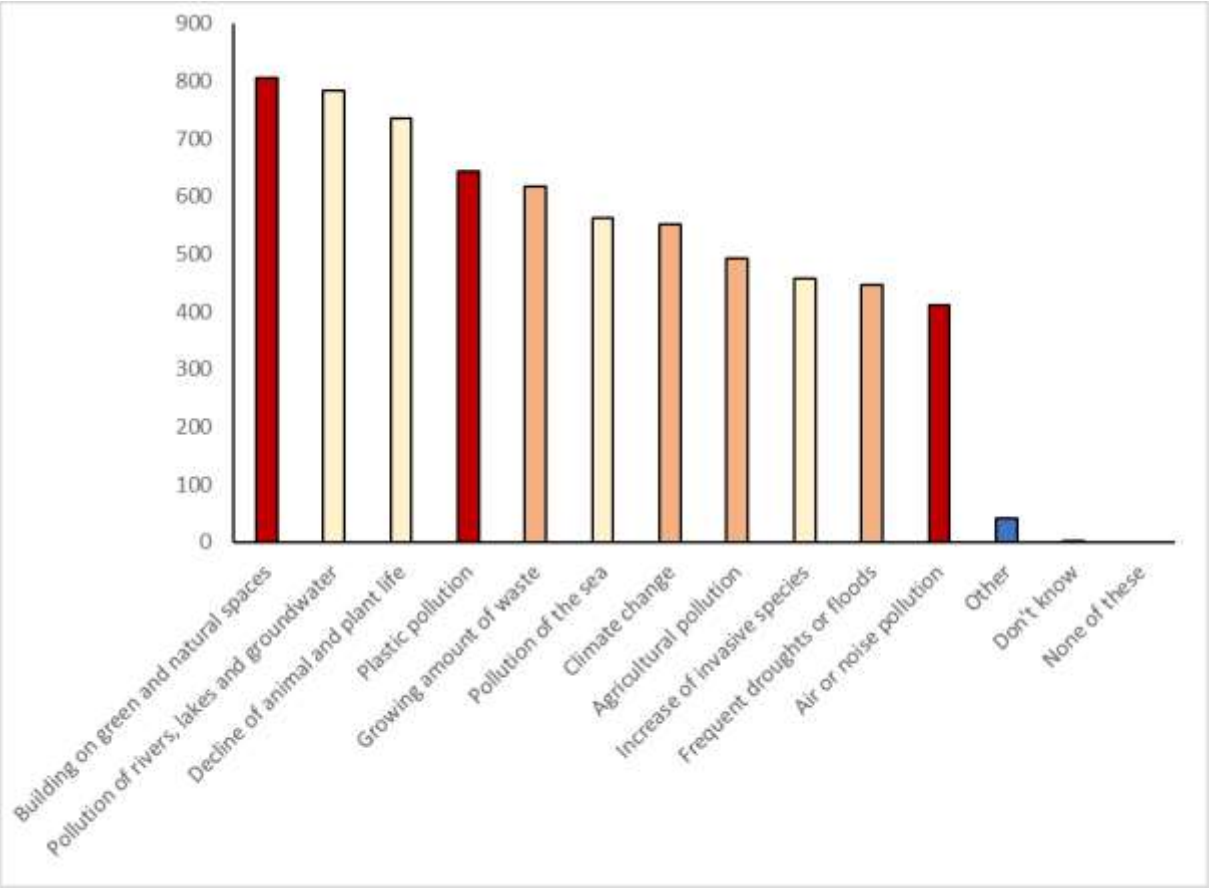


Figure 3. The level of importance of environmental issues (LCC Public Survey, 2024)

Habitats and Species of concern

The people of Lancashire were asked to prioritise 5 top species for recovery and as highlighted in figure 4, Hedgehogs, Bees and Red Squirrels came out on top whilst fungi and pollinators were considered as a low priority. Fungi is currently a hot topic in the conservation world, though this output is perhaps an indicator of poor awareness, highlighting the need for more education and research.

In terms of species, respondents regard Woodlands, Rivers and Grasslands as a high priority to recover (fig 5). However, it is important to note that many respondents commented that it is difficult to prioritise only 3 habitats and that all habitats are equally important for nature's recovery. Further suggestions are to prioritise habitat mosaics as opposed to viewing the habitats in isolation from each other i.e. habitat connectivity.

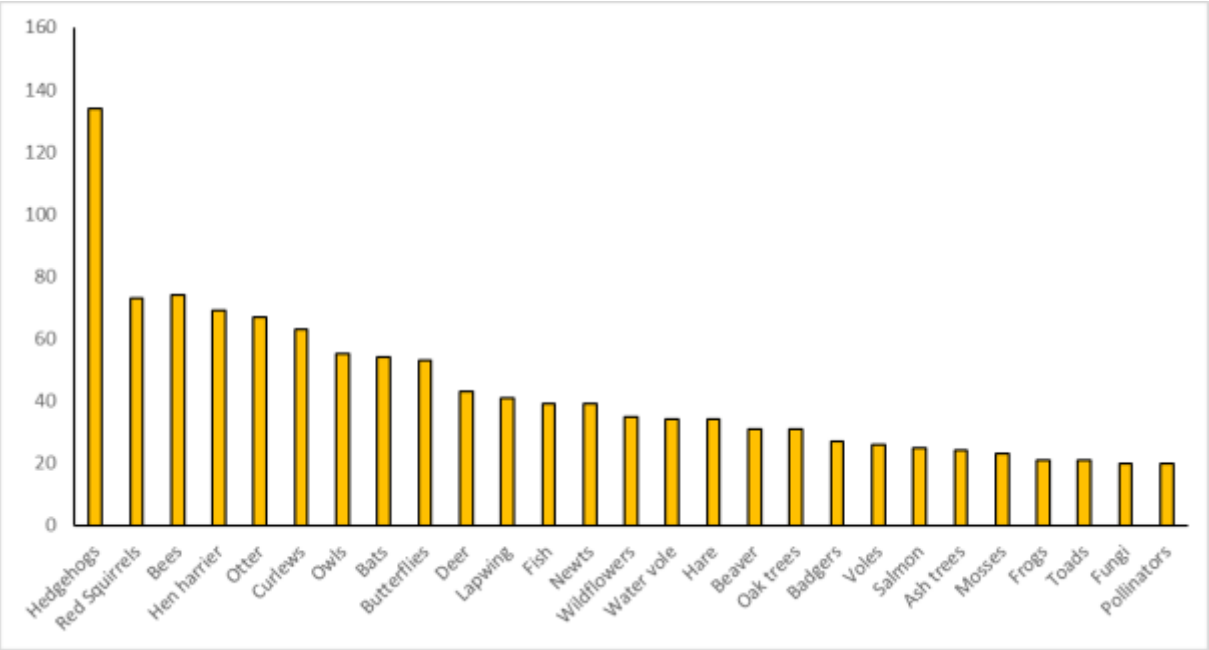


Figure 4. Prioritisation of species recovery in Lancashire according to the public (LCC Public Survey, 2024)

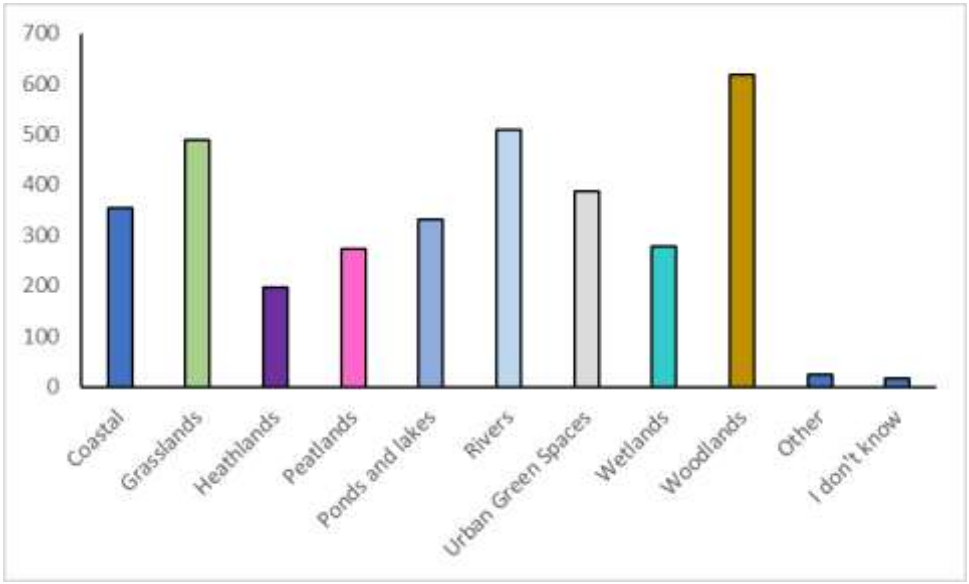


Figure 5. Prioritisation of habitat recovery in Lancashire according to the public (LCC Public Survey, 2024)

Appendix Nine: Nature Recovery documents Strategically Important to Lancashire

	Current/Active/In use	Previous version/superseded
District (Local)/Country/Regional	High (3)	Medium (2)
National/International	Medium (2)	Low (1)

Document Name	Publisher	Publication Date	Priority
A plan to recover England's temperate rainforests	Defra	2023	2
A UK Wetlands Strategy	Wildfowl & Wetlands Trust	2024	2
Achieving Net Zero Famrings 2040 goal	Natioinal Farmers' Union	Sep-19	2
Adopted Fylde Local Plan to 2032 (incorporating Partial Review)	Fylde Council	Dec-21	3
Agricultural Transition Plan 2021 to 2024	Defra	30-Nov-20	2
Alt Crossens Catchment Plan Catchment Partners Working Togther	Mersey Rivers Trust	Mar-23	3
Appendix 6 (b) Blackpool's Green and Blue Infrastructure Strategy Draft for Consultation	Blackpool Council		3
Appendum Burnley Wildlife & Habitat Survey 2007	Golder Associates Ltd	Dec-07	N/A
Arnside & Silverdale AONB Management Plan 2019 - 2024	Arnside & Silverdale AONB	Feb-19	2
Averis, Ben (2023) A provisional Definition of Temperate Rainforest in Britain and Ireland	Ben Averis	2023	2
Biological Heritage Sites (BHSs) Guidelines for Site Selection	Lancashire County Council	1998 (last partial revision 2023)	3
Blackburn with Darwen Adopted Local Plan 2021 - 2037	Blackburn with Darwen	Jan-24	3
Blackpool Nature Conservation Statement	Blackpool Council	April 2008 updated May 2012	3
Blackpool's Climate Emergency Action Plan	Blackpool Council		3
B-Lines	BugLife	2021	3
Burnley Green Infrastructure Strategy 2013 - 2031	TEP	Sep-13	3
Burnley Wildlife & Habitat Survey 2007	Golder Associates Ltd	Dec-07	N/A
Burnley Wildlife & Habitat Survey 2007 Habitat map	Golder Associates Ltd	Dec-07	N/A
Burnley's Local Plan	Burnley Borough Council, Economy & Growth	Jul-18	3
Burscough Parish Neighbourhood Plan	Burscough Borough Council	26-Jul-19	2, 3
Burscough Parish Neighbourhood Plan	West Lancashire Borough Council	Jul-19	2, 3
Central Lancashire Core Strategy	Central Lancashire Councils	Jul-12	2, 3

Central Lancashire Landscape Designation Study	Central Lancashire Councils	Oct-22	N/A
Central lancs Core Strategy	SRBC / CBC / PCC	2012	3
Central Lancs SPD - Biodiversity and Nature Conservation	SRBC / CBC / PCC	2015	3
Central Lancs SPD - Open Spaces and Playing pitches	SRBC / CBC / PCC	2013	3
Central lancs SPD - Rural Development	SRBC / CBC / PCC	2012	3
Chorley Climate Change Strategy 2022-2024	Chorley Council	2021	2
Chorley Local Plan 2012 - 2026	Chorley Council	Jul-15	3
Chorley's Clean Air Strategy 2021	Chorley Council	2021	N/A
Clean Air Strategy 2019	Defra	14-Jan-19	2
Climate Change Adaption Manual Evidence to support nature conservation in a changing climate 2nd Edition 2020	Natural England	2020 2nd edition	3
Climate Change Adaption Toolkit Blanket Bog	Natural England	2020 2nd edition	3
Climate Change Adaption Toolkit Carbon Storage and sequestration by habitat NE Research Report 2nd Edition	Natural England	14-Oct-21	3
Climate Change Adaption Toolkit Coastal floodplain & grazing marsh	Natural England	2020 2nd edition	3
Climate Change Adaption Toolkit Coastal saltmarsh	Natural England	2020 2nd edition	3
Climate Change Adaption Toolkit Lowland fens	Natural England	2020 2nd edition	3
Climate change: Impacts and adaptation in England's Woodlands	Duncan Ray, James Morison and Mark Broadmeadow	2010	2
Climate Emergency Action Plan (latest update)	Blackburn with Darwen	Jul-23	2
Constructed Farm Wetlands, Treating agricultural water pollution and enhancing biodiversity	Wildfowl & Wetlands Trust	Mar-15	2
Creating Urban Wetlands for Wellbeing, A route map	Wildfowl & Wetlands Trust	2022	2
Dales Woodland Strategy 2020-2030	YDNP	2020	1, 2
Delivering for Invertebrates in Local Nature Recovery Strategies	BugLife	Dec-23	2
Design your LNRS to Deliver for Amphibians and Reptiles	Amphibian and Reptile Conservation (ARC)	Dec-23	2
Douglas Catchment Action Plan	Groundworks	Mar-19	2
Douglas Catchment Management Plan	Groundwork	Mar-19	3
Douglas Catchment Partnership Management Plan	Groundworks	Nov-23	2
Emergency Tree Plan for Chorley 2020-2030	Chorley Council	Sep-20	2
England Peat Action Plan	Defra	May-21	3
English Seabird Conservation and Recovery Pathway – Seabird Sensitivity Evidence Review	Natural England Commissioned Report	Mar-23	3

English Seabird Conservation and Recovery Pathway – Seabird Sensitivity Evidence Review	Natural England Commissioned Report	Mar-23	3
Environment Agency: EA2025 creating a better place	Enviornment Agency	31-Oct-22	2
Environmental Improvement Plan 2023, Corporate Report	Defra	31-Jan-23	2
FARMING FOR THE FUTURE: AGROFORESTRY BENEFITS FOR NATURE AND CLIMATE	Woodland Trust	2022	2
Floodplain Meadows in LNRS	Floodplain Meadows Partnership	Feb-24	2
Forest of Bowland National Landscape Nature Recovery Plan	Forest of Bowland National Landscape	Dec-23	1
Forest of Bowland National Landscape Trees and Woodland Strategy	Forest of Bowland AONB	2021	3
Forest or Bowland AONB Management Plan 2019 - 2024	Forest of Bowland AONB	Feb-19	2
Forestry England Biodiversity Plan	Forestry England	2022	2, 3
Fylde Local Plan to 2032 – Comprehensive list of evidence – Fylde Council	Fylde Council		N/A
Fylde-Biodiversity-SPD-Adopted-11-September-2019-FINAL.pdf	Fylde Council	11th September 2019	3
Grassland Management Strategy	Lancaster City Council	23-Sep-21	2
Green & Blue Infrastructure (GBI) Strategy	Lancaster City Council	31-Jan-22	3
Green Infrastructure and Ecological Networks SPD	Blackburn with Darwen	Dec-15	3
Green Infrastructure Standards for England	Natural England	Jan-23	3
Growing the Future 2021-2026	Forestry England	2021	2
Highway Asset Information Strategy	Lancashire County Council	Feb-17	2
Highways Asset Management Plan	Lancashire County Council	Jan 2019 amended May 23	2
Highways Asset Management Plan Guidance - Highway Trees Causing Concern	Lancashire County Council	Jul-20	2
Highways Asset Management Plan Thirs Party Tree Guidance	Lancashire County Council	Jul-20	2
Highways Asset Management Plan Tree Safety Management Guidance Risk Based Inspections	Lancashire County Council	Aug-18	2
Highways England Designated Funds Plan	Highways England	2020	3
Highways England Designated Funds Plan	Highways England	2020	3
How to Design your LNRS to Deliver for Plants and Fungi	Plant Life	Oct-23	2
Hyndburn BC Habitats Survey	HBC/ Graeme Skelcher Associates	2019	3
Hyndburn Borough Council Open Space Report	Hyndburn Borough Council / KKP	2021	3
Identification of Functionally Linked Land supporting Special Protection Areas (SPAs) waterbirds in the North West of England	Natural England	09-Sep-21	3

Intgegrated Water Management	National Farmers' Union	27-Jan-21	N/A
Irwell Catchment Partnership 2019 - 2027 Catchment Plan	Irwell Catchment Partnership	Mar-19	3
Joint Fisheries Statement (JFS)	Defra	Updated 6 Dec 2022	2
Joint Lancashire Minerals & Waste Development Framework Core Strategy DPD Managing Our Waster & Natural Resources	Joint Authorities of Blackburn with Darwen Borough Council, Blackpool Council and Lancashire County Council	Feb-09	2
Keeps of Time Ancient & Native woodland and tree policy in England	DEFRA	May-22	3
Lancashire & South Cumbria Integrated Care Strategy 2023 - 2028	Lancashire & South Cumbria Integrated Care Partnership		2
Lancashire Biodiversity Action Plan	Lancashire Biodiversity Partnership	Mar-11	2, 3
Lancashire Biodiversity Action Plan 2001	Lancashire County Council	Apr-01	2, 3
Lancashire Climate Resilience Study	Lancashire Independent economic Review	Dec-21	3
Lancashire County Council A Landscape Strategy for Lancashire	Lancashire County Council, Environment Directorate	Dec-00	2
Lancashire County Council Climate Change Strategy	Lancashire County Council, Environment Directorate		2
Lancashire County Council Corporate Priorities	Lancashire County Council		2
Lancashire County Council Corporate Strategy	Lancashire County Council		2
Lancashire County Council Economic Strategy	Lancashire County Council	2023	2
Lancashire County Council, Environment & Climate Strategy	Lancashire County Council	2023	2
Lancashire Ecological Network Approach and Analysis (Version I)	LERN	May-15	3
Lancashire Local Transport Plan 2011 - 2021 A Strategy for Lancashire	Lancashire County Council	May-11	2
Lancashire Net Zero Pathways Report	Lancashire Independent economic Review	Mar-22	3
Lancashire woodland vision	Lancashire County Council		3
Lancaster District Climate Change Partial Review Local Plan	Lancaster City Council	Mar-24	3
Lancaster District Green and Blue Infrastructure Strategy	Lancaster City Council	Jan-22	3
Lancaster District Local Plan	Lancaster City Council	Jul-20	3
Landscape & Access	National Farmers' Union	14-Oct-20	N/A
Landscape Character Assessment	Lancashire County Council	Dec-00	3
Levelling Up the United Kingdom	Department for Levelling Up, Housing and Communities	02-Feb-22	2

