West Sussex Local Nature Recovery Strategy

Habitat Measures

V7

8th July 2025

About

At the heart of each LNRS are the collaboratively produced and locally agreed **priorities** for nature's recovery and the actions (called **measures**) that if implemented on the ground, can bring them about.

Through the LNRS process, **24 habitat priorities** for nature's recovery in West Sussex were prioritised from a long list that had been gathered following engagement with local people, organisations and groups. To deliver these priorities, **110 core measures** have been developed and refined with the help of local nature and land management experts. These have been presented in this document alongside the priority they support and additional guidance around their implementation.

Definitions

Priorities: High level statements of what the LNRS should strive to achieve for nature recovery in West Sussex within its timeframe.

'What does success in 10 years look like' statements: These provide detail of what delivery of the priority should look like within a 10 year timeframe to be considered successful. In most cases, this will require the implementation of both the core measures and enabling measures listed for each priority (see below).

Core habitat measures: Actions 'on the ground' that are required to deliver the priorities and outcomes identified for nature's recovery in West Sussex. These are the main focus of the LNRS as required by statutory guidance. Each measure is supported by notes on '**How'** (the techniques that could be used to deliver each measure (which in many cases will vary depending on the specific characteristics of a site), and '**Where'** – where they could be targeted to deliver greatest benefit. Links to **further information/guidance** and local case studies are also provided.

Enabling Measures: These are measures which are not habitat or species focussed and therefore cannot be addressed directly by Local Nature Recovery Strategies. They largely relate to supporting mechanisms, processes and functions that are considered critical to the delivery of core measures. While they cannot be picked up by LNRS, they are a focus of key local partnerships such as the Sussex Nature Partnership.

Priority species: The LNRS has identified a suite of species to target for nature recovery. These are species for which East/West Sussex is particularly important. Some have their own bespoke measures, and some have been grouped together into assemblages of species which share similar management requirements. The full species lists and targeted measures are presented in **Part 3** of the LNRS. The species and assemblages that are likely to benefit from our habitat measures have been incorporated into the relevant habitat sections that follow.

Mapped/not mapped. This indicates whether the measure has been mapped on the 'measures map' which follows this section.

Contents

DRAFT

Part 1: Core Measures

Coastal Habitats

Priority C1. Support the expansion, restoration, enhancement and creation of coastal and inter-tidal habitats

What does success in 10 years look like?

- The condition, connectivity and resilience of our most fragile coastal habitats* is improving through management, expansion and buffering of fragments and creation of new habitat where conditions are suitable and feasible.
- Migration of those habitats most vulnerable to loss through sea-level rise and coastal squeeze is being achieved through habitat creation where conditions and methodologies allow. Specific progress in the creation of new areas of saltmarsh and coastal floodplain grazing marsh is most notable.
- Pressures on the natural environment of our harbours and estuaries and their associated coastal and inter-tidal habitats and species from upstream diffuse inputs from land to sea have been reduced via 'nature-based solutions' and land and marine-based actions. 'Source to sea' approaches are playing a role in tackling impacts on coastal environments and habitats which originate on land, across catchments. In particular, the water quality of our harbours, inlets and coastal protected areas is improving, with the condition of affected coastal designated sites moving from unfavourable/declining to recovering condition as a result.
- The implementation of flood and coastal erosion risk management infrastructure is delivering positive benefits for nature, particularly where nature-based approaches such as managed-realignment projects have been possible and successful. The design of future coastal flood defence schemes is incorporating measures to support recovery of coastal habitats.
- Where areas of coastal habitat are at significant risk from sea-level rise and coastal squeeze, statutory bodies have led decision-making and delivery processes enabling nature recovery particularly where habitat loss and degradation of designated sites may result.
- Larger contiguous areas of coastal and inter-tidal habitat have been created in some areas (e.g. saltmarsh, mudflats and coastal grazing marsh) and are delivering a range of ecosystem services. These include a reduction in coastal flood risk and erosion, as well as improved carbon storage, bioremediation (use of habitats to absorb excess nutrients), healthy inshore waters and nursery areas for fish and other marine wildlife.
- Sensitive coastal sites are being buffered from encroaching development.
- Visitor management approaches are reducing the impacts of visitors on coastal habitats, as well as breeding birds and other species, and may have resulted in the creation of alternative sites or visitor opportunities to take pressure off the most sensitive and important areas.
- Achievement of the above is being facilitated through a collaborative approach to the recovery of habitats and species across marine, coastal and terrestrial ecosystems. The Sussex Bay 'Seascape Blueprint for research and recovery' (to be published in 2025), is guiding this work by providing an evidence-led approach to delivery of habitats and species within the coastal and marine environments of Sussex.

*Coastal habitats identified as '**at risk**' by Sussex Nature Partnership include sand dunes, saltmarsh, coastal vegetated shingle, saline lagoons, intertidal kelp, seagrass, mudflats, coastal grazing marsh, oyster reefs, mussel beds, maritime cliff and slope, chalk reefs and islands.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
C 1.1	**Retain existing and re-create additional naturally functioning shorelines where appropriate, supporting the creation and increased connectivity of coastal and intertidal habitat and delivery of additional ecosystem services.** **[Mapped]**	Managed realignment; removal of redundant coastal defence structures or coastal defence structures where dwellings or infrastructure are not at risk of flooding; encouragement of sedimentation on existing marshes/mudflats etc.	Areas identified under policies of 'managed realignment' and 'no further intervention' in Shoreline Management Plans; areas identified by Environment Agency and catchment partnerships as suitable for future proposals.	Restoring Estuarine and Coastal Habitats with Dredged Sediment - CaBA ***Local case study examples:*** *(West Sussex): Chalkdock Marsh, Apuldram Meadow*
C1.2	**Restore and enhance existing areas of intertidal saltmarsh and mudflats.** **[Mapped]**	Restoration of existing sites via grazing; cutting; protection from erosion.	Existing areas of inter-tidal saltmarsh and mudflat	Saltmarsh Restoration Handbook: CaBA Restoring Estuarine and Coastal Habitats with Dredged Sediment: CaBA ***Local case study examples:*** *(West Sussex): Saltmarsh Restoration Trial Project – West Itchenor (Chichester Harbour); Chalkdock Marsh, Apuldram Meadow.*
C1.3	**Create new areas of intertidal saltmarsh and mudflat, in locations where it is likely to be resilient to future climate pressures.** **[Mapped]**	Creation of new saltmarsh requires inundation of land by tidal waters. Approaches used may involve managed realignment; regulated tidal exchange; water management; re-use of dredged material etc. The aim is to ensure 'migration' of this habitat to areas with less risk from sea-level rise. This may have impacts on other habitats present on candidate sites which must be taken into consideration.	Areas where conditions are suitable for habitat creation and longevity (i.e. with future impacts of climate change/sea level rise in mind). Suitable locations for saltmarsh creation may include tidal reaches of rivers as these provide space for estuarine habitat types under threat from sea level rise to 'migrate' inland (upstream). Saltmarsh creation	Catchment based approach: Marine and coastal habitat restoration principles Environment Agency: Saltmarsh Restoration Handbook ***Local case study example:*** *Medmerry managed realignment project*

Code	Measures	How	Where	Further info/guidance
			is therefore also included as an option under measure R1.1 i.e. within areas of the floodplain where conditions may be suitable due to tidal inundation *(See R1.1 'Renaturalise' and reconnect rivers to their floodplains, allowing water to spill naturally onto adjacent land and restoring, expanding and better connecting floodplain habitats).*	
C1.4	**Enhance existing coastal vegetated shingle habitats and create new areas, primarily through expansion of existing sites.** **[Mapped]**	These will be site dependent but may include: control of Invasive Non-native Species; reduction of disturbance from shingle excavation or recreational pressure (e.g. fencing/visitor management, education and interpretation); non-intervention management; retention of tide-swept debris, prevention of scrub encroachment; enhancement of adjacent supporting habitats etc. Expansion/creation of new area can be facilitated by shingle profiling to create micro-habitats; recolonisaton or planting; protection from recreational pressure and future shingle excavation.	Existing sites for enhancement and expansion where conditions will support this. e.g. where new vegetation is likely to survive pressures from recreation, coastal processes etc; seek opportunities within coastal defence projects.	Coastal vegetated shingle (Buglife) Restoring Estuarine and Coastal Habitats with Dredged Sediment - CaBA Nature after minerals, advisory sheet: coastal vegetated shingle ***Local case study examples:*** *Stakes Island in Chichester Harbour (shingle recharge)*
C1.5	**Enhance existing areas of intertidal seagrass and create new areas primarily through expansion of existing sites*.** *(*note – seagrass and other habitats*	Removal of spartina and Invasive Non Native Species (INNS), management of bait digging and hand gathering, boat management practices etc. Success may rely on improvement of	Existing areas of inter tidal seagrass; areas identified in MMO 1135 Potential seagrass restoration *Environment Agency – seagrass*	Seagrass Restoration Handbook - CaBA LIFE Recreation ReMEDIES Solent Seagrass Restoration Project

Code	Measures	How	Where	Further info/guidance
	within the marine zone are not covered by the LNRS). **[Mapped]**	water quality and reduction in pollution (beyond the scope of the LNRS). Establishment of new areas should follow best practice techniques which may include replanting/reseeding depending on site conditions.	*potential*	Project Seagrass
C1.6	**Enhance existing coastal lagoons*, providing optimal environmental conditions for aquatic life.** (*these may be saline, brackish or freshwater depending on level of salinity). **[Mapped]**	Monitoring and control of salinity levels; management of water levels; reduction of disturbance; creation/enhancement of marginal habitats; improvement of water quality through reduction of pollution (beyond the scope of the LNRS) etc.	All coastal lagoons	Saline Lagoons, Solent Forum
C 1.7	**Create new coastal lagoons*, to connect wetland habitats and compensate for those lost due to pressures such as climate change.** (*these may be saline, brackish or freshwater depending on level of salinity). **[Mapped]**	Land-forming to create lagoon areas; natural dispersal of species; natural coastal processes as part of manged realignment projects	In transitional areas that are likely to flood and where possible pressures from recreation/ disturbance are low; creation of new coastal lagoons within managed realignment projects; locations where this will support specific species and form part of a wider mosaic of connected wetland habitats. May form part of response to loss of coastal habitats to sea level rise.	Nature after Minerals, Advisory Sheet: saline lagoons
C1.8	**Enhance the condition of existing sand dune habitats.** **[Mapped]**	Dune stabilization; removal and control of INNS; reduction of disturbance, trampling and erosion via visitor management etc.	All sand dunes sites	Natural England. The Sand Dune Managers Handbook (2nd edition) ***Local case study example:*** *Sand Dunes of East Head, Chichester Harbour.*

Code	Measures	How	Where	Further info/guidance
C1.9	**Restore native oyster habitat.** **[Mapped]**	Creating suitable conditions for growth of native oysters.	Areas identified as suitable via Blue Marine research and mapping data. In West Sussex, suitable sites within boundary of the LNRS are limited to known historic aquiculture sites within Chichester Harbour (with others offshore lying outside the formal LNRS boundary).	European Native Oyster Restoration Handbook - CaBA ***Local case study example:*** *Solent Oyster Restoration Project*
C1.10	**Reduce impacts on coastal wildlife caused by coastal leisure and recreational activities on land and water.** **[Unmapped]**	Management of recreational use in and around fragile coastal habitats and key sites for coastal wildlife (such as wildfowl, waders, terns, Brent geese); management of leisure activities (including dog walking) where this is a cause of wildlife disturbance.	Areas/sites of coastal habitat where wildlife is vulnerable to visitor pressure.	***Local case study example:*** *Solent Recreation Mitigation Strategy*

Other core measures overlap directly with this priority and will contribute to its delivery:

Woodland

W1.13 Enhance existing areas of coastal woodland in Chichester Harbour.

W2.6 Increase extent of coastal woodland in Chichester Harbour through expansion of existing areas of woodland.

Rivers, streams and aquifers

R1.1 'Renaturalise' and reconnect rivers to their floodplains, allowing water to spill naturally onto adjacent land and restoring, expanding and better connecting floodplain habitats (such as wet grassland, fen, marsh and wet woodland). This will support biodiversity, increase ground water recharge and provide flood attenuation. [Note that in tidal reaches of rivers, this measure may include creation of saltmarsh where conditions are suitable.]

Wetland and standing water bodies

Wt 1.4 Manage existing areas of floodplain grazing marsh (including coastal floodplain grazing marsh) to enhance the ecological condition of its mosaic of habitats and ditches.

Urban Nature

U2.1 Increase the area of habitat created and managed for nature within existing green spaces, such as parks, recreation grounds, allotments, golf courses, foreshore, public gardens, shared spaces (flats/housing association land), hospitals, prisons etc. *(Where located along the coast, these urban spaces may have a role to play in enhancing/creating coastal habitats while also providing public access. This will be very site specific).*

Code	Measures	How	Where	Further info/guidance
More generally, measures within **Rivers, streams and aquifers** section intended to enhance water quality within catchments, will also support the coastal and marine environment of West Sussex. Similarly, measures within protected sites will be relevant to many coastal habitats, given the high proportion of these sites that site within or in the proximity of protected sites such as SSSIs, SACs/SPAs, Ramsar Sites and Local Wildlife Sites (See **Nature Networks** section).				

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Harbour seal	C1.2, C1.3, C1.10
Dark-bellied brent goose	C1.5, C1.10
White-tailed eagle	C1.1, C1.9, C1.10
Common oyster	C1.9
Defolin's lagoon snail	C1.6, C1.7
Lagoon spire snail	C1.6, C1.7
Looping snail	C1.4
Priority assemblages of species	**Measures that would be beneficial**
Breeding waders - wet grassland & heathland assemblage	C1.2, C1.3, C1.10
Coastal grazing marsh & upper saltmarsh assemblage	C1.1, C1.2, C1.3
Shingle and sand dune assemblage	C1.1, C1.4, C1.8, C1.10
Breeding & migrating/winter shore birds assemblage	C1.2, C1.3, C1.4, C1.6, C1.7, C1.10

Farmed landscape and soils

Priority FL1. Create and enhance opportunities for wildlife within the farmed landscape

What does success in 10 years look like?

(These are in addition to statements noted under other habitat groups which apply to farmland e.g. grassland, woodland, hedges and heathland, freshwater and soils)

- Our species-rich grassland habitats that have been created by (and rely on) traditional farming practices, are improving in quality and extent through suitable management and understanding of their quality (see species-rich grassland section below).
- Species-rich and more structurally diverse grass buffer strips and plots in fields are providing new areas of habitat for wildlife, supporting invertebrates (including pollinators) and creating linkages/corridors between other habitats. These buffers and plots are of a size that is appropriate to the landscape and field-size.
- Nature friendly farming approaches are creating features and habitats for wildlife such as hedgerows, riparian buffer strips and species-rich field boundaries, supporting nature whilst also contributing to wider environmental quality by capturing nutrients, storing carbon, slowing the flow of water in the landscape etc. These habitat interventions are being supported farming practices which are also focused on minimising impacts on the wider environment such as soil erosion and diffuse pollution across catchments, improved carbon storage in soils etc.
- In-field trees (including veteran trees and groups of trees) are being protected from agricultural operations and maintained/replaced/restored as landscape features where possible to support biodiversity including invertebrates, mosses, lichens and birds. Natural regeneration is enabled, or planting is done to produce veteran trees for the future and to create connectivity between lone trees.
- Appropriate (nature friendly/climate resistant) agro-forestry species and scrub are being used in places to provide shelter and shade for livestock, support biodiversity and deliver other benefits such as improved water quality, reduced flood risk and carbon sequestration.
- Hedges are enhanced and gapped up, and hedgerow trees planted to ensure they have good structural diversity. New hedges are being established on farmland to improve the connectivity of hedgerows across the landscape.
- Ditches on farmland are managed sensitively to protect existing species and water levels are maintained where possible to enhance biodiversity.
- Farmland bird species (e.g. skylark, stone curlew, corn bunting, grey partridge, turtle dove, lapwing and barn owl) are being supported through the retention of important habitat and enhancement and creation of other habitats specific to their needs across the farmed landscape. The abundance and range of target species is increasing.
- Rare arable plant species are present and increasing in their range and number of sites through appropriate management (e.g. reduced use of pesticides, leaving areas of un-cultivated fallow ground etc).

Enabled (by government, protected landscapes, farming and conservation organisations):

- Farmers and landowners across West Sussex are engaging with support, advice and funding options available to enable them to carry out nature recovery actions.
- More farmers are implementing nature-friendly and/or regenerative farming practices, delivering benefits for nature, soil and the wider environment alongside more sustainable food production.
- The network of farmers working together locally through farmer clusters, nature-recovery partnerships or projects has grown and is playing a critical role in delivering for nature alongside sustainable food production, both on their own land and collectively at a larger scale.
- Farm and land-based business are on a positive trend towards economic and environmental sustainability, with nature-based solutions forming part of their farm business model. Successes and progress in achieving greater sustainability and contributing to delivery of LNRS are acknowledged.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
FL 1.1	**Create permanent, species-rich and/or structurally diverse grass blocks, strips, margins or headlands to support pollinators and other wildlife.** **[Unmapped]**	Creation of permanent grassland blocks, margins, headlands and strips with species and structural diversity. Suitable techniques will depend on whether these are being created on arable land or pasture. On arable, techniques can include seeding, mowing (including removal of arisings). On pasture, techniques are more likely to involve grazing regimes (e.g. mob grazing).	This is good practice across farmland but particularly where greater habitat connectivity is needed and/or to support specific species. Concentrate on connecting these strips, blocks and headlands across land holdings to support larger scale connectivity. Size of buffers, margins blocks etc, should be sufficient to provide ecological benefit but of a scale that is suitable for the landscape and field size.	Guidance for relevant ELMS options: CIPM2: Flower-rich grass margins, blocks or in-field strips Kent Wildlife Trust: Managing field margins for wildlife Wildlife Conservation Research Unit. Wildlife and farming: field margins, hedgerows, woodland and scrub ***Local case study examples:*** *South Downs Farmland Bird Initiative(web page) and story map* *Norfolk Estate project review. Grey Partridge on the South Downs* *The Peppering Project*
FL1.2	**Create new areas of cultivated fallow ground for arable plants and farmland birds and ensure that the overall area is maintained, even if individual plots are rotated through the landscape.**	Creation of fallow margins or plots in spring or autumn; to provide vegetative cover throughout the growing season. No application of fertiliser or manure.	Arable land, particularly on sandy or chalky soils. Target in areas known to be important for arable plants (e.g. from historic records) and where it will support specific bird species that are present in the area and will benefit	Farm Wildlife. Fallow Plots Plantlife. Managing arable farm land Guidance for relevant ELMS options: AB11 Cultivated areas for arable plants.

Code	Measures	How	Where	Further info/guidance
	[Unmapped]	The key is to encourage native plants within the seedbed to grow (rather than to plant seed). Site selection is therefore key in order to find locations with a rich seed bank (ideally in areas previously cultivated for up to 100 years).	from this type of habitat (e.g. stone curlew, lapwing, turtle dove). Rotation around the farm can prevent build-up of undesirable weed species.	AHW11 Cultivated areas for arable plants ***Local case study examples:*** *South Downs Farmland Bird Initiative(web page) and story map* For more information on specific measures to support farmland birds, see the species section of the LNRS on 'farmland birds' assemblage.
FL 1.3	**Create new areas of agro-forestry where this will support and enhance landscape character, support biodiversity and deliver other benefits such as shelter and shade for livestock.** **[Unmapped]**	This can be 'in-field' or 'around field' planting of in-field and hedgerow trees; management (pruning) of established trees; accompanying cropping or pastoral regimes.	Areas where this is a suitable land use in relation to landscape character (as guided by relevant local landscape character assessments[1]) and Protected Landscape Management Plans. Forestry Commission Mapping and Woodland Opportunity Map (Sussex Nature Partnership and SDNP) can help to spatially target opportunities[2].	Government guidance (Forestry Commission): a guide to agroforestry Agroforestry Handbook (Soil Association)
FL 1.4	**Provide nesting and roosting boxes or other features to support bats, birds, insects and reptiles in the farmed environment.** **[Unmapped]**	Provision of standing deadwood and log piles; bare ground; bird boxes; bat boxes; roosting/nesting sites in farm buildings.	For birds, rather than providing general bird boxes, provide specific types of boxes suited to **threatened** bird species found at the location (e.g. swift, house sparrow, starling, owl species etc.) and in locations where over-wintering habitat and summer insect-rich forage is present. For bats,	Defra: Blog – providing nest boxes for birds. Bat Conservation Trust Bat boxes; Bat box information pack. Barn owl Trust: nest boxes Swift conservation

[1] West Sussex Landscape Character Assessment, South Downs Landscape Character Assessment, High Weald AONB Management Plan.
[2] https://data-forestry.opendata.arcgis.com/datasets/aa20163c87814a3a8f5c19075244927a_0/explore
https://www.southdowns.gov.uk/wildlife-habitats/habitats/healthy-woodlands/woodland-opportunity-mapping/

Code	Measures	How	Where	Further info/guidance
			target areas where bats are known to roost or forage. Log piles and standing deadwood will support a general range of insects.	
FL 1.5	**Create and manage graded margins up to hedgerow and woodland edges on farmland, to support birds and other woodland and farmland species.** **[Unmapped]**	Creation of grass and scrub mosaic along the woodland/hedgerow edge; no application of pesticides/fertilisers;	Alongside priority habitat woodland types and ancient-species rich hedges (usually defined as 5 or more species within 30m).	Guidance for relevant ELMS options: AHW12 Manage woodland edges on arable land CAHL4 4m to 12m grass buffer strip on arable and horticultural land CIGL3 4m to 12m grass buffer strip on improved grassland
FL 1.6	**Plant new field trees to ensure continued presence of in-field trees within the farmed landscape.** **[Unmapped]**	Tree planting (with a plan for their long -term management and maintenance); protection from grazing if required; creation of a buffer of low growing vegetation around in-field trees to ensure they are not isolated from other habitat.	In locations where in-field trees have been lost or are old/veteran trees and thus where a plan for 'succession' is required.	Guidance for relevant ELMS options: BFS5 Protect in-field trees on intensive grassland
FL 1.7	**Implement sensitive land management practices on farmed land adjacent to rivers, streams, ditches and ponds to prevent run off and enhance the quality of the freshwater environment**. **[Unmapped]**	Reduced fertiliser inputs on land adjacent to rivers/streams; management of cattle poaching along river banks; cover crops; presumption against specific livestock with known detrimental impact on water quality (e.g. pig farming and Cryptosporidium/ chicken farming and nutrient run off), promotion of soil health.	Land adjacent to water courses, particularly in areas vulnerable to nutrients and/or sediment loads within water courses/freshwater ecosystems.	Catchment Sensitive Farming guidance
Other core measures overlap directly with this priority and will contribute to its delivery, these include: Many of the measures that relate to **rivers, streams and aquifers** and **wetlands and standing water bodies** located on farmland will be relevant (see sections below). These include: Rivers, streams and aquifers				

Code	Measures	How	Where	Further info/guidance
R1.6 Create and manage permanent vegetation **buffer strips alongside rivers and streams** to support biodiversity and intercept and reduce levels of pollutants (such as nutrients, chemical pollutants, veterinary chemicals, excessive sediment) reaching water courses. Wetlands and standing water bodies SWB 1.1 Enhance and restore existing ponds and pond complexes to improve biodiversity and water quality. This includes restoration of degraded and lost (ghost) ponds, pond complexes, **farm ponds,** hammer ponds, dew ponds and urban ponds. SWB1.2 Create new ponds / pond networks (complexes) to provide additional freshwater habitat and deliver wider environmental benefits (e.g. storage of water in the landscape). *Pond creation on farmland will provide additional ecological variety. Can be designed to store additional water in the landscape and support farmland bird species.* SWB 1.5 Create and manage permanent vegetation **buffer strips alongside ditches** and ponds to support biodiversity and intercept and reduce levels of pollutants (such as nutrients, chemical pollutants, veterinary chemicals, excessive sediment) reaching water courses. The farmed landscape in West Sussex contains a range of other habitat types and covers a large % of its total land area. Therefore, measures within the following sections will also be relevant in delivering nature's recovery in the farmed landscape: **species rich grassland; woodland, hedgerow & scrub; heathland and sandstone outcrops**; **Nature Networks** (protected sites and wildlife corridors) Also relevant may be measures relating to **coastal habitats** – where these sit within agricultural landholdings.			

