Part 3 : Statement of biodiversity priorities – priorities and potential measures

1. Better, bigger, more and joined up – the overarching principles for nature recovery in Kent and Medway

In order for the county's nature to respond and adapt to the increasing challenges of climate change, as well as the other pressures and challenges it faces, we need to ensure the Kent and Medway Local Nature Recovery Strategy is applying the Lawton principles. We are not only building on them but also reframing them slightly to provide a hierarchy for action – better, bigger, more and joined up.

In applying these principles across the Strategy, we will not only support the recovery of nature but also ensure that our habitats and species have the ability and space to respond and adapt to the impacts of climate change, by enabling dynamic habitats and increasing their resilience. It also means that there is room for nature alongside the many competing demands for land in our county, and that the many pressures facing nature are tackled with a more strategic and ecosystem-led approach.

The overarching principles of the Kent and Medway Local Nature Recovery Strategy are as follows:

- **Better** – improve the quality of our existing habitats and ensure they are in a healthy and functioning state by applying and resourcing better and appropriate management of them. We also need to better conserve and safeguard what we already have.
- **Bigger** – increase the size of our most valuable and important habitat sites, not only extending but buffering them, to protect them from the pressures of human influences.
- **More** – through habitat restoration and creation, establish new, nature-rich sites that not only provide more space for nature but also provide connectivity between existing core sites.
- **Joined up** – enhance connections between, and join up, sites, by improving the quality of the land between them, creating new physical corridors and establishing stepping stones.
- **Nature-based solutions** – work with nature and use natural processes to tackle some of the socio-economic challenges our county faces, maximising the benefits of nature recovery.
- **Land management and land use** – increase the number of landowners, land managers and farmers using nature-friendly and habitat-sensitive land management and land-use practices, recognising the crucial role they play in helping to deliver a better, more coherent and resilient wildlife network across the county.

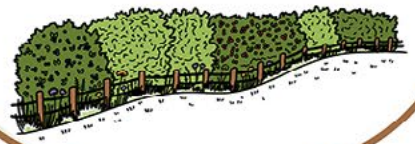
PRINCIPLES OF THE LNRS

BETTER

IMPROVE THE *Quality* OF OUR EXISTING HABITATS & ENSURE THEY ARE IN A HEALTHY & FUNCTIONING STATE BY APPLYING + RESOURCING BETTER & APPROPRIATE MANAGEMENT OF THEM. WE ALSO NEED TO BETTER CONSERVE & SAFEGUARD WHAT WE ALREADY HAVE

BIGGER

INCREASE THE SIZE OF OUR MOST *Valuable* & IMPORTANT HABITAT SITES, NOT ONLY EXTENDING BUT BUFFERING THEM, TO PROTECT THEM FROM THE PRESSURES OF HUMAN INFLUENCES



MORE

THROUGH HABITAT RESTORATION & *Creation*, ESTABLISH NEW, NATURE-RICH SITES THAT NOT ONLY PROVIDE MORE SPACE FOR NATURE BUT ALSO PROVIDE CONNECTIVITY BETWEEN EXISTING CORE SITES

JOINED UP

ENHANCE CONNECTIONS BETWEEN, AND JOIN UP, SITES BY IMPROVING THE *Quality* OF LAND BETWEEN THEM, CREATING NEW PHYSICAL CORRIDORS & ESTABLISHING STEPPING STONES

NATURE BASED SOLUTIONS

WORK WITH *Nature* & USE NATURAL PROCCESSES TO TACKLE SOME OF THE SOCIO-ECONOMIC CHALLENGES OUR COUNTY FACES, MAXIMISING THE BENEFITS OF NATURE RECOVERY

LAND MANAGEMENT + LAND USE

INCREASE THE NUMBER OF LANDOWNERS, LAND MANAGERS & FARMERS USING *nature friendly* & HABITAT-SENSITIVE LAND MANAGEMENT & LAND-USE PRACTICES, RECOGNISING THE CRUCIAL ROLE THEY PLAY IN HELPING TO DELIVER A BETTER, MORE COHERENT & RESILIENT WILDLIFE NETWORK ACROSS THE COUNTY

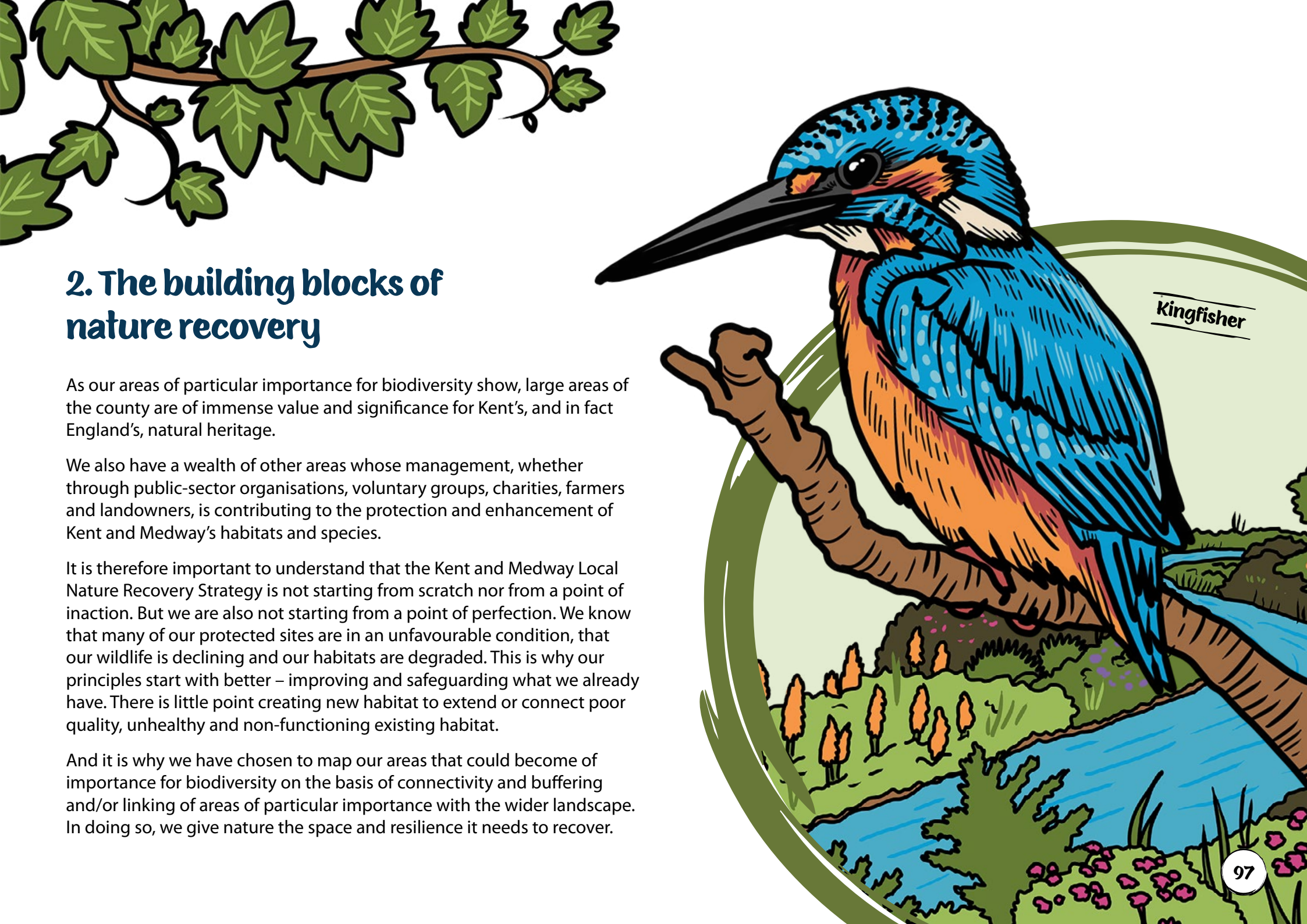
2. The building blocks of nature recovery

As our areas of particular importance for biodiversity show, large areas of the county are of immense value and significance for Kent's, and in fact England's, natural heritage.

We also have a wealth of other areas whose management, whether through public-sector organisations, voluntary groups, charities, farmers and landowners, is contributing to the protection and enhancement of Kent and Medway's habitats and species.

It is therefore important to understand that the Kent and Medway Local Nature Recovery Strategy is not starting from scratch nor from a point of inaction. But we are also not starting from a point of perfection. We know that many of our protected sites are in an unfavourable condition, that our wildlife is declining and our habitats are degraded. This is why our principles start with better – improving and safeguarding what we already have. There is little point creating new habitat to extend or connect poor quality, unhealthy and non-functioning existing habitat.

And it is why we have chosen to map our areas that could become of importance for biodiversity on the basis of connectivity and buffering and/or linking of areas of particular importance with the wider landscape. In doing so, we give nature the space and resilience it needs to recover.



3. Kent and Medway's vision for nature recovery

The Kent and Medway Local Nature Recovery Strategy has 10 ambitions for nature recovery around which our more detailed priorities and potential measures are structured. The first three expand further on the overarching principles, expressing outcomes for connectivity, nature-based solutions, and land management and land use.

Following these are six ambitions that focus on broad habitat groupings and our aspirations for grassland, successional, wooded, freshwater, urban and coastal ecosystems. The tenth ambition relates to the Strategy area's priority species and their recovery.