Local Flood Risk Management Strategy for Lancashire 2021 - 2027	Lead Local Flood Authorities - Blackburn with Darwen, Blackpool & Lancashire County Council	2021	2
Local Nature Recovery Strategies: a guide to help bumblebees thrive	Bumblebee Conservation Trust		2
Lune Catchment Partnership Vision	Lune Rivers Trust	Mar-22	3
Management of Existing UK Woodlands: An Opportunity for Green Prosperity	Institute of Chartered Foresters/Chartered Institute of Ecologists and Environmental Managers	Aug-23	2
Managing deadwood in forests and woodlands	Forest Research	2012	2
Managing England's woodlands in a climate emergency	Forestry Commission	2020	2
Managing woodland SSSI and ancient woodland with ash dieback	Forestry Commission & Natural England	2024	2
Marine strategy part one: UK updated assessment and Good Environmental Status	Defra	23-Oct-19	2
Marine strategy part three: UK programme of measures	Defra	17-Dec-15	2
Marine strategy part two: UK marine monitoring programmes	Defra	Updated 19 Dec 2022	
National Flood and Coastal Erosion Risk Management Strategy for England	Environment Agency	Jul-20	2
National Flood and Coastal Erosion Risk Management Strategy for England - GOV.UK (www.gov.uk)	Environment Agency	14-Jul-20	2
National Food Strategy The Plan	DEFRA - Independent Review	Jul-21	3
National Highways Environmental Sustainability Strategy	National Highways	2023	3
National Highways Environmental Sustainability Strategy	National Highways	2023	3
National Model Design Code: Pt 2 Guidance Notes	Ministry of Housing, Communities and Local Government	Refers to LNRS & includes definitions see p18	2
Natural England action plan 2022 to 2023	Natural England	27-Jul-22	2
Natural England Action Plan 2023/24	Natural England	Jun-23	3
Natural England and Forestry Commission: Our position on woodland creation Policy Paper	DEFRA	08-Dec-23	3
Natural England Green Infrastructure Principles	Natural England	Jan-23	3
Natural England Guidance on Wader Recovery Areas	Defra	Apr-24	2
Nature Positive 2030 Evidence Report	Joint Nature Conservation Committee		2
Nature Recovery Plan for the Yorkshire Dales National Park	Yorkshire Dales National Park Authority	Dec-23	1
NCA Profile 20: Morecambe Bay Limestones	Natural England		3

NCA Profile 21: Yorkshire Dales	Natural England		2
NCA Profile 32: Lancashire and Amounderness Plain	Natural England		3
NCA Profile 33: Bowland Fringe and Pendle Hill	Natural England		3
NCA Profile 34: Lancashire Valleys	Natural England		3
NCA Profile 35: Yorkshire Dales	Natural England		2
Net Zero & Agriculture A guide for Local Authorities	National Farmers' Union	10-Feb-21	2
NFU Tree Strategy	National Farmers' Union	13-Jul-21	2
North West England and North Wales Shoreline Management Plan SMP2	North West England and North Wales Shoreline Management Plan SMP2	18-Feb-11	1
NW Regional Flood & Coastal Committee Business Plan 1 pager	NW Regional Flood & Coastal Committee	2022	2
Our Journey to Net Zero, Farming's 2040 goal	National Farmers' Union	01-Oct-21	2
Part 2 Introduction to the habitats Climate Change Adaption Toolkit	Natural England	2020 2nd edition	3
Penwortham Town Council Neighbourhood Development Plan	Penwortham Town Council	2016	N/A
Plant biosecurity strategy for Great Britain (2023 to 2028)	Defra	09-Jan-23	2
Preston Local Plan 2012-2026	Preston City Council	Apr-15	2, 3
Preston Parks and Green Space Strategy	Preston City Council	Apr-21	2, 3
Recommendations Adopted by the Working Group on the Post-2020 GLOBAL BIODIVERSITY FRAMEWORK	Convention on Biological Diversity, UN Environment Programme	18-Dec-22	2
Ribble Life Catchment Partnership Vision	Ribble Rivers Trust	Mar-22	3
Ribble Valley Core Strategy 2008-2028	Ribble Valley Borough Council	Jan-14	2
Rossendale Borough Council Climate Change SPD	Rossendale Borough Council	19-Dec-22	3
Rossendale Borough Council Environmental Network Study 2017	TEP	Jan-17	3
Rossendale Borough Council Landscape Study 2015	Penny Bennett Landscape Architects	Dec-15	3
Rossendale Local Plan 2019 to 2036	Rossendale Borough Council	15/12/2021	3
Rossendale_local_plan_2019_to_2036_-_policies_map (9034×6392)	Rossendale Borough Council	15/12/2021	N/A
Site Improvement Plan: Bowland Fells - SIP022	Natural England	18-Dec-14	3
Site Improvement Plan: Calf Hill & Cragg Woods - SIP034	Natural England	09-Oct-14	3
Site Improvement Plan: Leighton Moss - SIP119	Natural England	23-Oct-14	3
Site Improvement Plan: Martin Mere - SIP133	Natural England	07-Oct-14	3
Site Improvement Plan: Morecambe Bay - SIP141	Natural England	19-Dec-14	3
Site Improvement Plan: Morecambe Bay Pavements - SIP142	Natural England	08-Oct-14	3
Site Improvement Plan: North Pennine Dales Meadows - SIP153	Natural England	18-Feb-15	3
Site Improvement Plan: Sefton Ribble - SIP212	Natural England	29-Oct-14	3
Site Improvement Plan: South Pennine Moors - SIP225	Natural England	18-Dec-14	3

South Ribble BC Climate Emergency Action Plan	South Ribble Borough Council	Jul-21	3
South Ribble Borough Council Biodiversity Action Plan	South Ribble Borough Council	Jul-23	1
South Ribble Borough Council Biodiversity Strategy	South Ribble Borough Council	Jul-22	1
SRBC Local Plan	SRBC	2015	3
SRBC SPD - Renewable and Low Carbon Energy	SRBC	2014	3
Sustainability and climate change: a strategy for the education and children's services systems	Defra	Updated 20 December 2023	N/A
Taking bats into account in Local Nature Recovery Strategies v2	Bat Conservation Trust	Apr-24	2
The Colchester Declaration	National Landscapes Association	2019	3
The England Tree Action Plan 2021 - 2024	DEFRA	May-21	3
The Flood Manifesto	National Farmers' Union Cymru	2017	2
The Foundation of Food - our vision for good soil health	National Farmers' Union	14-Jul-22	2
The National Wood	CONFOR	2023	2
The Nature Recovery Network	Defra	16-Feb-24	2
The UK Forestry Standard The government's approach to sustainable forestry	Forest Research	2023 revised Oct 2024	3
Transport asset management plan Phase 2 Year 3 Data Refresh	Lancashire County Council	Sep-23	2
Transport decarbonisation plan	Defra	14-Jul-21	N/A
Tree and Woodland Strategy	Blackburn with Darwen	Apr-24	2
Tree Asset Management Plan County Council trees and woodland assets 2023-2033	Lancashire County Council	Nov-22	2
Tree Strategy 2021-2031	Blackpool Council Parks Service	Draft	2
Trees and woods: at the heart of nature recovery in England	Woodland Trust	2023	2
UK Biodiversity Action Plan	JNCC	1994 (revised 2007)	3
UK Forestry Standard Practice Guide: Adapting Forest and woodland management to the changing climate.	Forest Research	2022	2
UK Red Squirrel Action Plan	UK Squirrel Accord	2023	3
Upland Breeding Wader guidance FAQs	Forestry Commission England	Jul-23	3
Upland breeding wader surveys & when woodland creation is likely to be appropriate Guidance	Forestry Commission England	27-Jul-23	3
Using bracken maps as a guide for regenerating rainforest	Lost Rainforests of Britain	2022	2
Using natural colonisation for the creation of new woodland	Forestry Commission	2021	2
West Lancashire Biodiversity Duty Plan 2023	West Lancashire Borough Council	Dec-23	2, 3

West Lancashire Borough Council Leisure Strategy 2015 - 2025	West Lancashire Borough Council	2015	3
West Lancashire Green Infrastructure and Cycling Strategy September 2017	West Lancashire Borough Council	Sep-17	2, 3
West Lancashire Local Plan 2012 - 2017 Development Plan Document	West Lancashire Borough Council	Oct-13	3
West Lancashire Local Plan 2012-2027 Policies map	West Lancashire Borough Council		N/A
West Lancashire natural environment action plan	West Lancashire Borough Council	Oct-11	2, 3
Wetlands for flood resilience	Wildfowl & Wetlands Trust	2022	2
When to convert woods and forests to open habitat in England: Government policy	DEFRA Forestry Commission Natural England	Mar-10	3
Wild about the North West: A biodiversity audit of North West England	Biobank	01-Jan-99	3
Wyre Local Plan (2011-2031) (incorporating partial update of 2022) – Wyre Council	Wyre Council	26-Jan-23	3
Wyre Waters Integrated Catchment Plan	Wyre Rivers Trust	Mar-19	3

Appendix Ten: Species shortlisted for recovery in Lancashire

Species & National Significance

Species of National Significance are those that are most threatened, in greatest decline, or where the **UK** holds a significant proportion of the world's total population. The UK lists of conservation designations includes:

- National (Great Britain (GB)) Red Lists (which are attributed a Threatened Status category, Near Threatened (NT), Vulnerable (VU), Endangered (EN), or Critically Endangered (CR)). Species categorised as Least Concern (LC) have not been included as Nationally Significant.
- The Wildlife and Countryside Act 1981 (as amended) (WCA) Schedules 1,5, & 8
- The Natural Environment and Rural Communities (NERC) Act 2006 - Species of Principal Importance in England (S41)
- Biodiversity Action Plan UK priority species list (UKBAP)
- Birds of Conservation Concern (BoCC, Red/Amber)
- Nationally Rare (species recorded that occur in 15 or fewer 10km X 10km grid squares in Great Britain (includes rare species qualifying under the main IUCN criteria).
- Nationally Scarce (also known as Nationally notable, species recorded that occur in 16 to 100 10km X 10km grid squares in Great Britain (includes rare species qualifying under the main IUCN criteria).
- Natural England Species Action Plans (SAP)

This is not a comprehensive collation of designations for UK species. Species can also be considered of National Significance where native species which have not been formally assessed against IUCN Red List criteria but have strong evidence to show that they would hold a status equivalent to IUCN assessed Threatened, such as from a recognised national recording scheme.

Although species may not be noted on a GB conservation designation list, they may still be of International Significance and Designated through:

- The Convention on the Conservation of European Wildlife and Natural Habitats
- Convention on Migratory Species
- OSPAR
- EC Cities
- The Conservation of Habitats and Species Regulations 2010
- Directive 2009/147/EC on the conservation of wild birds
- Habitats Directive (Annexes 2, 4 and 5)
- IUCN Red Lists

Species & Local Significance

Those not considered of National Significance (i.e., where they are of Least Concern (LC)) may still be important in Lancashire and highlighted either as Lancashire BAP

species (LBAP) and for plants as Lancashire Rare (LR), Lancashire Scare (LS) or from the Lancashire Endangered Plants list (LEP).

We have referred to the Lancashire Key Species (LKS) list which refers to species which have a recognised status, either (inter)nationally or locally within Lancashire and including species occurring in (Inter)Nationally important numbers in Lancashire. This list has been expert reviewed through the Lancashire Environment Record Network (LERN). LERN is the 'local environmental record centre' for the County and holds information on the important and protected sites that have been identified for their significance in Lancashire.

The Biological Heritage Site (BHS) guidelines list relevant species for each guideline from the LKS list.

Input from species experts in Lancashire was also considered where they could demonstrate sufficient information to justify the inclusion of species as of local significance.

Table 1. Species shortlists arranged by Thematic Habitat Group including the Broad Habitat Assemblage to which they were assigned, whether the Lancashire population is of national significance and the status of a species' significance at the Lancashire and National Level. Acronyms defined as follows: SS = Species Specialist (where no status was noted), FCT = Fungus Conservation Trust, LKS = Lancashire Key Species, BHS = a Biological Heritage Site species, LR = Lancashire Rare, LS = Lancashire Scarce, LBAP = Lancashire Biodiversity Action Plan, LEP list = Lancashire Endangered Plants, NS = Nationally Scarce, NR = Nationally Rare, BoCC = Birds of Conservation Concern, UKBAP = UK Biodiversity Action Plan, S41 = Section 41 Species of Principal Importance of the Natural Environment and Rural Communities Act 2006, HabDirA5 = Habitats Directive Annex 5, RDB = Red Data Book. IUCN Red List Classification also given for species where known: Extinct (E) Extinct in the Wild (EW), Critically Endangered (CE), Endangered (END), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD) and Not Evaluated (NE). A species highlighted in red denotes a Lancashire LNRS Target Species, which has bespoke measures applied.

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Aquatic and Wetlands						
Amphibian	*Triturus cristatus*	**Great Crested Newt - flagship for 'amphibian assemblage'**	Wet Grassland	Yes	LBAP, stronghold in NW	LC
Amphibian	*Bufo bufo*	Common Toad	Wet Grassland	No	LBAP	NT
Birds	*Acrocephalus schoenobaenus [br]*	Sedge Warbler	Lowland marsh/ fen (& Reedbeds)	Yes	RSPB shortlist	LC; BoCC Amber
Birds	*Botaurus stellaris*	Bittern	Lowland marsh/ fen (& Reedbeds)	Yes	LBAP	NT (Breeding), VU (Non-breeding), Amber
Birds	*Gallinago gallinago [n-br]*	Snipe	Upland and lowland marsh/ fen	No	RSPB shortlist	NT; BoCC Amber
Birds	*Haematopus ostralegus [br]*	Oystercatcher	Upland marsh/ fen	No	LBAP	VU
Birds	*Vanellus vanellus [br]*	Lapwing	Upland marsh/ fen	No	LBAP	EN, Red
Birds	*Numenius arquata [br]*	Curlew	Upland marsh/ fen	Yes	LBAP	EN, Red
Birds	*Tringa totanus [n-br]*	Redshank	Wet grassland (and salt marsh)	No	LBAP	NT, BoCC Amber
Birds	*Poecile montanus [br]*	Willow Tit	Wet Woodland (Broadleaved)	Yes		EN, BoCC Red
Crustaceans	*Austropotamobius pallipes*	white-clawed crayfish	Rivers & streams	UK		EN
Fish	*Lampetra planeri*	Brook lamprey	Riverine Gravels & Silts	No	BHS; LBAP; LKS	LC
Fish	*Osmerus eperlanus*	European Smelt	Rivers & streams	Yes		LC, S41; UKBAP

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Fish	*Salmo salar*	Atlantic Salmon	Rivers & streams	Yes	LBAP; BHS	EN; S41; UKBAP
Fish	*Salmo trutta*	Brown trout	Rivers & streams	No	LBAP	VU
Fish	*Thymallus thymallus*	Grayling	Rivers & streams	No		LC
Fish	*Lampetra fluviatilis*	European river lamprey	Rivers & streams	No	BHS	S41; UKBAP
Fish	*Anguilla anguilla*	European Eel	Rivers & streams/ wetlands/ ponds and ditches	No	LBAP	CR; UKBAP; S41
Flies	*Lipsothrix nobilis*	Scarce Yellow Splinter (crane fly)	(Dead wood in) Rivers and streams	UK	LKS	EN
Flies	*Triogma trisulcata*	A crane fly	Bog / Upland streams	UK	BHS	R
Flies	*Ellipteroides alboscutellatus*	A crane fly	Calcareous Flushes (mostly in woodland)	UK		EN
Flies	*Helina intermedia*		Lowland marsh/ fen	UK		VU
Flies	*Anticheta brevipennis*	a marsh fly	Marginal vegetation	UK		VU
Flies	*Limnophila pictipennis*	A crane fly	marginal vegetation (Coastal marshes, gravel pit ponds and fens)	UK		VU
Flies	*Orimarga virgo*	A crane fly	maritime cliffs / streams (calcareous)	UK		R
Flies	*Arctoconopa melampodia*	A crane fly	Riverbanks	UK		VU
Flies	*Symplecta meigeni*	A crane fly	Riverbanks	UK		R
Flies	*Gonomyia abbreviata*	A crane fly	Rivers & streams	UK		R
Flies	*Molophilus lackschewitzianus*	A crane fly	Rivers & streams	UK		R
Flies	*Gonomyia abbreviata*	A crane fly	Streams	UK		NR
Flies	*Prionocera subserricornis*	A crane fly	wetland / soils	UK		VU
Flies	*Pteromicra pectorosa*		wetlands / coastal wetlands (various)	UK		VU
Hymenoptera	*Anoplius concinnus*	aculeate wasp	Riverine	No	SS	
Hymenoptera	*Crossocerus walkeri*	aculeate wasp	Rivers & Streams	No		NS
Hymenoptera	*Crossocerus styrius*	aculeate wasp	Wetland/Woodland	No	SS	
Invertebrate	*Rhabdiopteryx acuminata*	Stonefly	Rivers & streams	UK		VU
Lichens	*Lathagrium dichotomum*	A "river jelly" lichen	Riverine Gravels & Silts	UK		VU, NS
liverwort	*Riccia beyrichiana*	Purple Crystalwort	Rocky/Wetland	UK		LC, NS
liverwort	*Riccia huebeneriana*	Violet Crystalwort	Wetland	UK		LC, NS