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
European water vole	FL1.7
Hazel dormouse	FL1.3, FL1.5
Pine marten	FL1.3, FL1.5
West European hedgehog	FL1.5
Greater horseshoe bat	FL1.5
Grey long-eared bat	FL1.1, FL1.4, FL1.5
Mouse-eared Bat	FL1.1, FL1.5
Dark-bellied brent goose	FL1.1, FL1.2, FL1.7
White-tailed eagle	FL1.7
White-clawed crayfish	FL1.7
Glow-worm	FL1.5
Grass-poly	FL1.7
Priority Assemblages of species	**Measures that would be beneficial**
Farmland birds assemblage	FL1.1, FL1.2, FL1.4, FL1.5
Rare arable plants assemblage	FL1.1, FL1.2
Woodland bats assemblage	FL1.4, FL1.5, FL1.7
Woodland birds assemblage	FL1.3

Priority SL1. Enhance soil habitats and their health to support biodiversity and improve ecosystem services

What does success in 10 years look like?

- The condition and health of soil across the farmed landscape of West Sussex is improving through a range of management and land use practices including rotation, suitable tillage and grazing regimes, retention of permanent pasture.
- There is increased integration of grass and herb-rich leys within farming systems, where appropriate, to increase biodiversity and improve soil health. Temporary habitats on farmland are recognised for the role they have on soil health.
- There is a greater understanding of soil condition and soil type, potential and variability across the LNRS area. There is more understanding of how soils can be improved to deliver soil health and other associated ecosystem services such as food production, soil biodiversity, carbon sequestration and greater farmland resilience to flooding and drought.
- Artificial inputs such as synthetic nitrogen-based fertilisers, fungicides, pesticides and herbicides have been reduced and minimised.
- Farmers have been able to access training and new insights into optimal management of soil for soil biology and organic carbon. The impacts of different farming systems on soils is understood.
- Rates of soil loss and erosion have slowed, particularly into rivers and other water courses. This is benefitting the quality of the freshwater and marine environment.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	What	Further info/guidance
SL 1.1	**Implement farming techniques that improve soil health and biodiversity.** **[Unmapped]**	Regenerative farming; organic farming; crop rotation; reduced tillage practices; mob grazing; integration of grass and herb-rich leys (arable); use of seed/plants of local provenance, use of cover crops etc.	Suitable for widespread application.	Regenerative Food & Farming Groundswell – principles of regenerative agriculture
SL 1.2	**Implement sensitive forestry practices to reduce impacts and compaction to forest floor and protect mycorrhizal systems.**	Timber extraction by heavy horses; if using conventional equipment, timing of works to reduce impact	Particularly important in ancient woodland	Forestry Standards (soil section)

Code	Measures	How	What	Further info/guidance
	[Unmapped]			
SL 1.3	**Reduce pesticide and fertiliser inputs, particularly within Nitrate Vulnerable Zones Source Protection Zones.** **[Unmapped]**	*Strategic use of chemicals; use of alternatives*	*Suitable for all farmland; particularly important in NVAs, SPZs.*	Guidance for relevant ELMS options: Applying the farming rules for water

Priority species that would benefit from soil habitat priorities and measures

Priority species	Measures that would be beneficial
European water vole	SL1.3
Hazel dormouse	SL1.2
Pine marten	SL1.2
Greater horseshoe bat	SL1.1, SL1.2
Grey long-eared bat	SL1.1, SL1.3
Mouse-eared bat	SL1.1, SL1.2
Dark-bellied brent goose	SL1.1, SL1.3
White-tailed eagle	SL1.1, SL1.3
White-clawed crayfish	SL1.3
A spider *Araniella alpaca*	SL1.2
A spider *Xysticus luctuosus*	SL1.2
Large gold case-bearer	SL1.1
Grass-poly	SL1.1, SL1.3
Priority assemblages of species	**Measures that would be beneficial**
Rare arable plants assemblage	SL1.1

Species-rich grasslands

Priority G1 Restore, expand, connect and enhance species-rich grasslands*

** For the purposes of this priority these include: lowland calcareous grassland (chalk grassland), species-rich meadows (including lowland meadows) and pastures, waxcap grasslands, and neutral grasslands.*

Note: Semi-natural grasslands within the High Weald National Landscape (HWNL) are dealt with under their own measures, given the complexity of grasslands in this area and the specific way in which the HWNL Team has been collating data and providing management support for the grasslands within its boundary. The term 'species-rich grassland' in these measures therefore relates to the definition of the term used by HWNL Team.

Acid grassland is most commonly found in association with heathland habitats and is thus dealt with primarily in the lowland heathland section below. Wet grassland and floodplain grazing marsh is included in the Wetland section below.

What does success in 10 years look like?

- The focus has changed from managing small fragments of species-rich grassland, to a more joined up approach that is delivering bigger, better and connected areas of species-rich grassland and associated habitats (e.g. scrub). Projects at a county and regional scale are helping to deliver progress at a landscape scale.
- More areas of existing species-rich grassland are being managed and restored to protect and enhance their value for nature. This includes management of grassland with low chemical inputs and appropriate grazing regimes. As a result, there is increased abundance of important plant species and the specific priority species associated with these habitats.
- Remnants of these valuable habitats have been identified and are being buffered and better connected through appropriate management of suitable adjacent high quality semi-improved grassland to create larger connected areas of species-rich grassland. Where creation of larger contiguous areas isn't possible, greater connectivity is being achieved through creation of corridors or stepping stones of habitat. This will often be within a mosaic of habitats dependent on underlying geology and current and historic land management influences (including grassland, woodland, scrub and/or hedgerows).
- Overall, a larger number of areas of high quality semi-improved grassland (which have the potential to become species-rich grassland) are being managed to increase diversity of important plant species and attract insects and other wildlife. Where possible this is being done in areas where this can help buffer or better connect existing areas of habitat as noted above.
- The enhancement and reduced fragmentation of low input species-rich grassland across West Sussex is delivering wider benefits including for pollinators, water quality, aquifer recharge, soil retention and quality, and carbon storage. Some of this is contributing to local and regional ambitions to support the natural function of aquifers such as the Big Chalk Initiative across Southern England.
- There is a much greater understanding and appreciation of the variety and value of the different types of species-rich grasslands in West Sussex, which are directly related to the underlying soils and geology and can vary immensely within a small area in some parts of the county.

- There is increasing recognition of the value of the undisturbed soils of our semi-natural grasslands for both carbon storage and carbon capture.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
G1.1	**Enhance existing areas of species-rich lowland calcareous (chalk) grassland, maintaining and improving its quality, diversity of species, suitable sward height and structure.** **[Mapped]**	These will be site specific but may include: rotational extensive grazing throughout the year; grazing/cut and collect regimes sensitive to the flora, fauna and fungi of the site; reduction in erosion; control of invasive non-native species (such as cotoneaster on downland areas of chalk grassland); use of locally harvested wildflower seed suitable for soil conditions or green hay for seeding new areas; reduction of recreational pressure on habitat and species disturbance via visitor management; control or removal of scrub where required. Note: on chalk grassland in particular, it may be beneficial to control scrub to create a grassland/scrub mosaic for the benefit of specific species (e.g. butterflies) and to create viable grazing areas. Seek ecological advice to identify suitable % scrub cover that would be valuable).	All areas of existing lowland calcareous (chalk) grassland; particularly those areas within and adjacent to Local Wildlife Sites and SSSIs/NNRs.	Guidance for relevant ELMS options: GRH6 Manage priority habitat species-rich grassland (endorsed) GS6 Management of species-rich grassland.
G1.2	**Create new areas of calcareous (chalk) grassland, particularly where this will expand existing sites and improve connectivity with existing areas of chalk grassland and related chalk habitats (such as chalk heath).** **[Mapped]**	These will be site specific but will include allowing natural regeneration/ colonisation of adjacent land via seed dispersal; use of green hay; use of local provenance seed or other plant material; grazing; cutting and removal of hay crop to reduce nutrients if required.	Locations where this will help to expand or better connect existing areas of high-quality chalk grassland and other chalk habitats; In terms of target sites, a good starting points will be suitable areas of semi-improved grassland on chalk soils, particularly those adjacent to existing chalk grassland. Reversion of improved	***Local case study examples:*** *Changing Chalk Partnership;* *Big Chalk initiative*

Code	Measures	How	Where	Further info/guidance
			grassland and arable on chalk soils is also possible but may be harder to achieve.	
G1.3	**Within the High Weald National Landscape, enhance the existing species-rich grasslands and lowland meadows found within the protected landscape, maintaining and improving ecological condition, diversity of species, suitable sward height and structure.** *(These include ancient, undisturbed and unimproved neutral grasslands, dry acid grassland, lowland meadows, hay meadows and pastures found within the High Weald National Landscape as defined and mapped by the High Weald National Landscape team). For **waxcap grasslands** which are also found in the High Weald, see separate measure below.* **[Mapped]**	These will be site specific but may include: rotational extensive grazing throughout the year; grazing/cut and collect regimes sensitive to the flora, fauna and fungi of the site; reduction in erosion; control of Invasive Non-native Species (INNS); use of local provenance/ locally harvested wildflower seed suitable for soil conditions* or locally sourced green hay for seeding new areas and/or locally grown Weald native plug plants for re-introductions; reduction of recreational pressure on habitat and species disturbance via visitor management; control or removal of scrub where required.	All areas of species-rich grassland within the HWNL not already in positive conservation management; particularly those in and around protected sites (i.e. those within LWS and LNRs or adjacent to/ between SSSIs)	High Weald National Landscape. Wildflower Grasslands in the High Weald (video) High Weald National Landscape Unit. Grassland management High Weald National Landscape Unit. Meadow Grassland in the High Weald Landscape (land manager's pack) Advice can also be provided directly to landowners by the High Weald National Landscape Team.
G1.4	**Within the High Weald National Landscape, create new species-rich grassland, particularly where this will expand and better connect the species-rich grasslands and lowland meadows of the protected landscape.** *(This may include creation of neutral grassland, dry acid grassland,*	Start with **low-input or high quality semi-improved grassland sites adjacent to or in close proximity to existing species-rich grassland sites**. Techniques will be site specific but may include: introduction of rotational extensive grazing throughout the year; grazing/cut and collect regimes sensitive to	Areas of high quality semi-improved grassland or low-input grassland (within the HWNL) adjacent to (or in close proximity to) existing species-rich grassland sites or existing priority habitats;	Advice can be provided by the High Weald National Landscape Team.

Code	Measures	How	Where	Further info/guidance
	lowland meadow and other types of species-rich grassland relevant to the High Weald and as advised by the HWNL Team). **[Mapped]**	the flora, fauna and fungi of the site; use of local provenance/ locally harvested wildflower seed suitable for soil conditions* or locally sourced green hay for seeding new areas and/or locally grown Weald native plug plants for re-introductions; reduction of recreational pressure on habitat and species disturbance via visitor management; control or removal of scrub where required. **Weald native origin wildflower seed is harvested from existing species-rich grasslands in the Weald for use in creation of Weald grasslands*		
G1.5	**Manage existing waxcap grasslands to retain and enhance their value for grassland fungi.** **[Mapped]**	Avoid use of fertilisers, manures, herbicides and lawn treatments; retain as permanent grassland and avoid cultivation; maintain a low sward height through low input grazing or mowing (with removal of arisings); avoid compaction and re-seeding.	All existing areas of waxcap grasslands. These may be located in agricultural grasslands or lawns, cemeteries and amenity grasslands. For more information, see measures within waxcap grassland fungi (assemblage) set out within the species section.	Plantlife: Waxcaps and grassland fungi – a guide to identification and management Sussex Biodiversity Record Centre: Grassland waxcap identification tool
G1.6	**Enhance existing areas of species-rich neutral grassland and lowland meadow (outside the High Weald National Landscape), maintaining and improving their quality, diversity of species, suitable sward height and structure.** *(Within the High Weald National Landscape, these types of grassland are already included in the definition of 'species-rich grassland and lowland meadows of the High Weald'*	These will be site specific but may include: rotational extensive grazing throughout the year; grazing/cut and collect regimes sensitive to the flora, fauna and fungi of the site; reduction in erosion; control of invasive non-native species (such as cotoneaster on downland areas of chalk grassland); use of local provenance/ locally harvested wildflower seed suitable for soil conditions* or locally sourced green hay for seeding new areas and/or locally grown Weald native plug plants for re-introductions; reduction of recreational	All areas of species-rich neutral grassland and lowland meadow outside High Weald National Landscape not already in positive conservation management; particularly those in and around protected sites (i.e. those within LWS or LNRs or adjacent to/ between SSSIs/NNRs) or in close proximity to other priority habitats.	Defra Blog: Maintain species-rich grassland Kent Wildlife Trust: Management of neutral grassland Plantlife: Managing meadows Guidance for relevant ELMS options: GRH6 Manage priority habitat species-rich grassland (endorsed); GS6 Management of species-rich grassland.

Code	Measures	How	Where	Further info/guidance
	and so are covered by measures G1.3 and G1.4 for this area of West Sussex). **[Unmapped]**	pressure on habitat and species disturbance via visitor management; control or removal of scrub where required.		
G 1.7	**Create new areas of species-rich neutral grassland and lowland meadow (outside the High Weald National Landscape), particularly where this will improve connectivity with existing neutral grassland and lowland meadow sites.** *(Within the High Weald NL this action is covered by measure G1.4 for this area of West Sussex).* *Note: the intention of this measure is to create species-rich neutral grassland in good condition rather than species-poor/moderate neutral grassland which may also fall under the definition of 'Other Neutral Grassland' as per the BNG metric).* **[Unmapped]**	Starting point is **semi-improved grassland on neutral soils** in the first instance (easier to convert to species-rich grassland); reduction of nutrient levels if required; allow natural regeneration/colonisation; use of locally sourced green hay; use of local provenance seed or other plant material; once established, grazing/cut and collect regimes sensitive to the flora, fauna and fungi of the site; management or removal of scrub where required;	Based on underlying soil type (neutral clay and alluvial soils with pH between 5.5 and 6.5); locations where this will help to expand or better connect existing areas of high-quality neutral grassland.	High Weald National Landscape: Managing grassland habitats Plantlife: The Good Meadow Guide Kent Wildlife Trust. Management of neutral grassland (includes a section on how to re-create neutral grassland) How to rewild: Neutral grassland habitat management plan
G 1.8	**Manage existing areas of high quality semi-improved/low-input grassland to retain and enhance biodiversity and support species-rich grassland habitats.** **[Unmapped]**	Manage to prevent degradation (e.g. over grazing or under grazing) or 'improvement' (addition of fertilisers); low input grazing to support increased sward height and structure; enhance species diversity (local seed sources/ green hay)	Known areas of low input/ semi-improved grassland; specifically target areas adjacent to species-rich grassland to act as buffer and basis for expansion of the species-rich habitat.	Guidance for relevant ELMS options: CLIG3 manage grass with very low nutrient inputs.
	For acid grassland – see lowland heath section. For wet grassland – see wetland section			

Code	Measures	How	Where	Further info/guidance
Other core measures overlap directly with this priority and will contribute to its delivery. These include: Farmland Fl1.1 Create permanent, species-rich and/or structurally diverse grass blocks, strips, margins or headlands to support pollinators and other wildlife. Woodland W1.5 Enhance existing wood pasture and parkland to ensure healthy veteran trees, a succession of age classes and a functioning habitat with naturally regenerating trees, shrubs and ground flora. W 2.3 Create new wood pasture and parkland habitat where this will enhance landscape character and increase habitat connectivity; seek opportunities to restore wood pasture and parkland on historic sites. Heathland H 1.1 Enhance existing areas of lowland heathland habitat through the improvement of ecological condition and structural diversity [*This will include acid grassland as part of a mosaic of heathland and associated habitats]* H 1.2 Create new areas of lowland heathland and acid grassland mosaic on suitable soil, particularly where this will expand existing sites and improve connectivity between them (e.g. by creation of 'stepping stones' of new habitat). Wetland Wt 1.5 Enhance existing areas of lowland wet grassland habitats to improve ecological condition Wt 1.6 Create new areas of lowland wet grassland habitats, particularly where this will expand and connect existing wetland habitats and deliver wider environmental benefits. More generally, other measures within the **Nature Networks** and **Urban Nature** sections may help to deliver this priority, where enhancement of species-rich grassland is suitable within wildlife corridors (e.g. verges, routeways, footpaths networks etc), and in new and existing parks/greenspaces. Species-rich grassland may also play a role in providing buffers to woodland and hedgerows (see **Woodland, hedgerow and scrub** section) and in buffers and interception habitat for water courses and aquifers (See **Rivers, streams and aquifers** section).			

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Grey long-eared bat	G1.3, G1.4, G1.6, G1.7, G1.8
Mouse-eared bat	G1.6, G1.7
Large gold case-bearer	G1.8
Priority assemblages of species	**Measures that would be beneficial**
Chalk grassland assemblage	G1.1, G1.2
Waxcap grassland fungi assemblage	G1.5

Woodland, hedgerow and scrub

Priority W1. Enhance our existing woodland habitats*, improving quality and ecological diversity of habitats, structural diversity and resilience

What does success in 10 years look like?

- Significant pressures on woodland, such as over-grazing by fallow deer (and increasingly muntjac deer), grey squirrels and invasive non-native species, are being addressed. In particular, a landscape-scale approach to deer population management and control is being prioritised over a piece-meal site-based approach. This landscape-scale approach is focused on locations where the pressures are most severe. More natural regeneration of woodland is occurring due to the subsequent reduction in deer numbers and other pressures.
- The value of our ancient and irreplaceable woodland habitats is understood and recognised in decision-making at all scales, helping to reduce its vulnerability to loss and degradation from a range of sources.
- A greater percentage of existing woodland in West Sussex has been brought into active management to support biodiversity and improve age and structural diversity. In particular, our ancient, irreplaceable and priority woodland is being managed to improve ecological function and quality of habitat for woodland species.
- Our remaining types of 'priority woodland' (e.g. gill woodland, wet woodland, traditional orchards, wood pasture and parkland) are being restored and managed to improve their condition.
- Historic coppiced woodlands (including hazel) are being restored through suitable management, supported by skills training and a growing local forestry and woodcraft industry.
- More of our plantations on ancient woodland (PAWS) are in positive management for biodiversity.
- Removal of conifers in some areas and where underlying geology and soil is suitable, is providing opportunities for creation of more wooded heath and open heath habitats.
- 'Ecotone' habitats (areas of scrub or other boundary habitats which act as transitional areas between adjacent habitats and support species) are being created along woodland edges. These are providing structural diversity, buffering the woodlands and providing other ecosystem services such as protection of soils and watercourses.
- Tree species diversity within woodland is being increased, particularly where this is low; increased species diversity is supporting biodiversity and increasing the resilience of these woodlands to the impacts of climate change, pests and diseases etc.
- The loss of trees from our woodland from pests and diseases is being managed where possible to reduce impacts. Where impacts are inevitable, these are providing opportunities for land use change, woodland replanting and regeneration all of which are enhancing the age and species diversity of woodland and its value for nature. Species choice is also ensuring future resilience where possible and is guided by best available evidence and advice.
- Our ancient and veteran trees are being mapped, recorded and managed to protect them from damage and enhance their value as habitat.

- The native black poplar population is stable and increasing through natural reproduction. Yew, juniper and other tree species are regenerating and being planted where appropriate to expand the presence of these tree species in the landscape.