1. **Connectivity** – High-quality habitats are connected at both a county and local scale, providing more linked natural space for nature to thrive in and a landscape that wildlife can move through and adapt to change in.
2. **Nature-based solutions** – Through safeguarding, management and restoration of the county's ecosystems, we enhance our resilience to climate change, deliver environmental improvements, address health and societal inequalities, and promote wellbeing, while advancing nature recovery.
3. **Land management and land use** – Land management and land use throughout Kent and Medway not only meets the economic and social needs of the county but also delivers nature recovery gains.
4. **Grasslands** – Our existing grasslands are conserved, with appropriate management returned, to restore, connect and extend these habitats to deliver high-quality, species-rich areas across the county.
5. **Successional habitats** – The structural diversity of open mosaic (brownfield) habitat found on previously developed land and low-level scrub is safeguarded from loss and damage, for the benefit of species that rely on early successional habitats.
6. **Woodland, trees and hedgerows** – Kent and Medway's native woodland, trees and hedgerows are safeguarded from loss and under appropriate and active management, delivering robust ground flora and soil structures. A mixture of natural regeneration and new establishment improves connectivity and provides an even greater contribution to climate change mitigation and resilience.
7. **Freshwater** – Our freshwater habitats are clean, sufficient and stable, in a healthy and good ecological state that supports an abundance and diversity of species. Catchments' functions are restored to deliver a connected mosaic of wet habitats, improving water quality and managing flood risk across the county.
8. **Urban** – Nature plays a central role in shaping the county's built-up environments, with wildlife benefiting from a network of connected green, blue and grey spaces, which also provide nature-based solutions to the environmental challenges of urban areas
9. **Coast** – Coastal and estuarine areas are allowed to evolve, with natural processes and progression restored, to enable them to adapt and be resilient to climate change. Habitat succession is managed strategically and holistically, to minimise loss and support a range of high-functioning, connected coastal habitats.
10. **Species** – Habitat management, restoration, extension or creation is specifically targeted to halt the decline, and support the recovery, of the Strategy's priority and threatened species and in doing so, reduces the risk of losing species through extinction from the county.

AMBITIONS + PRIORITIES

AMBITION FOR CONNECTIVITY IN KENT + MEDWAY

HIGH QUALITY HABITATS are CONNECTED at BOTH a COUNTY + LOCAL SCALE, PROVIDING MORE LINKED NATURAL SPACE for NATURE to THRIVE in a LANDSCAPE that WILDLIFE can MOVE THROUGH + ADAPT to CHANGE IN

PRIORITY CON 1

County's key wildlife sites better connected by addressing the fragmentation + barriers preventing movement of species

PRIORITY CON 2

Fragmentation caused by arterial roads, railway + other major infrastructure retrospectively addressed, reconnecting habitats + wildlife pathways

PRIORITY CON 3

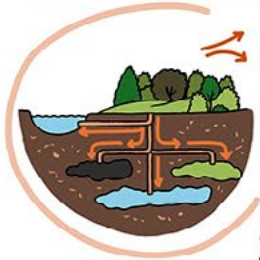
Habitat management + wilding approaches delivering a mosaic of habitats at a large scale, that are functionally connected + nature can flourish, with no important habitats or species population left completely isolated

PRIORITY CON 4

Landscape-scale management, with partners beyond the county, to address habitat change + species migration as a result of climate change

AMBITION FOR NATURE-BASED SOLUTIONS IN KENT + MEDWAY

THROUGH SAFEGUARDING, MANAGEMENT + RESTORATION OF THE COUNTY'S ECOSYSTEMS, WE ENHANCE OUR RESILIENCE TO CLIMATE CHANGE, DELIVER ENVIRONMENTAL IMPROVEMENTS, ADDRESS HEALTH + SOCIETAL INEQUALITIES + PROMOTE WELLBEING, WHILE ADVANCING NATURE RECOVERY



PRIORITY NBS1

Increase the extent of carbon sequestering habitats in the county (woodlands, saltmarshes, heathlands + grasslands), which are purposefully managed to function as a carbon store while prioritising a nature recovery function

PRIORITY NBS2

Safeguard from loss + increase the functionality + extent of, habitats delivering critical ecosystem services in the county

PRIORITY NBS3

Improve soil health + structure by enhanced + increased soil management, so that it is delivering better for invertebrates carbon sequestration, water retention + management + production + provisioning services

AMBITION FOR LAND MANAGEMENT + LAND USE IN KENT + MEDWAY

LAND MANAGEMENT + LAND USE THROUGHOUT KENT + MEDWAY NOT ONLY MEETS the ECONOMIC + SOCIAL NEEDS of the COUNTY, but ALSO SEEKS OPPORTUNITIES to DELIVER NATURE RECOVERY GAINS ACROSS a WIDE RANGE of LAND USES, from COMMERCIAL to RECREATIONAL

PRIORITY LM1

Increase the number of farms employing nature friendly farming practices, sensitive land management + delivering targeted action for nature recovery, resulting in farmland across the county that is rich in wildlife

PRIORITY LM2

Farmland responding to climate change-induced pressures with the help of nature

PRIORITY LM3

Prevent agricultural diffuse pollution of freshwater habitats + groundwater bodies in farmland, as a result of soil, nutrient or lifestock management practices + physical modifications

PRIORITY LM4

Publicly accessible open spaces managed to deliver benefits for wildlife, as well as the people that use them

AMBITIONS + PRIORITIES

AMBITION FOR GRASSLANDS IN KENT + MEDWAY

OUR EXISTING GRASSLANDS are CONSERVED, with APPROPRIATE MANAGEMENT RETURNED to RESTORE, CONNECT + EXTEND these HABITATS to DELIVER HIGH-QUALITY, SPECIES-RICH AREAS ACROSS the COUNTY

PRIORITY GL1

Chalk grasslands are safeguarded from land-use changes + other threats + restored to a better + species-rich condition. They are connected + buffered across the landscape to promote ecological integrity + resilience, particularly for facilitating species movement in response to climate change

PRIORITY GL2

Existing coastal + floodplain grazing marsh restored to better condition + to retain more freshwater, with sensitive areas + the breeding waders they support, protected from land management + recreational disturbance. Opportunities taken to create + extend areas of this habitat + increase its climate resilience

PRIORITY GL3

Existing species-rich lowland meadow is safeguarded from loss, restored to better condition + extended through sensitive land management practices to reduce soil nutrient levels. Through the extension of lowland meadow, this habitat is better connected, reducing the risk of isolated meadow species + declines in species richness

PRIORITY GL4

Retain, restore + extend the county's acid grassland + heathland habitat mosaics, to improve the species diversity that these habitats, with limited extent in Kent + Medway, support

PRIORITY GL5

Safeguard, restore + increase fields with a diversity + abundance of arable wild plants

AMBITION FOR SUCCESSIONAL HABITATS IN KENT + MEDWAY

THE STRUCTURAL DIVERSITY of OPEN MOSAIC HABITAT FOUND on PREVIOUSLY DEVELOPED LAND (BROWNFIELD) + LOW-LEVEL SCRUB is SAFEGUARDED from LOSS + DAMAGE, for the BENEFIT of SPECIES that RELY ON EARLY SUCCESSIONAL HABITATS

PRIORITY SH1

Safeguard from loss + damage, open mosaic habitats found on previously developed land (brownfield), that support priority species which rely on early successional habitats

PRIORITY SH2

Increase the extent of low level, scrub/successional habitat, providing a mix of young + mature scrub to enable structural diversity + to support a wide range of species. Link this scrub habitat with hedgerows, woodland + other habitats to support wildlife corridors

AMBITION FOR WOODLAND, TREES + HEDGEROWS in KENT + MEDWAY

KENT + MEDWAY'S NATIVE WOODLAND, TREES + HEDGEROWS are SAFEGUARDED from LOSS + UNDER APPROPRIATE + ACTIVE MANAGEMENT, DELIVERING ROBUST GROUND FLORA + SOIL STRUCTURES. A MIXTURE of NATURAL REGENERATION + NEW ESTABLISHMENT IMPROVES CONNECTIVITY + PROVIDES an EVEN GREATER CONTRIBUTION to CLIMATE CHANGE MITIGATION + RESILIENCE

PRIORITY WTH1

Retain the extent + improve the condition of existing woodland + trees outside woodland through active management, improving habitat provision for woodland species

PRIORITY WTH2

Increase the average canopy cover of Kent through woodland + trees outside woodland

PRIORITY WTH3

Return the ecological function provided by native trees previously prolific in Kent, by restoring those lost to disease, pests, climate change + drought

PRIORITY WTH4

Ensure the resilience of the county's woodlands

PRIORITY WTH5

Ancient woodland + ancient + veteran trees, are safeguarded from loss, with damaged areas restored through NATURAL PROCESSES management + the removal of invasive trees + plants. Areas of ancient woodland are buffered + better connected

PRIORITY WTH6

Increase the extent of high-quality wet woodland in the county + improve connectivity with the freshwater habitat network

PRIORITY WTH7

Retain + safeguard the High Weald's unique gill woodland, the plant species they support + the functions they provide for wider river catchment

PRIORITY WTH8

The extent of species-rich hedgerows throughout the county is increased, with lost hedgerows replaced, gaps filled + existing hedgerows managed to improve the quantity as well as quality. Hedgerows provide a coherent network of shelter, nesting + forage for wildlife across the landscape, allowing other habitats to be linked

PRIORITY WTH9

An increase in traditional orchards, under sensitive management, supporting an abundance + diversity of wildlife

PRIORITY WTH10

Appropriate + co-ordinated Deer management in woodland + connecting areas, on a landscape scale, to reduce their impacts + to support new planting + natural regeneration

AMBITIONS + PRIORITIES

AMBITION FOR FRESHWATER HABITAT IN KENT + MEDWAY

OUR FRESHWATER HABITATS are CLEAN, SUFFICIENT + STABLE, in a HEALTHY + GOOD ECOLOGICAL STATE that SUPPORTS an ABUNDANCE + DIVERSITY of SPECIES. CATCHMENTS' FUNCTIONS are RESTORED to DELIVER a CONNECTED MOSAIC of WET HABITATS, IMPROVING WATER QUALITY + MANAGING FLOOD RISK ACROSS the COUNTY

PRORITY FW1

All rivers, streams + associated floodplains have a more natural form, free from physical modifications + barriers, allowing them to achieve at minimum good ecological status or potential + supporting natural processes. All freshwater habitats support a diverse native flora.