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
liverwort	*Pallavicinia lyellii*	Ribbonwort	Wetland	UK		EN, NS
liverwort	*Cephaloziella rubella*	A liverwort	Woodland/Wetland	UK	BHS	NS
Mammal	*Arvicola amphibius*	European Water Vole	Rivers & Streams	UK	LBAP	EN
Mammal	*Pipistrellus Pipistrellus*	Common pipistrelle bat	Standing open water & canals	UK		LC
Mammal	*Pipistrellus pygmaeus*	Soprano pipistrelle	Standing open water & canals	UK	LBAP	LC, S41
Mammal	*Myotis daubentonii*	Daubenton's bat	Standing open water & canals	UK	LBAP, BHS	LC
Mammal	*Pipistrellus nathusii*	Nathusius' pipistrelle	Standing open water & canals	UK		NT
Mammal	*Lutra lutra*	Otter	Water courses	UK	LBAP	LC
Mollusc	*Margaritifera margaritifera*	Freshwater pearl mussel	Rivers and streams	UK		CR, NR
moss	*Kandaea elodes (Campylium elodes)*	a feather-moss	Calcareous Flushes	UK	BHS	NS
moss	*Drepanocladus turgescens*	a feather-moss	Calcareous Flushes	UK	BHS	CR, NR
moss	*Plagiomnium ellipticum*	Marsh Thyme-moss	Flsuhes/Wetland/Woodland	UK	BHS	LC, NR
moss	*Campylopus gracilis*	Schwarz's Swan-neck Moss	Flushes/(mires)	UK	BHS	LC, NS
moss	*Tortella densa*	Clint Crisp-moss	Flushes/(Rocky)	UK	BHS	LC, NS
moss	*Physcomitrium sphaericum*	Dwarf Bladder-moss	Flushes/Wetland/Soils	UK	BHS	LC, NR
moss	*Discelium nudum*	Flag-moss	River Banks	UK	BHS	LC, NS
moss	*Brachydontium trichodes*	Bristle-leaf	Riverine Sandstone	UK	BHS	LC, NS
moss	*Weissia rostellata*	Beaked Beardless-moss	Wetland/Soils	UK	BHS	LC, NS
odonata	*Erythromma najas*	Red-eyed Damselfly	Marginal Vegetation (Freshwater)	No	LR, BHS	LC
odonata	*Cordulegaster boltonii*	Golden-Ringed Dragonfly	Marginal Vegetation (Freshwater)	No	BHS	LC
odonata	*Orthetrum coerulescen*	Keeled skimmer	Marginal Vegetation (Freshwater)	No	BHS, LR	LC
odonata	*Aeshna isoceles (Anaciaeschna isoceles)*	Norfolk Hawker	Marginal Vegetation (Freshwater)	No		EN
Plants	*Carex divisa*	Divided Sedge	Brackish marshes	YES	LR	VU, NS

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Primula farinosa*	Bird's-eye Primrose	Calcareous Flushes	YES	LS; LBAP	VU/NT, NS
Plants	*Selaginella selaginoides*	Lesser Clubmoss	Calcareous Flushes	No	LR, LKS	
Plants	*Schoenus nigricans*	Black Bog-rush	Calcareous Flushes	No	LR; LBAP	LC
Plants	*Eriophorum latifolium*	Broad-leaved Cotton grass	Calcareous Flushes	No	LR; LBAP	LC
Plants	*Potamogeton berchtoldii*	Slender pondweed	Canals & Ponds	No	LS	LC
Plants	*Potamogeton friesii*	Flat-stalked Pondweed	Canals & Ponds	YES		NT, NS
Plants	*Potamogeton gramineus*	Various-leaved Pondweed	Canals & Ponds	No		NT
Plants	*Potamogeton lucens*	Shinning Pondweed	Canals & Ponds	No	LBAP	LC
Plants	*Potamogeton obtusifolius*	Blunt-leaved Pondweed	Canals & Ponds	No	LBAP	LC
Plants	*Potamogeton praelongus*	Long-stalked Pondweed	Canals & Ponds	No		NT
Plants	*Potamogeton pusillus*	Lesser Pondweed	Canals & Ponds	No	LBAP	LC
Plants	*Potamogeton trichoides*	Hairlike Pondweed	Canals & Ponds	No	LBAP	LC
Plants	*Potamogeton x lintonii*	Linton's Pondweed	Canals & Ponds	No	LBAP	
Plants	*Potamogeton x zizii*	A pondweed	Canals & Ponds	No	SS	
Plants	*Potamogeton crispus*	Curled Pondweed	Canals & Ponds	No	SS	LC
Plants	*Ranunculus Subgenus 2 - BATRACHIUM*	A water-crowfoot	Canals & Ponds	No	LKS	
Plants	*Ranunculus peltatus*	Peltate water-crowfoot	Canals & Ponds	No	LEP list, LBAP	LC
Plants	*Crocus nudiflorus*	Autumn Crocus	Damp Unimproved Grassland	No	LS	NT
Plants	*Colchicum autumnale*	Meadow Saffron	Damp Unimproved Grassland	No	LS	NT
Plants	*Trollius europaeus*	Globeflower	Damp Unimproved Grassland	No	LS	
Plants	*Blysmus compressus*	Flat-sedge	Damp Unimproved Grassland	No	LR; LBAP	VU
Plants	*Stellaria palustris*	Marsh Stitchwort	Damp Unimproved Grassland	No	LS: LBAP	VU
Plants	*Juncus compressus*	Round-fruited Rush	Damp Unimproved Grassland	No	LS, LEP list, LBAP	VU

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Persicaria minor*	Small Smartweed	Damp Unimproved Grassland	No	LEP list, LBAP	VU
Plants	*Gymnadenia borealis*	Heath Fragrant-Orchid	Damp Unimproved Grassland	No	LS: LBAP	LC
Plants	*Apium inundatum*	Lesser Marshwort	Ephemeral Ponds	No	LS	LC
Plants	*Wahlenbergia hederacea*	Ivy-leaved Bellflower	Flushed Grassland (Uplands)	No	LS	NT
Plants	*Pedicularis palustris*	Marsh Lousewort	Flushed Grassland (Uplands)	No	LR	VU
Plants	*Saxifraga hypnoides*	Mossy Saxifrage	Flushed Grassland (Uplands)	No	LR	VU
Plants	*Scutellaria minor*	Lesser Skullcap	Flushed Grassland (Uplands)	No	LR; LBAP	LC
Plants	*Rumex maritimus*	Golden Dock	Lowland marsh/ fen (& Reedbeds)	No	LS: LBAP	LC
Plants	*Cladium mariscus*	Great Fen-sedge	Lowland marsh/ fen (& Reedbeds)	No	LR; LBAP	LC
Plants	*Sparganium natans*	Least Bur-reed	Marginal Vegetation (Freshwater)	No	LR; LBAP	LC
Plants	*Calamagrostis stricta*	Narrow Small-reed	Mill Lodge	Yes	LR; LBAP	VU, NR
Plants	*Ranunculus circinatus*	Fan-leaved Water-crowfoot	Oxbow Lakes	No	LR; LBAP	LC
Plants	*Eleocharis austriaca*	Northern Spike-rush	Oxbow Lakes	No	LR; LBAP	LC
Plants	*Ranunculus trichophyllus*	Thread-leaved Water-crowfoot	Ponds & Ditches	No	LBAP	LC
Plants	*Gagea lutea*	Yellow Star-of-Bethlehem	Riverbanks	No	LR; LBAP	LC
Plants	*Ranunculus fluitans agg*	River Water-crowfoot	Rivers & streams	No	SS	
Plants	*Ranunculus penicillatus*	Stream Water-crowfoot	Rivers & streams	No		LC
Plants	*Alisma lanceolatum*	Alisma lanceolatum	Standing open water & canals	No	LR; LBAP	LC
Plants	*Luronium natans*	Floating water-plantain	Standing open water & canals	Yes	LEP list, LBAP	LC, NS
Plants	*Potamogeton alpinus*	Red Pondweed	Standing open water & canals	No	LS; LBAP	LC
Plants	*Potamogeton epihydrus*	Ribbon-leaved pondweed	Standing open water & canals	UK		NR

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Groenlandia densa*	Opposite-leaved Pondweed	Standing open water & canals	No	LR; LBAP	VU
Plants	*Oenanthe fistulosa*	Tubular Water Dropwort	Wet Meadows & Dune Slacks	No	LEP list	VU
Plants	*Alopecurus aequalis*	Orange Foxtail	Wetland/Soils	No	LR; LBAP	LC
Plants	*Juncus filiformis*	Thread Rush	Wetland/Soils	Yes	LR; LBAP	LC, NS
Plants	*Epipactis phyllanthes*	Green-flowered Helleborine	Wetland/Woodland	Yes	LR; LBAP	LC, NS
Plants	*Populus nigra subsp. betulifolia*	Black-poplar	Wetland/Woodland	No	LS: LBAP	LC
Plants	*Calamagrostis canescens*	Purple Small-reed	Wetland/Woodland	No	LR; LBAP	LC
Plants	*Salix myrsinifolia*	Dark-leaved Willow	Wetland/Woodland	No	LR; LBAP	LC
Plants	*Impatiens noli-tangere*	Touch-me-not Balsam	Wetland/Woodland	No	LS	LC, NS
Spider	*Caviphantes saxetorum*		Riverbanks	UK		NT
Coastal and Estuarine						
Birds	*Anas acuta [n-br]*	Pintail	Saltmarsh; estuarine	No	RSPB Shortlist	VU
Birds	*Calidris pugnax [br]*	Ruff	Saltmarsh and floodplain grazing marsh	No	BHS; LBAP; RSPB Shortlist	CR; BoCC4_red
Birds	*Charadrius hiaticula [br]*	Ringed Plover	Shingle and strandline	No	BHS; LBAP; RSPB Shortlist	NT
Birds	*Charadrius hiaticula [n-br]*	Ringed Plover	Shingle and strandline and Mudflats; intertidal	No	BHS; LBAP; RSPB Shortlist	VU; BoCC4_red
Birds	*Limosa [br]*	Black-tailed Godwit	Saltmarsh; estuarine	Yes	BHS; LBAP; RSPB Shortlist	EN; BoCC4_red
Birds	*Tringa totanus [br]*	Redshank	Saltmarsh and floodplain grazing marsh	Yes	RSPB Shortlist; LBAP	VU
Birds	*Tringa totanus [n-br]*	Redshank	Saltmarsh; wet grassland	No	RSPB Shortlist; LBAP	NT
Birds	*Vanellus [n-br]*	Lapwing	Mudflats	No	LBAP; RSPB Shortlist	VU; S41; UKBAP; BoCC4_Red
Bryophytes	*Tortella squarrosa (Pleurochaete squarrosa)*	Side-fruited Crisp-moss	Coastal Grassland & Dunes	UK	BHS	LC; NS

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Bryophytes	*Tortella inclinata*	Bent crisp-moss	Dune slacks	UK	BHS	LC; NS
Bryophytes	*Riccia beyrichiana*	Purple Crystalwort	Sand dunes	UK	BHS	LC; NS
Fish	*Osmerus eperlanus*	European Smelt	Rivers & streams	Yes		LC; S41; UKBAP
Fish	*Salmo salar*	Atlantic Salmon	Rivers & streams	Yes	LBAP; BHS	EN; S41; UKBAP
Fish	*Dicentrarchus labrax*	European Sea Bass	Coastal waters; estuaries	No		LC
Fish	*Gadus morhua*	Cod	Coastal waters; estuaries	No		UKBAP; S41
Fish	*Lampetra fluviatilis*	European river lamprey	Coastal waters; estuaries	No	BHS	UKBAP; S41
Fish	*Pleuronectes platessa*	Plaice	Coastal waters; estuaries	Yes		UKBAP; S41
Fish	*Anguilla*	European Eel	Estuarine	No		CR; UKBAP; S41
Fish	*Ammodytes marinus*	Lesser Sand eel	Coastal waters; estuaries	No		UKBAP; S41
Fish	*Clupea herengus*	Herring	Coastal waters; estuaries	No		UKBAP; S41
Fish	*Merlangius merlangus*	Whiting	Coastal waters; estuaries	No		UKBAP; S41
Fish	*Solea*	Sole	Coastal waters; estuaries	Yes		UKBAP; S41
Flies	*Helina intermedia*		Sand dunes / Lowland marsh/ fen	UK		VU
Invertebrate	*Baryphyma maritimum*	a spider	Sand dunes	UK		NT; NR
Invertebrate	*Rhysodromus fallax*	Sand running spider	Sand dunes	UK		VU; NR; UKBAP; S41
Invertebrate	*Mecopisthes peusi*	Peus's Long-back Spider	Dune slacks	UK	BHS; LBAP	LC; S41; UKBAP
Invertebrate	*Styloctetor romanus*	a spider	sand dunes	UK		LC; NR
Invertebrate	*Arachnospila wesmaeli*	wasp	Bare sand and chalk	No		RDB3; NS (Nb)
Invertebrate	*Lasius fulginosus*	jet ant	Shirdley Sands	No	SS	NE
Invertebrate	*Monochroa tetragonella*	saltern neb moth	saltmarsh & transitional brackish marsh	Yes		NS; Insufficiently known
Invertebrate	*Anacampsis temerella*	Black sober moth	Coastal Grassland & Dunes	Yes	LBAP	NR; Na
Invertebrate	*Scythris picaepennis*	white-dusted owlet	Coastal Grassland & Dunes	No		NS
Invertebrate	*Megachile circumcincta*	Black-headed leafcutter bee	Shirdley Sands	No	SS	NS
Invertebrate	*Colletes cunicularius (celticus)*	Vernal Mining bee	Coastal Grassland & Dunes	Yes		R; RDB3
Invertebrate	*Hipparchia semele*	Grayling	Sand dunes / limestone pavement	No	BHS; LBAP	EN; S41; UKBAP
Invertebrate	*Mioxena blanda*	spider	Numerous	UK		DD; NR
Invertebrate	*Podalonia affinis*	aculeate wasp	Shirdley Sands	Yes		R; RDB3

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Invertebrate	*Colletes marginatus*	margined colletes bee	Shirdley Sands	Yes		NS
Invertebrate	*Agrotis ripae*	Sand Dart moth	Dunes & saltmarsh	No	BHS; LBAP	NS
Invertebrate	*Luperina nickerlii*	Sandhill Rustic moth	Dunes & saltmarsh	Yes	LBAP	EN; RDB; S41
Invertebrate	*Lycia zonaria*	Belted beauty	saltmarsh & transitional brackish marsh+	Yes	BHS; LBAP	R; NS; S41
Invertebrate	*Apamea oblonga*	Crescent Striped moth	saltmarsh & transitional brackish marsh+	No	LBAP	NS
Invertebrate	*Mythimna pudorina*	Shore Wainscot moth	Sand-dune	No	LBAP	NS
Invertebrate	*Sideris turbida*	White Colon moth	Sand-dune	No	BHS; LBAP	NS
Invertebrate	*Philanthus triangulum*	"Beewolf" (aculeate wasp)	Shirdley Sands	No		VU; RDB2
Mammal	*Lutra lutra*	Otter [Br]	Water courses	UK	BHS; LBAP	LC; S41; UKBAP
Plant	*Thinopyrum junceiforme*	wheatgrass	sand dunes	No	Sandhill rustic larvae feed on it	
Plant	*Batis maritima*	saltwort	sand dunes	UK	food plant for sand dart moth	
Plant	*Cakile maritima*	sea rocket	sand dunes	No	food plant for sand dart moth	LC
Plant	*Ammophila arenaria*	marram grass	sand dunes	No	food plant for Shore Wainscot moth	LC
Plant	*poa bulbosa*	bulbous meadow grass	saltmarsh	No	food plant for Crescent Striped moth	LC; NS
Plant	*Glaux maritima*	sea milkwort	saltmarsh	No	food plant for the saltern neb moth	LC
Plant	*Salix repens*	creeping willow	sand dunes	No	for plant for lavae of Black sober moth (umbrella species) and vital pollen source for Vernal Mining bee (flagship/potential gold ticket species)	NT
Plant	*Gentianella campestris*	Field Gentian	Coastal Grassland & Dunes	No	LR; BHS; LBAP	VU; S41; UKBAP