**this includes ancient woodland, semi-natural woodland, plantations on ancient woodland sites (PAWS), gill woodland, wet woodland, coastal woodland, wood pasture and parkland, orchards, trees outside woodland, veteran and ancient trees.*

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further guidance/info
W1.1	**Deer Management (landscape scale). Undertake landscape scale deer management with targeted humane culling to reduce the impact of deer on woodland regeneration, recolonisation and quality of woodland habitats.** *Note: This approach should take priority over individual sited-based approaches to deer management which tend to displace deer to adjacent areas.* **[Unmapped]**	Large-scale, coordinated deer control; best delivered via a landscape scale approach involving collaboration of landowners across a wide area. See enabling measures (below) required to support this.	Cross-boundary/regional scale coordinated activity but may focus on agreed hotspots and information from monitoring of deer numbers and impacts.	Deer management (High Weald). Support for farmers and land managers and stalkers. High Weald National Landscape Team Deer Management FAQs for landowners ***Local case study example:*** *Sussex Woods Pilot Project (Natural England). Kingley Vale and Western Downs*
W1.2	**Bring ancient woodland into positive conservation management to support woodland species and enhance its ecological condition and resilience.** **[Mapped]**	Traditional woodland management practices (such as coppicing/ pollarding); diversification of age structure and species diversity; control of invasive non-native species (INNS); creation of 'edge habitats'/ecotones of scrub or semi-natural vegetation; retention of deadwood; fencing of the site to manage livestock/deer access to woodland to allow natural regeneration; management of other pressures on woodland regeneration e.g.	All ancient woodland sites; particularly beneficial where the ecological condition of the woodland is known to be particularly threatened and where woodland habitats are particularly concentrated and of ecological importance (as this will expand the overall area in better condition).	Woodland Trust: Ancient woodland restoration advice and support Woodland Trust: Practical guidance on restoring your ancient woodland Butterfly conservation. Managing woodland for butterflies and moths Seek guidance from Forestry Commission, Woodland Trust and Protected Landscape (depending on location this will be South Downs

Code	Measures	How	Where	Further guidance/info
		grey squirrels; monitoring for pests/disease and suitable management to reduce impacts; visitor management to protect woodland habitat/reduce disturbance where required.	It may be practical to gradually expand areas under good management by bringing more areas into conservation management in locations where progress towards deer management and woodland management is already being achieved. This will allow expertise and resources to be shared across wider areas.	National Park Authority or High Weald National Landscape Team). ***Local case study example:*** *Lost Woods of the Low Weald and Downs project*
W 1.3	**Enhance the condition of gill woodland through sensitive management and minimal intervention; create buffer habitat around these areas of woodland where appropriate* to protect the core habitat and increase connectivity for species.** *(*this can be any type of suitable semi-natural habitat that will support the gill woodland biodiversity. The type and scale of any buffer habitat must be guided by adjacent habitats and landscape character (many areas of gill woodland are bounded by small field sizes and so the size of any buffer should be designed with field size/ landscape type in mind).* **[Mapped]**	Minimal intervention to retain unique characteristics of these areas of woodland; control of invasive non-native species (INNS); management of livestock/deer access to woodland to allow natural regeneration; retention of deadwood; visitor management to protect woodland habitat/reduce disturbance where required. Note: some gill woodlands, especially those with bryophyte interest will need specific dappled light/shade conditions which may be impacted by a buffer. Ecological advice should therefore be sought for these sites. Ecological advice on type/size of any buffer habitat is recommended and can be provided by relevant Protected Landscape Team, Woodland Trust etc.	All areas of gill woodland (enhancement); creation of buffer of semi-natural habitat for those where this is a useful and appropriate action.	CIEEM Restoring ghyll woods

Code	Measures	How	Where	Further guidance/info
W 1.4	**Enhance and restore existing traditional orchards.** **[Mapped]**	Seek specialist advice when restoring old orchards. Suitable techniques include: identification of fruit cultivars and restoration of veteran trees through expert pruning; bringing grassland back into management through light grazing or cutting early in the spring then later summer; monitoring for pests and diseases. Note: restoration of traditional orchards requires a specific approach, different to that used for commercial/new orchards	Existing traditional orchards not already under management.	High Weald National Landscape Team. Orchards in the High Weald Landscape – Land manager's pack
W 1.5	**Enhance existing wood pasture and parkland to ensure healthy veteran trees, a succession of age classes and a functioning habitat with naturally regenerating trees, shrubs and ground flora.** *(Note: this habitat type supports an extensive range of species many of which are rare and only known in the UK in this habitat type).* **[Mapped]**	Take expert advice to avoid unintended impacts and loss of biodiversity. Suitable techniques include: protection of veteran trees from browsing and management for health requirements; retention of deadwood and fallen trees; replacement with new plantings at optimum spacings; protection of new plantings from browsing; establishment of optimum grazing pattern to encourage good ecological condition of the grassland and soil; use of green hay, overseeding and plant plugs to enhance grassland condition; retention of deadwood where possible; take an agro-forestry approach to productive land where appropriate and feasible.	Existing areas of wood pasture not currently under woodland management plan.	People's Trust for Endangered Species. Tree Care and Management in Wood Pasture and Parkland People's Trust for Endangered Species. Pasture Management for Wood Pasture and Parkland People's Trust for Endangered Species. Historic Management of Wood Pasture and Parkland Guidance for relevant ELMS options. WD5 Restoration of wood pasture and parkland ***Local example case study example:*** *Ebernoe Common Nature Reserve*
W1.6	**Manage existing floodplain and wet woodland to support biodiversity including bryophyte and fern populations.**	Retention of continuous cover (microclimate); coppicing/pollarding to improve structural and age diversity; selective felling of mature trees; reduction	Areas of wet woodland not already under management for improved habitat condition.	Sussex Otters and Rivers Project: How to create and restore wet woodlands

Code	Measures	How	Where	Further guidance/info
	[Mapped]	of browsing pressure; retention of deadwood; planting of suitable species. Species suitable for use in West Sussex include alder, crack willow, oak, black poplar, downy birch, ash and white willow. Seek guidance from relevant protected landscape team (South Downs National Park Authority; High Weald National Landscape Team; Chichester Harbour Conservancy).		
W1.7	**Restore PAWS (Plantations on Ancient Woodland Sites), replanting with a more species rich tree mix.** **[Mapped]**	Selectively thin or clear fell plantations on ancient woodland as appropriate and replant with native species or allow natural regeneration to occur. Note: it may be necessary to retain areas of conifer woodland to support certain species reliant on this habitat; Seek advice from Forestry Commission.	All PAWS not already restored or under this type of management.	Keepers of Time (Ancient and native woodland and trees policy) Woodland Trust: Restoring your ancient woodland
W1.8	**Bring other priority woodland (i.e. priority woodland types not covered by measures W1.2 - W 1.7) into positive conservation management to support woodland species and enhance its ecological condition and resilience.** *In addition to the woodland types above, this may include lowland beech and yew woodland and lowland mixed deciduous woodland.* **[Mapped/Unmapped]**	Preparation of management plan; thinning; coppicing; retention of dead wood; creation of open areas (rides, glades, scallops); encouragement of 'edge habitat' (ecotones) of scrub or semi-natural habitats; fencing of the site to manage livestock/deer access to woodland to allow natural regeneration; management of other pressures on woodland regeneration e.g. grey squirrels; monitoring for pests/disease and suitable management to reduce impacts; visitor management to protect woodland habitat/reduce disturbance where required etc.	All priority woodland not covered by measures (W1.2 - W1.8) particularly where there is no management plan currently in place. This will include the large category of 'lowland mixed deciduous woodland'.	Forestry Commission Practice Guide: The management of semi-natural woodland (lowland mixed broadleaved woods) Wildlife Trusts: How to manage your woodland for wildlife The Conservation Volunteers. Handbook. How to manage traditional British and Irish Woodlands Government Guidance: Manage and protect woodland for wildlife Butterfly conservation. Managing woodland for butterflies and moths

Code	Measures	How	Where	Further guidance/info
				Buglife. Managing woodland for pollinators People's Trust for Endangered Species. Management of woodlands with dormice
W1.9	**Control invasive non-native species (INNS) having a significant impact on woodland habitat and/or regeneration.** *Note. Control of INNS is included in other woodland management measures but is included under its own measure due to its importance and the fact that it may require coordinated and large-scale approaches. This measure does not include control of deer, which is covered under W1.1.* **[Unmapped]**	Site level control of species having a significant impact on the woodland habitats and/or regeneration. This may include grey squirrel, rhododendron, Cherry Laurel, Oak Processionary Moth. Larger-scale actions to control across land holdings where required.	Areas of woodland particularly affected by INNS and/or where these are having a detrimental impact on woodland flora/fauna	Woodland Trust. How invasive non-native species threaten our woodlands Woodland Wildlife Toolkit: Invasive species and disease Forestry Commission. Manage threats to woodland: destructive animals, invasive species.
W1.10	**Replace lost elm with disease resistant varieties that support same woodland species and assemblages and improve resilience to pests/disease and likely future climate change.** **[Unmapped]**	Replanting with suitable provenance;	Areas where Elm has been lost and replacement is required to sustain population and/or support treescape (in the case of towns/cities).	Forest Research: Dutch Elm Disease – central and southern Britain The Conservation Foundation: The Great British Elm Experiment ***Local case study example:*** *Butterfly Conservation: Elms for Adur Hairstreaks Project*
W 1.11	**Replace lost ash within woodland to support woodland biodiversity and future resilience to pests/disease and likely future climate change.**	Natural regeneration from retained disease resistant trees; management of pressures on the site (e.g. deer/squirrel damage) to encourage regeneration; tree planting using mixture of tree species/provenance	Areas where ash has been lost from woodland	West Sussex County Council. Ash dieback Woodland Trust: Woodland restoration and the fight against tree disease

Code	Measures	How	Where	Further guidance/info
	[Unmapped]	sourced from UK grown planting stock to minimize biosecurity risks. Factors to include in choice of species and provenance include site conditions, increasing species/provenance diversity to increase resilience to future disease; choice of provenance/species likely to handle future climate changes. Advice on best species choice may change through time as evidence emerges on resilience of provenances and species to likely future climate changes.		Forest Research (Forestry and Tree Health Resources): Ash Dieback Forestry Commission: Operations Note 046b. Restocking woodland following the loss of ash due to ash dieback. Tree Council: Ash Dieback – an action plan toolkit Sussex Wildlife Trust: Ash Dieback Contact Woodland Trust for information on tree packs for ash replacement (specific for soil types found in West Sussex).
W 1.12	**Manage existing and 'future' veteran and ancient trees to maintain good ecological condition and ensure continued habitat for the species they support.** **[Unmapped]**	Replanting; pruning/tree management; protection of root zones etc.	All existing and future veteran trees.	Woodland Trust: Ancient and Veteran Trees – caring for special trees on farms.
W 1.13	**Enhance existing areas of coastal woodland in Chichester Harbour** **[Mapped/unmapped]**	Protection from grazing (livestock/deer) if required.	Areas of existing coastal woodland in Chichester Harbour National Landscape. Seek guidance from Chichester Harbour Conservancy.	Chichester Harbour Conservancy. Chichester Harbour Management plan Trees for Cities: Tree planting in coastal towns and cities
Other core measures overlap directly with this priority and will contribute to its delivery. These include: Farmland FL 1.5 Create and manage graded margins up to hedgerow and woodland edges on farmland, to support birds and other woodland and farmland species Woodland W 3.2 Restore the treescape of cities and towns, particularly those that have declined through time and/or suffered loss of species (e.g. elm, ash, London plane), ensuring replacement with resilient species.				

Code	Measures	How	Where	Further guidance/info
W 3.4 Bring existing urban woodlands into active management to enhance nature conservation, historic environment and access.				

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Beaver	W1.6, W2.4
Hazel dormouse	W1.1, W1.2, W1.3, W1.7, W1.8
Pine marten	W1.1, W1.2, W1.3, W1.7, W1.8
Greater horseshoe bat	W1.2, W1.7, W1.8
Grey long-eared bat	W1.2
Mouse-eared bat	W1.2, W1.7, W1.8
A spider *Araniella alpaca*	W1.2, W1.8
A spider *Centromerus albidus*	W1.2, W1.7
A spider *Hygrolycosa rubrofasciata*	W1.3, W1.6
A spider *Xysticus luctuosus*	W1.1, W1.2, W1.8, W1.9
A wasp *Ectemnius borealis*	W1.2, W1.7, W1.8
Cosnard's net-winged beetle	W1.2, W1.8, W.1.12
Stag beetle	W1.2, W1.8
Variable chafer	W1.5, W1.12
Cheese snail	W1.2, W1.8
Priority assemblages of species	**Measures that would be beneficial**
Deciduous woodland and wood pasture fungi assemblage	W1.2, W1.5, W1.7, W1.9
Open parkland mature and veteran tree lichens assemblage	W1.5, W1.12
Open deciduous woodland assemblage	W1.2, W1.7, W1.8
Woodland bats assemblage	W1.2, W1.7, W1.8
Woodland birds assemblage	W1.1, W1.2, W1.3, W1.6, W1.7, W1.8

Priority W2. Create new woodland where this supports connectivity, biodiversity, ecosystem services and landscape character

What does success in 10 years look like?

- Our networks of existing woodlands are being strengthened by woodland creation designed to expand and connect existing woodland sites. Rather than larger-scale projects, this is the main focus of woodland creation in West Sussex given the existing high coverage of woodland habitats and the need to

protect and enhance landscape character and priority habitats. These constraints are most notable in particular Landscape Character Areas (NCAs) in West Sussex, such as the High Weald (characterised by existing woodland, historic field boundaries and fragile grasslands) and South Downs (with its predominantly open landscape character of chalk grassland and related habitats).

- Smaller areas of ancient semi-natural woodland (such as those found predominantly in the High Weald, Wealden Greensand and Low Weald NCAs) and vulnerable fragments of hanger woodland (in the South Downs NCA) are being expanded by creating areas of new woodland around their boundaries where this is appropriate, increasing their resilience and enhancing their value for wildlife.
- Connectivity of these woodland habitats is being enhanced through creation of new areas of woodland and trees outside woodland which act as stepping-stones and corridors between existing sites. The Low Weald in particular, provides opportunities for small-scale new woodland creation to 'significantly enhance the area's intricate and characteristic mix of semi-natural woodlands, gill woodlands, shaws, small field copses, hedgerows and individual trees to reduce habitat fragmentation and benefit biodiversity'[3] .
- The appropriate technique for woodland creation is being used based on-site considerations. e.g. natural colonization, regeneration or planting. In West Sussex, where deer pressure is low enough to allow it, approaches which encourage recolonisation and regeneration are particularly effective and produce areas of new woodland with significant benefits for nature. Where planting is used, species choice supports biodiversity and landscape character, but is also mindful of resilience to climate change, and pests and disease.
- Specific woodland types (including orchard, and wood pasture and parkland) are being re-established or restored in locations where they have been 'lost', enhancing historic landscapes whilst providing woodland connectivity and habitat. This includes restoration of woodland as part of wider woodland/heathland habitat mosaics in medieval forests and 'deer parks' such as those found in the High Weald.
- Care is being taken to ensure that woodland is created where this compliments and protects other priority habitats, landscape character or archaeological heritage, rather than loss or degradation of these. The principle of the 'right tree in the right place for the right reason' is being implemented.
- New woodland creation is also being located and designed to deliver multiple benefits where possible, including biodiversity, nature-based solutions for water quality, slowing the flow of water in the landscape to support river base flows and flood management, carbon storage, air quality, enhancement of landscape character and new opportunities for access to nature.
- The appropriate technique for woodland creation is being used based on site considerations. e.g. natural colonization, regeneration or planting. Species choice is supporting biodiversity, landscape character, resilience to climate change, and pests and disease.
- Opportunities are being taken to ensure succession of veteran and parkland trees, in-field trees, hedgerow trees and groups of trees in the landscape.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

[3] Natural England. National Character Area Profile 121: Low Weald

Code	Measures	How	Where	Further info/guidance
W2.1	**Create new areas of species-rich woodland and 'trees outside woodland' to expand and better connect existing woodland and deliver multiple benefits (such as habitat, flood risk reduction, water quality, shelter, access and recreation, landscape enhancement and carbon sequestration).** *This is in addition to creation of new orchards, wood pasture and parkland and floodplain/wet woodland which are covered by measures below.* **[Mapped]**	Recolonisation; regeneration; or planting; Include open areas (glades and rides) in design and encourage 'edge habitats' (ecotones) of scrub or semi-natural habitat. When planting, tree species choice should support biodiversity but consider climate/disease resilience and local landscape character. Seek guidance from Forestry Commission, Woodland Trust and/or relevant protected landscape teams (South Downs National Park Authority; High Weald National Landscape Team; Chichester Harbour Conservancy)	Given the extent of existing woodland in West Sussex, new woodland creation will be most beneficial in locations where it will expand existing woodland sites or increase connectivity between sites. It will be particularly beneficial where: • It can be located on previously wooded sites (Epoch 1 OS maps where available) • It will help to better connect areas of ancient woodland • It will expand the area of smaller woodland sites • It will improve connectivity between particularly 'isolated' woodland areas In all cases, the principle of the 'right tree in the right place for the right reason' must be applied. As such, all woodland creation in West Sussex must be guided by landscape character and constraints on the site including presence of other habitats, archaeology etc. Preferably, it will also be located where it will deliver other benefits such as flood risk reduction, carbon sequestration, air quality improvement and landscape character. Woodland Opportunity Mapping for Sussex provides a general guide to areas of sensitivity for woodland creation in West Sussex based on a number of key benefits and constraints (but excluding landscape character).	South Downs National Park/ Sussex Nature Partnership: Woodland Opportunity Mapping. This tool maps 'woodland opportunity areas with less sensitivity' across Sussex and South Downs National Park. These tend to include areas of 50-350m around existing woodland areas where there are least constraints to woodland creation and where it will deliver benefits such as flood risk reduction and a buffer to noise/air pollution along major roads. **Woodland Trust resources:** Woodland Creation Guide Tree species guide Managing your new woodland ***Local case study examples.*** *Lost Woods of The Low Weald and Downs – nature corridor scheme (helping to reconnect ancient woodlands)* *South Downs National Park Trust. Trees for the Downs.* *Chichester District Council. Chichester District Tree Scheme.*

Code	Measures	How	Where	Further info/guidance
			New woodland creation is noted as a particular opportunity within the **Low Weald** National Character Area as a means to enhance and better connect existing woodland and hedgerow networks in this area. In the High Weald National Landscape area, due to limited areas of opportunity and fragility of grassland sites which may be affected, it is important to seek initial advice on site suitability from High Weald National Landscape Team.	
W 2.2	**Establish new orchards, including community orchards, with a focus on maintaining locally distinctive varieties.** **[Unmapped]**	Tree planting (using suitable varieties)	Any suitable site as per advice (Forestry Commission, Woodland Trust, Protected Landscape Teams for relevant area) and following the principle of the 'right tree in the right place' as outlined in W2.1 above.	Guidance for relevant ELMS options: BE5 Creation of traditional orchards
W 2.3	**Create new wood pasture and parkland habitat where this will enhance landscape character and increase habitat connectivity; seek opportunities to restore wood pasture and parkland on historic sites.** **[Unmapped]**	Natural colonisation of scrub and tree species; planting of individual and groups of trees; grazing to create variety in the sward and encourage recolonisation; avoidance of agricultural inputs; habitat restoration using natural processes driven by grazing herbivores.	Farmland (arable or improved grassland) particularly where it extends, links or buffers existing sites, sites with open grown trees or areas of other woodland priority habitat; areas of 'lost'/historic wood pasture where this information is available; and following the principle of the 'right tree in the right place' as outlined in W2.1 above.	Guidance for relevant ELMS options: WD6 Creation of lowland wood pasture National Trust: Creation of wood pasture systems, Toolkit. Farm Wildlife: Wood pasture and parkland ***Local case study example:*** *Knepp estate: a wood pasture landscape*
W 2.4	**Create new areas of floodplain and wet woodland, particularly where this will expand existing sites and contribute to habitat connectivity and the**	Natural colonisation; tree planting (black poplar and other suitable species); creation of leaky dams to encourage wet areas for woodland establishment;	Target creation of new areas in locations which will expand/connect existing sites; best located in areas where trees and scrub are already growing near streams, springs or rivers (in flood plains but also in	Sussex Otters and Rivers Partnership: How to create and restore wet woodlands

Code	Measures	How	Where	Further info/guidance
	management of water flow in the landscape. **? [Mapped/Unmapped]**		other locations across the landscape which flood regularly. Creation of this habitat can play a role in slowing the flow of water in the landscape (as part of Natural Flood Management projects – see R1.5 below).	
W 2.5	**Plant new parkland trees, tree groups and individual hedgerow trees to support succession and continued presence of these features in the landscape.** **[Unmapped]**	Tree/hedgerow planting; protection of individual trees from grazing.	Areas of existing and historic parkland; within existing hedgerows.	Guidance for relevant ELMS options: TE2 Planting standard parkland trees
W 2.6	**Increase the extent of coastal woodland in Chichester Harbour National Landscape through expansion of existing areas of woodland.** **[Unmapped]**	Creation of new woodland via natural colonization; tree planting;	Expand existing areas of woodland where coastal squeeze permits and this does not conflict with other priority habitats or landscape character.	Seek advice from Chichester Harbour Conservancy team.

Other core measures overlap directly with this priority and will contribute to its delivery, these include:

Woodland

W1.1 Deer Management (landscape scale). Undertake **landscape scale** deer management with targeted humane culling to reduce the impact of deer on woodland regeneration, recolonisation and quality of woodland habitats.

W 3.3 Establish new areas of urban and peri-urban woodland which offer multiple benefits to residents, wildlife and landscape.

Farmland

Fl1.3 Create new areas of agro-forestry where this will support and enhance landscape character, support biodiversity and deliver other benefits such as shelter and shade for livestock.

More generally, woodland creation may play a role in how other measures are delivered on the ground. For example, the **Rivers, streams and aquifers** section contains measures which may see creation of riparian woodland to provide shade or buffer vegetation. Natural Flood Management may also employ woodland creation as a technique. The **Urban nature** section also contains measures which may employ woodland creation as part of creating more areas of wildlife habitat in parks, greenspaces or other urban locations.

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Hazel dormouse	W2.1
Pine marten	W2.1
Bechstein's bat	W2.1
Grey long-eared bat	W2.1
Mouse-eared bat (W2.1)	W2.1
A spider *Araniella alpaca*	W2.1
A spider *Centromerus albidus*	W2.1
A spider *Hygrolycosa rubrofasciata*	W2.4
A spider *Xysticus luctuosus*	W2.1
A wasp *Ectemnius borealis*	W2.1
Stag beetle	W2.1
Variable chafer	W2.3, W2.5
Priority Assemblages of species	**Measures that would be beneficial**
Deciduous woodland and wood pasture fungi assemblage	W2.1, W2.3
Open parkland mature and veteran tree lichens assemblage	W2.3
Open deciduous woodland assemblage	W2.1
Woodland bats assemblage	W2.1
Woodland birds assemblage	W2.1, W2.4

Priority W3. Enhance and expand our urban treescapes in West Sussex, taking opportunities to establish new urban (and urban fringe) woodland and street trees where this will support biodiversity and deliver multiple benefits

What does success in 10 years look like?

- The presence of trees in our urban areas is increasing (as measured by tools such as the Tree Equity index, held by the Woodland Trust).
- This helps to deliver multiple benefits in these areas, such as urban temperature regulation, flood risk reduction, enhancement of landscape character and increased access to nature in parks, streets and other green spaces and biodiversity. The principles of 'right tree in the right place' is also being applied to the creation of new woodland and to tree planting projects in urban areas. Species choice for urban areas is supporting biodiversity and resilience to climate change, pests and diseases.
- Species-rich tree planting and woodland creation is encouraged in new developments through strong local planning policies.

- The treescapes of our cities and towns which have suffered losses of particular species (e.g. elm/ash) are being restored as advised by Forestry Commission to ensure future resilience.
- New woodland creation is enhancing biodiversity in urban fringe and peri-urban areas where this is compatible with other habitats and landscape character. Where possible new areas of woodland in and around towns are providing opportunities for access.
- Suitable tree species are being used in urban areas to ensure resilience to climate change (as advised by Forestry Commission and the Woodland Trust).

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
W 3.1	**Plant new street trees to deliver multiple benefits.** *Note: there are often significant practical constraints to planting trees in existing streets including presence of existing urban infrastructure which will need to be taken into consideration.* **[Unmapped]**	Tree Planting. Species choice as per guidance from Forestry Commission/ Woodland Trust. Where street trees are already present, ensure planting is phased to replace 'over-mature'/ diseased and felled trees when necessary.	New streets in developments (see NPPF para 136 and National Design Guide); existing streets where planting will deliver benefits such as: wildlife connectivity (creating wooded corridors close to existing woodland); improved 'tree equity' in areas of low tree cover; increased resilience to flooding; shading/urban cooling; restoration of previous street trees and planting for succession and range of age classes in the future. Woodland Trust Tree Equity mapping tool provides a useful guide to where new street trees will deliver multiple benefits.	NPPF para 136 National Design Guide Woodland Trust – Tree Species Handbook Woodland Trust urban tree planting packs currently contain crab apple, field maple, hazel, rowan and silver birch. High Weald National Landscape. Soft Landscaping Guidance (once published)
W 3.2	**Restore the treescape of cities and towns, particularly those that have declined through time and/or suffered loss of species (e.g. elm, ash, London plane), ensuring replacement with resilient species.** **[Unmapped]**	Tree planting; colonisation; regeneration	Streets and urban woodland areas which have experienced loss of trees; riparian zones; parklands; small linear woodlands alongside roads and footpaths; other locations beyond edges of existing woodland which will improve woodland connectivity and deliver multiple benefits	Local Authority Treescapes Fund Contact Woodland Trust for information on tree packs for ash replacement specific for Sussex and Kent and tailored for soil type (clay, sand, wet or chalk).

Code	Measures	How	Where	Further info/guidance
W 3.3	**Establish new areas of urban and peri-urban woodland which offer multiple benefits to residents, wildlife and landscape.** **[Unmapped]**	Tree planting; community tree planting projects	Create as sites become available. Target in areas if possible which will deliver most benefits; in peri-urban areas, ensure it enhances landscape character and does not impact any existing priority habitats; follow guidance and good practice in site section, design and species choice. Note – these can be community woodlands and/or orchards (see measure W2.2)	Woodland Trust: planning your community wood Tiny Forest Project, Earthwatch Europe Trees and Design Action Group: Trees in the Townscape- a guide for decision-makers.
W 3.4	**Bring existing urban woodlands into active management to enhance nature conservation, historic environment and access.** *(this may overlap with measures for specific woodland types above if urban woodland falls into those categories).* **[Unmapped]**	Preparation of management plan; thinning; coppicing; retention of dead wood; create open areas (rides, glades, scallops); encourage 'edge habitat' (ecotones) of scrub or semi-natural habitats, provision of access.	Existing area of urban woodland not already in management to enhance condition.	Woodland Trust: Urban Trees and Woodland Example of local authority tree strategies and planting guidance for the area - **Crawley Borough Council's Tree Strategy:** Appendix A - Tree Planting Strategy.pdf (crawley.gov.uk) Appendix B - Tree Planting Strategy Document.pdf (crawley.gov.uk)
Other core measures overlap directly with this priority and will contribute to its delivery, these include: **Woodland -** measures related to enhancement and creation of specific priority woodland types if relevant to the site (see priorities W1 and W2 above). More generally, the **Urban nature** section also contains measures which may enhance existing woodland in existing urban parks or greenspaces and the **Nature Networks** section contains measures which may involve enhancing woodland habitat within existing wildlife corridors and transport corridors in urban areas.				