PRIORITY FW2

Ensure freshwater habitats + groundwater bodies are supplied with clean water, safeguarded from, + able to withstand the impacts of pollution

PRIORITY FW3

Freshwater habitats + groundwater bodies are supplied with sufficient water + resilient flows, supporting their natural hydrological + hydrogeological regime

PRIORITY FW4

Rivers, streams + springs + associated waterbodies have wide, more natural buffer strips with a diverse vegetation structure, which allow natural processes, provide a balance of light + shade, create mosaics of wetland habitats + safeguard from pollution + drought

PRIORITY FW5

Headwater streams have a natural form + natural processes, functioning as part of a mosaic of (seasonally) wet habitats including grasslands + woodlands, providing resilient flows to rivers + supporting a wide range of wildlife

PRIORITY FW6

Maintain + enhance ponds with high ecological value + restore those that have been lost or degraded. Enhance lake habitats + create new ponds, especially as part of a mosaic of habitats. Safeguard all pond habitats from runoff pollutants + invasive species, while allowing successional habitats to develop where appropriate

PRIORITY FW7

Lowland mire sites (fen + valley mires) + lowland peat habitats are well managed + enhanced, with the provision of buffers to allow the habitat extent to increase

PRIORITY FW8

High quality natural reedbeds across Kent are increased + existing reedbeds are in appropriate management

PRIORITY FW9

Enhance + restore wildlife-rich + functioning freshwater wetlands across the county, providing not only shelter, nurseries + breeding grounds but also carbon sinks + water management

PRIORITY FW10

Restore + enhance semi-natural lowland drains + associated marshlands through integrated water-level management + habitat restoration to reduce flood risk, mitigate drought impacts + promote biodiversity

AMBITION FOR URBAN HABITAT IN KENT + MEDWAY

NATURE PLAYS a CENTRAL ROLE in SHAPING the COUNTY'S BUILT-UP ENVIRONMENTS, with WILDLIFE BENEFITING FROM a NETWORK of CONNECTED GREEN, BLUE + GREY SPACES, WHICH ALSO PROVIDE NATURE-BASED SOLUTIONS to the ENVIRONMENTAL CHALLENGES of URBAN AREAS

PRIORITY URB1

Address habitat fragmentation in the urban + built environment, ensuring urban species can freely move about + developed areas + infrastructure does not impede passage

PRIORITY URB2

Deliver benefits for wildlife + support its recovery + growth in the urban environment through green space, building + land management

PRIORITY URB3

Safeguard + increase the extent of greenspace, trees + hedgerows within urban areas to not only provide more habitat for wildlife but also to deliver other benefits, including urban cooling, air + noise pollution regulation + surface water management

AMBITION FOR COASTAL HABITAT IN KENT + MEDWAY

COASTAL + ESTUARINE AREAS ARE ALLOWED to EVOLVE, with NATURAL PROCESSES + PROGRESSION RESTORED, to ENABLE THEM to ADAPT + be RESILIENT to CLIMATE CHANGE. HABITAT SUCCESSION is MANAGED STRATEGICALLY + HOLISTICALLY, to MINIMISE LOSS + SUPPORT a RANGE of HIGH-FUNCTIONING, CONNECTED COASTAL HABITATS

PRIORITY CL1

Sustainable + strategic management of estuaries + open coast to create functionality linked coastal habitats that are allowed to evolve, creating areas for wildlife to thrive. Natural dynamic processes + progression is restored, to enable adaptation + resilience to climate change + minimise the loss of intertidal habitats

PRIORITY CL2

Reduce small-scale loss, improve condition + increase connectivity of saltmarsh, mudflats, providing functioning ecosystems that are safeguarded from recreational disturbance

PRIORITY CL3

Reverse the decline in seagrass off Kent's coast to safeguard this important habitat for marine species + their breeding grounds + nurseries; + to preserve its vital function as a blue carbon store

PRIORITY CL4

Chalk cliffs + reef communities thrive in their natural state + are safeguarded from damage from recreational + leisure activities, development + bottom fishing methods

PRIORITY CL5

Sustainable management of native reef building shellfish to allow them to reach their habitat-reaching potential

PRIORITY CL6

Saline lagoons are appropriately safeguarded + managed to increase their resilience + adaptation to climate change + to secure their ecological functions, including the role they will play as transitional habitats

PRIORITY CL7

Safeguard + restore vegetated shingle, ensuring there is no unavoidable loss + areas remain in, or are returned to, a favourable condition

PRIORITY CL8

Restore sand dunes, enabling, where possible, the natural mobile function of the dune system to be reinstated or use management to maintain a full range of successional stages of sand stabilisation across the dune system

PRIORITY CL9

Reduction in coastal wildlife disturbance, resulting from leisure pressures at the coast

AMBITIONS + PRIORITIES

AMBITION FOR SPECIES HABITAT IN KENT + MEDWAY

HABITAT MANAGEMENT, RESTORATION, EXTENSION OR CREATION IS SPECIFICALLY TARGETED TO HALT THE DECLINE, + SUPPORT THE RECOVERY, OF THE STRATEGY'S PRIORITY + THREATENED SPECIES + IN DOING SO, REDUCES THE RISK OF LOSING SPECIES THROUGH EXTINCTION FROM THE COUNTY

PRIORITY 1

During the design of works to deliver a strategy potential measure, the habitat assemblages of the species longlist should be consulted for the relevant habitat. + all action should consider + take account of the species that depend upon it, recognising + supporting the interdependencies that exist

PRIORITY 2

During the design of works to deliver a strategy potential measure + where those works occur on or near the borders of the Strategy area, the neighbouring Local Nature Recovery Strategy's priority species list should be consulted to ensure that action in the Kent + Medway Strategy area does not undermine efforts for that species in the neighbouring area. Opportunities to facilitate the spread of a local population within the works should be identified, particularly where that species is currently absent from the county

PRIORITY 3

Action design should also recognise the contribution that species may make to the habitat + utilise, where appropriate, species within its management to help deliver more dynamic, natural, intact + climate resilient ecosystems

4. Understanding the priorities and measures – how to deliver against the principles of better, bigger, more and joined up

The 10 ambitions are delivered by a number of priorities – the outcomes we want to see for nature.

Sitting under these priorities are potential measures and wider measures. These are the actions that are required to realise the outcomes and ambitions we have identified for Kent and Medway's nature.

These measures have been framed around the Strategy's overarching principles by considering:

- what we need to do to **better** to manage the habitats we already have, to ensure they are functional, of high quality and safeguarded from threats and pressures
- how we can build on this existing resource by extending and buffering habitats, so there is a **bigger** extent.
- where we can restore or create new habitat, so we have **more** quality habitat for nature
- what **connectivity** is needed to ensure the better, bigger and more habitat is functionally linked
- how we can maximise the benefits of this healthy and functioning natural environment and deliver **nature-based solutions** to some of the county's challenges
- what are the critical **land management and land-use** considerations required to underpin delivery for the priority

Grey Heron by Jim Higham

Migrant Hawker dragonflies by Jim Higham

5. The priority and measures page layout

5.1 Identifying linked ambitions, priorities and measures

Each priority has a reference number, making it easier to link the priority to the overarching ambition, and the priority to its associated measures.

Prefix	Ambition to which priority and measure relates
CON	Connectivity
NBS	Nature-based solutions
LM	Land management and land use
GL	Grassland habitats
SH	Successional habitats
WTH	Woodland, trees and hedgerows
FW	Freshwater habitats
URB	Urban environments
CL	Coastal habitats

The prefixes for the Strategy's priority habitats are detailed in the table below.
Each measure has a reference number, making it easier to link the measure to its overarching priority, and the measure to its associated map. For example:

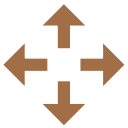
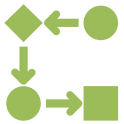
Ambition	Priority reference number	Potential measure reference number
GL – Grassland habitats	GL3 – Lowland meadows	GL3.2 – Create new lowland meadow sites, in close proximity to core/good condition sites

Ambition habitat grouping	Prefix	Kent and Medway Local Nature Recovery Strategy priority habitat	Prefix
Grassland	GL	Chalk grasslands	GL1
		Coastal and floodplain grazing marsh	GL2
		Lowland meadow	GL3
		Acid grassland and heathland	GL4
		Arable field margins	GL5
Successional habitats	SH	Open mosaic habitats found on previously developed land (brownfield)	SH1
		Scrub	SH2
Woodland, trees and hedgerows	WTH	Existing woodland, including wood pasture and parkland	WTH1
		New woodland	WTH2
		Lost woodland	WTH3
		Woodland resilience	WTH4
		Ancient woodland and ancient and veteran trees	WTH5
		Wet woodland	WTH6
		Gill woodland	WTH7
		Hedgerow	WTH8
		Traditional orchards	WTH9

Ambition habitat grouping	Prefix	Kent and Medway Local Nature Recovery Strategy priority habitat	Prefix
Freshwater	FW	Rivers and streams, including chalk and clay rivers (naturalised)	FW1
		Rivers and streams, including chalk and clay rivers (clean)	FW2
		Rivers and streams, including chalk and clay rivers (supply)	FW3
		Rivers and streams, including chalk and clay rivers (buffered)	FW4
		Headwater streams	FW5
		Ponds and lakes	FW6
		Lowland mire sites (fen and valley mires)	FW7
		Reedbeds	FW8
		Freshwater wetland	FW9
		Semi-natural lowland drains and marshlands	FW10
Urban	URB	Urban (fragmented)	URB1
		Urban green space	URB2
		Urban green space (nature-based solutions)	URB3
Coastal	CL	Estuary and open coast	CL1
		Saltmarsh and mudflats	CL2
		Seagrass	CL3
		Chalk cliffs and reefs	CL4
		Native Oyster and Blue Mussel reefs	CL5
		Saline lagoons	CL6
		Vegetated shingle	CL7
		Sand dunes	CL8

5.2 Identifying linked measures and Strategy principles

For each priority, the measures are set out against the relevant Strategy principle, denoted by the following symbols:

	Measures which improve the quality of our existing habitats, through improved management and safeguarding – delivering **better.**
	Measures which extend or buffer existing habitats – delivering **bigger**.
	Measures which restore or create new habitat – delivering **more**.
	Measures which focus on connectivity – delivering **joined up**.
	Measures which deliver **nature-based solutions**.