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plant	*Potentilla argentea*	Hoary Cinquefoil	Coastal Grassland	No	LR; BHS; LBAP	NT
Plant	*Oenanthe fistulosa*	Tubular Water Dropwort	Wet Meadows & Dune Slacks	No	LEP list; LBAP; BHS	LC; UKBAP; S41
Plant	*Rumex maritimus*	Golden Dock	Lowland marsh/ fen (& Reedbeds)	No	LS; BHS; LBAP	LC
Plant	*Baldellia ranunculoides*	Lesser Water-plantain	Dune slacks	No	LR; BHS; LBAP	NT
Plant	*Carex elata*	Tufted-sedge	Dune slacks	No	LR; BHS; LBAP	LC
Plant	*Equisetum variegatum*	Varigated horsetail	Dune slacks	Yes	LR; BHS; LBAP	LC; NS
Plant	*Hypopitys monotropa*	Yellow Bird's-nest	Dune slacks	No	LR; BHS; LBAP	EN; S41; UKBAP
Plant	*Juncus balticus*	Baltic Rush	Dune slacks	Yes	LR	LC; NS
Plant	*Juncus balticus x J. inflexus*	a hybrid rush	Dune slacks	Yes	LR; BHS; LBAP	
Plant	*Cladium mariscus*	Great Fen-sedge	Lowland marsh/ fen (& Reedbeds)	No	LR; BHS; LBAP	LC
Plant	*Euphorbia portlandica*	Portland Spurge	Dune slacks / sand dunes	No	LS; BHS; LBAP	LC
Plant	*Mibora minima*	Early Sand-grass	Dune slacks / sand dunes	No	LR; LBAP	NT; NR
Plant	*Catabrosa aquatica*	Whorl-grass	dune slacks; coastal ditches; canals	No	LS; BHS; LBAP	VU
Plant	*Asplenium marinum*	Sea Spleenwort	Maritime cliffs	No	LR; BHS; LBAP	LC
Plant	*Cochlearia officinalis*	Common Scurvy Grass	Maritime cliffs	No	LR	LC
Plant	*Parnassia palustris*	Grass-of-Parnassus	Dune slacks / upland flush	No	LEP list; LBAP; BHS	LC
Plant	*Festuca filiformis*	Fine-leaved Sheep's-fescue	Dunes and dry heaths	No	LR; BHS; LBAP	LC
Plant	*Hordeum secalinum*	Meadow Barley	Saltmarsh	No	LS; LBAP; BHS	LC
Plant	*Limonium humile*	Lax-flowered sea-lavender	Saltmarsh	Yes	LBAP; BHS	LC; NS
Plant	*Centaurium littorale*	Seaside centaury	Sand dunes	Yes	LBAP; BHS	LC; NS
Plant	*Epipactis dunensis*	Dune helleborine	Sand dunes	Yes	LR; LBAP; BHS	DD; NR
Plant	*Festuca arenaria*	Rush-leaved fescue	Sand dunes / Open sandy shingle	No	LR	
Plant	*Anthriscus caucalis*	Bur Chervil	Sandy or gravelly soils	No	LR; LBAP	LC
Plant	*Carex divisa*	Divided Sedge	Brackish marshes	Yes	LR	VU; NS; S41; UKBAP
Plant	*Lotus corniculatus*	common birds-foot trefoil	Coastal grassland / grassland (limestone)	No	food plant for white-dusted owlet moth	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plant	*Thymus drucei*	wild thyme	Coastal grassland	No	food plant for white-dusted owlet moth	LC
Reptile	*Vipera berus*	Adder - flagship for 'reptile assemblage'	Coastal and upland heath	No	LBAP	NT; UKBAP; S41
Reptile	*Lacerta agilis*	Sand Lizard	Sand dunes / lowland heath	No		EN; S41; UKBAP
Flies	*Helina parcepilosa*		sand dunes	UK		VU
Flies	*Macronychia griseola*	a flesh fly	sand dunes / lowland heath	UK		R
Flies	*Pteromicra pectorosa*	a snail-killing fly	wetlands / coastal wetlands (various)	UK		VU
Flies	*Meigenia majuscula*		coastal grassland / bare sand and chalk	UK		VU
Flies	*Nephrotoma quadristriata*		Dune slacks / sand dunes	UK		VU
Flies	*Limnophila pictipennis*	a tiger crane fly	Coastal marshes	UK		VU
Flies	*Orimarga virgo*	a limoniid crane fly	maritime cliffs / streams (calcareous)	UK		R
Flies	*Sphaerophoria loewi*	a hoverfly	saltmarsh & transitional brackish marsh	UK	BHS	NT
Flies	*Nephrotoma quadristriata*	a tiger crane fly	Dune slacks / sand dunes	UK		VU
Peatlands						
Birds	*Asio flammeus [br]*	Short-eared Owl	Moorland	No	RSPB Shortlist	EN
Birds	*Circus cyaneus [br]*	Hen Harrier	Moorland	Yes	RSPB Shortlist	EN; S41; BoCC4_Red
Birds	*Turdus torquatus [br]*	Ring Ouzel	Moorland	No	RSPB Shortlist	NT; S41; UKBAP; BoCC4_Red
Birds	*Saxicola rubetra [br]*	Whinchat	Moorland	No	LBAP; RSPB Shortlist	NT; BoCC4_Red
Birds	*Falco columbarius [br]*	Merlin	Moorland	No	LBAP; BHS Species; RSPB Shortlist	EN; BoCC4_Red
Birds	*Calidris alpina [br]*	Dunlin	Moorland & Blanket Bog	No	BHS Species, LBAP, RSPB Shortlist	VU, BoCC4_Red
Birds	*Lyrurus tetrix [br]*	Black Grouse	Moorland & Woodland Edge	No	RSPB Shortlist	VU; BoCC4_Red
Birds	*Gallinago gallinago [n-br]*	Snipe	Upland and lowland marsh/ fen	No	LBAP; RSPB Shortlist	VU
Birds	*Gallinago gallinago [br]*	Snipe	Upland and lowland marsh/ fen	No	LBAP; RSPB Shortlist	LC; Amber

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Birds	*Haematopus ostralegus [br]*	Oystercatcher	Upland marsh/ fen	No	LBAP; RSPB Shortlist	VU; Amber
Birds	*Vanellus vanellus [br]*	Lapwing	Upland marsh/ fen	No	LBAP; RSPB Shortlist	VU; S41; UKBAP; BoCC4_Red
Birds	*Numenius arquata [br]*	Curlew	Upland marsh/ fen	Yes	LBAP; RSPB Shortlist	EN; S41; UKBAP; BoCC4_Red
Bryophytes	*Bryum tenuisetum*	Yellow-tuber Thread-moss	Humid Soils (Acidic)	UK	BHS	LC, NS
Bryophytes	*Sphagnum pulchrum*	a sphagnum moss	Peat bog	UK	BHS	NS
Bryophytes	*Pallavicinia lyellii*	Ribbonwort	Peat bog	UK	BHS	EN, NS, S41
Bryophytes	*Cephaloziella rubella*	Red Threadwort	Peat bog	UK	BHS	NS
Bryophytes	*Campylopus gracilis*	Schwarz's Swan-neck Moss	Mires	UK	BHS	NS
Butterfly	*Euphydryas aurinia*	Marsh fritillary	Purple moor-grass & rush pasture	No	LBAP	VU; UKBAP; S41
Butterfly	*Coenonympha tullia*	Large heath	Heathland	No	LBAP; BHS Species	EN; UKBAP; S41
Flies	*Myopa polystigma*	a thick-headed fly	Dry grassland / Heathland	UK		R
Flies	*Triogma trisulcata*	a type of crane fly	Bog / Upland streams	UK	BHS	R
Flies	*Macronychia griseola*	a flesh fly	Lowland heath	UK		R
Flies	*Paragus tibialis*	a type of hover fly	heathland	UK		NT
Flies	*Tipula grisescens*	a type of crane fly	Peat bog	UK	BHS	R
Flies	*Empis prodromus*	a 'dance' fly	lowland heath	UK	BHS	NT
Flies	*Dicranomyia aperta*	a type of crane fly	Bog	UK		EN
Flies	*Idioptera linnei*	a type of crane fly	Bog	UK		EN
Flies	*Prionocera pubescens*	a type of crane fly	Bog	UK		VU
Hymenoptera	*Bombus monticola*	Bilberry Bumblebee	Heathland	Yes	SS	NE; localised and declining
Hymenoptera	*Bombus soroeensis*	Broken-banded Bumblebee	Moorland	No	SS	NE
Hymenoptera	*Myrmica lobicornis*	ant	Upland moorland / Lowland heath	No	SS	NE
Hymenoptera	*Myrmica sulcinodis*	ant	Heath / Bog	No	SS	NE
Hymenoptera	*Andrena ruficrus*	Northern Sallow Mining Bee	Structural Diversity (Upland)	Yes	SS	R (RDB3)
Invertebrate	*Agyneta gulosa*	Sheet weaver spider	Scrub-heath & moorland	UK		LC; NS
Invertebrate	*Rugathodes bellicosus*	A spider	Scrub-heath & moorland	UK		LC; NR
Invertebrate	*Scotinotylus evansi*	A spider	Scrub-heath & moorland	UK		LC; NS

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Lichens	*Cladonia rangiferina*	Reindeer lichen	Heathland	UK		HabDirA5
Lichens	*Cladonia portentosa*	A lichen	Scrub-heath & moorland	UK		HabDirA5
Lichens	*Cladonia arbuscula subsp. squarrosa*	A lichen	Structural Diversity (Upland)	UK		HabDirA5
Mammals	*Arvicola amphibius*	European Water Vole	Wet moorland / Flushes	UK	LBAP; BHS Species	EN; UKBAP; S41
Mammals	*Mustela putorrius*	Polecat	Various	UK	LBAP; BHS Species	LC; UKBAP; S41
Odonata	*Cordulegaster boltonii*	Golden-Ringed Dragonfly	Bog pools and wet margins	No	BHS Species	LC
Odonata	*Orthetrum coerulescens*	Keeled skimmer	Bog pools and wet margins	No	BHS Species	LC
Plants	*Carex lasiocarpa*	Slender Sedge	Bogs	No	LR, LBAP, BHS Species	LC
Plants	*Eriophorum vaginatum*	Hares-tail cotton grass	Bogs	No	larval foodplant for Priority species Large heath	LC
Plants	*Drosera anglica*	Great sundew	Bogs	No	LR	NT
Plants	*Drosera intermedia*	oblong-leaved sundew	Bogs	No	LR	VU
Plants	*Myrica gale*	bog myrtle	Bogs	No	LS, LBAP, BHS Species	LC
Plants	*Genista anglica*	Petty whin	Scrub-heath & Moorland	No	LR; LBAP; BHS Species	NT
Plants	*Wahlenbergia hederacea*	Ivy-leaved Bellflower	Flushed Grassland (Uplands)	No	LS; LBAP; BHS Species	NT
Plants	*Pedicularis palustris*	Marsh Lousewort	Flushed Grassland (Uplands)	No	LR; LBAP; BHS Species	VU
Plants	*Saxifraga hypnoides*	Mossy Saxifrage	Flushed Grassland (Uplands)	No	LR; LBAP; BHS Species	VU
Plants	*Scutellaria minor*	Lesser Skullcap	Flushed Grassland (Uplands)	No	LR; LBAP; BHS Species	LC
Plants	*Festuca filiformis*	Fine-leaved Sheep's-fescue	Heathland	No	LR; LBAP; BHS Species	LC
Plants	*Rhynchospora alba*	White Beak-sedge	Lowland bog	No	LR, LBAP, BHS Species	LC
Plants	*Rumex maritimus*	Golden Dock	Lowland marsh/ fen (& Reedbeds)	No	LS; LBAP; BHS Species	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Cladium mariscus*	Great Fen-sedge	Lowland marsh/ fen (& Reedbeds)	No	LR; LBAP; BHS Species	LC
Plants	*Rhododendron groenlandicum*	Bog Labrador Tea	Moorland	No	LEP list	
Plants	*Eleocharis multicaulis*	Many-stalked Spike-rush	Moorland Bogs	No	LR, LBAP, BHS Species	LC (EX)
Plants	*Filago minima*	Small Cudweed	Open sandy ground; heath; waste ground	No	LR; LBAP; BHS Species	LC
Plants	*Pinguicula vulgaris*	Common butterwort	Peatland flushes; dripping wet tuffa	No	LEP list	
Plants	*Succisa pratensis*	devil's-bit scabious	purple moor-grass & rush pasture	No	Key food plant for marsh fritillary	NT
Plants	*Draba incana*	Hoary Whitlowgrass	Structural Diversity (Upland)	No	LR; LBAP; BHS Species	LC
Plants	*Diphasiastrum alpinum*	Alpine Clubmoss	Structural Diversity (Upland)	No	LR; LBAP	LC
Plants	*Dryopteris aemula*	Hay-scented Buckler-fern	Structural Diversity (Upland)	No	LR; LBAP	LC
Plants	*Rubus chamaemorus*	Cloudberry	Upland	No	LS; LBAP; BHS Species	LC
Plants	*Huperzia selago*	Fir Clubmoss	Upland - Rocks and bare ground	No	LS; LBAP; BHS Species	LC
Plants	*Parnassia palustris*	Grass-of-Parnassus	Upland flush	No	LEP list; LBAP; BHS Species	LC
Plants	*Geranium sylvaticum*	Wood Crane's-bill	Upland Grassland	No	LS	NT
Plants	*Eriophorum latifolium*	Broad-leaved Cottongrass	Upland flush	Yes	LR; LBAP	LC
Plants	*Cornus suecica*	Dwarf cornel	Peatland/heathland	UK	LR	NT
Reptile	*Vipera berus*	Adder - flagship for 'reptile assemblage'	Coastal and upland heath	No	LBAP	NT; UKBAP; S41
Reptile	*Lacerta agilis*	Sand Lizard	Sand dunes / lowland heath	No		EN; S41; UKBAP
Rocky						
Birds	*Falco peregrinus [br]*	Peregrine	Crags & quarries	No	RSPB Shortlist; LBAP; BHS species	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Bryophytes	*Riccia beyrichiana*	Purple Crystalwort	Various - rocky/wetland	UK	BHS	LC; NS
Bryophytes	*Tortella inclinata*	Bent Crisp-moss	Damp Limestone and Calcareous Rocks	UK	BHS	LC; NS
Bryophytes	*Bryum elegans*	Blushing Bryum	Exposed Limestone and Calcareous Rocks	UK	BHS	LC; NS
Bryophytes	*Grimmia orbicularis*	Round-fruited Grimmia	Exposed Limestone and Calcareous Rocks	UK	BHS	LC; NS
Bryophytes	*Tortella squarrosa (Pleurochaete squarrosa)*	Side-fruited Crisp-moss	Exposed Limestone and Calcareous Rocks	UK	BHS	LC; NS
Bryophytes	*Schistidium robustum*	Robust Grimmia	Exposed Limestone and Calcareous Rocks	UK	BHS	LC; NS
Bryophytes	*Tortella densa*	Clint Crisp-moss	Structural Diversity (Limestone Habitat Mosaic)	UK	BHS	LC; NS
Butterfly	*Hipparchia semele*	Grayling	Limestone pavement / Sandy soils	No	LBAP	EN
Flies	*Ectinocera borealis*		Limestone pavement	UK		R
Flies	*Tipula alpina*	A crane fly	Rocky Woodland (Limestone)	UK	BHS	R
Fungi	*Alyxoria mougeotii*		Structural Diversity (Limestone Habitat Mosaic)	UK		LC; NS
Lichens	*Arthonia arthonioides*		Exposed Rock (Acidic)	UK		LC; NS
Lichens	*Bryobilimbia ahlesii*		Exposed Rock (Acidic)	UK		LC
Lichens	*Caloplaca britannica*		Exposed Rock (Acidic)	UK		LC; NS
Lichens	*Dermatocarpon rivulorum*		Exposed Rock (Acidic)	UK		DD; NR
Lichens	*Fuscidea austera*		Exposed Rock (Acidic)	UK		NT; NS
Lichens	*Lecania aipospila*		Exposed Rock (Acidic)	UK		LC; NS
Lichens	*Lecidea promixta*		Exposed Rock (Acidic)	UK		DD; NR
Lichens	*Rhizocarpon subgeminatum*		Exposed Rock (Acidic)	UK		LC; NS
Lichens	*Rinodina orculariopsis*		Exposed Rock (Acidic)	UK		LC; NS
Lichens	*Umbilicaria deusta*		Exposed Rock (Acidic)	UK		LC; NS
Lichens	*Clauzadea metzleri*		Structural Diversity (Limestone Habitat Mosaic)	UK		LC; NS
Lichens	*Hymenelia epulotica*		Structural Diversity (Limestone Habitat Mosaic)	UK		LC; NS
Lichens	*Lempholemma cladodes*		Structural Diversity (Limestone Habitat Mosaic)	UK		NT; NR

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Lichens	*Myriolecis agardhiana*		Structural Diversity (Limestone Habitat Mosaic)	UK		DD; NS
Lichens	*Opegrapha dolomitica*		Structural Diversity (Limestone Habitat Mosaic)	UK		LC; NS
Lichens	*Placynthium subradiatum*		Structural Diversity (Limestone Habitat Mosaic)	UK		LC; NS
Lichens	*Poeltinula cerebrina*		Structural Diversity (Limestone Habitat Mosaic)	UK		VU; NR
Lichens	*Polyblastia cupularis*		Structural Diversity (Limestone Habitat Mosaic)	UK		LC; NS
Lichens	*Pseudoleptogium diffractum*		Structural Diversity (Limestone Habitat Mosaic)	UK		NT; NS
Lichens	*Rinodina bischoffii*		Structural Diversity (Limestone Habitat Mosaic)	UK		LC; NS
Lichens	*Sclerococcum griseisporodochium*		Structural Diversity (Limestone Habitat Mosaic)	UK		NT; NR
Lichens	*Scytinium fragile*		Structural Diversity (Limestone Habitat Mosaic)	UK		VU; NS
Lichens	*Scytinium massiliense*		Structural Diversity (Limestone Habitat Mosaic)	UK		NT; NR
Lichens	*Scytinium subtorulosum*		Structural Diversity (Limestone Habitat Mosaic)	UK		NT; NR
Lichens	*Synalissa ramulosa*		Structural Diversity (Limestone Habitat Mosaic)	UK		VU; NR
Lichens	*Thalloidima sedifolium*		Structural Diversity (Limestone Habitat Mosaic)	UK		LC; NS
Macro-moth	*Trichopteryx polycommata*	Barred Tooth-striped	Structural Diversity (Limestone Habitat Mosaic)	Yes	LBAP	UKBAP
Macro-moth	*Thera cognata*	Chestnut-coloured Carpet	Structural Diversity (Limestone Habitat Mosaic)	No		NS
Macro-moth	*Photedes captiuncula*	Least Minor	Structural Diversity (Limestone Habitat Mosaic)	Yes	LBAP	RDB; red list GB rare
Macro-moth	*Adscita geryon*	Cistus Forester	Structural Diversity (Limestone Habitat Mosaic)	No	LBAP	NS
Micro-moth	*Elachista adscitella*	a moth	Structural Diversity (Limestone Habitat Mosaic)	No		NS