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Hazel dormouse	W3.3, W3.4
West European hedgehog	W3.3, W3.4
A wasp *Ectemnius borealis*	W3.4
Stag beetle	W3.4
Priority assemblages of species	**Measures that would be beneficial**
Open deciduous woodland assemblage	W3.4

Priority species	Measures that would be beneficial
Woodland birds assemblage	W3.3, W3.4

Priority Hdg1. Enhance, expand, restore and connect our network of hedgerows

What does success in 10 years look like?

- More hedgerows across West Sussex are being managed to improve and enhance their condition and increase their value for biodiversity (e.g. providing nesting sites, shelter, food and song posts).
- 'Lost' hedgerows (where locations are known) are being re-established, providing benefits to wildlife, greater habitat connectivity and restoration of important historic landscape features.
- New areas of hedgerow are being created to improve habitat connectivity (either as corridors or stepping-stones between woodland and grassland habitats) and deliver other ecosystem benefits. This includes hedgerow creation within new development.
- Existing hedgerows have been widened and enhanced, e.g. through gapping up or infilling with native species, coppicing or laying.
- In suitable areas, hedgerows are being managed to support target species (e.g. turtle dove require tall, thick hedgerows or scrub) as part of suite of actions to best support these species.
- Areas of scrub and other 'boundary habitats' are being created and managed as buffers along hedgerows (and woodlands) to create ecotones (transitional areas between adjacent habitats which support species).
- This is helping to support and enhance the historic field patterns and boundary features in West Sussex, particularly where these are of significant landscape character value (e.g. High Weald).
- Deer management at a landscape scale is helping to support the recovery and establishment of hedgerows particularly in areas of high deer population density where this is creating a significant pressure on this habitat type.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
Hdg 1.1	**Manage existing hedgerows to improve their structure, longevity and value for biodiversity.** **[Unmapped]**	Hedge cutting; suitable cutting cycle; gapping up; encourage 'edge habitats' (ecotones) of scrub/ semi-natural habitat.	Hedgerows not in this type of management already.	Hedgelink: See their website People's Trust for Endangered Species (PTES) resources: Tips for managing hedgerows & Hedgerow management Butterfly Conservation. Hedgerows for Hairstreaks

Code	Measures	How	Where	Further info/guidance
				LandApp: PTES Hedgerow tool on LandApp mobile (link) High Weald land managers pack: Hedgerows Sussex Wildlife Trust: How to manage my hedgerow for wildlife (aimed at gardens) Weald to Waves. Healthy Hedgerows. Guidance in relevant ELMS options: BE3 Management of hedgerows Protected Landscape teams can also provide advise in their relevant areas. ***Local case study example:*** *Rampion hedgerow enhancement fund (West Sussex)*
Hdg 1.2	**Restore degraded hedgerows and replace 'lost' and historic hedgerows.** **[Unmapped]**	Replanting stretches of hedgerow; gapping up; replanting of hedgerow trees; encouragement of 'edge habitats' (ecotones) of scrub/semi-natural habitats.	Areas of 'lost'/ historic hedgerows' (where mapping is available to guide location) and where remnants of existing hedgerows remain.	High Weald Land Manager's Pack: hedgerows
Hdg 1.3	**Create new hedgerows, including hedge trees where appropriate, to support habitat connectivity, enhance landscape character and deliver multiple benefits.** **[Unmapped]**	Planting; hedge laying; encouragement of 'edge habitats' (ecotones) of scrub/semi-natural habitats. Include new hedgerow trees at specific spacings and intervals (this is landscape specific so must follow guidance for relevant landscape character area and protected landscape); follow historic field patterns and avoid straight lines in the landscape; use specific techniques to ensure greater success in areas of high	Locations where this will improve connectivity between woodland habitats, support landscape character and capture water and minimise runoff from land. Contact protected landscape teams in relevant area for advice.	High Weald: Hedges Tree Council: Tree and hedge planting guide Guidance for relevant ELMS options: BN11 Planting new hedges ***Local Case study example.*** *Hedge creation, Plawhatch Farm*

Code	Measures	How	Where	Further info/guidance
		deer population (advice available from High Weald Team).		
Hdg 1.4	**Create new hedgerows and enhance existing hedgerows within new development, creating important corridors for wildlife and wildlife permeable boundaries.** **[Unmapped]**	Retention of existing hedgerows on site; management to enhance their condition; planting of new hedgerows and creation of edge habitats; accompany with relevant lighting restrictions where hedgerows are in important areas for night flying species (birds, bats).	All new development. But can include specific enhancement/creation of hedgerows specific to types of development and the impacts these will have on wildlife e.g. solar farms where this measure would be particularly beneficial for bat populations.	CPRE Sussex. Biodiversity enhancements in new housing developments

Other core measures overlap directly with this priority and will contribute to its delivery. These include:

Farmland

FL 1.5 Create and manage graded margins up to hedgerow and woodland edges on farmland, to support birds and other woodland and farmland species

Creation and enhancement of hedgerows may play a role in how other measures are delivered on the ground. For example, Natural Flood Management (**Rivers, streams and aquifers** section) may use hedgerows as part of its approach on specific sites. The **Urban nature** section also contains measures which may establish or enhance hedgerows to create more/better areas of wildlife habitat in parks, greenspaces or other urban locations. Hedgerows may also play an important role in the enhancement or creation of wildlife corridors and there are several measures within the **Nature Networks** section which are therefore also relevant.

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Hazel dormouse	Hdg1.1, Hdg1.2, Hdg1.3, Hdg1.4
Pine marten	Hdg1.1, Hdg1.2, Hdg1.3
West European hedgehog	Hdg1.1, Hdg1.2, Hdg1.3
Greater horseshoe bat	Hdg1.1, Hdg1.2, Hdg1.3, Hdg1.4
Grey long-eared bat	Hdg1.1, Hdg1.2, Hdg1.3
Mouse-eared bat	Hdg 1.1
Glow-worm	Hdg1.1, Hdg1.2, Hdg1.3
Priority assemblages of species	**Measures that would be beneficial**
-	-

Priority Scr1. Create and enhance scrub habitats, as edge habitat, as part of habitat mosaics and as a habitat in its own right

What does success in 10 years look like?

- Areas of scrub are being created and enhanced to provide valuable habitat for wildlife. In some places this is helping to support specific species such as red-backed shrike and turtle dove.
- There is a greater appreciation for scrub and how it should be managed.
- Scrub is being managed and created as a vital part of a dynamic mosaic of other habitats, such as heathland and species-rich grassland, where it helps to provide 'wilder and messy' areas which support a wider range of species. Creation of scrub is helping to expand mosaics of habitat around existing core sites. It is also a dynamic habitat within rotational management.
- Scrub is helping to create valuable transitional or edge habitat along hedgerows, woodlands, wetlands and areas of species-rich grassland.
- Scrub is recognised as a valuable habitat in its own right and as a component that helps in the restoration of other habitats.
- In parts of West Sussex, areas of coastal scrub are being established and expanded as part of an existing coastal woodland, scrub, grassland and early successional habitat mosaic.
- As a successional habitat, scrub continues to be managed to ensure it provides the transitional type of habitat needed by many species, rather than taking over and dominating an area. The scale and extent of its creation and enhancement in the landscape is appropriate for field size and local landscape character.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
Scr 1.1	**Create and enhance successional and scrub habitats to create a dynamic mosaic with diverse age and structure.** **[Unmapped]**	Grazing management, scarification, and assisted sowing/planting; retention of areas of uncut grassland next to existing scrub to provide important herb layer (structural diversity and ecotone).	• Enhancement of areas of existing 'high-value' scrub where these can be enhanced and expanded (including areas of important juniper scrub which is a key habitat in some areas) • Creation of new areas of scrub along woodland and hedgerow boundaries, particularly on arable or improved grassland (see measure Fl 1.5 and techniques within woodland and hedgerow measures for creation of 'edge habitats').	Defra: Managing scrub and scrub mosaics. Guidance for relevant ELMS options: WD7 Management of successional areas and scrub. SCR2 Manage scrub and open habitat mosaics ***Local case study examples:*** *Weald to Waves: Scrubland superheros*

Code	Measures	How	Where	Further info/guidance
			• Creation of small areas (patches) of scrub habitat within or adjacent to open mosaic habitats, heathland or grassland where needed to provide structural diversity and habitat for species (but note that in some cases, control of scrub may be needed on areas of lowland heath, open mosaic habitats or species-rich grassland). • Enhancement and creation of scrub habitats to support specific species (e.g. red-backed shrike, turtle dove, nightingale, Duke of Burgundy etc) • Creation of scrub as a wildlife-friendly habitat in and around community spaces (e.g. as boundaries or screening).	
Scr 1.2	**Control scrub where necessary along watercourses, to prevent overgrowth of habitat of importance for specific species e.g. water vole.** **[Unmapped]**	Grazing, browsing; cutting of scrub.	Known areas of water vole presence where scrub encroachment may be a problem.	People's Trust for Endangered Species: Helping water voles on your land
Other core measures overlap directly with this priority and will contribute to its delivery. Scrub creation and management may play a role in creating useful edge habitat (ecotones) along woodlands and hedgerows (see measures within **woodland** and **hedgerow** priorities above).				

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
European water vole	Scr1.2
Hazel dormouse	Scr1.1
Pine marten	Scr1.1

Priority species	Measures that would be beneficial
West European hedgehog	Scr1.1
Grey long-eared bat	Scr1.1
Mouse-eared bat	Scr 1.1
Glow-worm	Scr1.1
Priority assemblages of species	**Measures that would be beneficial**
-	-

Lowland Heathland and Sandstone Outcrops

Priority H1. Expand, enhance and better connect lowland heathland* and associated habitats

*this includes all forms of lowland heathland found in West Sussex e.g. dry heath, wet heath, wooded heath and chalk heathland.

What does success in 10 years look like?

- Our core areas of lowland heathland are being managed in a way that enhances their ecological condition and prevents loss or degradation due to lack of or inappropriate management. This management is creating a diverse mosaic of vegetation and open ground and is controlling encroachment by woodland and scrub where necessary. Improved condition of these habitats is supporting lowland heathland species and creating greater resilience to the impacts of climate change and increased fire risk.
- Core areas of heathland habitat are being expanded to create larger contiguous areas of lowland heathland and associated mosaic habitats (e.g. on acidic soils, a mosaic with wet heath, bog/mire, dry heath, bare ground, acid grassland, scrub and woodland; and on chalk heath, with calcareous grassland and scrub).
- Other new areas of heathland are being created, where conditions are suitable, to create stepping stones of habitat to better connect existing sites. Opportunities are also being taken to expand and connect existing heathland through the restoration of areas of degraded and/or 'lost' heathland where these sites are known. Opportunities are also being taken to use sites such as disused mineral workings for creation for heathland habitat where conditions are suitable.
- On acidic soils, acid grassland habitat is being enhanced and created as part of the overall heathland mosaic.
- Invasive non-native invasive species, such as rhododendron, gaultheria and deer, are being controlled where they pose a threat to areas of heathland.
- Visitor pressure at core sites (e.g. Ashdown Forest SPA and SAC, and the Wealden Heaths SPA) is being managed to reduce disturbance, nitrogen deposition (due to traffic levels), and other impacts on heathland species.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
H 1.1	**Enhance existing areas of lowland heathland through the improvement of ecological condition and structural diversity of the heathland and**	Appropriate grazing; control of Invasive Non-Native Species; scrub and bracken control/management; tree removal; retention of areas of bare ground and creation of new areas on a rotation; creation of fire breaks; rewetting (for wet	Existing heathland sites, particularly those not in conservation management. All heathland types, including chalk heath.	High Weald National Landscape Unit resources: Heathland in the High Weald Landscape, Land Managers' Pack.

Code	Measures	How	Where	Further info/guidance
	associated habitats (including acid grassland) **[Mapped]**	heath); visitor management to reduce pressures on habitats/ disturbance of key species.	In West Sussex, a small area of the new Heathland Connections Nature Recovery Project sits within West Sussex and provides opportunities to work collectively on management challenges.	Buglife: Management of Lowland Heath. Kent Wildlife Trust: Management of acid grassland Guidance for relevant ELMS options: LH1 Management of Lowland Heath.
H 1.2	**Create new areas of lowland heathland and acid grassland mosaic on suitable soil, particularly where this will expand existing sites and improve connectivity between them (e.g. by creation of 'stepping stones' of new habitat).** **[Mapped]**		Areas on suitable geology where this can help to expand or connect core sites; former areas of heathland; historic medieval forest and deer park areas (as mosaic with woodland); areas of woodland plantation on lowland heath; sites with low soil nutrient levels; opportunity areas identified by Heathland Connections Nature Recovery Project (see above).	Guidance for relevant ELMS options. LH3 Creation of heathland from arable or improved grassland ***Local case study examples:*** *South Downs National Park Authority. Heathland Stepping Stones* *South Downs National Park Authority. Heathlands Reunited project.* *Natural England. Heathland Connections Nature Recovery Project*

Other core measures overlap directly with this priority and will contribute to its delivery.

Woodland

W1.1 Deer Management (landscape scale). Undertake landscape scale deer management with targeted humane culling to reduce the impact of deer on woodland regeneration, recolonisation and quality of woodland habitats.

This will also benefit heathland sites.

Wetlands and standing water bodies

Wt1.1 Enhance remaining areas of peatland habitats by improving their hydrological function and ecological condition. Encourage expansion of existing areas where possible. This relates to the small patches of peatland habitat and 'wet heath' found within wider heathland habitat mosaics.

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
A spider *Araniella displicata*	H1.1

Priority species	Measures that would be beneficial
A spider *Pardosa paludicola*	H1.1
A spider *Philodromus emarginatus*	H1.1, H1.2
Heath potter wasp *Eumenes coarctatus*	H1.1, H1.2
Field cricket	H1.1, H1.2
A true fly *Nephrotoma sullingtonensis*	H1.1, H1.2
Marsh clubmoss	H1.1, H1.2
Petty whin	H1.1, H1.2
Upright chickweed	H1.1, H1.2
Rusty fork-moss	H1.1, H1.2
A lichen *Cladonia rei*	H1.1, H1.2
Priority assemblages of species	**Measures that would be beneficial**
Breeding waders - wet grassland & heathland assemblage	H1.1
Dry heaths with sand & gravel exposures assemblage	H1.1, H1.2
Heathland birds assemblage	H1.1, H1.2

Priority SO1 (Sandstone outcrops). Enhance the unique biodiversity of the sandstone outcrops of the High Weald

What does success in 10 years look like?

- The sandstone outcrop habitats in the High Weald are being safeguarded and enhanced through suitable management of the surrounding vegetation to prevent overgrowth and overshading of the rare lichens, mosses and liverworts they support.
- Visitor management approaches are protecting the vulnerable plant communities on the sandstone outcrops from damage from recreational use such as climbing.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures			
SO 1.1	**Enhance and maintain the condition of important plant communities within sandstone outcrop sites in the High Weald.** **[Unmapped]**	Techniques required will depend on the type of communities and conditions found on each site (there are highly variable); ecological advice is recommended on a suitable management approach. Suitable techniques may include: management of vegetation around outcrops if present to prevent	Sandstone outcrop sites, particularly those supporting important plant communities. Most of these are within the High Weald.	Advice can be provided by High Weald National Landscape team. **High Weald resources:** Sandstone Project Land management guidance_sandrock

Code	Measures			
		overshading whilst creating and maintaining required humid microclimate and light levels for plants, bryophytes and ferns; removal of rhododendron and other non-native species where required; sensitive removal of some natural vegetation e.g. holly, yew, scrub, bramble or bracken to adjust light levels to create/maintain dappled shade; visitor management to reduce visitor impacts on accessible sites used for climbing/access; management of other uses of these sites that would cause damage to valuable plant communities; creation of habitat buffers of sites within the farmed landscape to reduce impacts on plant communities from enrichment by agricultural run-off and fertilisers buffering of sites found on road verges to reduce impacts from vehicle damage.	Creation of habitat buffers around sites within farmed landscape.	

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
-	
Priority assemblages of species	**Measures that would be beneficial**
-	

Rivers, streams and aquifers

Priority R1 (Rivers and river systems). Support the recovery of our rivers and river systems*, their health, biodiversity and natural functions.

*River systems include rivers and their network of tributaries, streams and channels. The measures in this section include all streams, with additional measures specifically for chalk streams under R2 below.

What does success in 10 years look like?

- The principle of 're-wetting the landscape' is driving activity to restore the natural functions of our catchments, increase biodiversity and deliver wider ecosystem services (which include protection of base flows in rivers and streams at times of drought, improved water quality and reduced flood risk, critical in West Sussex to increase our resilience to the impacts of climate change).
- The natural functions of our rivers and streams are being enhanced and restored. The connection between our rivers and their floodplains has been increased where this is suitable. Mosaics of dynamic floodplain habitats are delivering benefits for nature and are supporting the natural function of river systems in times of flood and drought. In some places, watercourses are also being 're-naturalised' to improve their habitat and flow paths, un-doing 'straightening' and removing/adapting man-made barriers to flow and species movement. This is giving rivers and streams room to flow more naturally over a greater length.
- Networks of habitats (e.g. woodlands, trees, scrub, grasses and water dependent vegetation) in our riparian zones are supporting biodiversity and providing greater habitat connectivity along our river corridors. These 'functional habitats' are also delivering important benefits for our river systems, improving water quality, regulating flow of water off the land and supporting base flows in our river systems. Targeted use of 'Natural Flood Management'(NFM)[4] is helping to create these habitats as part of a set of wider actions which store water in the landscape and slow its flow.
- Pollution of the aquatic environment is being reduced through targeted work to reduce harmful inputs and more beneficial land management practices, particularly in areas vulnerable to high nutrient and sediment loads. Farmers and landowners are being supported in this through advice and access to relevant funding schemes.
- Sustainable Drainage Systems (SuDS) and constructed wetlands are being used to treat contaminated surface water and discharges and are also reducing the impact of road and urban runoff on rivers and aquifers, particularly in areas of high risk.

[4] NFM techniques include: planting cross-slope hedgerows; planting or allowing regeneration of cross-slope, riparian and floodplain habitats; installing leaky dams across flow pathways and in channels; digging or de-silting ponds; soil restoration and conservation; encouraging rougher vegetation and buffer strips; intercepting surface water with swales and sediment traps; ditch management/reprofiling; increasing seasonal storage through creation of scrapes, rills and wetlands through opening up floodplain washlands and restoring meanders; coastal and river flood defence re-alignment SDNPA (2017).

- The level of shade along our rivers, streams and standing water bodies is being managed to create optimum balance of light and shade for aquatic biodiversity and to reduce the impact of climate change on water temperature where this is required. This may involve creation of new riparian vegetation where shade is required or management/removal of existing vegetation where it is causing excess shading.
- Catchment scale work is being targeted to eradicate and control Schedule 9 Wildlife & Countryside Act non-native invasive species that pose a threat to freshwater ecosystems and species, particularly in areas of most concern. Work in West Sussex is contributing to the region-wide ambition to eradicate American mink in the South East of England (Waterlife Recovery Trust).
- Willing landowners and farmers understand areas of potential beaver suitability, and the available grants and potential benefits of beaver reintroductions should their land be suitable.
- Across West Sussex, a catchment-based approach involving Environment Agency, farmers and land managers, protected landscapes, water companies, local authorities and communities is driving a targeted and collaborative approach to action which benefits our river systems.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority.
Note: measures R1.1, R1.2 and R1.3 can often be delivered together as a package of measures.