Measures are identified as either a potential measure or wider measure:

- **Potential measures** identify where the action determined as necessary for our nature recovery priorities should be strategically targeted to achieve the greatest gains for biodiversity and to deliver the widest environmental benefits.
- **Wider measures** are proposed actions which would either be similarly beneficial over wide areas or it was not possible to determine specific locations to carry out the proposed action. Collectively, wider measures identify areas of additional opportunities for nature recovery but do not form a part of the formal Local Nature Recovery Strategy's local habitat map.

5.3 Identifying associated Strategy priority species

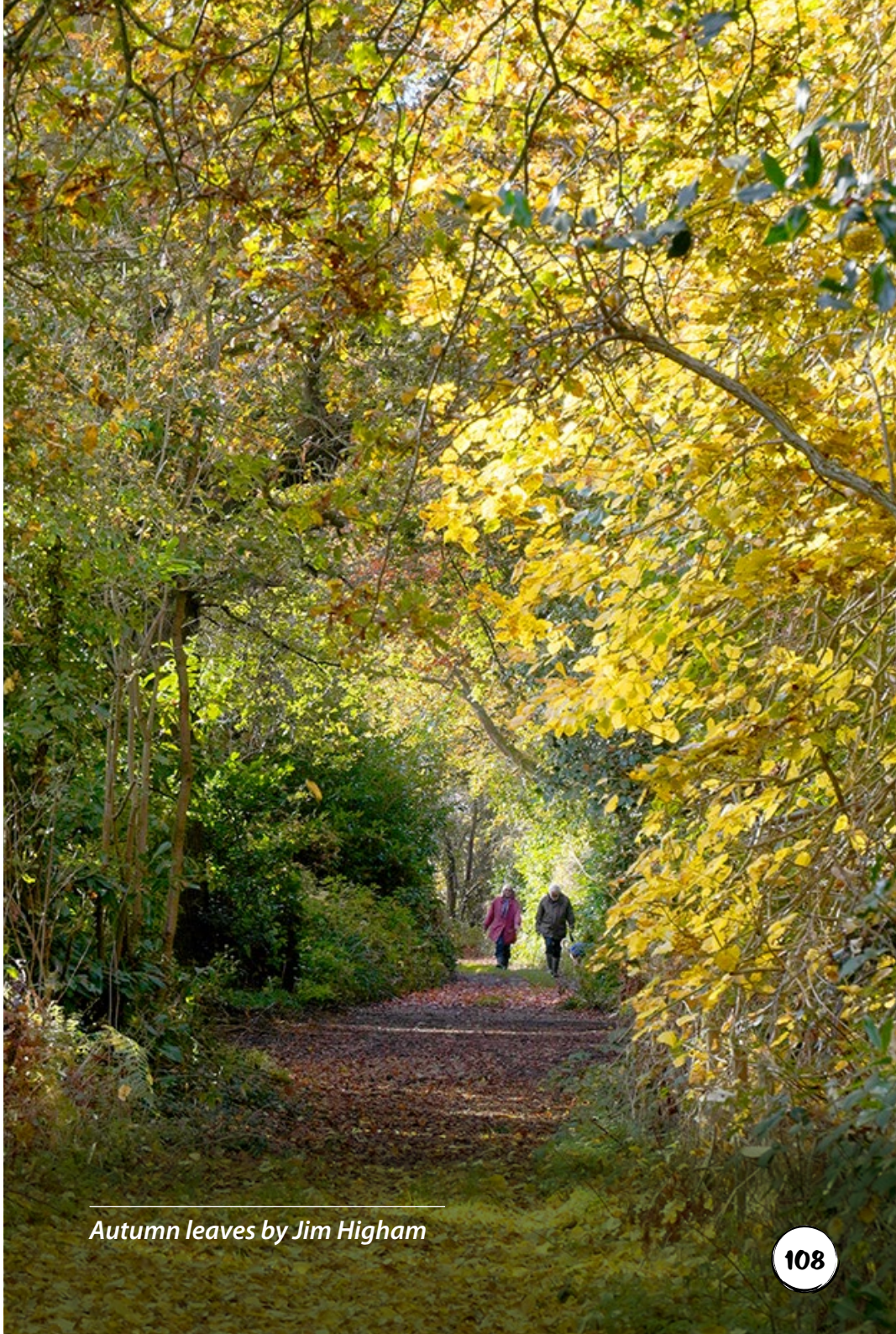
Each nature recovery priority also notes the priority species that will benefit from its delivery. Some priority species require action that is covered by the potential measures identified for the habitat priority. These are identified separately from the priority species that are associated with the habitat in question but require bespoke measures. Bespoke measures for the Strategy's priority species can be found in Appendix 3.1.

5.4 Other information included with each priority

In developing the Strategy, a number of other requirements for the recovery of the habitat or achievement of the priority were identified that could not be mapped or fell outside the definition of a Local Nature Recovery Strategy potential measure:

- **Land management and land use principles** – these are best practice and/or recommended approaches that should underpin any action taken for the delivery of the priority. These are not exhaustive – rather, they are indicative of the principles that should be applied.
- **Supporting measures** – these largely relate to supporting mechanisms, processes and functions that are considered critical to the delivery of the identified potential measures for habitats and species. Without these mechanisms, processes and functions being in place, the potential measures may be limited in their success.
- **Data, evidence and mapping needs** – identifies what is needed to better inform the priority's delivery and/or will allow improved mapping during the next iteration of the Strategy.

Supporting measures and further data/evidence/mapping sit outside the regulatory scope of Local Nature Recovery Strategy. However, it is important to acknowledge and recognise these in the context of the priority they relate to and where they are therefore detailed. Only those considered critical to the achievement of the priority have been included.



Autumn leaves by Jim Higham

6. How to use the potential measures and mapping to inform nature recovery

6.1 A note on the Strategy's potential measures mapping and its limitations

Before using the Strategy mapping it is important to note the following:

- Mapping indicates areas where the potential measures could be delivered. In some instances, these are large areas; in others, they are specific areas, depending on the mapping capability. In all cases, the mapped areas are indicative.
- The strategic nature of this document means that some measures may not be relevant or appropriate when considered in detail at the local level.
- The desk-based approach means the mapping is theoretical and not based on actual known site conditions. Site assessments, and other permissions and prerequisites, will inform the appropriateness of the action to that location.
- Inclusion of a site in the Local Nature Recovery Strategy does not preclude that action from any necessary permissions, site assessments and other prerequisites before it is implemented.
- Sites of Special Scientific Interest, Special Areas of Conservation, Special Protection Areas, Ramsar sites and National Nature Reserves are statutory national and international designations. Measures have been mapped to these sites to maintain the integrity of the connectivity approach taken in creating a nature recovery network for the Strategy area. The potential measures also present future considerations for the site. However, the mapped potential measures do not override or replace existing management associated with the designation nor do they negate the need for any requisite consents or approvals. It is essential that the existing designated features and the legal processes and guidance are checked and followed prior to delivery of the suggested measure.
- Mapping is based on existing known data – consequently, other sites may hold potential interest or relevance to a potential measure but may not be mapped as there is no pre-existing data available.
- The Strategy and associated maps do not dictate actions nor instruct their implementation – they are a guide for how landowners and managers could use or manage the land, or approach their operations, in a way that could support the recovery of nature.
- Mapping of an area to a potential measure, wider measure or areas that could become of particular importance to biodiversity does not offer any formal or otherwise protection, which can only be provided through statutory designations or local planning policy. It also does not preclude any uses of the land or operations.
- Although mapping indicates where this action may be most needed or result in the greatest gains, this action can be introduced outside the target area – nature recovery action does not need to be limited to the areas that could become of particular importance to biodiversity.
- A potential measure may have value locally but that is not reflected when considered strategically at a county scale. Therefore, its exclusion from the mapping does not indicate that the action is not applicable.
- The Strategy notes a number of management measures to increase the functionality or biodiversity of a habitat – some have been mapped, some not. These management measures apply to the whole county and, although mapping indicates where this management may be most needed or result in the greatest gains, the introduction of appropriate management will deliver benefits wherever it is applied.

6.2 Identifying action to recover nature

The Strategy mapping provides a spatial context to the wide number of priorities set out in the Kent and Medway Local Nature Recovery Strategy. It takes what could be seen as an overwhelming list of actions and sets a county-wide plan for where these actions would best be delivered.

The mapping is a key part of the Strategy – it breaks down what we need to do and, crucially, where, to recover nature in Kent and Medway. How you use the maps depends on what you want to know.

Further instruction on using the Strategy maps is provided alongside the online mapping tool.

6.2.1 Where are the priority areas for a specific habitat type?

You may be interested in knowing where has been identified as the key areas for a specific habitat type – this might be a broad habitat group, like grasslands, or a specific habitat, like lowland meadows.

You can view these on the map by selecting all the potential measures that start with the relevant prefix. Continuing the example, this would be looking at mapped measures that start with GL, if your interest is in all grasslands, or GL3 if your interest is specifically lowland meadows.

This will show you where in the county the Strategy has identified action should be targeted for that broad habitat group and/or specific habitats. The habitat prefixes can be found in the table below. When viewing the maps, you may find that more than one potential measure is identified for an area – see below for guidance on prioritising measures.

Prefix	Ambition to which priority and measure relates
CON	Connectivity
NBS	Nature-based solutions
LM	Land management and land use
GL	Grassland habitats
SH	Successional habitats
WTH	Woodland, trees and hedgerows
FW	Freshwater habitats
URB	Urban environments
CL	Coastal habitats

Mallard duck with ducklings by Jim Higham

6.2.2 Where should specific action be targeted?

You may be interested in knowing where in the county has been identified as the key areas for a particular action. This might be actions that relate to one of the Strategy principles, for instance 'more', or a particular action you have seen identified against a priority.