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Micro-moth	*Anania funebris*	White-spotted Sable	Structural Diversity (Limestone Habitat Mosaic)	Yes	LBAP	NS; S41
Micro-moth	*Scythris fallacella*	a moth	Structural Diversity (Limestone Habitat Mosaic)	Yes	SS	proposed RDB1
Mollusc	*Vertigo angustior*	Narrow-mouthed whorl snail	Limestone pavement	UK		NT
Plant	*Trichomanes speciosum*	Killarney Fern	Wooded rocks	Yes	LR; LBAP	LC; NR
Plant	*Cardamine impatiens*	Narrow-leaved Bitter-cress	Structural Diversity (Limestone Habitat Mosaic)	Yes	LR; LBAP	NT; NS
Plant	*Rubus saxatilis*	Stone Bramble	Structural Diversity (Limestone Habitat Mosaic)	No	LS; LBAP	LC
Plant	*Euphorbia exigua*	Dwarf Spurge	Structural Diversity (Limestone Habitat Mosaic)	No	LBAP	VU
Plant	*Geranium sanguineum*	Bloody Crane's-bill	Exposed Limestone and Calcareous Rocks	No	LR	LC
Plant	*Melica nutans*	Mountain Melick	Structural Diversity (Limestone Habitat Mosaic)	No	LR; LBAP	LC
Plant	*Convallaria majalis*	Lily-of-the-valley	Limestone pavement & scree	No	LR; LBAP	LC
Plant	*Potentilla neumanniana*	Spring Cinquefoil	Limestone pavement & wooded limestone	No	LS; LBAP	LC
Plant	*Polygonatum odoratum*	Angular Solomon's-seal	Limestone pavement & wooded limestone	Yes	LR; LBAP	LC; NS
Plant	*Cryptogramma crispa*	Parsley Fern	Exposed rock	No	LR; LBAP	LC
Plant	*Asplenium viride*	Green Spleenwort	Exposed rock (basic)	No	LR; LBAP	LC
Plant	*Carex digitata*	Fingered Sedge	Limestone pavement & wooded limestone	Yes	LR; LBAP	LC; NS
Plant	*Spergularia rubra*	Sand Spurrey	Open Mosaic on Previously Developed Land; quarries	No	LS	LC
Plant	*Filago vulgaris*	Common Cudweed	Scrub-heath & moorland / Exposed Rock	No	LS	NT
Plant	*Galium boreale*	Northern Bedstraw	Limestone pavement	No	LR; LBAP	LC
Plant	*Gymnocarpium robertianum*	Limestone Fern	Limestone pavement & scree	No	LR; LBAP	LC
Plant	*Polypodium cambricum*	Limestone Polypodium	Structural Diversity (Limestone Habitat Mosaic)	No	LR	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plant	*Sorbus rupicola*	Rock whitebeam	Structural Diversity (Limestone Habitat Mosaic)	Yes	LS; LBAP	LC; NS
Plant	*Sorbus lancastriensis*	Lancastrian whitebeam	Structural Diversity (Limestone Habitat Mosaic)	Yes		Endemic
Plant	*Filago minima*	Small Cudweed	Scrub-heath & moorland / Exposed Rock	No	LR	LC
Plant	*Lycopodium clavatum*	Side-fruited Crisp-moss	Scrub-heath & moorland / Exposed Rock	No	LS	LC
Plant	*Erophila glabrescens*	Glabrous Whitlowgrass	Limestone pavement / Sandy soils	No	LS	LC
Plant	*Draba incana*	Hoary Whitlowgrass	Scrub-heath & moorland / Exposed Rock	No	LR; LBAP	LC
Plant	*Diphasiastrum alpinum*	Alpine Clubmoss	Scrub-heath & moorland / Exposed Rock	No	LR	LC
Plant	*Actaea spicata*	Baneberry	Limestone pavement & wooded limestone	Yes	LR; LBAP	LC; NS
Plant	*Carex ericetorum*	Rare Spring-sedge	Limestone rocks	Yes	LR S41	VU; NS
Plant	*Cypripedium calceolus*	Lady's-slipper orchid.	Limestone pavement & wooded limestone	Yes	LR S41	CR; NR
Plant	*Daphne mezereum*	Mezereon	Structural Diversity (Limestone Habitat Mosaic)	Yes	LR	VU; NS
Plant	*Draba muralis*	Wall Whitlowgrass	Structural Diversity (Limestone Habitat Mosaic)	Yes	LR	LC; NS
Plant	*Epipactis atrorubens*	Dark-red Helleborine	Structural Diversity (Limestone Habitat Mosaic)	Yes	LR; LBAP	LC; NS
Plant	*Juniperus communis*	Juniper	Structural Diversity (Limestone Habitat Mosaic)	No	LEP list	LC
Plant	*Asplenium trichomanes ssp.trichomanes*	a maidenhair spleenwort	Exposed rock	No	LR; LBAP	LC
Plant	*Huperzia selago*	Fir clubmoss	Scrub-heath & moorland/ Exposed Rock	No	LS; LBAP	LC
Plant	*Dryopteris aemula*	Hay-scented Buckler-fern	Scrub-heath & moorland / Exposed Rock	No	LR; LBAP	LC
Plant	*Hymenophyllum tunbrigense*	Tunbridge Filmy Fern	Wet rocks	No	LR; LBAP	LC
Plant	*Tilia cordata*	Small-leaved Lime	Wooded rocks	No	LS	

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plant	*Hymenophyllum wilsonii*	Wilson's Filmy-fern	Wet rocks	No	LR; LBAP	NT
Plant	*Monotropa hypopitys*	yellow bird's-nest	Wooded rocks	?	LEP list; LBAP	EN
Plant	*Sesleria caerulea*	Blue moor-grass	Structural Diversity (Limestone Habitat Mosaic)	Yes	LBAP; key food plant for stand-alone species Least minor moth.	LC; NS
Plant	*Falco peregrinus [br]*	Peregrine	Exposed rock - crags and quarries	UK	LBAP	LC
Spider	*Porrhomma Egeria*		Caves & mines	UK	LBAP	LC
Wooded Habitats and Trees						
Birds	*Coccothraustes coccothraustes [br]*	Hawfinch	Ancient broadleaf and/or established 'old' mature semi natural woodlands; Traditional Orchards;	No	BHS; LBAP	EN; S41
Birds	*Lyrurus tetrix [br]*	Black Grouse	Moorland & Woodland Edge	No	BHS; LBAP	VU
Birds	*Chloris chloris [br]*	Greenfinch	Scrub	No		EN
Birds	*Poecile montanus [br]*	Willow Tit	Wet Woodland (Broadleaved)	Yes	BHS; LBAP	EN
Birds	*Accipiter gentilis [br]*	Goshawk	Ancient & Native Woodland	No	BHS; LBAP	NT
Birds	*Ficedula hypoleuca [br]*	Pied Flycatcher	Ancient & Native Woodland	No		NT
Birds	*Caprimulgus europaeus*	Nightjar	Conifer woodland	UK	BHS; LBAP	UKBAP; S41
Bryophytes	*Plagiomnium ellipticum*	Marsh Tyme-moss	Wetland/Woodland	UK	LKS	NR
Bryophytes	*Rhytidiadelphus subpinnatus*	Scarce turf-moss	Humid Woodland	UK	BHS	NR; UKBAP; S41
Bryophytes	*Cololejeunea rossettiana*	Rossetti's Pouncewort	Humid Woodland	UK	BHS	NS
Bryophytes	*Cephaloziella rubella*	red threadwort	Woodland/Wetland	UK	BHS	NS
Bryophytes	*Pylaisia polyantha*	Many-flowered Leskea moss	Woodland/Hedgerows (on trees)	UK	BHS	NS
Bryophytes	*Ulota calvescens*	Balding Pincushion moss	Broadleaf Woodland (on trees)	UK	BHS	NS
Bryophytes	*Serpoleskea confervoides (Platydictya confervoides)*	Moss sp	Humid Woodland	UK	BHS	LC
Butterflies	*Fabriciana adippe*	High brown frittilary	Coppice woodland	Yes		CR; UKBAP; S41

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Butterflies	*Speyeria aglaja*	Dark Green Fritillary	Woodland rides (coastal)	No	SS	LC (The Butterfly Red List for Great Britain; 2010)
Butterflies	*Boloria euphrosyne*	Pearl-bordered Fritillary	Coppice woodland	Yes	LBAP; BHS species	EN; UKBAP; S41
Butterflies	*Boloria selene*	Small Pearl-bordered Fritillary	Coppice woodland	No	LBAP; BHS species	VU; UKBAP; S41
Butterflies	*Thecla betulae*	Brown Hairstreak	Hedgerow (Blackthorn)	No		VU; UKBAP; S41
Butterflies	*Hamearis lucina*	Duke of Burgundy	Coppice woodland	Yes	LBAP; BHS species	VU; UKBAP; S41
Butterflies	*Satyrium w-album*	White-letter Hairstreak	Structural Diversity (Open Woodland)	No	LBAP; BHS species	VU; UKBAP; S41
Crustacean	*Armadillidium pictum*	Painted pill woodlouse	Woodland (Limestone)	UK	BHS	LC
Flies	*Scleroprocta pentagonalis*	a type of crane fly	wet woodland	UK		R
Flies	*Chrysopilus laetus*	Tree snipe fly	wood pasture / decaying wood	UK		NT
Flies	*Zabrachia tenella*	Pine black fly	conifer woodland / dead wood	UK		EN
Flies	*Urophora solstitialis*	Nodding Thistle Gall Fly	Structural Diversity (Grassland/Woodland)	UK		R
Flies	*Tanyptera nigricornis*	Lesser Sabre Comb-Horn	Dead wood / Woodland (Broadleaved)	UK		R
Flies	*Tipula alpina*	a type of crane fly	Rocky Woodland (Limestone)	UK	BHS	R
Flies	*Ellipteroides alboscutellatus*	a type of crane fly	woodland calcareous (tufa flushes)	UK		EN
Flies						
Flies	*Parallelomma paridis*	a dung fly	damp woodland	UK		VU
Flies	*Tipula hortorum*	a type of crane fly	Woodland (Broadleaved)	UK	BHS	R
Fungi	*Pholiota mixta*	a scalycap fungi	Ancient & Native Woodland	UK		FCT Endangered
Fungi	*Tricholoma viridilutescens*	a 'knight' fungi	Ancient & Native Woodland	UK		FCT Endangered
Fungi	*Volvariella surrecta*	Piggyback rosegill	Ancient & Native Woodland	UK		FCT Vulnerable
Fungi	*Cantharellus friesii*	Orange chanterelle	Broadleaf Woodland (Beech)	UK		UKBAP; S41
Fungi	*Clitocybe subspadicea*	a funnel fungi	Broadleaf Woodland (Beech)	UK		FCT Vulnerable
Fungi	*Phellodon Confluens*	Fused tooth fungi	Woodland	UK	BHS	UKBAP; S41

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Fungi	*Phellodon melaleucus*	Grey tooth fungi	Broadleaf Woodland (Oak)	UK	BHS	UKBAP; S41
Fungi	*Rubinoboletus rubinus*	Crimson bolete	Broadleaf Woodland (Oak)	UK		VU
Fungi	*Russula cicatricata*	a brittlegill fungi	Broadleaf Woodland (Oak)	UK		FCT Vulnerable
Fungi	*Tricholoma inocybeoides*	a 'knight' fungi	Broadleaf Woodland (Oak)	UK		NE
Fungi	*Russula persicina*	a brittlegill fungi	Broadleaf Woodland (Willow)	UK		NE
Fungi	*Cortinarius violaceus*	Violet webcap	Woodland (Calcareous)	UK		Ing - Endangered; Evans - NT
Fungi	*Echinoderma echinaceum*	a common gilled fungi	Woodland (Calcareous)	UK		FCT Vulnerable
Fungi	*Ramaria broomei*	Blackening coral	Woodland (Calcareous)	UK	BHS	UK
Fungi	*Rugosomyces ionides*	Violet domecap	Woodland (Calcareous)	UK		FCT Vulnerable
Fungi	*Tricholoma acerbum*	Bitter knight	Woodland (Calcareous)	UK		VU
Hymenoptera	*Crossocerus binotatus*	Digger wasp sp	Decaying wood	No		NS
Hymenoptera	*Passaloecus monilicornis*	Solitary wasp sp	Decaying wood (Hardwood)	Yes	SS	UK
Hymenoptera	*Crossocerus styrius*	Solitary wasp sp	Damp Woodland	No	SS	UK
Hymenoptera	*Osmia parietina*	Wall Mason-bee	Structural Diversity (Open Woodland)	Yes		NR; UKBAP; S41
Hymenoptera	*Formica rufa*	Red Wood Ant	Coniferous Woodland	Yes	LBAP	NT
Hymenoptera	*Formicoxus nitidulus*	Shiny Guest ant	Coniferous Woodland	Yes	SS	UK (linked to F; Rufa)
Hymenoptera	*Pseudoplatylabus violentus*	an parasitic wasp sp	Structural Diversity (Grassland/Woodland)	Yes	SS	UK
Hymenoptera	*Dipogon subintermedius*	a spider-hunting Wasp	Decaying wood	No	SS	UK
Hymenoptera	*Trichrysis cyanea*	Blue cuckoo wasp	Decaying wood	No	SS	UK
Hymenoptera	*Lasius fulginosus*	Jet ant sp	Decaying wood	No	SS	UK
Hymenoptera	*Vespa crabro*	European hornet	Woodland & Orchards	No	SS	UK
Hymenoptera	*Hoplitis claviventris*	Welted mason bee	Structural Diversity (Open Woodland)	No	SS	UK
Hymenoptera	*Andrena synadelpha*	Broad margin mining bee	Woodland (scrub mosaic)	YES	SS	UK - Not found elsewhere in the Country
Hymenoptera	*Crossocerus binotatus*	Digger wasp sp	Decaying wood	No		NS
Hymenoptera	*Passaloecus monilicornis*	Solitary wasp sp	Decaying wood (Hardwood)	Yes	SS	UK
Hymenoptera	*Crossocerus styrius*	Solitary wasp sp	Damp Woodland	No	SS	UK
Hymenoptera	*Osmia parietina*	Wall Mason-bee	Structural Diversity (Open Woodland)	Yes		NR; UKBAP; S41
Hymenoptera	*Formica rufa*	Red Wood Ant	Coniferous Woodland	Yes	LBAP	NT