Code	Measures	How	Where	Further info/guidance
R 1.1	**'Renaturalise' and reconnect rivers to their floodplains, allowing water to spill naturally onto adjacent land and restoring, expanding and better connecting floodplain habitats (such as wet grassland, fen, marsh and wet woodland). This will support biodiversity, increase ground water recharge and provide flood attenuation.** **[Mapped]**	A suite of techniques can be used for this, such as: • Lowering height and gradient of banks, removing or realigning embankments • Removing culverts to 'daylight' stretches of rivers and streams • 'Rewiggling' (undoing straightening/restoring meanders) • Reconnecting old side channels • Increasing habitat variety through retention/increase of natural structures such as leaky dams and letting fallen trees remain in situ. • Removal of hard engineering, including artificial bank and bed protection • Removal/de-commissioning of pumps (previously used to reduce water levels) • Rewetting fields to encourage new wetland and grassland habitats	Areas of river/floodplain where this is both feasible and desirable e.g. where it doesn't conflict with land protection or flood mitigation requirements. This measure will result in a change of land use/habitat in affected areas (e.g. where drained farmland reverts to floodplain) and therefore these changes must be factored into any projects. Target this activity using information from Environment Agency and Catchment Partnerships and via engagement with landowners. Note – that in tidal reaches of rivers, this may include creation of saltmarsh where conditions are suitable (see also coastal measure C1.3 above).	The River Restoration Centre. Resources. ***Local case study examples:*** *Adur River Recovery Project* *Western River Rother Project, Leconfield Estate* *National Trust Woolbeding reimagined conservation project (River Rother, West Sussex)*

Code	Measures	How	Where	Further info/guidance
		• Implementation of a 'Stage 0' approach (where suitable) thinking beyond the river channel itself and working to restore the river to its 'pre-disturbance' state • Beavers may play a role in implementation of this measure where sites are suitable and landowners and communities are willing to consider their re-introduction.	Deliver as part of a package with improvement of 'in-river' habitat connectivity and restoration of 'in-river' habitat (R1.2 and R1.3).	
R1.2	**Improve 'in-river' connectivity for species through removal of barriers to fish passage and natural flows of water and sediment.** **[Mapped]**	• Removal of barriers to fish passage and aquatic organisms (including weirs and culverts), where this is possible • retrofitting of structures to include fish passes • removal of redundant concrete water gauging	Areas of river/floodplain where this is feasible. Removal of those barriers which block greatest amount of river and priorities identified by Environment Agency and Catchment Partnerships. As part of a package with re-naturalisation and restoration of 'in-river' habitat (R1.1 and R1.3)	Natural England: Improving river habitats to support wildlife during high and low flows ***Local case study example.*** *Ouse and Adur Rivers Trust – Breaking Barriers*
R1.3	**Manage, restore and enhance 'in river' and riparian habitat to support biodiversity, the natural function of the river/stream and temperature regulation in the face of climate change.** **[Mapped]**	• Encouragement of in-channel vegetation (macrophytes) (e.g. by bank-regrading, creation of in-channel features such as berms and bars) • Use of large wood structures, in-channel flow deflectors and other approaches to create variation in flow • Creation of mammal ledges • Reduction of fragmentation of river habitats • In-river channel enhancements such as: channel pinching; addition and cleaning of gravels in sections of rivers/streams where sediment or other impacts are affecting habitat	Suitable for widespread implementation but effective as part of package with removal of fish barriers and re-naturalisation (R1.1 and R1.2);	Natural England: Improving river habitats to support wildlife during high and low flows Woodlands for Water | The Rivers Trust Wild Trout Trust: Trees and Rivers

Code	Measures	How	Where	Further info/guidance
		function such as impacting fish spawning • Management and / or planting of riparian woodland and bankside trees to control shading as required (creation of scrub not advised as this may end up 'tunnelling' the river); coppicing of bankside trees to allow more light into shaded sections of over-shaded river.		
R 1.4	**Enhance aquatic and riparian habitat within ditches connected to the river network.** **[Unmapped]**	Managing vegetation on one side of the ditch only during each operation; removing vegetation by cutting above the base; allowing vegetation to re-establish by natural regeneration etc. Ensure larger ditches are more open that those off the 'main drain' which can be more vegetated.	All ditches.	Guidance for relevant ELMS options: WBD2 Manage ditches WT3 Management of ditches of high environmental value ***Local case study examples:*** *Manhood Wildlife and Heritage Group: Fixing and Linking our Wetlands Project (FLOW project)*
R 1.5	**Deliver Natural Flood Management (NFM) interventions across catchments, targeting areas where this will deliver multiple benefits and provide greatest benefit to communities at risk of flooding.** **[Mapped/Unmapped ?]**	NFM includes a range of techniques including planting cross-slope hedgerows; planting or allowing regeneration of cross-slope, riparian and floodplain woodlands; installing leaky dams across flow pathways and in channels; digging or de-silting ponds; soil restoration and conservation; encouraging rougher vegetation and buffer strips; intercepting surface water with swales and sediment traps; ditch management/reprofiling; increasing seasonal storage through creation of wader scrapes; wetland creation through opening up floodplain washlands and restoring meanders; coastal and river flood defence re-alignment.	Areas mapped by Catchment Partnerships and Environment Agency as suitable for NFM.	South Downs National Park Authority and Sussex Flow Initiative: Natural Flood Management: a guide for farmers and landowners of the Solent and South Downs. ***Local case study examples:*** *Sussex Flow Initiative which has evolved into Wilder Ouse*

Code	Measures	How	Where	Further info/guidance
R1.6	**Create and manage permanent vegetation buffer strips alongside rivers and streams to support biodiversity and intercept and reduce levels of pollutants (such as nutrients, chemical pollutants, veterinary chemicals, excessive sediment) reaching water courses.** **[Mapped]**	Creation of permanent vegetation buffers (grassland, wetland, hedgerows, trees, others). For farmland, buffer size to be suitable for site, field size and landscape scale. For grassland buffers, there is a recommended width under ELMS schemes >6m (SFI) and 12-24m (arable land at high risk of erosion)	This is good practice along all water courses but is particularly important in the following cases: • water courses in an agricultural setting (arable and pasture) • priority water courses e.g. chalk streams, wood gills. • those located in source protection zones and nitrate vulnerable zones • those in upper catchments	Guidance for relevant ELMS options: BFS1 12m to 24m watercourse buffer strip on cultivated land Defra farming blog: Water body buffering standard of the Sustainable Farming Incentive pilot
R 1.7	**Create nature-based interception features (e.g. ponds, swales, wetlands) as part of a package of actions to prevent run-off from roads and highways entering water courses.** **[Unmapped]**	Creation of ponds, swales or wetland to capture run-off; ongoing maintenance and treatment of water within these features to reduce the presence of pollutants which may be harmful to wildlife (guided by ongoing monitoring of pollutants). Seek technical and ecological advice on suitability. May need to be part of a wider package of measures to capture and remove sediment and other pollutants before it reaches the nature-based feature.	Not on the aquifer / source protection zones due to risk of pollution of the aquifer unless permitted by EA/water companies (due to increased risk that these may increase pollution of groundwater). Nature-based features alone may be suitable for low-traffic roads where level of pollutants in run-off are less; on motorways, trunk roads or those with high congestion levels, other interventions will be required to remove sediment/pollution before it enters a nature-based feature.	CIWEM and Stormwater Shepherds: Highway runoff and the water environment
R 1.8	**Reduce the impact and spread of Invasive Non-Native Species (INNS) on freshwater habitats (rivers, streams, wetland sites, standing water bodies).** *Note: Key species of concern across freshwater habitats in West Sussex include:* *One the banks: Himalayan balsam; American skunk cabbage; giant*	Techniques used will depend on species, distribution and efficacy of management approaches.	Initial focus on 'target areas' where concentrations are high and/or the sites may be acting as a source of spread. Presence of species in the Ouse catchment by waterbody has been mapped and a strategy produced for tackling their impact at a catchment scale.	Ouse INNS strategy: control techniques GB Non-native species secretariat - information hub ***Local case study example:*** *Sussex Ouse Non-native species project*

Code	Measures	How	Where	Further info/guidance
	hogweed; Japanese knotweed; Rhododendron ponticum In the water: *floating pennywort; parrots feather; water fern; New Zealand pigmyweed; Elodea species; Lagarosiphon major (curly waterweed); signal crayfish; Chinese mitten crab; Asian clam; Chinese mystery snail; American mink.* **[Unmapped]**		For some species, it is recommended to start from headwaters and work downstream. For others, the species may be spreading from tidal reaches. Advice on best approach can be sought from relevant-Catchment Partnerships. For efforts to control American Mink: this work should form part of Regional eradication approach to eradication efforts in south-east England.	

Other core measures overlap directly with this priority and will contribute to its delivery.

Rivers, streams and aquifers

A1.1 Create high quality Sustainable Drainage Systems (SuDS) to reduce storm overflows, support ground water quality and encourage groundwater recharge/infiltration where required.

A 1.2 Implement land management practices, habitat creation and management to support ground water recharge and reduce levels of nutrients (nitrates/phosphates) and other pollutants reaching groundwater. This includes buffering karst features.

Coastal

C1.3 Create new areas of intertidal saltmarsh and mudflat, in locations where it is likely to be resilient to future climate pressures.

Urban Nature

U1.3 'Re-naturalise' stretches of urban rivers/streams to support biodiversity and natural processes, where this is feasible and aligns with flood risk approaches. Provide access along these stretches where possible to better connect people to urban rivers/streams.

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Beaver	R1.1, R1.3, R1.5
European water vole	R1.1, R1.2, R1.3, R1.3, R1.4, R1.5, R1.6, R1.8
Dark-bellied brent goose (R1.1)	
Marsh harrier (R1.1, R1.5)	
White-tailed eagle (R1.1)	
White-clawed crayfish	R1.2, R1.3, R1.4, R1.6, R1.8

Priority species	Measures that would be beneficial
Emerald damselfly	R1.1, R1.7
Swollen spire snail	R1.1
Lesser marshwort	R1.4
Great tassel stonewort	R1.4
Priority assemblages of species	**Measures that would be beneficial**
Breeding waders - wet grassland & heathland assemblage	R1.1
Coastal grazing marsh & upper saltmarsh assemblage	R1.1
Breeding & migrating/winter shore birds assemblage	R1.1
Streams & rivers assemblage	R1.1, R1.2, R1.3, R1.3, R1.4, R1.5, R1.6, R1.8

Priority R2 (chalk streams). Support the recovery and resilience of our chalk streams and their unique biodiversity

What does success in 10 years look like?

- For the small, chalk streams which emerge from the steep scarp slope of the chalk downs, effort has been focused on safeguarding these streams from physical modification and retaining and enhancing their natural chalk stream characteristics. [In general these types of chalk stream in Sussex remain under less pressure than those in the coastal plain].
- The larger chalk streams, emerging from the dip slope of the chalk downs into the coastal plain have been prioritised for restoration given the greater pressure they have experienced historically from adjacent land use, pollution and physical modification.
- Where necessary, the natural functions of chalk streams have been increased through actions to restore the following: stream slope (improving longitudinal connectivity); an intact gravel bed; dynamic interaction with fallen trees and living riparian trees; interaction with the floodplain (lateral connectivity); ecological processes and habitats that support their key species (fish, insects, mammals and plants).
- Chalk streams are benefitting from sensitive land use within the wider catchment and are buffered from pollutants, supporting recovery of water quality. In particular, actions have been taken to reduce sediment load entering these streams.
- Winterbournes (seasonally flowing chalk streams) have been identified and there is greater awareness of their presence and function. Efforts have been focused on retaining and restoring these streams where required.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:
Note: These are in addition to standard measures for rivers/streams in R1 above and are specific to chalk streams which are of particular importance in West Sussex.

Code	Measures	How	Where	Further info/guidance
R 2.1	**Restore chalk streams and winterbournes to support base flows, water quality, natural functions, aquatic habitats and biodiversity.** **[Mapped]**	• Restoration of lost/former channels where known • Restoration of meanders and gradient • Removal of culverts and other barriers which may be impacting sedimentation, low flows and longitudinal connectivity • Expansion of wet and floodplain margins • Creation of buffer habitat and to intercept pollutants • Management of shade from riparian vegetation to create optimal light/shade conditions for macrophyte development • Retention/establishment of natural leaky large wood structures	Target all chalk streams and winterbournes particularly those streams at greatest risk of low base flows in summer/drought periods, those experiencing low ecological condition or under pressure from high nutrient/pollution levels and those where channels have been modified and where there is potential to 'renaturalise' them. In West Sussex: focus specific efforts on the more pressurised chalk streams emerging from the dip slope into the coastal plain (including River Ems, Lavant and Bosham streams).	Catchment based approach: Chalk stream Restoration Strategy Chalk Streams – England's freshwater marvel ***Local case study examples:*** *Western Sussex Rivers Trust. Chalk Stream Resilience.* *Broadwater Brook chalk stream restoration*
Other core measures overlap directly with this priority and will contribute to its delivery. Rivers, streams and aquifers R 1.8 Reduce impact and spread of Invasive Non-Native Species on freshwater habitats (rivers, streams, wetland sites, standing water bodies). Measures to support groundwater recharge and water quality of the **aquifers** will also support chalk streams, for example: A 1.2 Implement land management practices, habitat creation and management to support ground water recharge and reduce levels of nutrients (nitrates/phosphates) and other pollutants reaching groundwater. This includes buffering karstic features.				

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
European water vole	R2.1
White-clawed crayfish	R2.1
Crystal moss-animal	R2.1
Priority assemblages of species	**Measures that would be beneficial**
Streams & rivers assemblage	R2.1

Priority A1 (Aquifers). Support the health and function of our aquifers

What does success in 10 years look like?

- Larger areas of priority habitats on our aquifers and particularly within the priority catchment areas of water companies are being managed to restore and enhance their ecological condition and deliver key ecosystem services including the recharge of the aquifer and protection of groundwater from pollution. On the chalk aquifers, in many cases this will mean enhancing and restoring chalk grassland and associated habitats (including arable reversion)
- The restoration and expansion of priority habitats in key areas for groundwater protection is also taking place, again to support biodiversity and aquifer function.
- Localised areas of 'interception' and buffering habitat are being created around karst features[5] to reduce risk of ground water pollution.
- Impacts on ground water quality and recharge from runoff are being reduced through the use of Sustainable Drainage Systems (SuDS), 'rainscapes' and rain gardens where appropriate; these are providing additional habitat and space for water.
- Landowners and farmers are being supported to reduce water usage and increase water sustainability and resilience.
- Communities living on the 'chalk block' are informed and engaged in activities to support the aquifer, such as reducing demand for water, water-friendly gardens, creation of raingardens, schools projects etc.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
A 1.1	**Create high quality Sustainable Drainage Systems (SuDS)[6] to reduce storm overflows, support ground water quality and encourage groundwater recharge/infiltration where required.**	Various types of SuDS depending on purpose: swales and conveyance channels; filtration; infiltration; retention and storage; wetland, inlets, outlets and control structures. Specific examples include green roofs, permeable paving, rain gardens, tree planting, swales, ponds, infiltration basins and soakaways.	Widespread but only in areas suitable for creation of SuDs (which depends on factors such as underlying geology, proximity to Ground Water Source Protection Zones (where SuDS may risk contaminating water resources), topography, flood risk, archaeology, landscape etc). See maps identifying local 'SuDS Suitability Scores' for information.	Water, People, Places: a guide for master planning sustainable drainage into developments. Susdrain.org website WWT and RSPB: Sustainable Drainage Systems: a guide for local authorities and developers ***Local case study example.***

[5] In West Sussex, these are features in the chalk caused by erosion - (e.g. streamlines, dolines (sinkholes), dissolution pipes and springs). These can cause rapid infiltration of surface water containing pollutants to enter the aquifer.

[6] SuDS are drainage systems designed to manage surface water run off. They are designed to control the quantity and rate of runoff from a development, improve the quality of the surface water runoff (e.g. reducing pollutants), and contribute to the nature conservation, landscape and amenity value of the development site and its surroundings (Guide to Sustainable Drainage Systems in East Sussex, 2015)

Code	Measures	How	Where	Further info/guidance
				Greener Hassocks & Ditchling. Flood and SuDS project.
A1.2	**Implement land management practices, habitat creation and management to support ground water recharge and reduce levels of nutrients (nitrates/phosphates) and other pollutants reaching groundwater. This includes buffering karst features.**	Restoration of ponds/dew ponds; habitat creation and enhancements; reduced use of chemical inputs; use of cover crops; identifying and buffering karstic features.	Source Protection Zones; Nitrate Sensitive Areas; Sussex North Water Supply Zone (StatMap Earthlight). SE Water: strategy for habitat creation and NbS in SPZs (to be drafted during course of this LNRS) Environment Agency's Nitrate Leaching Tool to measure how much nitrate is lost from farmed land.	Water companies – direct advice
Other core measures overlap directly with this priority and will contribute to its delivery. Measures within the species-rich grassland section to create and enhance chalk grassland habitat will most likely be located on chalk geology and thus may support ground water quality and aquifer recharge.				

Wetlands and Standing Water Bodies

Priority Wt1 (Wetland habitats). Restore and enhance our existing wetland habitats* and create new wetlands particularly where this will expand and connect existing sites.

(* where wetland includes reedbeds, coastal/floodplain grazing marsh and our small areas of peatland habitat such as bog, mires, wet heath and fen)

What does success in 10 years look like?

- More of our existing wetland sites are in positive management, resulting in improved ecological condition, sufficient water levels and reduced threat from invasive species.
- Measures to support river systems and aquifers (R1 and A1) are supporting the hydrological function of our wetlands, which is increasing their resilience in the face of climate change.
- Our large, iconic wetland sites are improving in their condition through measures beyond their boundaries to increase the area of contiguous and stepping stone habitat, improving connectivity and reducing pressures from poor water quality and insufficient water levels.
- Our most fragile and vulnerable wetland habitats such as fen, bog and mire, marsh, reedbed, coastal and flood plain grazing marsh are being managed to restore their hydrological function and ecological condition. In many cases, this has meant removing artificial drainage, preventing nutrient enrichment and removing encroaching vegetation where required. Areas of these habitats are expanding where conditions and water levels permit.
- Areas of wet grassland and water meadow have been increased and expanded and are supporting associated species such as waders and wildfowl. Water vole populations in these wetland areas are also increasing thanks to improved habitat connectivity and control of American mink.
- Floodplain habitats and wet woodland areas have been created as part of the wider restoration of floodplain function. More generally, our wetlands are delivering a range of wider environmental benefits. By increasing the storage of water in the landscape they are contributing to reduced flood risk, improved water quality, improved base flows in our rivers in times of drought and carbon storage.
- Harmful impacts from flooding, surface water runoff and combined sewer overflow discharges are being mitigated and reduced through Nature-based Solutions. Natural Flood Management (NFM), nature-based Sustainable Drainage Systems (SuDS) and Integrated Constructed Wetlands (ICWs) are creating benefits for nature while delivering more space for water alongside benefits for reducing flood risk, pollution and improving water quality.
- Defunct infrastructure which is inhibiting wetland expansion is being removed (e.g. sluices, field drainage etc.).

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures			
Wt1.1	**Enhance remaining areas of**	Identification of the hydrology of the site and its	All existing peatland habitats in	Natural England (NERR 064): A narrative for conserving freshwater

Code	Measures			
	peatland habitats by improving their hydrological function and ecological condition. Encourage expansion of existing areas where possible. **[Mapped]**	functional boundaries; restoration of hydrological regimes and water table (e.g. by blocking drains); manage vegetation to remove non-typical wetland species; remove trees where the site has dried out and trees have been planted/colonised; influence surrounding land use to support water levels and reduce pollution; create wetland buffer for the site.	Sussex (lowland fen, lowland bog, mire). Note that many are found within heathland habitat mosaics (see Priority H1).	and wetland habitats in England Natural England: Climate Adaptation Manual: Lowland raised bog Natural England: Climate Adaptation Manual: Lowland Fens CIEEM. Fen Management Handbook
Wt 1.2	**Enhance existing areas of reedbed to improve ecological condition and function and delivery of wider environmental benefits.** **[Mapped]**	Maintain water levels at a high and stable level or restore to these levels if required; manage the habitat to maintain all stages of succession (young reedbed to older reedbed), structural and species diversity; grazing; cutting if necessary should be on a long rotation; scrub control to prevent encroachment but retaining some scrub in places to support biodiversity.	Enhance all existing areas;	Catchment Based Approach – Reedbeds Guidance for relevant ELMS options: WT6 Management of reedbed
Wt1.3	**Create new areas of reedbed, particularly where this will expand and connect existing sites and/or deliver wider environmental benefits (such as improvement of water quality).** **[Unmapped]?**	Groundworks to create suitable ground and water condition; establish reed vegetation; manage water levels and supply; vegetation management to control any opportunistic/ invasive species	Create new reedbeds where soils and hydrology are suitable within floodplains, estuaries, lake edges and reclaimed industrial sites such as gravel pits/quarries.	Guidance for relevant ELMS options: WT7 Creation of Reedbed
Wt 1.4	**Manage existing areas of floodplain grazing marsh (including coastal floodplain grazing marsh) to enhance the ecological condition of its mosaic of habitats and ditches.**	Manage to create variety of vegetation height and density (including bare ground, patchy scrub, temporary pools); maintain light grazing and/or cut for hay/silage; prevent scrub invasion; maintain drainage ditches to provide a range of successional stages of vegetation and a rotational approach to ditch cleaning. This will support the value of the ditches for aquatic and water margin fauna; manage water levels to	All existing CFGM; other Floodplain grazing marsh along rivers.	Buglife resources: Coastal and floodplain grazing marsh; Grazing Marsh Ditches

Code	Measures			
	[Mapped]	maintain high water levels in ditches throughout the year; for Coastal Floodplain Grazing Marsh manage saline incursion and flooding; create varied ditch profiles; maintain water quality by reducing nutrient input from fertilizers.		
Wt 1.5	**Enhance existing areas of lowland wet grassland habitats to improve ecological condition and delivery of wider environmental benefits.** (*Note: this refers to those areas of grassland that are periodically inundated and not considered to be floodplain grazing marsh (which tends to be drained for grazing). It may include floodplain wetland mosaic, washland grasslands, wet pasture and wet meadow).* **[Mapped]**	Manage water levels to allow/enable seasonal shallow flooding (inundation) of grassland in winter/spring; create areas of standing water and wet features (e.g. scrapes and pools); graze (low levels) or cut for hay; avoid use of fertilizers, slurry or manure; use of green hay to enhance grassland species diversity	Existing areas of wet grassland, particularly that in poor ecological condition and where actions to restore seasonal inundation will be possible.	Catchment Based Approach: Biodiversity Habitat Pack – wet grasslands River Restoration Centre: Manual of River Restoration Techniques. Creating Floodplain Wetland Features – floodplain wetland mosaic Freshwater Habitats Trust: Floodplain grassland restoration Natural England: A narrative for conserving freshwater and wetland habitats in England (NERR064) Guidance for relevant ELMS options: SFI Manage lowland wet grassland for birds GS10 Management of wet grassland for wintering waders and wildfowl
Wt1.6	**Create new areas of lowland wet grassland habitats, particularly where this will expand and connect existing wetland habitats and deliver wider environmental benefits.** *(Note: this refers to those areas of grassland that are periodically inundated and not considered to be floodplain grazing marsh (which tends to*	Restoration of hydrological conditions; use of "re-wetting" techniques to raise water levels (e.g. drain blocking); consider creating variations in landform (hollows, channels etc.) to allow water to build up on the surface; manage water levels in winter to (where possible to do so) to retain water on the site; graze/cut to create suitable sward conditions.	Existing areas of low input grassland or species-rich grassland in sites with potential for water level control/ flooding in winter	Catchment Based Approach. Wet Grassland Guidance for relevant ELMS options: GS12 Creation of wet grassland for wintering waders and wildfowl

Code	Measures			
	be drained for grazing). It may include floodplain wetland mosaic, washland grasslands, wet pasture and wet meadow). **[Unmapped]**			
Other core measures overlap directly with this priority and will contribute to its delivery. Rivers, streams and aquifers R1.8 Reduce impact and spread of Invasive Non-Native Species on freshwater habitats (rivers, streams, wetland sites, standing water bodies). A 1.1 Create high quality Drainage Systems (SuDS)[7] to reduce storm overflows, support ground water quality and encourage groundwater recharge/infiltration where required.				

Priority species that would benefit from these measures

Priority species	**Measures that would be beneficial**
European water vole	Wt1.1, Wt1.2, Wt1.3, Wt1.4
Dark-bellied brent goose	Wt1.4, Wt1.5, Wt1.6
Marsh harrier	Wt1.2, Wt1.3, Wt1.4, Wt1.5, Wt1.6
White-tailed eagle	Wt1.4, Wt1.5, Wt1.6
A spider *Hygrolycosa rubrofasciata*	Wt1.1
A spider *Pardosa paludicola*	Wt1.1
Emerald damselfly	Wt1.4, Wt1.5, Wt1.6
Swollen spire snail	Wt1.4, Wt1.5, Wt1.6
Cut-grass	Wt1.4, Wt1.5, Wt1.6
Lesser marshwort	Wt1.4
Great tassel stonewort	Wt1.4
Priority assemblages of species	**Measures that would be beneficial**
Breeding waders - wet grassland & heathland assemblage	Wt1.4, Wt1.5, Wt1.6
Coastal grazing marsh & upper saltmarsh assemblage	Wt1.4
Grazing marsh molluscs assemblage	Wt1.4

[7] SuDS are drainage systems designed to manage surface water run off. They are designed to control the quantity and rate of runoff from a development, improve the quality of the surface water runoff (e.g.reducing pollutants), and contribute to the nature conservation, landscape and amenity value of the development site and its surroundings (Guide to Sustainable Drainage Systems in East Sussex, 2015)

Priority SWB1 Standing water bodies (SWB) (reservoirs, lakes, ponds and ditches). Restore and enhance existing standing water bodies and create new standing water body habitat for biodiversity and other benefits.

What does success in 10 years look like?