You can view these by selecting the specific measure, using the reference number. If you wanted to see where actions delivering 'better' for lowland meadow have been mapped, you would select the map for GL3.1. If you wanted to see where the potential measure 'Increase the extent of high quality, connected lowland meadow by creating new lowland meadow sites, in close proximity to core/good condition sites' has been mapped, you would select the map for GL3.2.

You can view more than one potential measure at a time. When doing so, you may find that more than one potential measure is identified for an area – see below for guidance on prioritising measures. The reference numbers for each measure are provided in the priorities' potential measures tables.

6.2.3 What should be done at a specific location?

You may be interested in knowing if any action has been identified at a specific location – whether that is land you own or manage, land where you volunteer or land that is of particular interest to you.

If there are no potential measures identified, you should also look at the wider measures mapping – while these are not a constituent part of the areas that could become of particular importance to biodiversity, they have been identified as offering a wider opportunity for nature recovery.

If the area of land you are interested in has a statutory national or international designation (Sites of Special Scientific Interest, Special Areas of Conservation, Special Protection Areas, Ramsar sites and National Nature Reserves), you may still find potential measures mapped. These do not override any existing management for the site, and it is essential that the existing designated features and the legal processes and guidance are checked and followed prior to delivering the suggested measure.

If there are neither potential measures nor wider measures mapped to the area of interest, this does not mean that it holds no value for biodiversity, or that it does not offer any opportunity to support the recovery of nature. It is simply that, within the requirements of the Local Nature Recovery Strategy potential measures mapping, it has not been identified as significant at a strategic-county scale.

When viewing the maps, you may find that more than one potential measure is identified for an area – see guidance on prioritising measures.

Redshanks by Jim Higham

6.2.4 Where should action for the Strategy priority species be targeted?

Mapping of potential measures for the Strategy's priority species has not been developed, due to the complex nature of the bespoke action required.

To aid locating where action could be taken, priority species heat maps have been developed for a range of habitat assemblages. These maps identify the areas that are considered to offer the most benefits for priority species, using the density of priority species for that habitat assemblage as a proxy. These maps are indicative and are intended to provide additional and supporting information for delivery. They should be used in consultation with species experts, when delivering action for priority species.

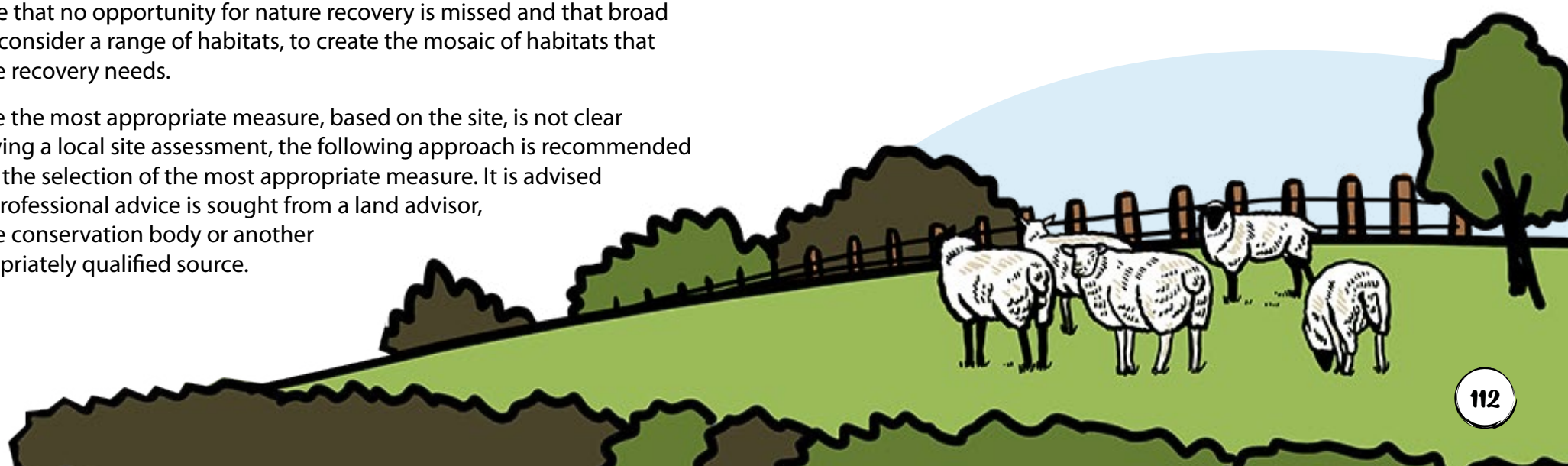
The priority species habitat assemblage maps produced for the Strategy are detailed in the table to the right.

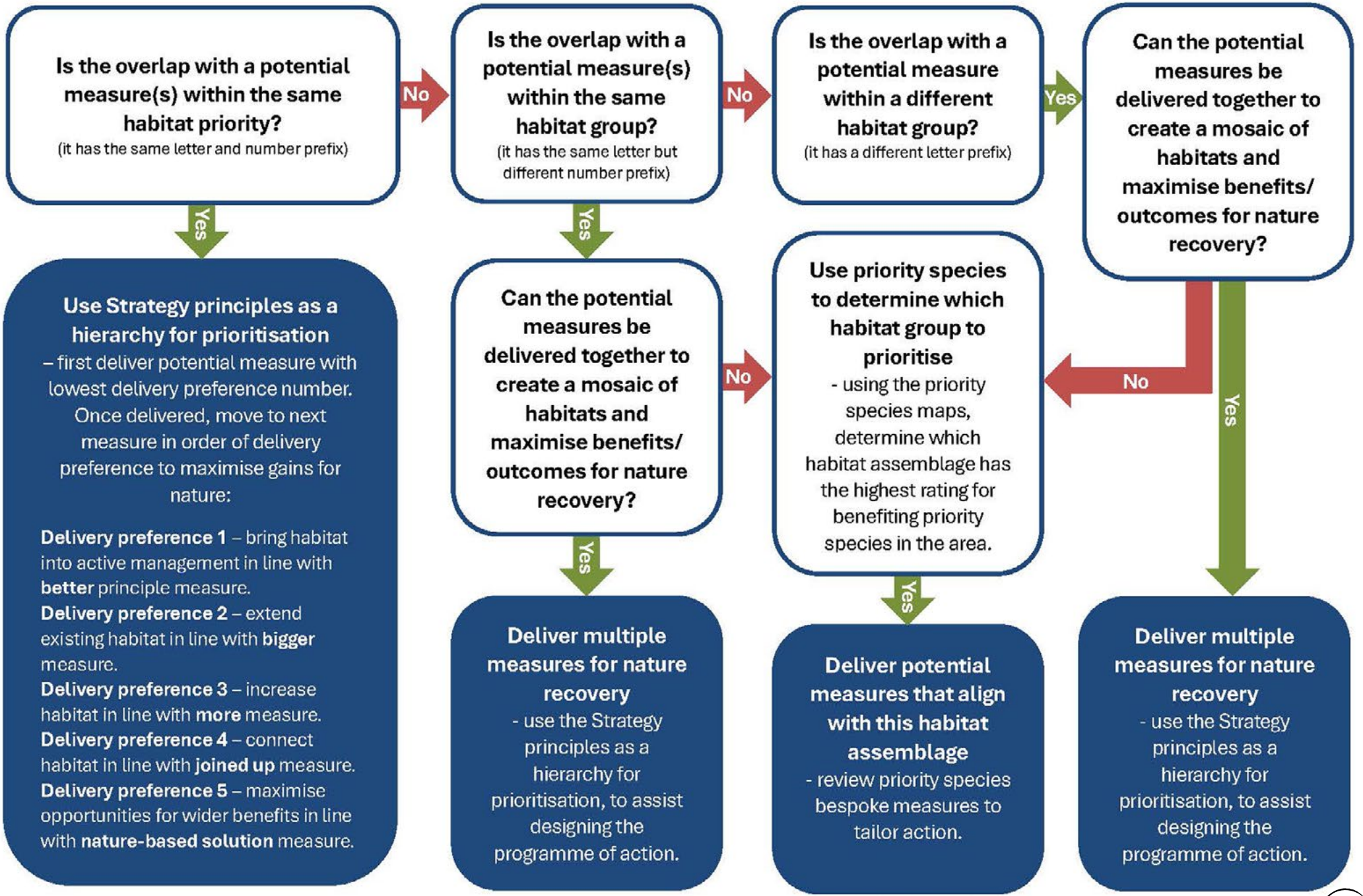
Strategy habitat group	Priority species habitat assemblage maps
Grassland habitats	• Arable • Chalk grassland • Coastal and floodplain grazing marsh • Heathland • Lowland meadows
Successional habitats	• Scrub and open mosaic habitat on previously developed land (brownfield)
Woodland, trees and hedgerows	• Woodlands • Ancient woodland, wood pasture and parkland and traditional orchard
Freshwater	• Rivers and streams • Standing open water • Swamp, reedbed and wet woodland
Urban	• Urban
Coastal	• Littoral sediment • Maritime cliff and slope • Sand dunes and vegetated shingle

6.3 Prioritising action when more than one potential measure is mapped to the same location

In some locations, more than one potential measure is identified. This is to ensure that no opportunity for nature recovery is missed and that broad areas consider a range of habitats, to create the mosaic of habitats that nature recovery needs.

Where the most appropriate measure, based on the site, is not clear following a local site assessment, the following approach is recommended to aid the selection of the most appropriate measure. It is advised that professional advice is sought from a land advisor, nature conservation body or another appropriately qualified source.