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Hymenoptera	*Formicoxus nitidulus*	Shiny Guest ant	Coniferous Woodland	Yes	SS	UK (linked to F; Rufa)
Hymenoptera	*Pseudoplatylabus violentus*	an parasitic wasp sp	Structural Diversity (Grassland/Woodland)	Yes	SS	UK
Hymenoptera	*Dipogon subintermedius*	a spider-hunting Wasp	Decaying wood	No	SS	UK
Hymenoptera	*Trichrysis cyanea*	Blue cuckoo wasp	Decaying wood	No	SS	UK
Hymenoptera	*Lasius fulginosus*	Jet ant sp	Decaying wood	No	SS	UK
Hymenoptera	*Vespa crabro*	European hornet	Woodland & Orchards	No	SS	UK
Hymenoptera	*Hoplitis claviventris*	Welted mason bee	Structural Diversity (Open Woodland)	No	SS	UK
Hymenoptera	*Andrena synadelpha*	Broad margin mining bee	Woodland (scrub mosaic)	YES	SS	UK - Not found elsewhere in the Country
Lichen	*Thelocarpon intermediellum*	a lichen	Structural deadwood	UK		LC; NR
Macro-moths	*Thera cognata*	Chestnut-coloured Carpet	Juniper scrub	No		NS
Macro-moths	*Trichopteryx polycommata*	Barred Tooth-striped	Rocky Woodland (Limestone)	Yes	LBAP; BHS species	UKBAP; S41
Macro-moths	*Eustroma reticulata*	Netted Carpet	Wet Woodland (Broadleaved)	Yes		VU; UKBAP; S41
Macro-moths	*Synanthedon culicformis*	Large Red-belted Clearwing	Early Succession (Birch Wood)	No		NS
Mammals	*Plecotus auritus*	Brown long-eared bat	Woodland	UK	BHS; LBAP	HabDir; UKBAP; S41
Mammals	*Myotis nattereri*	Natterer's bat	Woodland	UK	BHS; LBAP	HabDir
Mammals	*Nyctalus noctula*	Noctule bat	Woodland	UK	BHS; LBAP	HabDir; UKBAP; S41
Mammals	*Nyctalus leisleri*	Leisler's	Woodland	UK		HabDir; NT
Mammals	*Myotis brandtii*	Brandt's bat	Woodland	UK		HabDir
Mammals	*Myotis mystacinus*	Whiskered bat	Woodland	UK	BHS; LBAP	HabDir
Mammals	*Martes martes*	Pine marten	Woodland	UK		CR
Mammals	*Muscardinus avellanarius*	Hazel Dormouse	Ancient & Native Woodland	UK		VU
Mammals	*Mustela putorrius*	Polecat	Various	UK		LC
Mammals	*Erinaceus europaeus*	West European Hedgehog	Structural Diversity (Open Woodland)	UK		VU
Mammals	*Sciurus vulgaris*	Eurasian Red Squirrel	Mixed Woodland	No		EN
Plants	*Calamagrostis canescens*	Purple Small-reed	Wet woodland	No	LR; LBAP; BHS	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Salix myrsinifolia*	Dark-leaved Willow	Wet Woodland (Broadleaved)	No	LR; LBAP; BHS	LC
Plants	*Populus nigra subsp; betulifolia*	Black-poplar	Riverside trees	No	LS; LBAP; BHS	LC
Plants	*Gagea lutea*	Yellow Star-of-Bethlehem	Wooded riverbanks	No	LR; LBAP; BHS	LC
Plants	*Atropa belladonna*	Deadly Nightshade	Woodland (Scrub Mosaic)	No	LS; LBAP; BHS	LC
Plants	*Salix phylicifolia*	Tea-leaved Willow	Woodland (Scrub Mosaic)	No	LR; LBAP; BHS	LC
Plants	*Cardamine impatiens*	Narrow-leaved Bitter-cress	Wooded Limestone	Yes	LR; LBAP; BHS	NT; NS
Plants	*Carex strigosa*	Thin-spiked Wood-sedge	Ancient & Native Woodland	No	LR; LBAP; BHS	LC
Plants	*Epipactis phyllanthes*	Green-flowered Helleborine	Damp Woodland	Yes	LR; LBAP; BHS	LC; NS
Plants	*Neottia nidus-avis*	Bird's-nest Orchid	Broadleaf Woodland (Beech)	No	LR; LBAP; BHS	NT
Plants	*Impatiens noli-tangere*	Touch-me-not Balsam	Wet Woodland (Broadleaved)	UK	LS; LBAP; BHS	LC; NS
Plants	*Berberis vulgaris*	Barberry	Hedgerow	No	LR; LBAP; BHS	LC
Plants	*Polygonatum odoratum*	Angular Solomon's-seal	limestone pavement woodland	Yes	LR; LBAP; BHS	LC; NS
Plants	*Daphne laureola*	Spurge-laurel	Limestone woods	No	LS; BHS	LC
Plants	*Carex digitata*	Fingered Sedge	Structural Diversity (Open Woodland)	Yes	LR; LBAP; BHS	LC; NS
Plants	*Helleborus foetidus*	Stinking Hellebore	Review	No	LS; LBAP; BHS	LC; NS
Plants	*Polypodium cambricum*	Southern Polypody	Rock & Woodland	No	LR; LBAP; BHS	LC
Plants	*Sorbus rupicola*	Rock Whitebeam	Rock (and woodland; on JL Lit review)	Yes	LS; LBAP; BHS	LC; NS
Plants	*Circaea x intermedia*	Enchanter's Nightshade sp;	Woodland	No	LS	UK
Plants	*Rubus armipotens*	Bramble sp	Woodland	No	LR	UK
Plants	*Rubus serpens*	Bramble sp	Woodland	UK	LS	UK
Plants	*Sorbus torminalis*	Wild Service-Tree	Woodland	No	LS; LBAP; BHS	LC
Plants	*Rubus accrescens*	Bramble sp	Woodland & Heath	Yes	LR	UK
Plants	*Tilia cordata*	Small-leaved Lime	Woodland & Rock	No	LS; BHS	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Monotropa hypopitys*	yellow bird's-nest	Woodland; quarries; dune slacks	UK	LEP list; LBAP; BHS	UKBAP; S41
Plants	*Bromopsis benekenii*	Lesser Hairy-brome	Ancient & Native Woodland	No	LR; LBAP	LC
Plants	*Clinopodium vulgare*	Wild Basil		No	LS	LC
Plants	*Helictotrichon pratense*	Meadow Oat		No	LS	LC
Plants	*Scabiosa columbaria*	Small Scabious		No	LS; LBAP	LC
Plants	*Sorbus lancastriensis*	Lancastrian whitebeam	Structural Diversity (Open Woodland)	Yes	LS	NT
Plants	*Calamagrostis canescens*	Purple Small-reed	Wet woodland	No	LR; LBAP; BHS	LC
Plants	*Salix myrsinifolia*	Dark-leaved Willow	Wet Woodland (Broadleaved)	No	LR; LBAP; BHS	LC
Plants	*Populus nigra subsp; betulifolia*	Black-poplar	Riverside trees	No	LS; LBAP; BHS	LC
Plants	*Gagea lutea*	Yellow Star-of-Bethlehem	Wooded riverbanks	No	LR; LBAP; BHS	LC
Plants	*Atropa belladonna*	Deadly Nightshade	Woodland (Scrub Mosaic)	No	LS; LBAP; BHS	LC
Plants	*Salix phylicifolia*	Tea-leaved Willow	Woodland (Scrub Mosaic)	No	LR; LBAP; BHS	LC
Plants	*Cardamine impatiens*	Narrow-leaved Bitter-cress	Wooded Limestone	Yes	LR; LBAP; BHS	NT; NS
Plants	*Carex strigosa*	Thin-spiked Wood-sedge	Ancient & Native Woodland	No	LR; LBAP; BHS	LC
Plants	*Epipactis phyllanthes*	Green-flowered Helleborine	Damp Woodland	Yes	LR; LBAP; BHS	LC; NS
Plants	*Neottia nidus-avis*	Bird's-nest Orchid	Broadleaf Woodland (Beech)	No	LR; LBAP; BHS	NT
Plants	*Impatiens noli-tangere*	Touch-me-not Balsam	Wet Woodland (Broadleaved)	UK	LS; LBAP; BHS	LC; NS
Plants	*Berberis vulgaris*	Barberry	Hedgerow	No	LR; LBAP; BHS	LC
Plants	*Polygonatum odoratum*	Angular Solomon's-seal	limestone pavement woodland	Yes	LR; LBAP; BHS	LC; NS
Plants	*Daphne laureola*	Spurge-laurel	Limestone woods	No	LS; BHS	LC
Plants	*Carex digitata*	Fingered Sedge	Structural Diversity (Open Woodland)	Yes	LR; LBAP; BHS	LC; NS
Plants	*Helleborus foetidus*	Stinking Hellebore	Review	No	LS; LBAP; BHS	LC; NS
Plants	*Polypodium cambricum*	Southern Polypody	Rock & Woodland	No	LR; LBAP; BHS	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Sorbus rupicola*	Rock Whitebeam	Rock (and woodland; on JL Lit review)	Yes	LS; LBAP; BHS	LC; NS
Plants	*Circaea x intermedia*	Enchanter's Nightshade sp;	Woodland	No	LS	UK
Plants	*Rubus armipotens*	Bramble sp	Woodland	No	LR	UK
Plants	*Rubus serpens*	Bramble sp	Woodland	UK	LS	UK
Plants	*Sorbus torminalis*	Wild Service-Tree	Woodland	No	LS; LBAP; BHS	LC
Plants	*Rubus accrescens*	Bramble sp	Woodland & Heath	Yes	LR	UK
Plants	*Tilia cordata*	Small-leaved Lime	Woodland & Rock	No	LS; BHS	LC
Plants	*Monotropa hypopitys*	yellow bird's-nest	Woodland; quarries; dune slacks	UK	LEP list; LBAP; BHS	UKBAP; S41
Plants	*Bromopsis benekenii*	Lesser Hairy-brome	Ancient & Native Woodland	No	LR; LBAP	LC
Plants	*Clinopodium vulgare*	Wild Basil		No	LS	LC
Plants	*Helictotrichon pratense*	Meadow Oat		No	LS	LC
Plants	*Scabiosa columbaria*	Small Scabious		No	LS; LBAP	LC
Plants	*Sorbus lancastriensis*	Lancastrian whitebeam	Structural Diversity (Open Woodland)	Yes	LS	NT
Plants	*Viola sp;*	violet sp	Woodland and grasslands	Required plant species for stand-alone butterflies HBF and PBF and short-listed DGF	SS	
Plants	*Ulmus sp;*	elm	Woodland margins and clearings	Required plant species for short-listed species white-letter hairstreak	SS	
Plants	*Paris quadrifolia*	Herb Paris	damp woodland	Required plant species for short-listed fly species	SS	LC
Plants	*Pteridium aquilinum*	Bracken	Woodlands and grassland	Required plant species for stand-alone	SS	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
				butterflies HBF and PBF		
Spider	*Xysticus luctuosus*	Crab spider sp.	woodland understory	UK		EN; NR
Spider	*Clubiona caerulescens*	Leaf curling sac spider sp.	Woodland and scrub	UK		VU; NR
Grasslands						
Birds	*Emberiza calandra [br]*	Corn Bunting	Arable/farmland - hedgerows	No	RSPB Shortlist	NT
Birds	*Motacilla flava [br]*	Yellow Wagtail	Arable/farmland	No	RSPB Shortlist; threatened in Lancashire	NT & BoCC4_Red
Birds	*Passer montanus [br]*	Tree Sparrow	Arable/farmland - hedgerows	No	RSPB Shortlist	VU; S41
Birds	*Perdix perdix [br]*	Grey Partridge	Arable/farmland	No	RSPB Shortlist; threatened in Lancashire - LBAP	VU; S41 & BoCC4_Red; UKBAP
Birds	*Crex crex*	Corn Crake	Arable/farmland	No	RSPB Shortlist; LBAP	LC; WCA_Sch158; S41; UKBAP; BoCC4_Red
Birds	*Haematopus ostralegus [br]*	Oystercatcher	Damp/wet Grasslands - wet meadows and pastures	No	LBAP	VU
Birds	*Vanellus vanellus [br]*	Lapwing	Damp/wet Grasslands - wet meadows and pastures	No	LBAP	EN, BoCC4_Red
Birds	*Numenius arquata [br]*	Curlew	Damp/wet Grasslands - wet meadows and pastures	Yes	LBAP	EN, BoCC4_Red
Birds	*Gallinago gallinago [br]*	Snipe	Damp/wet Grasslands - wet meadows and pastures	No	LBAP	NT, BoCC4_Amber
Bryophytes	*Rhytidium rugosum*	wrinkle-leaved feather-moss	Limestone/calcareous grassland	UK	BHS	LC; NS
Bryophytes	*Didymodon acutus*	Pointed Beard-moss	Limestone/calcareous grassland	UK	BHS	DD; NS
Bryophytes	*Nardia geoscyphus*	Earth-cup flapwort	Limestone/calcareous grassland	UK	BHS	LC; NS
Bryophytes	*Anthoceros agrestis*	field hornwort	Arable/farmland	UK	BHS	LC; NS

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Butterflies	*Coenonympha pamphilus*	Small heath	Grassland (Open Mosaic) - dry grasslands	No	LBAP	VU; S41; UKBAP
Butterflies	*Lasiommata megera*	Wall	Grasslands various	No	LBAP	EN; S41; UKBAP
Butterflies	*Erynnis tages*	Dingy skipper	Limestone/calcareous grassland	No	LBAP	LC; S41; UKBAP
Butterflies	*Aricia artaxerxes*	Northern brown argus	Limestone/calcareous grassland	Yes	LBAP	VU; WCA_Sch158; S41; UKBAP
Flies	*Chyliza extenuata*	a rust fly	unimproved grassland / calcareous grassland	UK		R
Flies	*Urophora solstitialis*	Nodding Thistle Gall Fly	Structural Diversity (Grassland/Woodland)	UK		R
Flies	*Doros profuges*	Phantom hoverfly	Unimproved grassland / limestone grassland	UK		NT
Grassland Fungi	*Entoloma queletii*		Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Gliophorus reginae*	Jubilee Waxcap	Ancient, unimproved Grassland	UK		VU
Grassland Fungi	*Porpolomopsis calyptriformis*	Pink Waxcap	Ancient, unimproved Grassland	UK		VU
Grassland Fungi	*Elachista adscitella*		Limestone Grassland	UK	SS	
Grassland Fungi	*Elachista triseriatella*		Limestone Grassland	UK	SS	
Grassland Fungi	*Squamanita paradoxa*		Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Dissoderma paradoxum*	Powdercap strangler	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Microglossum olivaceum*	Olive Earthtongue	Unimproved Grassland (Fungi)	UK		UKBAP; S41
Grassland Fungi	*Camarophyllopsis schulzeri*		Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Clavaria flavipes*	Straw Club	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Clavaria incarnata*	Skinny Club	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Clavaria zollingeri*	Violet Coral	Unimproved Grassland (Fungi)	UK	SS	

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Grassland Fungi	*Cuphophyllus colemannianus*	Toasted Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Cuphophyllus flavipes*	Yellowfoot Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Cuphophyllus lepidopus*	Scalyfoot Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Cuphophyllus radiatus*	Slender Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Dermoloma magicum*	Black Magic	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Entoloma atromadidum*	Big Slate Blue Pinkgill	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Entoloma bloxamii*	Big Blue Pinkgill	Unimproved Grassland (Fungi)	UK		S41; UKBAP
Grassland Fungi	*Entoloma griseocyaneum*	Felted Pinkgill	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Entoloma henrici*	Matt Pinkgill	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Entoloma luteobasis*	Big Brown Pinkgill	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Entoloma madidum*	Brightsky Pinkgill	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Entoloma porphyrophaeum*	Lilac Pinkgill	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Entoloma prunuloides*	Mealy Pinkgill	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Gliophorus europerplexus*	Butterscotch Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Gloioxantomyces vitellinus*	Glistening Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe aurantiosplendens*	Orange Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe citrinovirens*	Citrine Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe intermedia*	Fibrous Waxcap	Unimproved Grassland (Fungi)	UK	SS	

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Grassland Fungi	*Hygrocybe lepida*	Goblet Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe mucronella*	Bitter Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe phaeococcinea*	Shadowed Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe punicea*	Crimson Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe quieta*	Oily Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe spadicea*	Date Waxcap	Unimproved Grassland (Fungi)	UK		S41; UKBAP
Grassland Fungi	*Hygrocybe splendidissima*	Splendid Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Hygrocybe subpapillata*	Papillate Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Microglossum atropurpureum*	Dark-purple earthtongue	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Microglossum fuscorubens*		Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Microglossum pratense*		Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Microglossum rufescens*	Rufous Earthtongue	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Microglossum tenebrosum*	Gloomy Earthtongue	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Neohygrocybe ingrata*	Dingy Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Neohygrocybe nitrata*	Nitrous Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Neohygrocybe ovina*	Blushing Waxcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Porpoloma metapodium*	Mealy Meadowcap	Unimproved Grassland (Fungi)	UK	SS	
Grassland Fungi	*Trichoglossum walteri*	Shortspored Earthtongue	Unimproved Grassland (Fungi)	UK	SS	

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Grassland Fungi	*Pseudotricholoma metapodium*	Mealy Meadowcap	Unimproved Grassland (Fungi)	UK	SS	
Hymenoptera	*Lasius sabularum*	a ant	Unimproved grassland	Yes		NR
Hymenoptera	*Lasius umbratus*	a ant	Unimproved grassland	No		NR
Hymenoptera	*Sphecodes ferruginatus*	Dull-headed Blood Bee	Grassland (Open Mosaic)	No		Nb
Hymenoptera	*Pseudoplatylabus violentus*	a wasp	Grassland (Open Mosaic)	Yes	SS	
Hymenoptera	*Osmia parietina*	Wall Mason-bee	Grassland (Open Mosaic) - acid grassland	Yes	Stronghold in Morecambe Bay	R; UK BAP; S41; RDB3
Hymenoptera	*Andrena tarsata*	Tormentil Mining-bee	Grassland (Open Mosaic) - acid grassland	Yes		S41; SAP
Hymenoptera	*Andrena coitana*	Small flecked mining bee	Grassland (Open Mosaic) - acid grassland	No	SS	
Hymenoptera	*Nomada obtusifrons*	Flat-ridged Nomad Bee	Grassland (Open Mosaic) - acid grassland	No	SS	
Hymenoptera	*Bombus muscorum*	Moss Carder-bee	Grassland (Open Mosaic) - acid grassland	Yes		UK BAP; S41
Hymenoptera	*Andrena nigriceps*	Black-headed mining bee	Grassland (Open Mosaic) - acid grassland	No		NS
Hymenoptera	*Nomada robertjoetiana*	Tormentil nomad bee	Grassland (Open Mosaic) - acid grassland	No		RDB3
Hymenoptera	*Colletes similis*	Bare-saddled cellophane bee	Grassland (Open Mosaic) - acid grassland	No	SS	
Hymenoptera	*Hoplitis claviventris*	Welted Lesser Mason Bee	Grassland (Open Mosaic) - acid grassland	No	SS	
Lichens	*Placidium pilosellum*		Limestone/calcareous grassland	UK		NT; NS
Macromoths	*Photedes captiuncula*	Least Minor	Limestone/calcareous grassland	Yes	LBAP	EN
Macromoths	*Adscita geryon*	Cistus Forester	Limestone/calcareous grassland	No	LBAP	NS; S41; UKBAP
Mammals	*Micromys minutus*	Harvest Mouse	Grassland (Open Mosaic)	UK	LBAP	NT; S41; UKBAP
Mammals	*Lepus europaeus*	Brown hare	Arable/farmland	UK	LBAP	LC. S41; UKBAP; NERC_S41
Mammals	*Mustela putorius*	Polecat	Grassland (Open Mosaic)	UK	LBAP	LC; S41; UKBAP; NERC_S41; HabReg-Sch4
Mammals	*Myotis mystacinus*	Whiskered bat	Arable/farmland	UK	LBAP	DD; WCA_Sch5

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Mammals	*Rhinolophus hipposideros*	Lesser horseshoe bat	Arable/farmland	UK		LC; S41; WCA_Sch158
Mammals	*Eptesicus serotinus*	Serotine	Arable/farmland	UK		VU; WCA_Sch158
Micromoths	*Anania funebris*	White-spotted Sable	Limestone/calcareous grassland	Yes	LBAP	NS; S41; UKBAP
Micromoths	*Scythris fallacella*	Bronze owlet	Limestone/calcareous grassland	Yes	Rare and very localised nationally	pRDB1
Micromoths	*Elachista cingillella*		Limestone/calcareous grassland	Yes		NR; pRDB1
Micromoths	*Celypha rufana*	Rufous marble	Limestone/calcareous grassland	Yes		pRDB3
Micromoths	*Scythris picaepennis*	White-dusted Owlet	Limestone/calcareous grassland	No	LBAP	
Micromoths	*Anania terrealis*		Limestone/calcareous grassland	Yes		NS
Plants	*Fumaria bastardii*	Tall Ramping-fumitory	Arable, farmland	No		LC
Plants	*Fumaria purpurea*	Purple Ramping-fumitory	Arable, farmland	Yes	LBAP	LC, S41, UKBAP, NS
Plants	*Fumaria muralis*	Common Ramping-fumitory	Arable, farmland	No		LC
Plants	*Fumaria officinalis*	Common Fumitory	Arable, farmland	No		LC
Plants	*Fumaria capreolata*	White Ramping - fumitory	Arable, farmland	No		LC
Plants	*Galeopsis speciosa*	Large-flowered Hemp-nettle	Arable, farmland	No		VU
Plants	*Lamium hybridum*	Cut-leaved Dead-nettle	Arable, farmland	No		LC
Plants	*Lamium amplexicaulis*	Henbit Dead-nettle	Arable, farmland	No		
Plants	*Stachys arvensis*	Field Woundwort	Arable, farmland	No		NT
Plants	*Spergula arvensis*	Corn Spurrey	Arable, farmland	No		VU
Plants	*Glebionis segetum*	Corn Marigold	Arable, farmland	No	LEP list	VU
Plants	*Viola arvensis*	Field Pansy	Arable, farmland	No		LC
Plants	*Viola tricolor*	Wild Pansy	Arable, farmland	No		NT
Plants	*Papaver rhoeas*	Common Poppy	Arable, farmland	No		LC
Plants	*Papaver dubium*	Long-headed Poppy	Arable, farmland	No		LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Papaver lecoquii*	Yellow-juiced Poppy	Arable, farmland	No	LBAP	
Plants	*Papaver argemone*	Prickly Poppy	Arable, farmland	No		VU
Plants	*Aphanes australis*	Slender Parsely-piert	Arable, farmland	No		
Plants	*Urtica urens*	Small Nettle	Arable, farmland	No		LC
Plants	*Lepidium campestre*	Field Pepperwort	Arable, farmland	No	LBAP	LC
Plants	*Raphanus raphanistrum ssp. raphanistrum*	Wild Radish	Arable, farmland	No		LC
Plants	*Thlaspi arvense*	Field Penny-cress	Arable, farmland	No		LC
Plants	*Fallopia convolvulus*	Black-bindweed	Arable, farmland	No		LC
Plants	*Anagallis arvensis*	Scarlet Pimpernel	Arable, farmland	No		LC
Plants	*Anchusa arvensis*	Bugloss	Arable, farmland	No		LC
Plants	*Myosotis discolor*	Changing Forget-me-not	Arable, farmland	No		LC
Plants	*Mentha arvensis*	Corn Mint	Arable, farmland	No		LC
Plants	*Anthemis arvensis*	Corn Chamomile	Arable, farmland	?		EN
Plants	*Anthemis cotula*	Stinking Chamomile	Arable, farmland	?		VU
Plants	*Agrostis gigantea*	Black Bent	Arable, farmland	No		LC
Plants	*Alopecurus myosuroides*	Black-grass	Arable, farmland	No		LC
Plants	*Alchemilla monticola*	a Lady's-Mantle	Grassland (Open Mosaic) - roadside verge	Yes	LR	EN
Plants	*Alchemilla subcrenata*	a Lady's-Mantle	Unimproved grasslands	Yes	LR	VU; NR
Plants	*Allium oleraceum*	field garlic	grassland various	No	LR	VU
Plants	*Anacamptis morio*	green-winged orchid	Limestone/calcareous grassland	No	LEP	NT
Plants	*Antennaria dioica*	Mountain Everlasting	Limestone/calcareous grassland	No	LR	VU
Plants	*Blysmus compressus*	Flat sedge	Damp/wet Grasslands - damp meadows	No	LR	VU
Plants	*Botrychium lunaria*	Moonwort	Upland and Limestone/calcareous grassland	No	LR	VU
Plants	*Cerastium arvense*	Field Mouse-ear	Lowland grassland	No	LS	NT
Plants	*Crocus nudiflorus*	Autumn Crocus	Grassland (Open Mosaic)	No	LS	LC
Plants	*Genista tinctoria*	Dyer's Greenweed	Unimproved grasslands	No	LS	VU
Plants	*Gentianella amarella*	Autumn Gentian	Pasture	No	LS	NT