- The water quality and ecological condition of standing water bodies, such as reservoirs, lakes, ponds, ditches, dew ponds, hammer ponds, mill sites etc., is improving. This is being achieved through appropriate restoration activity, the creation and enhancement of habitats that prevent nutrient and sediment runoff entering standing water bodies, and supportive land management practices in the wider catchment.
- There is more understanding of the range of value to biodiversity that can be found in ponds in various ecological stages and therefore the need to take ecological advice before embarking on pond restoration.
- Ponds of high existing ecological value have been identified and are being managed to retain and enhance their condition.
- New ponds and networks of ponds have been created in suitable rural and urban locations.
- Strategies are in place for the management of invasive non-native species within standing water bodies.
- Standing water ditches of high and potentially high environmental value are under management that is enhancing their value for all related species.
- There is more awareness that ditches can be part of the river network and are managed as such for their support of aquatic biodiversity and habitat connectivity.
- People understand how to manage and use ponds and other standing water bodies to reduce impacts caused by actions such as duck feeding, swapping plants between ponds, adding invasive non-native species such as terrapins and so on.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
SWB 1.1	**Enhance and restore existing ponds and pond complexes to improve biodiversity and water quality. This includes restoration of degraded and lost (ghost) ponds, pond complexes, farm ponds, hammer ponds, dew ponds and urban ponds.**	It is vital to seek ecological advice to identify if a pond requires restoration as they can be ecologically valuable in different ecological stages. The techniques required will therefore vary depending on the pond type/location, threats from run off and other reasons for poor ecological condition. Techniques may include:	Dependent on ecological advice. May include farm ponds, historic ponds (hammer ponds), dew ponds, village ponds, urban ponds; It may be particularly important to target Priority Ponds (which support uncommon and	Freshwater Habitats Trust. Pond Management Hub ***Local case study examples:*** *South Downs National Park Trust, Peppering Dew Ponds Restoration* *Pounds for Ponds initiative.* *East Beach Pond Group, Selsey (West Sussex)*

Code	Measures	How	Where	Further info/guidance
	[Unmapped]	• Creation/management of riparian habitats (creating a buffer where needed to reduce impacts of runoff and shading where needed); • desilting • removal of leaves and rubbish • management of water levels and depths • cutting/thinning of bankside vegetation • reducing vegetation in the pond	declining species) and ponds in poor condition.	*Sussex Wildlife Trust. 'Bomb Pond', Great barn farm, Wiston.*
SWB 1.2	**Create new ponds / pond networks (complexes) to provide freshwater habitat for wildlife and deliver wider environmental benefits.** *Whilst these will provide wider environmental benefits (such as slowing the flow of water in the environment), these are primarily 'wildlife ponds' and their design, location and riparian habitats should reflect this.* *(For creation of water storage ponds, swales and scrapes primarily for water storage and flood risk reduction, see measure R1.7 (Natural Flood Management)).* **[Unmapped]**	Identify suitable site seeking ecological advice if necessary; excavate pond creating profile/ edges which will be beneficial for wildlife (see guidance).	Re-creation of 'lost ponds' where the location is known; locations where pond creation is suitable based on soils and geology; areas where pond creation is beneficial for species (e.g. Great Crested Newts); location close to other ponds/wetlands. Use historic pond survey work to target areas of 'lost ponds' for restoration. Information exists for South Downs National Park (lost Dew Ponds) and parts of High Weald National Landscape.	Pond Conservation (Million Ponds). Locating ponds and finding a water source. Farming for Nature. How to build a wildlife pond on your land Government blog. create ponds and lakes (on farmland) Great crested newt district licensing - ESCC; WSCC; Naturespace. ***Local case study example.*** *Wilder Horham District. Wetland creation at Mayes Park.*
SWB1.3	**Create new large standing water bodies (reservoirs/lakes) with beneficial riparian habitat;**	Construction of new water body; restoration of ex-mineral sites to create new lakes/ponds where suitable; creation of ambitious areas of riparian habitat around any new features (as		***Local Case Study example:*** *Havant Thicket Reservoir Project, Hampshire*

Code	Measures	How	Where	Further info/guidance
	this may include reservoir creation where identified as required to support water resources management. **[Unmapped]**	suitable for location) and as required for support of species.		
SWB 1.4	**Restore and enhance standing water ditches to improve value for species and restore habitat linkages via ditch-side vegetation.** **[Unmapped]**	Maintenance of water levels; allow some sections of ditches to become choked to provide habitat for invertebrates; management on a long rotation to provide different stages of vegetation; clearance of ditches on one side only; creation of shallow margins; cattle poaching on some stretches to maintain shallow profile and control excessive vegetation growth.	All ditches but of particular importance are ditches of high and potentially high environmental value.	Defra. Create and manage ditches for wildlife Freshwater Habitats Trust - ditches Buglife. Ponds and ditches. Nature Friendly Farming Network. Ditches – ways to unlock multiple benefits Link to relevant ELMS guidance: WT3 Management of ditches of high environmental value ***Local Case Study example:*** *Fixing and Linking our Wetlands (FLOW). Manhood Peninsula (West Sussex)*
SWB 1.5	**Create and manage permanent vegetation buffer strips alongside ditches and ponds to support biodiversity and intercept and reduce levels of pollutants (such as nutrients, chemical pollutants, veterinary chemicals, excessive sediment) reaching water courses.**	Creation of permanent vegetation buffers (grassland, wetland, hedgerows, trees, others). For farmland, buffer size up to 20m – but to be to be suitable for site, field size and landscape scale.	This is good practice along all standing water bodies but is particularly important in the following cases: • water bodies in an agricultural setting (arable and pasture) • ditches and ponds of high environmental value • those located in source protection zones and nitrate vulnerable zones	Farm Wildlife. How to do it: farm ponds and water bodies. Guidance for relevant ELMS schemes include: BFS2: Buffer in-field ponds on arable land BFS3: Buffer in-field ponds on improved grassland

Code	Measures	How	Where	Further info/guidance
	[Unmapped]			

Other core measures overlap directly with this priority and will contribute to its delivery.

Rivers, streams and aquifers
R 1.8 Reduce impact and spread of Invasive Non-Native Species on freshwater habitats (rivers, streams, wetland sites, standing water bodies).

Measures to support **aquifers** and to deliver more **urban nature** may also include creation or restoration of dew ponds/ponds in suitable areas.

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
European water vole	SWB1.4, SWB1.5
Emerald damselfly	SWB1.1, SWB1.2, SWB1.4, SWB1.5
Pondweed leafhopper	SWB1.1, SWB1.2, SWB1.5
Crystal moss-animal	SWB1.1, SWB1.2
Cut-grass	SWB1.1, SWB1.4, SWB1.5
Lesser marshwort	SWB1.4, SWB1.5
Great tassel stonewort	SWB1.4, SWB1.5
Priority assemblages of species	**Measures that would be beneficial**
Grazing marsh molluscs assemblage	SWB1.4, SWB1.5
Ponds for amphibians assemblage	SWB1.1, SWB1.2, SWB1.5

Urban Nature

Priority U1: Create and connect new nature-rich areas within the urban environment, for the benefit of wildlife and people

What does success in 10 years look like?

- Greenspaces across our urban and peri-urban areas are being thought of as a vital part of our 'ecological networks' – with opportunities being taken where possible to add to and complement existing greenspaces to enhance these networks. All new and existing parks and greenspaces are being managed for people and nature (See Priority U2 below).
- Creation of new greenspace is being done at different scales depending on circumstances and opportunities. For example, in densely populated urban areas where pressure on land is high, innovative use of pocket parks and smaller scale interventions for nature (e.g. green roofs, green walls, planters, verges, local 'no-mow' zones, swift bricks etc). Opportunities for larger scale interventions are being sought for community and neighbourhood green spaces that benefit nature and people. Local government policies for green infrastructure and urban greening are important drivers of action with planning conditions ensure 'green' development is delivered in practice.
- The public and private sectors are playing their part. New and additional 'nature-rich' greenspaces (e.g. local nature reserves, allotments, parks, verges, public gardens, areas of habitat creation on public land (schools, hospitals)) are being created as part of a wider network, located and designed to provide benefits for nature and people. Existing business and industrial zones are creating new habitat-rich and green areas of value to nature and employees.
- New areas are creating much needed connectivity for nature within the urban environment, particularly those of a linear nature such as verges, embankments, new green walking and cycling corridors etc.
- Street trees, hedgerows, wildflower planting and other urban habitats (e.g. green walls and green roofs) are being included in the built and public realm across our villages, towns and cities to create additional habitat and a range of ecosystem services including carbon sequestration, support for pollinators, shading, flood risk reduction and improvements to health and wellbeing. Planting schemes ensure 'future-proofing' against potential changes in climate.
- Communities are being encouraged to develop community-led plans which address nature recovery and include actions that can be delivered by residents. The design of new greenspaces reflects the needs and views of local people and aims to provide spaces which are considered safe and welcome to all. Opportunities are being taken to innovate, test and research nature-based approaches which better connect communities to these projects.
- Creation of new greenspaces is being targeted, particularly where the provision of existing green space falls below national standards and where income and health inequalities have been mapped[8]. Creation and enhancement (see U2) of our urban green spaces is also reflecting the 'voices' of those communities and individuals that are often not heard in decisions about where to target resources.
- Priority is being given to ensuring that new development includes sufficient accessible natural greenspace of value to both residents and wildlife; inclusion of habitats within developments is 'landscape-led', linking to and enhancing surrounding habitats and the natural environment.

[8] Natural England Green Infrastructure Framework mapping. https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Map.aspx

- ‘Sustainable Drainage Systems’ (SuDS) such as ponds and raingardens are being created in urban areas particularly where these can also provide ecosystem services such as flood risk reduction and water storage in the urban landscape.
- Local government, the Protected Landscapes in Sussex (South Downs National Park, High Weald National Landscape and Chichester Harbour National Landscape) and geographical partnerships such as The Living Coast UNESCO Biosphere and Weald to Waves Community Network are helping to improve access to green spaces for the benefit of the populations within their boundaries.

Core Measures

Measures identifying the ‘action on the ground’ required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
U 1.1	**Create new accessible natural greenspaces in urban areas, designed and located to deliver multiple benefits for people and nature.** **[Mapped]**	Creation of new parks or green spaces, with delivery of multiple benefits in mind (wildlife, health and wellbeing, air quality, urban temperature regulation, flood risk reduction etc). These can include a range of size and type of greenspace – from larger parks, allotments/community food growing spaces to smaller parks and corners of habitat/greenspace at the street scale. Design should seek to deliver specific benefits to wildlife, health/wellbeing, climate change mitigation (e.g. tree and hedgerow planting) and climate adaptation (e.g. flood risk reduction, urban temperature regulation (as required in that locality)).	Opportunities to include new greenspaces in all new larger housing developments; within existing urban areas opportunity will be more limited by space/funds but should be targeted in areas of ‘nature deficit’, highest health inequalities, air pollution and vulnerability to the impacts of climate change (e.g. flooding and urban heat island effects) – and where possible to enhance connectivity between existing green spaces; locate within proposed urban ‘ecological networks’ if mapped by local authorities. NE Green Infrastructure Standards mapping tool can be used to identify areas in need of greater provision of accessible natural greenspace.	Natural England: Green infrastructure – the catalyst for urban greening Natural England, Green Infrastructure Framework – principles and standards Natural England, Green Infrastructure Framework – mapping tool Heritage Lottery Fund – How to create sustainable urban greenspace in your area Nature Towns and Cities
U 1.2	**Retrofit small/micro areas of habitat within the built/public realm of towns and cities, particularly in areas of ‘nature deficit’ and where it will contribute to climate adaptation and provide enhanced connectivity between existing green spaces.**	Green roofs and walls, tree/hedge planting, pollinator habitat (UK native wildflower planting), pocket parks, tiny/mini/Miyawaki forests, green bus-stops, raingardens, roundabouts etc. These areas may or may not be accessible but will provide important stepping-stones of urban habitat for	Within smaller developments (residential and commercial); business/industrial zones; shared spaces (housing association land, hospitals, schools); public realm (bus stops, green routeways; within proposed urban ‘ecological networks’ if mapped by local authorities etc.	Grey to Green Guide – Mayor of London

Code	Measures	How	Where	Further info/guidance
	[Unmapped]	wildlife. Should be planned as wider approach to creating connected meaningful, habitat in urban areas. Take ecological advice if needed on location and design. Note: Urban greening factor policies within local plans may be helpful in delivering this measure.		
U 1.3	**'Re-naturalise' stretches of urban rivers/streams to support biodiversity and natural processes, where this is feasible and aligns with flood risk approaches. Where appropriate, provide access along these stretches where possible to better connect people to urban rivers/streams.** [Mapped/Unmapped]	'De-culverting' where possible, in-channel enhancements, riparian habitat creation, flood-plain connection/re-meandering (where there is space to do so), improvements to access (where possible) to promote local engagement and benefit.	Suitable areas identified in consultation with local authorities, catchment partnerships and Environment Agency;	The River Restoration Centre: River Restoration in Urban Areas Factsheet.

Other core measures overlap directly with this priority and will contribute to its delivery. These include:

Woodland

W 2.2 Establish new orchards, including community orchards, with focus on maintaining locally distinctive varieties.

W 3.1 Plant new street trees to deliver multiple benefits.

W 3.3 Establish new areas of urban and peri-urban woodland which offer multiple benefits to residents, wildlife and landscape.

Hedgerows

Hdg 1.3 Create new hedgerows, including hedge trees where appropriate, to support habitat connectivity, enhance landscape character and deliver multiple benefits.

Hdg 1.4 Create new hedgerows and enhance existing hedgerows within new development, creating important corridors for wildlife and wildlife permeable boundaries.

Rivers, streams and aquifers

R 1.7 Create nature-based interception features (e.g. ponds, swales, wetlands) as part of a package of actions to prevent run-off from roads and highways entering water courses.

A1.1 Create high quality Sustainable Drainage Systems (SuDS) to reduce storm overflows, support ground water quality and encourage groundwater recharge/infiltration where required.

Wetlands and standing water bodies

SWB 1.2 Create new ponds / pond networks (complexes) to provide freshwater habitat for wildlife and deliver wider environmental benefits.

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
West European hedgehog	U1.1, U1.2
Priority assemblages of species	**Measures that would be beneficial**
Urban birds assemblage	U1.1, U1.2
Ponds for amphibians assemblage	U1.1

Priority U2: Enhance the value for nature of existing parks, buildings and other blue/green spaces

What does success in 10 years look like?

- Existing parks and other open spaces in our urban areas (e.g. gardens, school grounds, playing fields, hospital grounds etc.) are being managed with nature in mind, using suitable mowing regimes for grassland management and by creating new areas of habitat such as species-rich grassland, woodland, individual trees, hedgerows and ponds etc.
- Disturbance to wildlife on sensitive accessible sites is being reduced through careful management of visitor and dog use.
- A more sustainable approach to 'fine turf management' (i.e. high intensity management of sports pitches and other areas of amenity grassland) is supporting biodiversity, pollination, carbon sequestration and soil health in parks, recreation grounds, golf courses and school playing fields across Sussex.
- In our publicly owned green and blue spaces, their management (in-house and via contractors) is optimising wildlife benefits.
- Use of herbicides and pesticides in urban parks, greenspaces and private gardens has reduced significantly. In our publicly owned spaces, there is a principle of 'no pesticide/herbicide use' with agreed protocols in place which identify alternatives and specify the very limited exceptions where use may be permitted. In private gardens, a greater awareness of the impacts of pesticides and herbicides on nature and the alternatives available is reducing their use across the board.
- Species in urban areas are being supported through the provision of wilder, better connected and more natural spaces and vegetation.
- In addition, more buildings in urban areas are providing nesting habitat for birds, bats and other wildlife (for example, via provision of suitable nest boxes, swift bricks, bee houses etc. as part of new developments and extensions); this is targeted where specific species can benefit most (e.g. swift populations in Brighton).
- Private businesses, e.g. golf courses, within urban, peri-urban and rural locations, are creating and enhancing habitats for the benefit of wildlife and acting as important strategic locations for nature's recovery.
- Residents are playing an active role by managing areas of their gardens and adjacent public spaces for nature, providing nest boxes, hand weeding pavements (thus removing the need for spraying with chemicals) etc.

- Community based organisations are being supported to manage local green spaces (recreation grounds, ponds, orchards, allotments, community gardens, burial grounds) for nature and wider benefits and feel part of a bigger movement for nature's recovery across the LNRS areas. Innovation in the identification of green spaces as 'community assets' and the use of mechanisms such as Community Land Trusts and dedication of town/village greens is bringing more greenspaces into community management with a specific focus on delivering local benefits for nature and people.
- More educational projects are being created to help communities understand the importance and potential of the environment in urban areas (e.g. for their mental and physical health).

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
U 2.1	**Increase the area of habitat created and managed for nature within existing green spaces, such as parks, recreation grounds, allotments, golf courses, foreshore, public gardens, shared spaces (flats/housing association land), hospitals, prisons etc.** **[Mapped]**	• **Smaller grassed areas**: manage as natural greenspaces with reduced mowing, where this does not impact negatively on visitor experience • **Cemeteries and churchyards**: manage closer to natural greenspaces through suitable mowing practices and other habitat enhancements, where this is supported by stakeholders • **Allotments**: create new areas of habitat via hedgerows, small trees, wildflowers • **Playing fields**: Sustainable Turf Management*; management of corners and edges for wildlife; establishment of hedges, boundary trees, long grass boundary strips, minimising use of chemicals etc. • **School grounds**: sensitive management and creation of new areas of habitat within grounds for the benefit of nature and pupils and linked to net zero and climate adaptation plans • **Golf courses:** Sustainable Turf Management; innovative and diverse management techniques for tee, fairway, green and rough to reduce chemical use and support benefit for wildlife; creation of new areas of wildlife habitat, which link to habitat types beyond their boundaries. See specific measure for golf courses below.		Sussex Nature Partnership: Toolkit for park managers: assessing the benefits and potential of parks for nature and people Future Parks Accelerator: resource hub Management of burial grounds for nature (Caring for God's Acre). Pitchcare: sustainable turf management The Conservation Volunteers: The Urban Handbook. Weald to Waves. Gardens and Greenspaces. ***Local case study examples:*** *Manor Green Park Group, Selsey (Manhood Peninsula)* *Horsham District Council. Wildways Project.*

Code	Measures	How	Where	Further info/guidance
		• **Foreshore**: management to expand/enhance fragile coastal habitats on the site (e.g. coastal vegetated shingle) • **Local Greenspace Designations**: some of these may be important for wildlife and could be good sites for community-based projects where landowner is willing (may be parish, district/borough or private landowner) • **All**: reduction in disturbance to wildlife and damage to fragile areas of habitat where necessary. This may involve a range of visitor management approaches such as ranger/warden activity; protection of specific areas via fencing, zoning etc. Education, awareness raising and interpretation is vital in all greenspaces as part of management for 'nature and people'. **Sustainable Turf Management increases the value of playing fields and other areas of managed turf for nature and reduces the impacts of its management on the wider environment (e.g. via reduced water and chemical use etc).*		
U 2.2	**Install features to support species within urban areas (buildings, greenspaces, roads etc). Where possible, create adjacent supporting habitat for the species where this would be helpful (will be species and location specific).** **[Unmapped]**	• **Roosting/nesting boxes** for bats and birds across urban areas, with particular focus on existing nesting and breeding sites for important urban species • **Mammal ledges and wildlife kerbs** to support species movement in urban areas • **'Hedgehog' holes** in fences/walls to support their movement • **Amphibian 'ladders'** for road drainage gully pots • **Habitat for bees** (solitary and bumble) such as bee bricks and adjacent habitat (B-lines and pollinator gardens)	Widespread – but specific techniques may be targeted to support species populations in key locations (to be informed by species work).	**Local case study examples.** *West Sussex County Council. Mammal shelf on A272.* *Wilder Horsham District. Supporting Swift boxes in the District.*
U 2.3	**Reduce and where possible eliminate chemical fertilisers and pesticide applications on publicly owned land (e.g. farms, golf courses, highways, verges**	This can be guided through the drafting and implementation of protocols within relevant local and national authorities.	Aspiration is for this to be widespread across all publicly owned land where possible.	

Code	Measures	How	Where	Further info/guidance
	and central reservations, parks and sports grounds).			
U2.4	**Create and enhance habitats within golf courses and implement nature-friendly management practices, supporting biodiversity on-site and increasing connectivity with habitats beyond their boundaries.** **[Mapped]**	Many options depending on location and underlying soils/geology. Include innovative and diverse management techniques for tee, fairway, green and rough to reduce chemical use and support benefit for wildlife; habitat enhancement; habitat creation; pond creation; adjusted mowing to leave grassland habitat for wildlife; removal of non-native invasive species; planting of trees/shrubs to support wildlife; features such as bat/bird boxes; reduced use of chemical inputs	All golf courses noting that these may be in urban, peri-urban or rural settings; create habitat on site which can increase connectivity to habitats beyond the boundaries of the course.	RSPB blog: make your course a haven for wildlife ***Local case study example**: new initiative puts nature recovery into golf sector.*

Other core measures overlap directly with this priority and will contribute to its delivery:
Woodland
W3.4 Bring existing urban woodlands into active management to enhance nature conservation, historic environment and access.
Hdg 1.1 Manage existing hedgerows to improve their structure, longevity and value for biodiversity.
Wetlands and standing water bodies
SWB 1.1 Enhance and restore existing ponds and pond complexes to improve biodiversity and water quality. This includes restoration of degraded and lost (ghost) ponds, pond complexes, farm ponds, hammer ponds, dew ponds and urban ponds.

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
West European hedgehog	U2.1, U2.2, U2.4
Stag beetle	U2.1, U2.2, U2.4
Priority assemblages of species	**Measures that would be beneficial**
Urban birds assemblage	U2.1, U2.2, U2.3, U2.4
Ponds for amphibians assemblage	U2.1, U2.4

Nature Networks: Protected sites, wildlife corridors and more wildlife-rich habitat

All of the actions set about above, across different habitat types and scales, will contribute to nature's recovery in Sussex.
But key to achieving the step-change required, will be to work strategically, spatially and with ambition to create a much more effective **network** of 'bigger, better, more and joined' wildlife rich spaces.

Several key interventions are needed to make this happen:

- Enhancement of our existing 'protected sites' – the core areas of wildlife habitat that form the basis of our nature network
- The creation of new wildlife corridors to better connect habitats and protected sites across the landscape. These are required at all scales and can deliver multiple benefits for wildlife, people and the wider environment. Where full corridors are not feasible, smaller areas or 'stepping stones' of habitat will be beneficial and provide vital connectivity for species.
- The creation of more areas of wildlife-rich habitat. These might be areas of a single habitat type (delivered by the measures in the sections above) – or mosaics/mixtures of various habitat types together in one place. Examples include: 'messy' mixture of habitats created by re-introducing natural processes to a site; places where successional/transitional habitats are present and may change through time; projects/schemes delivering multiple habitat types across a site (e.g. mineral restoration projects; habitat banks etc).

Priority PS1: Support the expansion and enhancement of a network of protected sites*

** Protected sites include: International and European designations: Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites. National Designations: Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), Marine Conservation Zones (MCZs). Local Designations: Local Nature Reserves (LNRs), Local Wildlife Sites (LWSs), Local Geological Sites (LGSs).*

What does success in 10 years look like:

- The ecological function and resilience of our protected sites is improving by restoring and expanding their ecological size (creating more wildlife-rich habitat beyond their borders) and better connecting sites through the creation of significant landscape-scale habitat, and new 'stepping stones' and corridors of habitat. On-site improvements[9] are also taking place to increase the condition of quality of habitat in these core areas.
- Our Local Wildlife Sites and Local Nature Reserves are being brought into management that supports improvements in habitat condition, guided by recommendations from Local Wildlife Sites Initiative, where these are available.

[9] It is important to note that onsite improvements within SSSIs and NNRs are not covered by this LNRS as their management is covered by a specific statutory processes to ensure their protection and management. This involves contractual arrangements between Natural England and landowners which would potentially be confused by general measures within the LNRS. The LNRS can, however, identify measures for the improvement of habitats within Local Wildlife Sites, Local Nature Reserves and Local Geological Sites.