Is the overlap with a potential measure(s) within the same habitat priority?
(it has the same letter and number prefix)
No
Is the overlap with a potential measure(s) within the same habitat group?
(it has the same letter but different number prefix)
No
Is the overlap with a potential measure within a different habitat group?
(it has a different letter prefix)
Yes
Can the potential measures be delivered together to create a mosaic of habitats and maximise benefits/ outcomes for nature recovery?
Yes
Use Strategy principles as a hierarchy for prioritisation – first deliver potential measure with lowest delivery preference number. Once delivered, move to next measure in order of delivery preference to maximise gains for nature:
Delivery preference 1 – bring habitat into active management in line with better principle measure.
Delivery preference 2 – extend existing habitat in line with bigger measure.
Delivery preference 3 – increase habitat in line with more measure.
Delivery preference 4 – connect habitat in line with joined up measure.
Delivery preference 5 – maximise opportunities for wider benefits in line with nature-based solution measure.
Yes
Can the potential measures be delivered together to create a mosaic of habitats and maximise benefits/ outcomes for nature recovery?
No
Use priority species to determine which habitat group to prioritise
- using the priority species maps, determine which habitat assemblage has the highest rating for benefiting priority species in the area.
No
Yes
Yes
Deliver multiple measures for nature recovery
- use the Strategy principles as a hierarchy for prioritisation, to assist designing the programme of action.
Yes
Deliver potential measures that align with this habitat assemblage
- review priority species bespoke measures to tailor action.
Deliver multiple measures for nature recovery
- use the Strategy principles as a hierarchy for prioritisation, to assist designing the programme of action.

Marbled White butterfly by Jim Higham

6.4 White space – using the wider measures mapping

Users of the Strategy and its mapping may be concerned about the 'white space' in the local habitat map, which indicates that the area is not mapped as being – or could become – of particular importance for biodiversity.

Every area has a biodiversity value and is important in the recovery of nature. This Strategy was developed under the project title Making Space for Nature, and that is absolutely what we need to do in every part of the county's landscape if our wildlife is to have the room it needs to return to a thriving state.

However, as noted by the Local Nature Recovery Strategy guidance, indiscriminate or widespread mapping of areas will not aid the targeting of available resources. Therefore, the Strategy is required to determine and map the areas that will have the greatest impact on achieving the priorities.

An unmapped area does not mean that no action should be taken – and there are measures that can be taken indiscriminately across the county. A number of the priorities have mapped wider measures – these are measures identified as valuable to the recovery of a particular habitat but which could only be mapped to the extent of that habitat, rather than as prioritised areas. While these do not feature in the Strategy's local habitat map, they play an important role in directing broad action across the whole of the Strategy area and collectively fill in much of the white space.

In addition, under many of the priorities, there are land management and land-use principles, which can be applied to that habitat. These principles can be applied to that particular habitat anywhere in the county – it does not need to be habitat mapped in the local habitat map.

6.5 Informing delivery of biodiversity net gain

The potential measures mapping has an important role in the delivery of meaningful biodiversity net gain. Biodiversity net gain is a mandatory requirement that aims to make sure that development has a measurably positive impact on biodiversity. This gain is calculated using a standardised metric which identifies the biodiversity value of the land lost and the biodiversity gained.

The 2025 updated planning guidance notes that Local Nature Recovery Strategies will identify areas where habitat creation, restoration or enhancement would be most beneficial for nature recovery and wider environmental outcomes, and that the strategies can play a critical role in supporting offsite gains to be delivered in a way that maximises biodiversity benefits, when these are required to achieve a development's biodiversity gain objective. This can help to support bigger and more joined-up areas in which our wildlife can thrive.

Local Nature Recovery Strategies are designed to promote the delivery of offsite biodiversity gain in the right places, where offsite provision is needed to meet the biodiversity gain condition for a development and it cannot be met in full through onsite habitat enhancements.

The Local Nature Recovery Strategy can be used as a key source of information about strategic approaches to offsite biodiversity net gain delivery and connections to existing habitat, when local planning authorities are carrying out their functions in respect of biodiversity net gain.

The statutory biodiversity metric formula takes different factors into account, including the habitat's size, condition, type and strategic significance. Strategic significance is the local significance of the habitat based on its location and habitat type. Where a Local Nature Recovery Strategy has been published, high strategic significance (and the associated score) is applied when:

- the location of the habitat parcel has been mapped in the Local Nature Recovery Strategy as an area where a potential measure has been proposed to help deliver the priorities of the Strategy; and
- the proposed intervention is consistent with the mapped potential measure in the Local Nature Recovery Strategy for the habitat parcel.

6.6 Protecting nature

The purpose of the Strategy is to provide a framework for nature recovery, directing action to where it is most needed and where it will deliver the greatest gains. It does not offer any formal, or otherwise, protection, which can only be provided through statutory designations or local planning policy.

Throughout the document, the term 'safeguard' is used. In the context of this Strategy, this does not imply a formal protection nor the prevention of potentially impactful activities, unless they have already been identified within an existing and adopted Local Plan or an established legal protection. Safeguarding may be delivered by setting aside land but it also refers to active management that prevents loss and damage, using buffers to minimise human impacts, and connecting habitats to increase resilience. Where measures refer to safeguarding areas, this does not mean that nothing can happen in these areas, but that appropriate action should be taken to support the habitats and species they are notable for.

Local authorities may choose to use the Strategy to help identify land that should be set aside for the purposes of nature recovery but there is no requirement on them to do so. The Strategy offers direction and proposed measures that can assist public bodies in meeting their duties relating to the recovery of nature.

7. Kent and Medway Local Nature Recovery Strategy priorities and potential measures

This chapter sets outs the priorities and potential measures for:

Connectivity

Nature-based solutions

Land management and land use

Grassland habitats

Successional habitats

Woodland, trees and hedgerows

Freshwater habitats

Urban environments

Coastal habitats

Oak tree by Jim Higham

Connectivity priorities and potential measures

Ambition for connectivity in Kent and Medway – **High-quality habitats are functionally connected at both a county and local scale, providing more linked natural space for nature to thrive in and a landscape that wildlife can move through and adapt to change in.**

An overview of habitat fragmentation and the importance of improving connectivity

Habitat fragmentation results when large areas of connected habitat become broken up as a result of use of the land or natural processes. The main causes of habitat fragmentation in Kent and Medway are urbanisation and its associated infrastructure, agricultural changes and expansion and removal of habitat, such as deforestation. As a coastal county, sea-level rise, coastal erosion, and salt and freshwater flooding can also temporarily and permanently fragment habitats.

Habitat fragmentation negatively impacts wildlife in several ways. A perhaps obvious consequence is the loss of total habitat area. This loss means less space for species to find what they need in terms of food, shelter and breeding.

When a habitat is fragmented, it not only reduces the quantity but also the quality – this is known as the edge effect. In a functioning and healthy environment, the edge where two different habitats meet is often a diverse area of varying structures that can be critical to species which require different habitats for their life cycle and/or feeding and breeding. But the conditions of these edge habitats are also quite different to within the adjoining habitat and are often unsuitable for the survival of habitat specialists. As habitats become broken up and smaller, the proportion of edge habitat increases, and species not suited to these areas struggle to survive.

Fragmentation also impedes the movement and mobility of species, and impacts wildlife in two ways. Firstly, populations of species become isolated, resulting in inbreeding and a reduction in genetic diversity. This makes the population more vulnerable to disease and has consequences for its long-term health. Ultimately, it is at greater risk of extinction. Secondly, fragmentation will limit a species' ability to respond to climate change impacts, whether it's redistributing because of climate shifts or because habitats have changed, been degraded or lost.

Habitat fragmentation may be a significant driver of nature loss but it is one that can be addressed and even reversed through habitat management, extension and creation.

Connectivity priorities and potential measures

The majority of the county's connectivity priorities relate to the specific needs of individual habitats and the functional links that need to be made within or between these. As a result, the majority of the connectivity potential measures for the Strategy area are detailed with the relevant habitat. In addition to these habitat-based measures for connectivity, the Strategy also promotes a number of overarching priorities and potential measures to be applied across the county.

Elham Valley by Jim Higham

Priority CON1 – County's key wildlife sites better connected by addressing the fragmentation and barriers preventing movement of species

Wider measure CON1.1: Improve functional connectivity corridors between the designated and protected sites of the areas of particular importance for biodiversity and safeguard these areas.

Land-use and land management principles for better connectivity of county's key wildlife sites:

- Safeguarding to be delivered through setting aside land and/or putting in place active management that prevents loss of, or damage to, the habitat.

Supporting measure for better connectivity of county's key wildlife sites:

- Land-use planning to support the safeguarding of areas that are strategically important in reducing habitat fragmentation and addressing bottlenecks for species movement by setting aside land and/or putting in place land-use restrictions and management that prevents loss and damage.

Data, evidence and mapping needs for better connectivity of county's key wildlife sites:

- Identify areas of the county that are strategically important in reducing habitat fragmentation and addressing bottlenecks for species movement.

Priority CON2 – Fragmentation caused by arterial roads, railway and other major infrastructure retrospectively addressed, reconnecting habitats and wildlife pathways.

Potential Measures

Potential measure CON2.1: Installation of green bridges, wildlife crossings, tunnels and other appropriate structures, alongside retrofitting existing structures, to address historic fragmentation caused by major infrastructure.

Supporting measure for addressing fragmentation caused by major infrastructure:

- All new infrastructure to consider fragmentation impacts and to design connectivity mitigation into the scheme from the start.

Data, evidence and mapping needs for addressing fragmentation caused by major infrastructure:

- Maintain a register of habitat fragmentation caused by major infrastructure to enable a pipeline of projects for funding and investment.

Priority CON3 – Habitat management and wilding approaches delivering a mosaic of habitats at a large scale, that are functionally connected and nature can flourish, with no important habitats or species populations left completely isolated

Wider measure CON3.1: Set aside and/or put in place active management to prevent loss of, or damage to, areas of importance for functional connectivity.

Wider measure CON3.2: Enhance habitats alongside the county's highway, railway, cycleway, pathway and public right of way networks and National Trails to become functional networks for wildlife movements and provide opportunities for people to connect with nature.

Wider measure CON3.3: Maximise opportunities to restore wildflower habitat on road verges to contribute to a county network of wildlife-friendly habitat corridors.

Wider measure CON3.4: Implement broad buffer zones and connecting strips between habitat areas designated or managed for their biodiversity value.