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Geranium sylvaticum*	Wood Crane's-bill	Unimproved grasslands	No	LS	NT
Plants	*Gymnadenia borealis*	Heath Fragrant Orchid	Damp/wet Grasslands - calcareous	No	LS	LC
Plants	*Jasione montana*	Sheep's-bit	Grassland (Open Mosaic) - sandy	No	LR	VU
Plants	*Juncus compressus*	round-fruited rush	Damp/wet Grasslands - wet meadows and pastures	No	LS	VU
Plants	*Oenanthe pimpinelloides*	Corky-fruited Water-dropwort	Damp/wet Grasslands - wet meadows and pastures	No	LR	LC
Plants	*Ophrys insectifera*	fly orchid	Limestone/calcareous grassland	No	LEP	VU
Plants	*Pedicularis palustris*	Marsh Lousewort	Damp/wet Grasslands - flushed grassland and moorland flushes	No	LR	VU
Plants	*Persicaria minor*	small water pepper	Damp/wet Grasslands - flushed grassland	No	LEP	VU
Plants	*Platanthera chlorantha*	Greater Butterfly-orchid	Unimproved/calcareous grasslands	No	LR	NT
Plants	*Primula farinosa*	birds-eye primrose	Damp/wet Grasslands - calcareous flushes	Yes	LS	NT; NS
Plants	*Saxifraga hypnoides*	Mossy Saxifrage	Damp/wet Grasslands - flushed grassland and moorland flushes	No	LR	VU
Plants	*Schoenus nigricans*	Black Bog-rush	Damp/wet Grasslands - calcareous flushes	No	LR	LC
Plants	*Scutellaria minor*	Lesser skullcap	Damp/wet Grasslands - flushed grassland	No	LR	LC
Plants	*Selaginella selaginoides*	Lesser clubmoss	Damp/wet Grasslands - calcareous flushes	No	LR	LC
Plants	*Serratula tinctoria*	saw-wort	Grassland (Open Mosaic)	No	LR	LC
Plants	*Spiranthes spiralis*	Autumn Lady's-tresses	Limestone/calcareous grassland	No	LR	NT
Plants	*Stellaria palustris*	Marsh Stitchwort	Damp/wet Grasslands - damp grassland and ditch sides	No	LS	VU
Plants	*Trollius europaeus*	Globeflower	Unimproved grasslands	No	LS	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Wahlenbergia hederacea*	Ivy-leaved bell flower	Damp/wet Grasslands - flushed grassland	No	LS	NT
Plants	*Cirsium heterophyllum*	Melancholy Thistle	Grassland	No	LS; BHS	LC
Plants	*Viola sp.s*	Violet sp.s	Grassland various	No	Key food plant for shortlisted fritillary butterflies	
Plants	*Solidago virgaurea*	Goldenrod	Limestone/calcareous grassland	No	Key food plant for white-spotted sable and bronze owlet moth (below)	LC
Plants	*Helianthemum nummularium*	rockrose	Limestone/calcareous grassland	No	Key food plant for shortlisted Northern Brown Argus butterfly; Cistus Forester moth	LC
Plants	*Lotus corniculatus*	common birds-foot trefoil	Limestone/calcareous grassland	No	Key food plant for dingy skipper (butterfly) and *Scythris picaepennis* (micro-moth)	LC
Plants	*Pteridium aquilinum*	Bracken	Grassland various	No	Required for short-listed fritillary butterflies (e.g.; requires violets in coppiced limestone woodland; beneath bracken in open fields or in tussocky grasslands.)	LC
Urban						
Amphibians	*Bufo bufo*	Common toad	standing open water / parks & gardens	No	LBAP; BHS	NT; UKBAP; S41

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Amphibians	*Triturus cristatus*	Great crested newt	standing open water / parks & gardens	Yes	LBAP; BHS	LC; UKBAP; S41
Birds	*Hirundo rustica [br]*	Swallow	Buildings; pasture/lowland grassland	No	RSPB Shortlist	VU
Birds	*Sturnus vulgaris [br]*	Starling	Buildings; pasture/lowland grassland	No	RSPB Shortlist; LBAP	VU; BoCC4_red
Birds	*Apus apus [br]*	Swift	Buildings	Yes	RSPB Shortlist; LBAP	EN; BoCC4_red
Birds	*Delichon urbicum [br]*	House Martin	Buildings	No	RSPB Shortlist	NT
Birds	*Falco peregrinus [br]*	Peregrine	Crags; quarries and man-made structures	No	RSPB Shortlist; LBAP; BHS	LC
Birds	*Chloris chloris [br]*	Greenfinch	Scrub	No	RSPB Shortlist	EN; Red
Birds	*Chroicocephalus ridibundus [n-br]*	Black-headed Gull	Urban as part of complex needs	Yes	RSPB Shortlist	VU; Amber
Birds	*Larus argentatus [n-br]*	Herring Gull	Urban as part of complex needs	No	RSPB Shortlist; LBAP	EN; BoCC4_red
Birds	*Larus marinus [n-br]*	Great Black-backed Gull	Urban as part of complex needs	No	RSPB Shortlist; LBAP; BHS	EN
Birds	*Larus fuscus [br]*	Lesser Black-backed Gull	Urban as part of complex needs	Yes	RSPB Shortlist; LBAP	DD; Amber
Bryophytes	*Riccia huebeneriana*	Violet Crystalwort	Reservoir margins	UK		LC; NS
Bryophytes	*Bryum creberrimum*	Tight-tufted Thread-moss	Road verge/waste ground	UK		DD; NS
Bryophytes	*Weissia rostellata*	Beaked Beardless-moss	Reservoir margins	UK	BHS	LC; NS
Bryophytes	*Physcomitrium sphaericum*	Dwarf Bladder-moss	Reservoir margins	UK	BHS	LC; NR
Fungi	*Leccinum duriusculum*	Slate Bolete	Parks & gardens	UK		NT
Hymenoptera	*Anthidium manicatum*	Wool carder bee	Parks & gardens	No	SS	
Hymenoptera	*Stelis punctulatissima*	Stelis punctulatissima	Parks & gardens	No	BHS	Nb
Hymenoptera	*Dolichovespula media*	Median Wasp	Parks & gardens	No		Na
Hymenoptera	*Lissonota deversor*	Lissonota deversor	Parks & gardens	No	SS	
Hymenoptera	*Vespa crabro*	European Hornet	Orchards	Yes	SS	
Invertebrates	*Erythromma najas*	Red-eyed Damselfly	Marginal Vegetation (Canal)	No	LR; BHS Odo*	LC
Invertebrates	*Brachychaeteuma bagnalli*	a millipeade	Parks & gardens	UK		LC; NS
Invertebrates	*Porrhomma egeria*	a spider	Caves & mines	UK	LBAP	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Mammals	*Pipistrellus Pipistrellus*	Common pipistrelle	High manmade structures/buildings; Parks & gardens; Canals & Ponds	No	LBAP	LC; S41
Mammals	*Pipistrellus pygmaeus*	Soprano Pipistrelle	High manmade structures/buildings; Parks & gardens; Canals & Ponds	No	LBAP	LC; UKBAP; S41
Mammals	*Myotis daubentonii*	Daubenton's bat	High manmade structures/buildings; Parks & gardens; Canals & Ponds	No	LBAP; BHS	LC
Mammals	*Myotis brandtii*	Brandt's bat	High manmade structures/buildings; Parks & gardens; Canals & Ponds	No	LBAP; BHS	DD
Mammals	*Myotis mystacinus*	Whiskered bat	High manmade structures/buildings; Parks & gardens; Canals & Ponds	No	LBAP; BHS	DD
Mammals	*Eptesicus serotinus*	Serotine	High manmade structures/buildings; Parks & gardens; Canals & Ponds	No	BHS	VU
Mammals	*Rhinolophus hipposideros*	Lesser horseshoe bat	High manmade structures/buildings; Parks & gardens; Canals & Ponds	No	LBAP; BHS	LC; UKBAP; S41
Mammals	*Erinaceus europaeus*	West European Hedgehog	Parks & gardens	No	LBAP	VU; UKBAP; S41
Mammals	*Arvicola amphibius*	European Water Vole	Canals/ditches/lakes	No	LBAP; BHS	EN; UKBAP; S41
Plants	*Alisma lanceolatum*	Narrow-leaved Water-plantain	Standing open water & canals	No	LR; LBAP; BHS	LC
Plants	*Anacamptis pyramidalis*	Pyramidal Orchid	Brownfield	No	LBAP; BHS	LC
Plants	*Aphanes inexspectata (australis)*	Slender Parsley-piert	Dry sandy soils	No	LS; LBAP; BHS	LC
Plants	*Apium inundatum*	Lesser Marshwort	Ephemeral Ponds	No	LS; BHS	LC
Plants	*Blackstonia perfoliata*	Yellow-wort	Brownfield	No	BHS	LC
Plants	*Briza media*	Quaking Grass	Open Mosaic on Previously Developed Land; Quarries	No		NT
Plants	*Carex demissa*	a yellow sedge	Brownfield	No		LC
Plants	*Carex flacca*	Glaucous sedge	Brownfield	No	SS	

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Centaurium erythraea*	Common Centaury	Brownfield	No		LC
Plants	*Clinopodium acinos*	Basil thyme	Brownfield	No	LR; LBAP; BHS	VU; S41; UKBAP
Plants	*Crepis biennis*	Rough Hawk's-beard	Road verge	No	LR; BHS	LC
Plants	*Dactylorhiza sp.*	Common spotted and marsh orchids	Brownfield	No	BHS	LC
Plants	*Daucus carota*	Wild carrot	Brownfield	No	SS	LC
Plants	*Epipactis palustris*	Marsh Helleborine	Brownfield	No	LS; LBAP; BHS	LC
Plants	*Erigeron acer*	Blue fleabane	Brownfield	No	SS	LC
Plants	*Erophila glabrescens*	Glabrous Whitlowgrass	Sand dunes; stony ground	No	LS; BHS	LC
Plants	*Euphorbia exigua*	Dwarf Spurge	Base rich disturbed ground	No	LR; LBAP; BHS	VU
Plants	*Filago minima*	Small Cudweed	Open sandy ground; heath; waste ground	No	LR; LBAP; BHS	NT
Plants	*Filago vulgaris*	Common Cudweed	Open sandy ground; heath; waste ground	No	LS; LBAP; BHS	NT
Plants	*Groenlandia densa*	Opposite-leaved Pondweed	Standing open water & canals	No	LR; LBAP; BHS	VU
Plants	*Inula conyzae*	Ploughman's Spikenard	Brownfield	No	BHS	LC
Plants	*Leontodon hispidus*	Rough hawkbit	Brownfield	No	SS	LC
Plants	*Leontodon saxatilis*	lesser hawkbit	Road verges	No	SS	LC
Plants	*Linaria vulgaris*	Common toadflax	Brownfield	No	SS	LC
Plants	*Linum catharticum*	Fariy flax	Brownfield	No	SS	LC
Plants	*Luronium natans*	floating water plantain	Standing open water; quarries	UK	LEP list	NT; NS; UKBAP; S41
Plants	*Lycopodium clavatum*	Stag's horn clubmoss	Open stony ground	No	LS; LBAP; BHS	LC
Plants	*Lythrum portula*	Water-purslane	Ponds and reservoirs (draw down)	No	LS; BHS	LC
Plants	*Monotropa hypopitys*	Yellow birds nest	Brownfield (St Helens)	UK	LEP list; LBAP; BHS	UKBAP; S41
Plants	*Ophrys apifera*	Bee orchid	Brownfield	No	BHS	LC
Plants	*Picris hieracioides*	Hawkweed oxtongue	Brownfield	No	LBAP	LC
Plants	*Potamogeton alpinus*	Red Pondweed	Standing open water & canals	No	LS; LBAP; BHS	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Potamogeton berchtoldii*	Small Pondweed	canals and ponds	No	SS	LC
Plants	*Potamogeton crispus*	Curled Pondweed	Canals & Ponds	No	SS	LC
Plants	*Potamogeton epihydrus*	American Pondweed	Standing open water & canals	UK	SS	VU; NR
Plants	*Potamogeton friesii*	Flat-stalked Pondweed	canals and ponds	No	SS	NT; NS
Plants	*Potamogeton gramineus*	Various-leaved Pondweed	canals and ponds	No	SS	NT
Plants	*Potamogeton lucens*	Shinning Pondweed	canals and ponds	No	LBAP; BHS	LC
Plants	*Potamogeton obtusifolius*	Blunt-leaved Pondweed	canals and ponds	No	LBAP	LC
Plants	*Potamogeton pectinatus*	Fennel Pondweed	canals and ponds	No	SS	LC
Plants	*Potamogeton perfoliatus*	Perfoliate Pondweed	canals and ponds	No	SS	LC
Plants	*Potamogeton praelongus*	Long-stalked Pondweed	canals and ponds	No	SS	NT
Plants	*Potamogeton pusillus*	Lesser Pondweed	canals and ponds	No	LBAP; BHS	LC
Plants	*Potamogeton trichoides*	Hairlike Pondweed	canals and ponds	No	LBAP	LC
Plants	*Potamogeton x lintonii*	Linton's Pondweed	canals and ponds	No	LBAP	
Plants	*Potamogeton x zizii*	Long-leaved Pondweed	canals and ponds	No	SS	
Plants	*Ranunculus parviflorus*	Small-flowered Buttercup	Parkland	No	LR	LC
Plants	*Ranunculus peltatus*	peltate water-crowfoot	Canals & Ponds	No	LEP list; LBAP; BHS	LC
Plants	*Ranunculus Subgenus 2 - BATRACHIUM*	Water-crowfoots	canals; ponds and rivers	No	LKS	
Plants	*Ranunculus trichophyllus*	Thread-leaved Water-crowfoot	Ponds & Ditches	No	LBAP; BHS	LC
Plants	*Reseda lutea*	Wild Mignonette	Brownfield	No	SS	LC
Plants	*Rubus albionis*	Pink-flowered bramble	Garden	No	LR	
Plants	*Rumex longifolius*	Northern dock	Road verge	No	LR; LBAP; BHS	LC
Plants	*Sagina nodosa*	Knotted Pearlwort	Brownfield	No	SS	LC
Plants	*Saxifraga tridactylites*	rue-leaved saxifrage	Brownfield / exposed soils	No	SS	LC

Group	Latin	Common Name	Broad Habitat Assemblage	Lancashire population is of national significance (Yes / No / Unknown (UK))	Lancashire significance	National significance (In the absence of local input or comprehensive UK red lists, we considered the unofficial red list assessments
Plants	*Scrophularia umbrosa*	Green Figwort	Wet habitats; water margins; ditches; dykes and marshes	No	LS	LC
Plants	*Senecio erucifolius (Jacobaea erucifolia)*	Hoary Ragwort	Brownfield	No	SS	LC
Plants	*Silene vulgaris*	Bladder campion	Road verge	No	SS	LC
Plants	*Sparganium natans*	Least Bur-reed	Marginal Vegetation (Freshwater)	UK	LR; LBAP; BHS	VU
Plants	*Spergularia rubra*	Sand Spurrey	Open Mosaic on Previously Developed Land; Quarries	No	LS	LC
Plants	*Stachys arvensis*	Field Woundwort	Arable farmland; Brownfield	No		NT
Plants	*Torilis nodosa*	Knotted Hedge-parsley	Dry sandy soils	No	LS; LBAP; BHS	LC
Plants	*Trifolium campestre*	Hop Trefoil	Brownfield	No	SS	LC

Appendix Eleven: Summary table of species assemblages and a very brief definition of what that grouping includes along with some additional information as to where the group and species may overlap with other groups.

Standardised Assemblage	Description	Linked Categories
Ancient and native woodland	Native long-standing/Old and ancient woodlands where this is a key requirement of the species. Links to other woodland categories and structural assemblages.	Other woodland types.
Arable Farmland	Generic grouping for species which have a strong association with arable farming practices, including grazed pasture, or field margins.	Grassland and open mosaic categories. Hedgerows
Bogs	Includes blanket, lowland raised and mires. Includes species which are more dependent on more permanently wet peat and bog.	Flushes and Scrub-heath moorland
Brownfield	This category has been included strictly to highlight species which benefit from urban brownfield areas.	Grassland and scrub mosaic categories will also occur as Brownfield.
Calcareous Flushes	Flushes can include damp to wet components of habitat. Springs and ephemeral wet conditions in a variety of habitat categories. This group specifically relates to calcareous/base-rich conditions. Neutral to acidic flushes are grouped elsewhere.	Other flushes and calcareous categories.
Caves and Mines	Includes species of both natural and artificial underground structures.	
Coastal and or floodplain grazing marsh	Including species associated with marshland on riverine floodplain and coast zones.	Coastal Saltmarsh, Marsh
Coastal Saltmarsh	Category grouping species noted as having a particular association with coastal saltmarsh.	Coastal and or floodplain grazing marsh, Coastal Waters & Estuaries
Coastal Sand Dune System	An inclusive category that groups habitats associated with dynamic coastal dunes. Includes dune slacks, fixed and mobile dunes, beach, dune scrub and dune grasslands.	Other well drained grasslands (open mosaic) and calcareous habitats.