- The impacts of pressures on protected sites which originate beyond their borders are being reduced through collective action of stakeholders. Whilst responsibility for this mostly lies outside the scope of the LNRS, the LNRS is driving action to create and improve habitat where this can support our protected sites (as noted above). It is also playing a role in improving the environmental quality affecting many of our key sites (particularly our water-dependent sites). For example, 'nature-based solutions' are being used in key areas of our catchments to support water quality and base flows of important wetland and coastal sites downstream.
- The key pressures on our most vulnerable protected sites are being addressed collaboratively and at a landscape-scale, particularly in areas at greatest risk. This is being informed by climate change risk assessments of SSSIs and any Protected Site Strategies that come forward within the timeframe of this LNRS[10].

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
PS1.1	**Implement on-site management required to improve the ecological condition of Local Wildlife Sites particularly where this is known to be poor/failing.** **[Unmapped]**	Site/habitat dependent; management should be guided by ecological survey and management recommendations/ management plans as prepared via Sussex Local Wildlife Sites Initiative (LWSI) where available.	LWS in poor/failing condition as identified by Sussex Local Wildlife Sites Initiative (LWSI).	Sussex Local Wildlife Sites Initiative
PS1.2	**Create new areas of habitat on land adjacent to protected sites, thus expanding the total area of connected wildlife habitat in and around protected sites.** **[Mapped]**	Habitat creation – related to habitats within the protected sites which would benefit from increased contiguous area created beyond boundary.	Particularly important for protected sites which are of small size, in poor condition and/or are isolated from a network of adjacent habitats; strategic areas for SSSIs/NNRs can be agreed through discussion with Natural England, landowners and nature delivery organisations; *Note it may not be possible to create more habitat immediately adjacent to sites in some cases due to existing land uses (e.g. urban areas).*	Sussex Local Wildlife Sites Initiative for land adjacent to Local Wildlife Sites
PS 1.3	**Implement sensitive land use in areas adjacent to existing protected sites to reduce pressures on the sites and their**	Adoption of land use practices (e.g. soil management, reduced use of chemicals, grazing regime etc) to reduce pressures on adjacent	Farmland where measures could be introduced to support habitat condition/enhancement within sites. Targeting may involve failing sites where there is	Sussex Local Wildlife Sites Initiative for land adjacent to Local Wildlife Sites

[10] Natural England is driving these processes. At time of writing, no Climate Change Risk Assessments of SSSIs were yet complete and there is only one Protected Site Strategy (pilot project) in preparation which is in West Sussex (Kingley Vale). It is anticipated that much more information will therefore be available to inform the review of this LNRS in 5-8 years time.

Code	Measures	How	Where	Further info/guidance
	habitats/species. **[Unmapped]**	protected sites. *A list of techniques is not identified here as these will be specific to the location, existing land use and sensitivity of the adjacent protected site.*	farmland around it. SSSI Impact Risk zones may be helpful spatial areas to use for targeting this measure around SSSIs/NNRs. This approach may form part of a landscape scale approach to increasing condition and resilience of protected sites (see enabling measure PS 1.9 below).	'Protected Site Strategies' once these have been developed for SSSI/NNRs
PS 1.4	**Create new 'stepping stones' of habitat in critical areas of fragmentation between existing protected sites.** **[Unmapped]**	Habitat restoration or creation; techniques will depend on habitats involved.	Reduce fragmentation, promote more connectivity between sites, reduce isolation of some species and facilitate their movement. Location and type of habitat created also informed by underlying soil/geology and/or existing habitat on the site. Priority given to the following: • Areas of heathland stepping stones between key heathland sites • Areas of wet woodland between Ramsar sites in West Sussex • Areas of restored species-rich grassland between key grassland protected sites. New areas of habitat may be chalk, acid or neutral grassland depending on underlying geology and soil and site suitability. • New 'urban connections' of wildlife rich habitat between key urban protected sites	High Weald National Landscape. Managing and creating grassland habitats ***Local case study examples:*** *South Downs National Park, Heathland Reunited project*
PS 1.5	**Create upstream habitats to support the water flows and water quality of downstream protected wetland sites, thus strengthening the future resilience of these sites to the impacts of climate change.** **[Unmapped]**	Habitat creation to create nature-based solutions to water quality and flow pressures. Suitable habitat types will be site dependent but may include woodland, wetland, grassland or habitat mosaics.	Locate in areas upstream of the wetland protected sites most vulnerable to low flows, diffuse pollution, high nutrient flows into low nutrient ecosystems.	

Code	Measures	How	Where	Further info/guidance
PS 1.6	**Create new 'alternative accessible greenspaces' and/or recreational opportunities outside protected sites to relieve visitor pressure on these sites particularly where this is needed to protect and enhance habitats and/or species populations within these sites.** **[Unmapped]**	Habitat creation; creation of additional accessible green spaces. This should be delivered/ designed to also provide additional habitat (which is more resilient to visitor pressure/ disturbance) thus creating habitat as well as helping to draw visitor pressure away from fragile sites.	Locate in areas where the new greenspace will effectively draw visitors away from the protected site (for residential use, it may therefore need to be close to residents to make it attractive to them rather than closer to the protected site).	*Creation of Suitable Alternative Natural Greenspaces (SANGs) to protect fragile heathland of the Ashdown Forest from visitor pressure*

Other core measures overlap directly with this priority and will contribute to its delivery.
This priority will overlap extensively with other measures for specific habitats that are required within and around protected sites to support their improvement or expansion. In particular, see the following sections: coastal; woodland, hedgerow and scrub; species-rich grassland; heathland; rivers, streams and aquifers; wetlands and standing water bodies.
See also other measures within this section e.g. those relating to creation and enhancement of wildlife corridors and creation of new areas of wildlife-rich habitat.

Priority Cor1: Enable landscape recovery at scale across landscapes and large-scale nature corridors where this supports biodiversity, ecosystem services and landscape character

What does success in 10 years look like?

- Farmer and landowner-led landscape scale nature recovery initiatives (such as the Weald to Waves Corridor, farm cluster initiatives and other landscape scale approaches) have been enabled and supported and are delivering joined-up nature-recovery projects and actions on the ground. These are playing a vital role in supporting nature, improving habitat connectivity, enhancing landscape character and delivering wider environmental benefits across the LNRS area.
- Publicly owned areas of land are part of large-scale nature recovery initiatives, working with private landowners to deliver multiple benefits for nature and people.
- Parishes within these corridors and areas of landscape scale recovery are playing a role, by identifying opportunities for recovery that can contribute to delivery of action on the ground (via Parish Priority Statements and Neighbourhood Plans).

- Large scale corridors and landscape scale initiatives are playing a particularly important role in areas of sensitive and fragmented habitat where a joined-up and bigger scale approach is needed, and in river valleys and sensitive areas of catchments where they can deliver wider benefits for the freshwater environment and improve habitat connectivity.
- Where Landscape Recovery bids have been developed between farmers, landowners and other partners in West Sussex but have been unsuccessful in receiving funding (e.g. Arun Valley, Ashdown Forest), Arms-Length Bodies, Protected Landscapes, conservation organisations and others continue to support the development of these initiatives towards a funding solution.
- District-scale approaches, where local government and other organisations can play a role in supporting and enabling nature recovery at a larger scale, are emerging (such as Wilder Horsham, Adur Landscape Recovery project, Chichester District Council Wildlife Corridors, High Weald Deer Project) and are playing an important role in coordinating delivery at a sub-county scale.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures
	This is an enabling priority and will be delivered on the ground through implementation of a range of other core measures (set out in other sections) and the **enabling measures listed below** that will be vital to encouraging and supporting a collaborative approach to delivery. ***Local case study example:*** *Weald to Waves – creating a nature recovery corridor across Sussex*
Other core measures overlap directly with this priority and will contribute to its delivery. No specific measures listed. Rather, this priority will overlap extensively with other measures for specific habitats that are required within landscape scale corridors and initiatives. In particular, see the following sections: coastal; farmland and soils; woodland, hedgerow and scrub; species-rich grassland; heathland; rivers, streams and aquifers; wetlands and standing water bodies.	

Cor2. Safeguard and enhance the value of existing green and blue corridors for nature and create new corridors and stepping stones of habitat where this will improve connectivity between habitats and between rural and urban green spaces

What does success in 10 years look like?

- Existing green and blue corridors are identified and being safeguarded from loss or degradation via a range of mechanisms including the planning system, best practice management and landowner commitment and action.

- Opportunities are being taken to create and enhance habitats along existing corridors thus enhancing their ecological function and resilience, particularly where they are providing species with a vital movement corridor.
- New corridors of linking habitat are being created between particularly important and isolated areas of habitat and/or designated sites, and these are targeted where they will create much needed connectivity for species.
- Within urban areas, new 'green and blue linkages' between parks and greenspaces are being created by including corridors in new urban infrastructure when opportunity arises. These are delivering multiple benefits for nature and people in the urban environment including increased resilience to the impacts of climate change (e.g. flood risk reduction, urban shading and cooling etc.). Care is being taken to use species that will be resilient to future changes in climate to ensure these new linkages ensue.
- Gardens – both private and public – are making a vital contribution to creating and linking habitats within urban environments through more wildlife-friendly approaches and more areas dedicated to wildlife habitat.
- Within the urban and peri-urban fringes new accessible green corridors are providing greater ecological connectivity between urban areas and adjacent rural areas whilst enhancing the landscape and providing opportunities for access and recreation.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/ guidance
Cor 2.1	**Enhance existing essential corridors used by priority species and those species especially vulnerable to climate change, creating and improving habitat within the corridor.** **[Mapped]**	Sympathetic management of existing habitat and new habitat creation; delivered through land-owner collaboration along corridor length to retain/enhance required habitat and support species recovery.	Corridors of specific importance for key species. To be informed by species work.	
Cor 2.2	**Create new wildlife corridors to reduce habitat fragmentation, support specific species and (where possible) deliver wider environmental benefits and public access.** **(district/sub-county scale)** **[Mapped]**	Creation and enhancement of habitats suitable for the location; design and locate where possible to deliver other environmental benefits required in that location. May be via creation of corridors or stepping stones of habitat.	Locate where these would deliver greater connectivity linkages between habitats and protected sites. Opportunities should be taken to create these corridors in urban/peri-urban areas as a way of better connecting urban and rural areas; opportunities should also be taken within the planning and delivery of new urban extensions to ensure the creation of linked networks of green/open spaces and	***Local case study example:*** *Chichester District Council - Strategic Wildlife Corridors*

Code	Measures	How	Where	Further info/ guidance
			corridors which provide benefits for nature and people. These may be identified in local plans and Green Infrastructure strategies by district/unitary councils or through initiatives designed at district scale to support nature's recovery.	
Cor 2.3	**Create and enhance community-scale green/blue corridors (at neighbourhood/parish or community level) through coordinated activity at a local scale.** **[Unmapped]**	This can include gardens/verges, 'holes in fences', creation of new habitat in a local area to create linkages; on-going management of these corridors to maintain and enhance value for wildlife.	Within areas identified locally as potential local corridors (e.g. by parish councils, local community groups and within neighbourhood plans); a measure intended to be driven by local groups and parish councils.	***Local case study examples:*** *Selsey Pollinator Highway Project* *Manhood Peninsula Horsham District Council, Wildways Project*

Other core measures overlap directly with this priority and will therefore contribute to its delivery. These include:

Urban Nature

U1.2 Retrofit small/micro areas of habitat within the built/public realm of towns and cities, particularly in areas of 'nature deficit' and where it will contribute to climate adaptation and provide enhanced connectivity between existing green spaces.

U1.3 'Re-naturalise' stretches of urban rivers/streams to support biodiversity and natural processes, where this is feasible and aligns with flood risk approaches. Provide access along these stretches where possible to better connect people to urban rivers/streams.

U 2.1 Increase the area of habitat created and managed for nature within existing green spaces, such as parks, recreation grounds, allotments, golf courses, public gardens, shared spaces (flats/housing association land), hospitals, prisons etc.

Nature Networks

PS 1.4 Create new 'stepping stones' of habitat in critical areas of fragmentation between existing protected sites.

Measures within priority **Cor3** are also relevant as these relate to enhancement of existing transport, walking and cycling corridors in particular (e.g. verges). Measures seeking to expand and connect **specific habitat types** or support specific **species** may also help to enhance existing corridors or create new ones. See sections: **Coastal; Farmland and soils; Woodland and scrub; Heathland; Freshwater; Urban Nature.**

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Hazel dormouse	Cor2.1, Cor2.2

Priority species	Measures that would be beneficial
Pine marten	Cor2.1, Cor2.2
West European hedgehog	Cor2.1, Cor 2.2, Cor 2.3
Greater horseshoe bat	Cor2.1, Cor2.2
Grey long-eared bat	Cor2.1, Cor 2.2
Mouse-eared bat	Cor2.1, Cor2.2
Priority assemblages of species	**Measures that would be beneficial**
Woodland bats assemblage	Cor2.1, Cor2.2

Cor3. Enhance transport corridors, verges, historic routeways and footpath networks for wildlife

What does success in 10 years look like?

- New and existing travel routes (road and rail) are being managed for nature via the creation and enhancement of habitats, creating bigger, wider and more joined up areas of habitat along their length; they are also increasing connection to the adjacent habitats and where possible, enabling connectivity across their corridors via construction of green bridges or wildlife underpasses. The significant policy change and cross-departmental cooperation required within local government and transport authorities to make this happen is taking place.
- A greater number of our road verges are being managed to improve biodiversity; all of our 'notable' and designated verges in West Sussex are being monitored and are under sensitive management which retains and enhances their particular value for wildlife.
- Historic routeways such as sunken lanes, droveways, tracks and paths, that are characteristic in many parts of West Sussex, are being enhanced as natural corridors, with suitable habitat management and creation to support their wildlife rich banks, verges, hedges and trees.
- Abandoned sunken lanes are being protected from anti-social activity such as dumping, fly-tipping, and loss through appropriation into neighbouring properties.
- Bridleways, cycle paths, footpath corridors and networks are, where possible, being enhanced through habitat creation and management actions. This is creating wider and more connected areas of habitat. Such work is also being delivered along the South Downs Way and National King Charles III Trail (part of which runs along the West Sussex coastline).

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
Cor 3.1	**Create strategic road/rail crossings for wildlife.**	Green bridges/underpasses and other features to assist wildlife crossing.	At key locations where infrastructure severs key ecological networks (e.g. A23, A24, A27).	BBC Countryfile. A417 Missing Link project in Gloucestershire

Code	Measures	How	Where	Further info/guidance
	[Unmapped]		*Note: measure specifically for Highways England & Network Rail to deliver. No green bridge projects yet in West Sussex but examples elsewhere in England.*	
Cor 3.2	**Create and enhance habitats along major road corridors (including roundabouts) and the railway network (trackside vegetation and stations) as part of sustainable management of transport corridors.** **[Unmapped]**	Habitat creation; improved verge management along highway corridors. e.g. development of a more nuanced verge cutting regime that enables cuttings to be removed (e.g. on verges currently declining due to a cut-and-leave regime).	Corridors/verges along major road network and railway network; areas identified by Highways authorities and network rail as opportunities for habitat creation	National Highways and Wildlife Trusts. Networks for nature programme.
Cor 3.3	**Protect from damage/loss and enhance habitats along designated verges and other recognised verges of high value for wildlife.** **[Unmapped]**	Implementing appropriate cutting regimes, avoiding smothering with chip piles or grass cuttings and ditch dredging and refraining from planting non-native species; no use of pesticides and herbicides etc.	All designated verges and identified verges of high wildlife quality. In West Sussex, "Notable Road Verges"(NRVs) have been identified and are managed specifically for wildlife.	High Weald National Landscape – Roadside verges (website) High Weald National Landscape Unit. Managing roadside verges for biodiversity – a new approach Plantlife. Road Verges Plantlife. The Good Verge Guide
Cor 3.4	**Enhance habitats along historic routeways of West Sussex to protect and enhance their value for wildlife, landscape and heritage.** **[Unmapped]**	Enhance the condition of the complex mosaic of small-scale habitats along routeways; suitable mowing regimes to protect fragile verge habitats; sympathetic tree management; no use of pesticides/herbicides on verges particularly where these are important for biodiversity	All identified historic routeways e.g. drove routes, byways, sunken lanes, rural lanes. Within the High Weald National Landscape, historic routeways are a noted priority for protection and enhancement.	High Weald National Landscape Resources: Guidance - routeways; High Weald Weald Management Plan – section *on routeways (p28)*
Cor 3.5	**Enhance verges of local community interest for wildlife**	This can include creation of new species- rich pockets of grassland along verges to support pollinators;	Verges identified by local communities/parishes or in neighbourhood plans as of value and	High Weald guidance: road verges

Code	Measures	How	Where	Further info/guidance
	to improve their value for nature. **[Unmapped]**	appropriate cut-and-collect regime; no use of pesticides/herbicides etc.	interest for wildlife locally or those where communities are keen to support verge management for wildlife.	Plantlife: Managing grassland road verges ***Local case study example:*** *West Sussex County Council: Community Road Verges (CRVs)*
Cor 3.6	**Create and enhance habitats along 'active travel' corridors e.g. footpaths, cycle paths, bridleways and national trail networks.** **[Mapped]**	Habitat creation and enhancement, suitable for the location. This may require more joined up approach to investment in these corridors with environmental improvements integrated into workplans for footpaths, trails and local authority Local Cycle and Walking Infrastructure Plans where possible.	Can be applied along most transport corridors, particularly off-road sections which may hold more opportunity for habitat creation/enhancement alongside the route; may include specific targeted work where this will link to adjacent habitat of value or support specific species. If targeted to lengths of these corridors where there is little existing habitat, these works could help support habitat connectivity and creation of a more complete 'green corridor' for users.	

Other core measures overlap directly with this priority and will therefore contribute to its delivery. These include:

Nature Networks

PS 1.4 Create new 'stepping stones' of habitat in critical areas of fragmentation between existing protected sites.

Urban Nature

U1.2 Retrofit small/micro areas of habitat within the built/public realm of towns and cities, particularly in areas of 'nature deficit' and where it will contribute to climate adaptation and provide enhanced connectivity between existing green spaces.

U1.3 'Re-naturalise' stretches of urban rivers/streams to support biodiversity and natural processes, where this is feasible and aligns with flood risk approaches. Provide access along these stretches where possible to better connect people to urban rivers/streams.

U 2.1 Increase the area of habitat created and managed for nature within existing green spaces, such as parks, recreation grounds, allotments, golf courses, public gardens, shared spaces (flats/housing association land), hospitals, prisons etc.

The measures within **Cor 2** may also be relevant and overlap if they are implemented within a transport corridor.

Measures seeking to expand and connect **specific habitat types** or support specific **species** may also help to enhance existing transport corridors. See sections: **Coastal; Farmland and soils; Woodland, Hedgerow and Scrub; Heathland; Freshwater; Urban Nature.**

Priority species that would benefit from these measures

Priority species	Measures that would be beneficial
Hazel dormouse	Cor3.1, Cor3.2, Cor3.4, Cor3.6
Pine marten	Cor3.1, Cor3.2, Cor3.4, Cor3.6
West European hedgehog	Cor3.1, Cor3.2, Cor3.3, Cor3.4, Cor3.5, Cor3.6
Grey long-eared bat	Cor3.4
Priority assemblages of species	**Measures that would be beneficial**
-	-

Priority WRH1. Create new areas of wildlife-rich habitats (mosaics and mixed habitats) to compliment those created under habitat-specific priorities above.

What does success in 10 years look like?

- Projects and schemes at a range of scales (from local to more ambitious, larger scale projects) are creating areas of new wildlife habitat made up of a mixture/mosaic of habitat types suitable for the site.
- These may be in strategically important locations and delivered through partnership working, or in areas where opportunity arises for habitat creation on private land or publicly owned land.
- Projects include opportunities to restore ex-mineral sites to create areas of valuable habitat, habitat banks and other sites with long-term commitment to the creation and management of habitat.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Code	Measures	How	Where	Further info/guidance
WRH1.1	**Restore existing ex-mineral sites to create new areas of high-quality habitats suitable for the site.** **[Mapped]**	Habitat creation and on-going maintenance as an integral part of the plans for site restoration.	Sites identified by minerals authority as suitable for restoration to habitat with particular focus on those identified for restoration projects and funding.	Nature after Minerals
WRH1.2	**Establish habitat banks in strategically beneficial locations ensuring long-term commitment**	Formal habitat bank projects to deliver habitat creation for funding via the Biodiversity Net Gain (BNG) process.	Strategically beneficial locations include sites within proposed habitat corridors, buffers to protected sites and BOAs	***Local case study example.*** *Ardingly Habitat Bank, West Sussex*

Code	Measures	How	Where	Further info/guidance
	to the creation of high-quality habitats. **[Mapped]**		and/or in areas where they will deliver wider environmental benefits and/or access to nature.	
WRH 1.3	**Deliver habitat creation and enhancement projects involving multiple habitats/habitat mosaics.** **[Mapped]** *This is designed to capture those projects which cannot be captured under habitat specific measures above.*	Delivery of habitat enhancement and/or creation projects involving multiple habitats on the site.	Areas brought forward for projects. Preferably in locations of strategic benefit for nature's recovery (e.g. within proposed habitat corridors, buffers to protected sites, BOAs) and/or in areas where they will deliver wider environmental benefits and/or access to nature.	
Other core measures overlap directly with this priority and will therefore contribute to its delivery. These include: Many of the measures in the sections above will contribute directly to enhancement and creation of Nature Networks. See measures in all other sections for specific habitats of interest.				

Nature, health and wellbeing

NH1. Create new areas of natural greenspace designed and located to deliver benefits for health and wellbeing while enhancing biodiversity.

This priority complements the general presumption under U1.1 that creation of new green spaces will be targeted in areas where local people are currently under-served in relation to 'nature nearby' and where there is known health and income inequality – but is more specific and relates to bespoke creation and design of natural greenspaces to deliver health benefits.

What does success in 10 years look like?

- This 'asset-based' approach is creating places, specifically designed to enhance biodiversity alongside accessibility and delivery of benefits for health and wellbeing. They are located and designed using health-information and best practice for the design of 'healthy places'. This includes understanding how to design places to support health in the face of a changing climate.
- Places are also being designed to support nature but also to anticipate the impacts of climate change on health, using nature as part of the solution (e.g. tree planting to provide urban cooling).
- Nature and access to nature is acknowledged by decision-makers across all sectors as part of the solution to supporting health and delivery of health-related policy priorities. Funding for creation of these new health 'assets' thus flows from across sectors and via partnership working.
- New development, particularly large urban extensions, demonstrates good practice in the provision of greenspace which will support health and wellbeing of residents.
- Green and blue spaces, particularly in urban areas, are being valued and supported as important community assets which bring people together and contribute to community cohesion.
- Cross-sectoral work is supporting people and communities to access 'nature nearby', again driven by an understanding of where social and cultural barriers may be preventing this.
- Public engagement initiatives are creating a more diverse range of opportunities for connection with nature (e.g. via food growing, natural play areas, green social prescribing) and as such a larger and more diverse percentage of the population of West Sussex are receiving benefits for their health and wellbeing.

Core Measures

Measures identifying the 'action on the ground' required to deliver this priority:

Note: these are in addition to measures within U1 and U2 which will increase the value of green spaces for nature and people.