Data, evidence and mapping needs for connected habitats:

- Develop better understanding, and map, priority areas for road and verges that need better management to benefit functional connectivity.
- Identify and map migration routes for priority species, identifying any existing barriers to movement.

Priority CON4 – Landscape-scale management, with partners beyond the county, to address habitat change and species migration as a result of climate change.

Supporting measures for regional action:

- Work with responsible authorities to the north and west of the county to ensure they are identifying species migrating from Kent as a result of climate change dispersal.
- Utilise existing regional initiatives and partnerships, and develop new ones where required, to support and facilitate cross-boundary working across the South-East.

Data, evidence and mapping needs for regional action:

- Increase understanding of likely species movement and habitat change to improve ability to identify which counties to work with.

Bluebell by Jim Higham

Nature-based solutions priorities and potential measures

Ambition for nature-based solutions in Kent **- Through safeguarding, management and restoration of the county's ecosystems, we enhance our resilience to climate change, deliver environmental improvements, address health and societal inequalities, and promote wellbeing, while advancing nature recovery.**

An overview of nature-based solutions and the opportunities in Kent and Medway

Nature-based solutions address societal challenges through actions to protect, sustainably manage and restore natural and modified ecosystems, benefiting people and nature at the same time. They target major challenges like climate change, disaster risk reduction, food and water security, biodiversity loss and human health, and are critical to sustainable development.

Through the many habitats within the county, we are presented with the opportunity to not only recover nature through our interventions but also to deliver some other significant benefits, including:

- carbon sequestration
- soil quality improvements
- air quality improvements
- water quality improvements
- water resource management
- flood management
- coastal erosion management
- temperature regulation

Our six habitat priorities offer the following potential benefits:

	Grasslands	Successional habitats	Woodland, trees and hedgerows	Freshwater	Urban (green infrastructure)	Coastal
Carbon sequestration	✓ Yes	✓ Yes	✓ Yes	✓ Yes	✓ Yes	✓ Yes
Soil quality	✓ Yes		✓ Yes			
Air quality			✓ Yes		✓ Yes	
Water quality	✓ Yes			✓ Yes	✓ Yes	
Water supply				✓ Yes	✓ Yes	
Flood management	✓ Yes	✓ Yes	✓ Yes	✓ Yes	✓ Yes	✓ Yes
Coastal erosion	✓ Yes					✓ Yes
Temperature regulation			✓ Yes	✓ Yes	✓ Yes	

Natural Solutions to Climate Change in Kent (2021) identified a number of opportunities for nature-based solutions within the county, which would deliver the above benefits. These are discussed below.

Biodiverse grassland

Approximately 8% of the county is biodiverse grassland. Also known as species-rich grassland, this is an area dominated by grasses that supports a wide variety of plant and animal life, offering numerous benefits for ecosystems and human wellbeing. Nature-based solutions come from the protection and restoration of grassland, road verge naturalisation and an increase in sustainable agriculture. Sustainable agriculture could significantly increase the benefits offered by grassland by reverting some of the improved grassland which covers 30% of the county.

The challenges faced with nature-based solutions from grassland are land availability, buy-in of the agricultural sector and intensive management requirements.

Woodland, trees and hedgerows

Woodland is the most abundant semi-natural habitat in Kent and Medway, with broadleaved, mixed and yew woodland covering 11% of the county. Active woodland management is regarded as the quickest win in terms of nature-based solutions, with expansion and creation of woodland and hedgerow delivering further in the longer term. This is embedded in the county's tree establishment strategy, Plan Tree, which aims to better manage existing woodland, tree and hedgerow resources, and to establish a further 1.5 million trees, increasing average canopy cover across the county to 19%.

The challenges to these opportunities are exacerbated drought conditions in the county putting existing and new trees at risk, the lack of, and costs of, active woodland management, and a lack of land availability for regeneration and new woodlands, trees and hedgerows.

Freshwater

Rivers and streams cover 1.7% of the county and standing water, open water and canals cover 1.2%. Fen, marsh and swamp wetland habitats account for just 0.2%, which means this is a limited habitat.

In the first instance, the retention and safeguarding of this county's inland wetlands would preserve the beneficial qualities offered by existing habitats. Greater opportunities exist through the restoration of natural river channels, the extension and creation of wetlands, the reinstatement of historic ponds and the creation of new ponds.

Land availability, length of time for the habitat to become functional, associated flood risks and trading of habitats may pose challenges to these solutions.

Urban

With 16% of the county being built or urban habitats, it is important to look for opportunities for nature-based solutions in these areas. Especially so, as this is where the majority of the population live and work and therefore where the societal challenges that can be addressed by nature-based solution are most keenly felt.

Opportunities include green walls and roofs, better management of and increase in urban green space, naturalising road verges, street trees and the use of sustainable urban drainage. In addition to the ecosystem services these provide, they are also important in respect of delivering health and wellbeing benefits and providing opportunities to connect with nature within the urban environment.

Coastal wetlands and other habitats

Kent has one of the longest coastlines in the country, with a wide variety of different habitats including coastal grazing marsh, saltmarsh, native oyster beds, seagrass beds, sand dunes, vegetated shingle and mudflats. With such a notable resource, opportunities begin with improved management, restoration and retention, to ensure continued benefits from the services that all these habitats provide. Extending this habitat is another opportunity, but one that is perhaps harder to deliver, given the need to find suitable sites for managed realignment of defences and the effects of coastal squeeze reducing the existing habitat. Extension of the habitat also poses the challenge of habitat trading and therefore needs to be part of a wider, strategic approach.

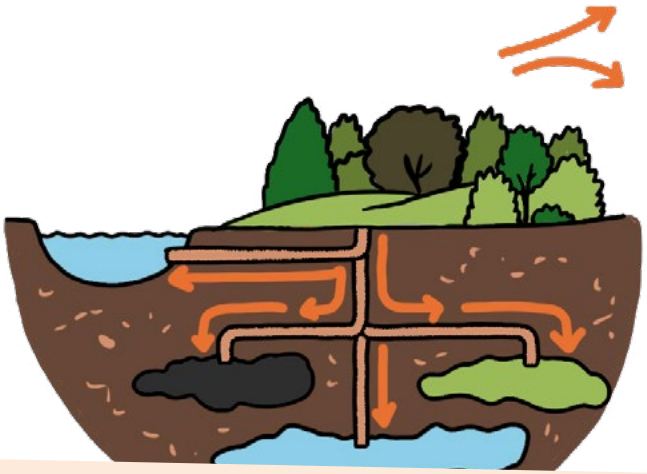
Opportunities to extend coastal sites and benefit habitats can be considered for the reuse of dredged sediment taken from ports and harbours around the coastline.

Nature-based solutions priorities and potential measures

Delivering the habitat-based priorities and their associated measures will maximise the opportunities to realise the benefits they bring in terms of nature-based solutions. Where relevant, potential measures have specifically been mapped to where these benefits are most needed – that is, focusing on areas of flood risk, poor water quality and supply, poor air quality, urban heating, and where the benefits of increasing and improving access to green space would be most keenly felt.

In addition to these habitat-based priorities for nature-based solutions, this Strategy also promotes a number of overarching priorities and wider measures to be applied across the county.

Long tailed Tit by Jim Higham



Priority NBS1 – Increase the extent of carbon sequestering habitats in the county (woodlands, saltmarshes, heathlands and grasslands), which are purposefully managed to function as a carbon store while prioritising a nature recovery function.

Priority NBS2 – Safeguard from loss, and increase the functionality, and extent of, habitats delivering critical ecosystem services in the county.

Priority NBS3 – Improve soil health and structure by enhanced and increased soil management, so that it is delivering better for invertebrates, carbon sequestration, water retention and management, and production and provisioning services.

Land management and land-use principles to support nature-based solutions:

- Increase the extent of agricultural land that is also managed for carbon sequestration, focusing on soil health and biomass production.
- Prioritise soil restoration where soil degradation is impacting food production and other provisioning services.
- Plant and restore hedgerows across open landscapes, at appropriate locations and taking account of historic field boundaries, to capture water and minimise runoff, reducing scour and siltation.
- Adopt principles of agroforestry and permaculture to improve soil management.
- Apply conservation grazing practices to develop stronger grassland root structures and adaptive multi-paddock grazing, with long rests to restore soil health.
- Reduce use of pesticides, herbicides and fertiliser, and the use of insecticides and wormers in livestock.
- Use regenerative practices: reduced inputs, reduced cultivation, no/minimum till, deeper rooting, stronger rooted swards, overwintering stubble, cover crops, minimise compaction, plough along contour, maintain invertebrates and bacteria.
- Deliver safeguarding through setting aside land and/or putting in place active management that prevents loss of, or damage to, the habitat.

Supporting measures for nature-based solutions:

- Plan land use to support the safeguarding of areas that are important for carbon sequestration by setting aside land and/or putting in place land-use restrictions and management that prevents loss and damage.

Data, evidence and mapping needs for nature-based solutions:

- Identify the county's most valuable carbon sequestering habitats and potential measures to maximise their function, in order to support landowners and managers in recognising and realising the carbon sequestration opportunities of their land.
- Identify areas of Kent where critical nature-based solutions are being delivered.
- Create baseline mapping of soil health, determined on areas rather than point data, so a wider collaborative management approach can be employed.

Land management and land-use priorities and potential measures

Ambition for land management and land use in Kent and Medway – **Land management and land use throughout Kent and Medway not only meets the economic and social needs of the county, but also seeks opportunities to deliver nature recovery gains across a wide range of land uses, from commercial to recreational.**

An overview of land management and land use and the opportunities in Kent and Medway

Kent and Medway's agricultural landscape

The county is known as the Garden of England for good reason. 62% of the land in Kent and Medway is used for agriculture and 14.7% for forestry and woodland. The Defra 2021 census reported that, in total, there are over 13,000 farmers, growers and farm workers across 2,825 farms in the county, which cover 222,540ha of land. Over 40% of agricultural grassland is used for grazing livestock and 16% serves a horticultural purpose. Over 50% of land farmed in the county is under arable production.