		Dunes associated with woodland, lowland heath and shingle
Coastal Waters & Estuaries	Category focused on inshore coastal waters and estuaries largely grouping fish species which require these areas for migration/breeding.	Rivers and Streams, other coastal categories.
Crags and quarries	Natural and manmade steep sided rock faces.	Exposed rock categories
Deadwood & Litter	Broad category including a range of structural and deadwood (trunks and branches) in addition to organic litter (leaves and twigs).	Woodland categories
Exposed Rock (Acidic)	A group of species which require exposed rock or rock ledges and where a mosaic habitat (e.g. rock with scrub/grassland) would not be beneficial due to their sensitivity to shading or competition.	Crags and quarries
Exposed Rock (Calcareous)	A group of species which require exposed rock or rock ledges and where a mosaic habitat (e.g. rock with scrub/grassland) would not be beneficial due to their sensitivity to shading or competition.	Crags and quarries
Flushes	An inclusive category which draws together a range of wet habitat associated species, including draw-down and ephemeral wet zones around waterbodies. Species limited to calcareous habitat have been separated but those which are more catholic are included here.	Calcareous flushes, other wetland habitats particularly uplands.
Grassland (Calcareous Mosaic)	Includes species of calcareous open species diverse grassland habitats which may also benefit from areas of open ground or rock but not necessarily of scrub.	Grassland (Open Mosaic), Structural Diversity (Calcareous Habitat Mosaic)
Grassland (Open Mosaic)	Includes species of open species diverse grassland habitats including meadows which do not necessarily benefit from a scrub mosaic but may benefit from some bare ground and un-evenness in the sward. Species specific to calcareous open grassland are included in Grassland (Calcareous Mosaic). This category includes species of predominantly dry grasslands (including Coastal).	Grassland (Calcareous Mosaic) Unimproved grasslands
Hedgerow	Species diverse managed hedgerows.	Species may cross over with other wooded habitat and scrub.
Lowland bog	Grouping species specific to lowland bog habitat and lowland bog restoration.	Bogs
Maritime cliffs	Species predominantly associated with maritime cliffs. Likely crossover with other coastal categories and grassland/mosaics in coastal zones.	Coastal Sand Dune System, Grasslands
Marsh	Species of freshwater to slightly brackish marshland/fen *includes reedbeds*	Bogs, Flushes

Mixed Woodland	Category to include species which are described specifically as being associated with mixed woodland habitat.	Other woodland types and deadwood.
Mudflats	Intertidal mudflat resource specifically assigned to shortlisted threatened birds.	Other intertidal coastal systems (particularly Estuaries/Saltmarsh). Also, uplands for Birds.
Parks & Gardens	A loose category which groups species noted for their association with urban and suburban parks and gardens. May be cross over with natural equivalent habitat (grasslands/woodland).	Grasslands and Woodland
Ponds	Groups species which require or are strongly associated with Ponds, pond margins and immediately associated habitat.	Flushes, Standing water and other wetland categories.
Purple moor-grass & rush pasture	Purple moor-grass & rush pasture	Flushes and upland/moorland categories.
Riparian Woodland	Humid woodland along the banks of rivers and streams. This type of woodland is of particular interest to many bryophytes and invertebrates as well as higher plants.	Other woodland categories, Rivers and streams.
Rivers & streams	Includes species of typically fast flowing freshwater habitats and their margins. This includes species of a range of riverbank and exposed substrate conditions (rocks/gravels).	
Scrub Mosaic	Category which groups species which require open scrub mosaic habitats in a range of conditions. Does not include those species specific to calcareous mosaic.	
Scrub-heath & moorland	An inclusive category which groups many species of upland habitats including heathland, moorland, and upland farms. Typically, does not include wetter uplands which are grouped under Bogs or flushes.	Bogs, Flushes
Shingle & strandline	Group including species which have specific requirements regarding the use of coastal shingle and strandlines.	Other coastal categories.
Special Action Required (Urgent Reintroduction of Foodplant)	Species specific. See details.	

Standing open water	Includes standing open water such as lakes, their margins and draw down zones. Does not include species strict to Ponds. May include some cross over with canals though these are not a focus of this group.	Ponds, Flushes
Structural Diversity (Calcareous Habitat Mosaic)	An inclusive category of species which benefit from a mosaic of habitats which provide a range of structural opportunities on calcareous substrate. This includes light scrub, thin unimproved grassland, bare ground, limestone pavements and exposed rock where no one habitat dominates.	Calcareous grassland, exposed rock (calcareous) and scrub mosaic
Synanthropic	A loose category of species which are associated particularly with the human built environment. Notable Buildings and structures. Non-building associations are included under Parks & Gardens or Brownfield with which this crosses over.	Parks and Gardens, Brownfield.
Unimproved Grassland (Fungi)	Category highlighting the important community of grassland fungi which may or may not also be botanically diverse.	Species rich and unimproved grasslands (Grassland (Open Mosaic)), Flushes
Wet Rocks	Species specific to wet rock which could be in woodlands or in deep unwooded valleys or cloughs.	Exposed Rock categories, Woodland categories (rocky woodlands).
Wet Woodland (Broadleaved)	Species categorised by their reliance of wet woodland habitat relates also to woodland and flushes	Woodland (Broadleaved), Flushes
Wet Woodland (Coniferous)	Species categorised by their reliance of wet woodland habitat relates also to woodland and flushes	Woodland (Coniferous), Flushes
Woodland (Broadleaved)	An inclusive category of species associated with broadleaved woodland or trees. Likely to be significant crossover with related categories and interpretation of actions should with care regarding the species detail.	Wet Woodland, Deadwood, Flushes
Woodland (Calcareous)	Category including species which are related to woodland on calcareous substrates specifically but would not benefit from scrub mosaic management.	Other habitat categories on calcareous substrates. Other woodland categories.
Woodland (Coniferous)	An inclusive category of species associated with coniferous woodland or trees. Likely to be significant crossover with related categories and interpretation of actions should with care regarding the species detail.	Wet Woodland, Deadwood, Flushes

Woodland Margins & Clearings	Species which require glades, margins or other clearings within established woodland and would not benefit from scrub mosaic management.	Other woodland categories, grassland categories.

Appendix Twelve: Habitat map sub-habitat types

Sub-habitat types
ancient woodland
acid grassland
arable
built environment
calcareous grassland
coastal and floodplain grazing marsh
coniferous woodland
deciduous woodland
fen, marsh and swamp
heath
improved grassland
inland rock
limestone pavement
littoral sediment and rock
lowland bog
mixed woodland
modified grassland
neutral grassland
residential gardens
rivers and steams
rough grassland
scrub
semi-improved grassland
standing open water and canals
suburban
upland bog

Appendix Thirteen: An outline of additional steps taken, constraints applied, and datasets used to map measures beyond the described methodology.

Measure Code	On a Network	Additional methodology	Additional constraints	Additional datasets used
AW1.2	Yes		Agricultural grade 1 or 2 Built-up areas	Risk of flooding from rivers and sea (EA) Built Up Areas (OS) Provisional Agricultural Land Classification (NE)
AW1.3	Yes	Ditches and drains, polyline features were buffered by 1.25m to create 2.5m wide polygons.		Detailed River Network (EA)
AW2.1	Yes	Identified priority watercourses and a 10m buffer for smelt or salmon		
AW2.2	Yes	Sections of watercourses within priority salmon/smelt habitats directly impacted by the in-river barriers were extracted from the detailed river network.		River obstacles database (EA) AMBER database (RT) Detailed River Network (EA)
AW2.3	Yes	River polylines in the detailed River Network (primary, secondary, tertiary) with very low frequency of bends that were (1) were not a main river or a field drain/ditch, (2) were less than 10m wide, and (3) had less than a 10% gradient. Identified all suitable habitat polygons within a 50m buffer of the resulting sections of watercourses.	Agricultural grade 1 or 2 Minimum 100m stretch	Detailed River Network (EA)
AW3.1.1	Yes		Steep slopes Built-up areas (to avoid duplicating the urban measure)	GCN Strategic Opportunity Areas (NE) Wetland potential mapping (WWT)
AW3.4	Yes	Extracted out Habitat Map polygons for habitats that could be converted to the target habitats through restoration that were within the following zones on DEFRA's Habitat Networks maps for Lowland Fen, Reedbeds, Upland Fens, Flushes and Swamps.		Habitat Networks maps (Defra)

		• Primary habitat • Associated habitats • Habitat Restoration-Creation • Restorable Habitat • Fragmentation Action Zone • Network Enhancement Zones 1&2 • Network Expansion Zone Extracted out Habitat Map polygons for habitats that could be converted to the target habitats that were outside of DEFRA's Habitat Networks maps but were within 200m of the existing target habitats.		
AW4.2	Yes	Housing allocations in wetland network plus all allocations in two areas identified on Opp/con map for high surface water flood areas		Allocations from districts and unitary authorities
AW4.4	Yes	Upstream catch area from the flood risk area (LCC) and Opp/con areas and cross reference with the high priority 'Spatial Prioritisation of Catchments Suitable for Using NFM' dataset. Buffered main rivers by 100m.	Built-up areas	Flood Risk Areas (LCC) Spatial Prioritisation of Catchments Suitable for Using NFM (EA) Flood map for planning rivers and sea zone 3 (EA)
B1	No	Biological Heritage Sites (BHS) and provisional BHS		
B2	No	BHS buffered by 50m and polygon within the buffer included if 25% of the polygon fell within it.		
C1.1	No	Select sand dunes, salt marsh and dune slacks.		
C1.2	No	Barriers identified in shoreline management plans where the plans have stated any time frame for realignment or		Shoreline Management Plans (EA) River obstacles database (EA)

		replacement by natural defences, in addition to any coastal and estuarine fish passage blockages.		
C1.3	No	Map habitats in areas of confluence between coastal and freshwater systems, such as Tidal limit and tributaries flowing into the main estuary system.		
C2.1	No	Extracted coastal flood defences from coastal management plans that included realignment or replacement by natural defences. Extracted existing sand dune, coastal wetlands, and grasslands from habitat map.		Shoreline Management Plans (EA)
C2.2	No	Mapped dune slacks and sand dunes plus adjacent land where creation is possible, from the habitat map not within designated zones for actively managing and restoring.		
C2.3	No	Extracted sand dunes, saltmarshes, and dune slacks from habitat map.		
C3.1	No	Extracted relevant habitats after overlying with flood zone maps and identify existing coastal lagoons not in flood zones that could have potential for island creation.		Flood zone map 2 & 3 (EA) Historic flood map (EA)
C3.2	No	Map riffle habitat polygons from satellite imagery up to the tidal limit and in tributaries that link into the estuary.		
C3.3	No	Extract saltmarsh and adjacent relevant polygons from habitat map.		
C3.4	No	Extracted coastal grasslands and wetlands. Mapped frequent flooded agricultural land and transitional habitats		Flood zone map 2 & 3 (EA)
G1.1	No	Extracted grassland polygons from the habitat map that aligned with agri-environment scheme options for waders, wader hotspots (5 or more breeding pairs) around the Forest of		Agri-environment schemes (NE) Wader hotspot maps (RSPB)

		Bowland (FoB) and checked LERN records for key sites along with the Opp/con map.		
G1.2	No	Extracted grassland polygons from the habitat map that aligned with agri-environment scheme options for species rich grassland and FoB hay meadow project.		Agri-environment schemes (NE) FoB Hay Meadows (LCC, YDMT)
G2.2	No	Measure mapped on biodiversity verges		Biodiversity verges (LCC)
G3.2	No	Extracted arable assemblage species records from LERN, with a min. 100m resolution and post 2000. Identified arable habitat polygons with above mean (2) species richness		Arable assemblage records (LERN)
P1.1	No	Map lowland peat on agricultural land grade 1 & 2		Moorland line (RPA) Soilscapes (NatMap)
P1.2	No	Agricultural land (arable, coastal and floodplain grazing marsh and pasture) adjacent to designated peatland sites		Moorland line (RPA) Land cover (RPA) Soilscapes (NatMap)
P2.1	No	Deep peat minus relevant land cover, SSSIs and BHS		Moorland line (RPA) Soilscapes (NatMap)
P2.3	Yes	Used wetland model and removed appropriate land cover and land uses, and peaty soils in the uplands	250m buffer of peaty soils	Moorland line (RPA) Soilscapes (NatMap)
P2.4	No	Identified heath from habitat map selected those outside the moorland line for lowlands, used additional species records post 2000 to add additional relevant polygons		Moorland line (RPA) Soilscapes (NatMap) Species records (LERN)
P3.2	Yes	Used wetland model and removed appropriate land cover and land uses, and peaty soils in the uplands	250m buffer of peaty soils	Moorland line (RPA) Soilscapes (NatMap)
P3.4	No	Identify woodland polygons not on the ancient woodland update layer that overlap with deep peat		Ancient woodland inventory update (NE) Moorland line (RPA) Soilscapes (NatMap)
P4.1	No	Peaty soils in the moorland line outside SSSI and BHS designations	Steep slopes	Moorland line (RPA) Soilscapes (NatMap)
P4.2	No	Peaty soils in the moorland line outside SSSI and BHS designations	Steep slopes	
P4.3	No	Peaty soils in the moorland line outside SSSI and BHS designations	Steep slopes	Moorland line (RPA) Soilscapes (NatMap)

P4.4	No	Habitat map used to identify plantations on peaty soils		Peaty soils (NatMap)
P4.5	No	Identify blanket bog outside of designated APIBs and BHS		
P5.1	No	Identified appropriate habitat around APIBs		Peaty soils (NatMap)
P5.2	No	Upland heath identified from habitat map and checked with species records		Species records (LERN)
P5.3	No	Identified and buffered upland purple moor grass & rush pasture and upland flushes from habitat map		
R1.1	No	Limestone pavements outside of SSSIs		Limestone pavements order (NE)
R2.1	No	Identify rocky areas with high species assemblage using the SID database for inland unvegetated or sparsely vegetated habitats (species richness above mean 3). Precise (100m accuracy) but historic records were used.		Species records (LERN)
R3.1	No	Identified quarries and spoil heaps from the habitat map and OMPDL in addition to Opp/con map		Open Mosaic on Previously Developed Land (OMPDL, NE)
U1.2	Yes	Intercepted the B-Line network with our grassland and wetland network restricted to 100m buffer of BUA		B-Lines (Bug Life) Built-up Areas (OS)
U2.1	Yes	Identified priority watercourses and a 10m buffer for smelt or salmon	Built-up Areas	Built-up Areas (OS)
U2.5	All		Built-up Areas	Open Mosaic on Previously Developed Land (OMPDL, NE)
U2.6	All	OS land use tier a and b in habitat map used to identify relevant polygons from habitat map		
U2.7	All	OS land use tier a and b in habitat map used to identify relevant polygons from habitat map		Local authority owned land (LCC)
U2.8	All	Selected cables >100m perimeter intercepting all networks		Street light cabling (LCC)
U3.1	All	Buffered all roads except local access roads (road hierarchy), rail and canals (habitat map) and cycle routes by 100m and intercepted with all networks.	Removed areas where recreational disturbance is an issue	Road hierarchy (LCC) Cycle network (LCC)
U3.2	No	Mapped five locations for green bridges, underpasses or culvert replacements for Lancashire's motorways and major trunk rail network – project with Highways England		Multiple data sources – see project report
U3.3	All	Built-up Area buffered by 500m intercepted with all networks	Built-up Areas (500m buffer)	Built-up Areas (OS)

U3.4	All	Canal BHS and canals intercepting all networks were buffered by 50m and polygons intercepting the buffer were included unless intercepted by a road on visual inspection.		
U4.1	No	Used several data sources to identify potential sites, including LCC's PROW and open access information, indices of deprivation and NE's GI mapping to identify areas lacking GI.		Public Rights of Way (PROW, LCC) Open Access (LCC) Public engagement survey (LCC) Green Infrastructure (GI, NE) Indices of Deprivation (NE)
U4.2	No	Used the Opp/con map, the public engagement survey results, LERN data on current nature reserves and district wildlife sites to idenfity potential areas.		Public engagement survey (LCC) Country Parks District Wildlife Sites (LERN) Indices of Deprivation (NE)
W1.1	No	Ancient and long-established woodland were mapped along with temperate rainforest woodlands identified from the WPM survey, in addition to expert opinion.		Ancient woodland inventory update (NE) West Pennines Moors Woodland survey (LCC)
W1.2	Yes		Ancient woodland inventory update	Ancient woodland inventory update (NE)
W1.3	Yes		Ancient woodland inventory update	Ancient woodland inventory update (NE)
W1.5	No	Identified polygons within a 5m distance of the ancient tree inventory		Ancient tree inventory (WT)
W1.6	Partly	Extracted polygons intercepting the network from the listed datasets (last column), included those on the ancient woodland inventory update even when outside the network.		Wood pasture and parkland (NE) Ancient woodland inventory update (NE)
W1.8	Yes	Included polygons from the habitat map and ancient woodland inventory update within the network.	Removed any within 100m of a main road.	Ancient woodland inventory update (NE)
W2.1	Yes	Identified unwooded polygons within 10m buffer of watercourses	Agricultural land grade 1 & 2 Functionally Linked Land SSSI impact zone 1	LiDAR Vegetation Object Model data SSSI impact zone 1 (NE) Peaty soils (NatMap) Functionally Linked Land (NE)

			Special Protection Area 50m buffer Scheduled monuments Peaty soils G1.2 Predator shadow <500m	Predator shadow (FE)
W2.3	Yes		Agricultural land grade 1 & 2 Functionally Linked Land SSSI impact zone 1 Special Protection Area 50m buffer Scheduled monuments Peaty soils G1.2 Predator shadow <500m	SSSI impact zone 1 (NE) Peaty soils (NatMap) Functionally Linked Land (NE) Predator shadow (FE)
W2.5	Yes	Extracted from W2.3 & W2.7 where they intercepted the floodplain		Flood map for planning rivers and sea zone 2 & 3 (EA)
W2.6	Yes	*Extracted from W2.3 where intercept with arable or agricultural land grade 3*		Agri-environment schemes (NE)
W2.7	No	Temperate rainforests identified for W1.1 plus polygons with precursor vegetation from the West Pennine Moors Woodland Survey		West Pennine Moors Woodland Survey (LCC)
W2.8	Yes	Used W2.3 and selected polygons that buffered deciduous or mixed woodlands and removed from W2.3		

Appendix Fourteen: Thematic Habitat Group Reports

Available on request.

[i] *Sp*ecies Recovery within Local Nature Recovery Strategies - Advice for Responsible Authorities (Version 1: August 2023)

[ii] Stevenson-Holt, C. D., K. Watts, C. C. Bellamy, O. T. Nevin and A. D. Ramsey (2014) Defining landscapes Resistance Values in least-Cost Connectivity Models for the Invasive Grey Squirrel: A Comparison of Approaches using Expert-Opinion and Habitat Suitability modelling. *Plos One* ttps://doi.org/10.1371/journal.pone.0112119

[iii] Defra (2023) *Local nature recovery strategy statutory guidance: What a local nature recovery strategy should contain*.

[iv] The Environment (Local Nature Recovery Strategies) (Procedure) Regulations 2023. SI 2023/No. 341. Available at: The Environment (Local Nature Recovery Strategies) (Procedure) Regulations 2023 (legislation.gov.uk). As accessed on 11/12/2024.