Code	Measures	How	Where	Further info/guidance
NH 1.1	**Create new areas of natural greenspace designed specifically to**	Creation and enhancement of greenspaces specifically designed to deliver benefits to mental and physical health;	These are in addition to a general increase in quality of existing green spaces and creation of new greenspaces, which can be designed to	The Living Coast: Things to do: health and wellbeing

Code	Measures	How	Where	Further info/guidance
	deliver health and wellbeing benefits. *Examples include therapeutic gardens and green spaces in hospitals, clinics, schools, community gardens, areas for community food growing, parks etc.* **[Mapped]**	within these spaces, provision of infrastructure such as accessible pathways, quiet spaces etc. to enhance accessibility and provide a range of health benefits.	deliver multiple benefits including health/wellbeing. These are areas designed specifically to deliver benefits to health and may be linked to green social prescribing activities or the needs of specific users of these spaces. e.g. hospitals, surgeries, schools, community gardens etc.	Lambeth GP Food Coop: community led health cooperative working with NHS partners How the London Boroughs of Camden and Islington are using Green Spaces to deliver better health outcomes for residents | Local Government Association and Appendix 1 - Parks for Health Strategy Document.pdf (islington.gov.uk) ***Local case study examples**:* *Sussex Nature Partnership (Parks and greenspaces project). Health Park Audits* *Surrey and Sussex Health Care NHS Trust. New woodland project*

Other core measures overlap directly with this priority and will contribute to its delivery.

As noted above, this compliments measures within Urban Nature, designed more broadly to create and/or enhance more natural accessible greenspace in urban environments where these can deliver multiple benefits for people and nature:

Urban Nature:
U 1.1 Create new accessible natural greenspaces in urban areas, designed and located to deliver multiple benefits for people and nature.
U 2.1 Increase the area of habitat created and managed for nature within **existing** green spaces, such as parks, recreation grounds, allotments, golf courses, public gardens, shared spaces (flats/housing association land), hospitals, prisons etc.

Part 2: Enabling measures

These are common to the West Sussex LNRS and East Sussex LNRSs and will be taken forward in collaboration with delivery partners and relevant stakeholders. They do not form part of the formal LNRS requirement but have been identified as important to underpin delivery of the core measures above.

Coastal Habitats

Priority C1. Support the expansion, restoration, enhancement and creation of coastal and inter-tidal habitats

Code	Enabling Measures
C1.11 (EM)	**Establish a consolidated inventory/map of opportunities for adaptive coastal management, bringing together the range of existing datasets, to help target action to mitigate sea-level rise/coastal squeeze.**
C1.12 (EM)	**Research and understand the barriers to recovery of intertidal habitats and communities e.g. inter-tidal kelp, seagrass, chalk platforms.**
C1.13 (EM)	**Guidance, awareness raising and community support to reduce the impact of garden escapes on coastal vegetated shingle communities.**
C1.14 (EM)	**Develop the 'Seascape Blueprint' for Sussex Bay to highlight areas of opportunity for the marine and coastal environment, explore enhanced connectivity, set priorities for the future and expose overarching pressures to maximize ecosystem service delivery.**

Farmed landscape and soils

FL1. Create and enhance opportunities for wildlife within the farmed landscape

Code	Enabling Measures
Fl1.8 (EM)	**Improve and coordinate support to farmers to provide clearer signposting and advice on options and funding available for nature-based actions on their land (e.g. ELMS, catchment-based funding, protected landscape funds etc).** *This will require the organisations involved in providing landowner advice in Sussex to coordinate their activity, share information on activities they are supporting and develop a clearer, targeted offer to farmers on funding and support available.* *Include sustainable farming practices, such as regenerative farming, also linking to best practice and sources of funding available.*
Fl1.9 (EM)	**Support collaboration between farmers at a landscape scale, via farm-cluster groups and applications to Landscape Recovery Schemes - through provision of facilitation and funding.** Cross-reference to Corridor 1 priority (landscape scale activity).
Fl 1.10 (EM)	**Showcase best practice 'farmer to farmer'** e.g. exemplar hedgerows etc**.**

Code	Enabling Measures
Fl 1.11 (EM)	**Support a farmer-led communications initiative to promote greater understanding of farming by the public, illustrating the pressures on farm businesses and the role of the sector in delivering positive impacts for nature and the environment.** This could include actions such as farm tours and walks which get people out onto farms as well as traditional communications approaches.
Fl 1.12 (EM)	**Enhance the evidence base for farmland habitats, encouraging and support long term monitoring and evidence gathering to inform future interventions to support farmland habitats.**

SL1. Enhance soil habitats and their health to support biodiversity and improve ecosystem services

Code	Enabling Measures
SL 1.4 (EM)	**Increase knowledge in soils and biology via training for farmers/landowners on soils and organic carbon.**
SL 1.5 (EM)	**Provide advice and support for introduction of healthy soil management techniques**
SL 1.6 (EM)	**Establish a programme of funded soil testing and monitoring for organic carbon and biology to target arable and low-input grassland.**

Species-rich grassland

G1 Restore, expand, connect and enhance species-rich grassland

Code	Enabling Measures
G 1.9 (EM)	**Collate best practice and learning from previous grassland restoration projects, identifying what works and what doesn't in specific landscapes, soils and situations.**
G 1.10 (EM)	**Encourage and support harvesting and use of local/native seed and proper use of suitable seed mixes.** **Support creation of a supply of local provenance of UK Biosecure plugs and seeds that are native to Sussex, which meet ALPHA's seed certification and marketing criteria and conform with CIEEM's code of practice.**
G 1.11 (EM)	**Provide information and awareness raising for landowners on the biodiversity value and significance of their species-rich grassland and importance of suitable management.**
G 1.12 (EM)	**Support knowledge sharing across farmers and landowners on management best-practice, including grazing/livestock management techniques and timings; identify a lead 'champion'/advocate for each sub-county areas of the LNRS.**
G 1.13 (EM)	**Support farmers and land managers with grazing livestock, machinery, contractors and infrastructure (fences, water, signs, seed, gates, local abattoirs) required on grassland sites targeted for restoration/expansion.**
G 1.14 (EM)	**Establish an effective, proportionate mechanism for surveying chalk grassland and determining value before land-use change, building on learning by SDNPA and Big Chalk Consortium on chalk grassland rapid condition assessment. Start with targeting of low**

Code	Enabling Measures
	input grassland sites which are not included in PHI or within SSSIs. Produce a historic chalk grass land-use map to help target restoration. *Regarding other grassland types:* *A waxcap grassland surveying methodology is under development and can be disseminated once finalised.* *In some areas of Sussex (e.g. High Weald) it is very difficult to develop a rapid assessment approach due to the complexity of grassland types found in the area (related to varied underlying soils/geology). Expert ecological advice/surveying should be used until such times as other alternatives have been developed.*
G1.15 (EM)	**Identify grassland data gaps and develop methodology for mapping non-calcareous species-rich grasslands (acid, waxcap, floodplain, lowland meadow) and their current condition.**

Woodland, hedgerow and scrub

W1. Enhance and expand and better connect our existing woodland habitats, improving quality and diversity of habitats, structural diversity and resilience

Code	Enabling Measures
W 1.14 (EM)	**Develop a Deer Management Strategy – working across key stakeholders and at a regional scale.**
W 1.15 (EM)	**Work across stakeholders to develop an awareness raising/communications strategy on the need for deer management to support woodland management.**
W 1.16 (EM)	**Work across stakeholders to support the growth of a local venison market, necessary to support deer management approaches.**
W 1.17 (EM)	**Provide support and encourage creation of ancient woodland management plans focusing initially on key and vulnerable sites before rolling out support for their creation more widely.**
W 1.18 (EM)	**Develop community woodland management projects where there are clear benefits for public economy and health and positive woodland management.** *Example of local best practice: Lost Woods of Low Weald and Downs*

Code	Enabling Measures
W 1.19 (EM)	**Support the Sussex Black Poplar Partnership to grow and distribute black poplar to landowners creating and restoring wet woodland.**
W 1.20 (EM)	**Promote adoption of UK tree and plant health biosecurity policies and encourage local sourcing and growing of tree stocks**
W 1.21 (EM)	**Support development of local markets for wood-based products that support traditional woodland management approaches such as coppicing** (e.g. fuel, timber)
W 1.22 (EM)	**Local Authorities - adopt local plan policies to support recovery of woodland in Sussex, supporting their protection in planning and maximising opportunities for creation, restoration and enhancement of woodland.** *e.g. local planning policies seeking 50m buffers to development around ancient woodland, with smaller buffers where it can be shown to be sufficient. See Woodland Trust Planning Guidance.*

W2. Create new woodland where this supports connectivity, biodiversity, ecosystem services and landscape character

Code	Enabling Measures
W 2.7 (EM)	**Support communities to create new community woodlands, particularly in areas targeted for funding.**
W 2.8 (EM)	**Identify/map historic/'lost' hedgerows to target their re-creation.**
W 2.9 (EM)	**Local Authorities - adopt local planning policies which set a target for minimum canopy cover and prioritise action in areas of low tree equity** (as per Woodland Trust mapping). Woodland Trust advises setting an area-wide target of 20% cover, prioritizing areas of greatest need (using tree equity mapping). For development sites, Woodland Trust also recommends setting site specific targets which may be higher depending on site location and characteristics.

W3. Enhance and expand our urban treescapes in Sussex, taking opportunities to establish new urban (and urban fringe) woodland and street trees where this will support biodiversity and deliver multiple benefits

Code	Enabling Measures
W 3.5 (EM)	**Expand elm protection areas and promote biosecurity guidance on measures to reduce future spread of elm disease** Useful guidance: *Trees and Design Action Group: Trees in the Townscape- a guide for decision-makers.*
W 3.6 (EM)	**Adopt local plan policies for tree replacement and phased succession** (i.e. young trees coming up to replace old trees felled due to disease, safety, old age etc.)

Code	Enabling Measures
W 3.7 (EM)	**Develop county/district level tree strategies to support delivery of tree planting targets.** *Local case study example: West Sussex Tree Plan (covers trees in county council's ownership).*
W 3.8 (EM)	**Promote best practice in species selection for new tree/woodland planting within development.** *e.g. Tree species appropriate to the local area (e.g. of local provenance); ensure future-proofing against climate change/pest and disease vulnerability.* Examples of existing guidance: *Woodland Trust: residential development and trees. Guide for Planners and Developers*
W 3.9 (EM)	**Promote guidance for species-selection for tree planting in gardens to provide benefits for wildlife and wider environment.** Examples of existing guidance: *Woodland Trust: British Trees and Shrubs: 14 native garden trees*

Hdg1. Enhance, expand, restore and connect our network of hedgerows

Code	Enabling Measures
Hdg 1.5 (EM)	**Improve mapping of existing and lost hedgerows at Sussex scale; identify target areas for restoration and replanting.**
Hdg 1.6 (EM)	**Adopt /encourage local plan policies to encourage use of hedgerows/natural boundaries within developments (rather than fencing) and consider lighting around hedgerows, to minimise impact and ensure that it is wildlife sensitive if areas need to be lit for public safety.**

Scr1. Create and enhance scrub habitats, as edge habitat, as part of habitat mosaics and as a habitat in its own right

Code	Enabling Measures
Scr 1.3 (EM)	**Develop guidance on scrub establishment as buffers to Ancient Semi Natural Woodland.**
Scr 1.4 (EM)	**Raise awareness of the value of scrub as a habitat**
Scr 1.5 (EM)	**Work with land managers to identify and encourage best practice in scrub management.**

Lowland Heathland and Sandstone Outcrops

H1. Expand, enhance and better connect lowland heathland habitats.

Code	Enabling Measures
H 1.3 (EM)	**Collate examples of best practice on how to manage and create lowland heathland; provide knowledge sharing/training to others on 'what good looks like'.**
H1.4 (EM)	**Provide landowner advice to support heathland creation in targeted areas (where this will create connectivity and expansion of existing sites); map historic heathland cover to aid targeting and awareness of historic heathland areas.**
H 1.5 (EM)	**Facilitate collaboration across landowners/eNGOs/others to identify target areas for heathland expansion/creation at landscape scale**
H 1.6 (EM)	**Support heathland creation through a system to produce and supply local provenance UK bio-secure plugs and seeds**
H 1.7 (EM)	**Test proportionate but effective habitat monitoring utilising techniques such as rapid habitat condition assessments (with agreed methodology)**
H1.8 (EM)	**Adopt/Support local plan policies that require mitigation for any impact of development on core heathland sites (Ashdown Forest SAC/SPA).**

SO1. Enhance the unique biodiversity of the sandstone outcrops of the High Weald

Code	Enabling Measures
SO 1.2 (EM)	**Monitor key species diversity, population and distribution on sandstone outcrops and adjust management accordingly.**
SO 1.3 (EM)	**Work with geologists to produce geodiversity site action plans for key sandstone outcrop sites.**
SO 1.4 (EM)	**Work with climbing clubs and organisations to minimise impacts on important sandstone outcrop sites**
SO 1.5 (EM)	**Produce up-to-date site dossiers for all SSSI sandstone outcrops notified for their fern, bryophyte and lichen communities.**

Rivers, streams and aquifers

R1 (Rivers and river systems): Support the recovery of our Sussex rivers and river systems, their health, biodiversity and natural functions.

Code	Enabling Measures
R 1.9 (EM)	**Work collaboratively to design a data and monitoring system (including identifying data gaps) to provide more information on the health of our rivers and streams in Sussex, how and where to target interventions and monitor their effectiveness.**

Code	Enabling Measures
R 1.10 (EM)	**Coordinate engagement across catchments with landowners, farmers, water companies with existing and new initiatives to achieve enhancements in water quality. Support this with a database of opportunities for delivery for use by all sector delivery partners.**
R 1.11 (EM)	**Develop a coordinated approach to tackling INNS within each catchment, based on collated best practice and working across partners.** *Local case study example: Sussex Ouse Non-native species project*
R 1.12 (EM)	**Adopt local plan policies to require buffer zones along streams, rivers and ponds within new development, in order to reduce flood risk and run-off from development.**
R 1.13 (EM)	**Identify sources / pathways / receptors of river pollutants and provide guidance on suitable action to take (e.g. reduce or buffer inputs). Pollutants could be from a range of sources including urban areas, industrial sites, highly mobile soils, roads, or farming. Guidance will be needed for all sectors.**
R 1.14 (EM)	**Raise awareness of the pressures on rivers and watercourses, with identifiable actions for businesses, local government and residents to take to reduce pressures and support water quality, low base flows, the structure and form of rivers and streams (e.g. side bars, pools, glides, vegetation, woody debris, riparian habitats etc.), flood risk and biodiversity.**

R2 (Rivers and river systems): Support the recovery and resilience of our chalk streams and their unique biodiversity

Code	Enabling Measures
R 2.2 (EM)	**Agree Targets and Environmental Flow Indicators to support the environmental quality of chalk streams, winterbournes and greensand streams in West/East Sussex. Abstraction levels are within these targets.**
R 2.3 (EM)	**Increase/restore monitoring and testing of chalk and greensand streams.**
R 2.4 (EM)	**Develop more accurate mapping for location of chalk and greensand streams to support decision-making (including planning)**
R 2.5 (EM)	**Adopt local Plan/Development Policies reduce impacts on chalk and greensand streams from development (water levels, water quality, shape/form etc).**

A1 (Aquifers): Support the health and function of our aquifers

Code	Enabling Measures
A 1.3 (EM)	**Community engagement projects to support delivery of actions to support the aquifer (e.g. via residential gardens, creation of raingardens in schools/public spaces etc.)** Example: The Aquifer Project, West and East Sussex.

Wetland and Standing Water Bodies

Wt1 (Wetland habitats). Restore and enhance our existing wetland habitats and create new wetlands particularly where this will expand and connect existing sites.

Code	Enabling Measures
Wt 1.7 (EM)	**Map historical wetland sites to identify potential reinstatement of wetlands.**
Wt 1.8 (EM)	**Identify the vulnerability of wetland sites to climate change and what this will mean for water level management/ resilience into the future.** Note the results of SSSI risk/vulnerability assessments for wetland sites once published.

SWB1 Standing water bodies (SWB) (reservoirs, lakes, ponds and ditches). Restore and enhance existing standing water bodies and create new standing water body habitat for biodiversity and other benefits.

Code	Enabling Measures
SWB 1.6 (EM)	**Produce guidance/policy to discourage in-line standing water bodies (ponds, lakes etc) and raise awareness of the importance of site suitability for pond creation. Include guidance for all pond types/locations (rural and urban).**

Urban Nature

U1: Create and connect new nature-rich areas within the urban environment, for the benefit of wildlife and people

Code	Enabling Measures
U 1.4 (EM)	**Create an accurate data set of accessible natural greenspaces in the LNRS area down to town/parish scale, to inform planning and funding for investment in greenspaces.** *This will bring together GI mapping done at district scale and complement the basic but incomplete information on accessible natural greenspaces in Sussex contained within the Natural England GI Standards mapping tool.*
U 1.5 (EM)	**Work with public and private sectors to identify opportunities for creation of new areas of urban habitat, providing guidance and advice on habitat creation, management and funding available.** *(This could range from landfill sites, brownfield sites, to small areas in business/industrial zones, cul de sacs etc. These are not necessarily accessible areas but help to create more and better connected habitat in urban areas). This exercise will help to release land for new accessible greenspaces, or retrofitting smaller areas of habitat into built/public realm. May be supported by local authority urban greening policies.*
U 1.6 (EM)	**Develop projects to support wildflower propagation and distribution (e.g. via projects such as Changing Chalk Greening the Cities**

Code	Enabling Measures
	Project). *Local example:* Changing Chalk – greening the cities - The Living Coast
U 1.7 (EM)	**Adopt local plan policies to require developments to deliver high quality green infrastructure which benefits residents and nature.** ***Further information and guidance*** *Building with nature standards: High Weald Housing Design Guide* *Natural England Green Infrastructure – planning and design guide*
U 1.8 (EM)	**Promote the use of Community Land Trusts to secure new areas of land as community green assets** ***Further information and advice:*** Action in Rural Sussex
U 1.9 (EM)	**Promote Guidance on recommended planting schemes for developers to ensure new planting within development supports local nature priorities.** Link to High Weald guidance (once published)
U 1.10 (EM)	**Deliver training for local government.** For example: • ***For planners and Development Managers****: planning for nature in urban areas (in developments/ local plans).* • ***For parks and estate teams****, neighbourhood services etc. : managing land in local government ownership for nature*
U 1.11(EM)	**Develop guidance and support for local communities on managing land for nature and food/growing.** ***Further information and guidance:*** *Urban Farming Toolkit: A guide to growing to sell in the city | Sustain* *Food growing: Case studies* *Community Garden – Sufra NW London*

U2: Enhance the value for nature of existing parks, buildings and other blue/green spaces in urban areas

Code	Enabling Measures
U 2.5 (EM)	**Draft and implement 'onsite mowing plans' for existing parks and greenspaces to support improvement of grassland management for species diversity and additional wildlife benefits.**

Code	Enabling Measures
U 2.6 (EM)	**Adopt planning policies to avoid and reduce impact on species in urban and rural areas and support positive action where possible. e.g. policies to avoid and reduce light impacts on night flying bats, birds and other wildlife; installation of nest boxes for specific species (e.g. swift bricks) etc.**
U 2.7 (EM)	**Promote wildlife friendly gardening across the LNRS area; including habitat creation in gardens (food, shelter and nesting sites), management for water (rain gardens, rainwater harvesting etc), reduced use of chemicals, peat and artificial turf.** ***Further information and guidance:*** *Weald to Waves: Gardens and greenspaces network*
U 2.8 (EM)	**Build capacity and support community groups/parish councils to create and enhance local green spaces for nature. This may include guidance on:** • management of local green spaces for nature • community engagement and communications when introducing new management for nature into parks and accessible greenspaces • management of contractors/ model contracts for greenspace mowing and management for nature
U 2.9 (EM)	**Produce guidance and provide training for local authority and private sector contractors (on greenspace/grassland management for nature).**

Nature Networks: Protected sites, wildlife corridors and more wildlife-rich habitat

Priority : PS1 Support the expansion and enhancement of a network of protected sites*

Code	Enabling Measures
PS1.7 (EM)	**Identify most urgent upstream invasive species issues for wetland protected sites and agree approach to management/control at sub-catchment level.** *Strategy in place for Ouse and Adur; develop similar strategy for other catchments.*
PS 1.8 (EM)	**Identify vulnerability of protected sites to climate change and adaptation measures required in response. Build these into future Protected Site Strategies and next LNRS.**
PS 1.9 (EM)	**Develop a landscape scale recovery approach for targeted protected sites, where this large-scale approach is required to improve condition of the sites and increase their resilience.** *This would involve landowners and other delivery organisations identifying actions they can deliver at scale to help reduce pressures on a protected site and support recovery of habitats and species in and around the site.* Development of a Protected Site Strategy could form part of this.
PS 1.10	**Continue to survey and provide management recommendations for Local Wildlife Sites via Sussex Local Wildlife Sites Initiative**

Code	Enabling Measures
(EM)	**(LWSI); identify a process for identification and designation of new LWS where this would be appropriate. Support an adequately funded LWSI to enable this to happen.**
PS 1.11 (EM)	**Support local groups to prepare/deliver climate adaptation action plans for their areas where these will support resilience of protected sites at most risk from the impacts of climate change.**

Cor1: Enable landscape recovery at scale across landscapes and large-scale nature corridors where this supports biodiversity, ecosystem services and landscape character

Code	Enabling Measures
Cor 1.1 (EM)	**Beyond preparation of the LNRS, continue to identify target areas for collaborative action and funding (based on existing bids, farm clusters, district scale approaches, landowner interest). Link to specific habitat or species requirements at landscape scale and delivery of wider environmental benefits.**
Cor 1.2 (EM)	**Provide facilitation and coordinated advice for landowners in these target areas.** *This was identified as a priority enabling measure by stakeholders during the LNRS preparation.*
Cor 1.3 (EM)	**Collate local data being generated by landscape-scale projects to identify impact, progress and learning.**
Cor 1.4 (EM)	**Support smarter use/sharing of skills, equipment/machinery and volunteers across nature-delivery sector to support these initiatives**

Cor2. Safeguard and enhance the value of existing green and blue corridors for nature and create new corridors and stepping stones of habitat where this will improve connectivity between habitats and between rural and urban green spaces

Code	Measures
Cor 2.4 (EM)	**Adopt planning policies to create and connect green and blue corridors via development/planning; where possible, secure protection of important green/blue corridors for wildlife within local planning policy (e.g. Chichester DC)**
Cor 2.5 (EM)	**Develop guidance and support for parish councils, community groups and residents to support creation of local/ community scale corridors.**

Cor3. Enhance transport corridors, verges, historic routeways and footpath networks for wildlife

Code	Measures
Cor 3.7 (EM)	**Produce and disseminate guidance on different types of verge management for contractors; review implementation and effectiveness in maintaining/enhancing verge habitats**
Cor 3.8 (EM)	**Establish mowing/collection equipment sharing and purchase schemes for local authorities/ parish councils/ community groups where required**
Cor 3.9 (EM)	**Training on traditional skills for community groups and contractors: e.g. grassland/verge management, hedge laying etc.**

Code	Measures
WRH1. 4 (EM)	**Produce guidance for planning authorities and developers on strategically useful locations for new habitat banks within the LNRS area**

Nature, health and wellbeing

NH1. Create new areas of natural greenspace designed and located to deliver benefits for health and wellbeing while enhancing biodiversity.

Code	Enabling Measures
NH 1.2 (EM)	**Produce /disseminate guidance and examples of best practice to support design and management of green spaces for nature and health.**
NH 1.3 (EM)	**Support cross sectoral work to increase access to nature for health and wellbeing benefits via:** • access to 'nature in everyday life' • nature-based health promotion • green care. ***Further information and guidance:*** Sussex Nature Partnership (2024). *Nature and Health: shared outcomes for a collaborative approach in Sussex.*
NH 1.4 (EM)	**Where needed (and where possible), negotiate new access arrangements to existing nature-rich spaces particularly in areas of low provision and where it may be difficult to establish new public parks/greenspaces.**