Farmers, growers and producers in Kent and Medway contribute significantly to the UK's food security, providing 40% of the horticultural goods (vegetables, leafy greens, salad products) consumed domestically, and 80% of the top fruit (apples and pears). Viticulture is a fast-growing use of land in Kent and Medway, with over 50 vineyards now in the county.

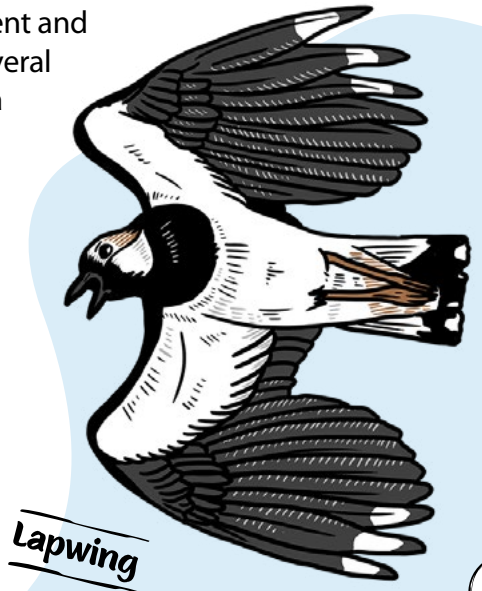
Agricultural business encompasses a wide range of landowners, including large private estates, institutional landowners, large commercial operations, family farms and smallholdings.

Opportunities through collaboration, innovation and nature-friendly farming

There are many leading regenerative farmers in Kent and Medway, who are applying skilled and innovative regenerative practices to their land, focused on protecting and restoring soil health. Five key principles of regenerative practices inform and guide a suite of farming techniques:

1. Minimise soil disturbance.
2. Maximise species diversity.
3. Keep the soil covered year round and build soil organic matter.
4. Maintain living roots all year round.
5. Integrate livestock.

The impact of nature-friendly, regenerative practices is boosted when farmers work together, turning individual efforts into action on a landscape scale. Within Kent and Medway, we are fortunate to have several farmer clusters working together on a landscape scale. These farmer-led groups are working with local communities, water companies, wildlife charities, and town, parish and local councils. They are demonstrating how business, environment and food security can be linked together while protecting and restoring a remarkable range of wildlife habitats and species and responding to the pressures of climate change.



Lapwing

Collectively, farmer clusters cover over 52,606ha of farmed land across the county (about a quarter of the agricultural land). Some 315 members are collaboratively working across a variety of landscapes, soil and habitat types to support vital species recovery and habitat management, restoration and creation. This is at the same time as growing food and managing livestock. These clusters are:

- Boxley
- Darent Valley
- East Kent Arable
- East Kent Valleys
- East Stour
- Eden
- Greensand
- Hoo
- Marden
- North Kent Downs and Medway Gap
- North-East Kent
- Stour Valley to Stone Street
- Swale
- Upper Beult
- 1066

The way that land is managed has a strong influence on the health of our waterways. Runoff from agricultural inputs can cause eutrophic pollution which is damaging to biodiversity and negatively impacts our water quality, while soil health and intensive farming practices can increase risks from flooding or drought.

Catchment Partnerships bring together the local knowledge and expertise of environmental non-government organisations, water companies, local authorities, government agencies, landowners, angling clubs, farmers, academia and businesses. These partnerships undertake integrated management of land and water, addressing each river catchment as a whole and delivering crosscutting practical interventions on the ground.

Many of the nature-friendly farming practices that are so important for supporting the recovery of biodiversity are enabled through Environmental Land Management grants from Defra. These schemes comprise three distinct funding streams:

1. The Sustainable Farming Incentive scheme pays farmers and land managers to take up or maintain sustainable farming and land management practices that protect and benefit the environment, support food production and improve productivity.

2. Countryside Stewardship Higher Tier pays farmers and land managers to manage land in a way that protects, restores or enhances the environment and mitigates the effects of climate change. Countryside Stewardship Higher Tier can be applied to woodland, farmed land, land managed for nature or a combination.

3. Landscape Recovery pays groups of farmers and land managers to carry out long-term, large-scale projects together. The Landscape Recovery scheme supports net zero carbon emissions, protected sites and wildlife-rich habitat.

Seeking opportunities to recover nature through sensitive land management is a key principle of the Local Nature Recovery Strategy. However, there must also remain an awareness of the potential impacts on productivity and food security that can result from nature recovery actions. For instance, wide field margins may reduce the parcel size available for production and reduce yield. For this reason, the Local Nature Recovery Strategy ambition for land management maintains a focus on economic and social priorities while also striving to see nature recovery coincide happily with farming practices.

Non-agricultural land use and management

There are many non-agricultural landowners in the county which are either currently employing, or presenting the opportunity for, management practices that support habitats and wildlife. Such landholdings in Kent and Medway include, but are not limited to:

- amenity green space, playparks and country parks
- charity-owned land such as Kent Wildlife Trust, RSPB, Plantlife, Woodland Trust, National Trust and English Heritage
- privately owned natural and historic sites, stately homes, historic and managed gardens, including Crown Estate
- golf courses, cricket fields, equestrian sites and other sports pitches
- churches and cemeteries
- allotments
- public estate, including councils, National Highways, Network Rail, Ministry of Defence, National Health Service sites and His Majesty's Prisons
- public and private schools, colleges, universities and other educational facilities
- parish and town councils
- ports
- water, power, gas and other infrastructure
- minerals and waste sites
- business parks, large retailers, developments, airfields and tourist attractions
- game shooting reserves/land (some of this can be found on farmland)

Land management and land-use priorities and potential measures

Land management and land use, when undertaken sensitively and in consideration of the habitat and wildlife that depends on it, poses a great opportunity to support the recovery of nature. The majority of these opportunities depend on landowners and managers delivering the Strategy's habitat-based potential measures.

In addition to these habitat-based measures, the Strategy promotes a number of overarching priorities and potential measures for land management and land use to be applied across the county.

Tractor by Jim Higham

Priority LM1 – Increase in the number of farms employing nature-friendly farming practices, sensitive land management and delivering targeted action for nature recovery, resulting in farmland across the county that is rich in wildlife.

Priority species requiring nature-friendly farming measures:

- Barn Owl
- Corn Bunting
- Linnet
- Yellow Wagtail
- Yellowhammer
- Brown Hare
- West European Hedgehog

Priority species associated with farmland, requiring additional bespoke measures

- Shrill Carder Bee
- Omphalapion beuthini (beetle)
- Brown Hairstreak Butterfly
- Brent Goose
- Lapwing
- Tree Sparrow
- Turtle Dove
- Adder
- Ground-pine

Wider measure LM1.1: New or extended farmer clusters in areas that could become of particular importance for biodiversity not already covered.

Land management and land-use principles for nature-friendly farming:

- Apply regenerative principles of land management, including limiting soil disturbance, maintaining soil cover, fostering agricultural diversity and rotations, keeping living roots in the soil, and integrating livestock and arable systems.
- Apply integrated pest management (the use of biological, physical and cultural tools to control pest species) to develop a more natural approach to pest control, reducing reliance on plant protection products and livestock medications.
- Restore, create, expand and maintain headlands, margins, infield strips and ponds.
- Manage buffers around arable fields for nature and other environmental benefits.
- Increase habitat complexity on farmland, with mosaic habitats and strategically considered field margins and hedgerows providing connectivity across the landscape. Utilise wider, higher, bigger hedges, smaller fields with grass margin buffers, and more scrub, cover crops, arable wildflowers, trees in hedgerows and worked fields, and ponds.
- Incorporate hedgerows into livestock management practices.
- Tackle insufficient livestock and graziers for conservation grazing by providing a 'dating service' between those who need livestock on their land and the graziers that might be available to move livestock into these areas.

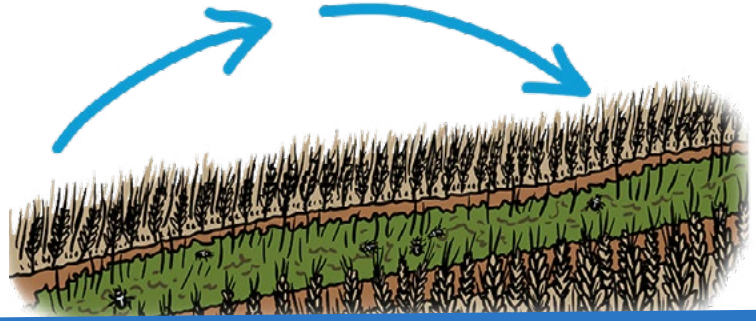
- Create wide environmental buffer margins within linear waterways (ditches, streams and rivers) to reduce runoff from agricultural land and nitrogen enrichment.
- Create successional areas and scrub, and nesting plots for Skylarks and other declining farmland birds.
- Intervene to provide year-round food supply for Skylarks and other declining farmland bird species.
- Provide for, and safeguard, nesting sites for Swallows in farm buildings.
- Ensure any measures taken are in keeping with the local landscape setting and character.

Supporting measures for nature-friendly farming:

- Use existing and new clusters, and other means, to connect farmers with those already employing nature-friendly farming.
- Develop a conservation grazing support programme/network to support measures requiring this intervention, to provide matching services, training and information and links to peers and the supply chain.

Data, evidence and mapping needs for nature-friendly farming:

- Identify farmland that is strategically important for linking natural habitats.



Priority LM2 – Farmland responding to climate change-induced pressures with the help of nature.

Wider measure LM2.1: Use of nature-based solutions to improve climate resilience of farmland

Land management and land-use principles for nature-based solutions for climate resilience in farming:

- Move towards planting more cover and catch crops to mitigate flooding and drought.
- Take the agroforestry approach and integrate more trees into the agricultural landscape.
- Move to more climate-resilient food crops, to reduce failure from growing crops in extreme weather conditions
- Use of trees, including planting, to provide shade for livestock.

Data, evidence and mapping needs for nature-based solutions for climate resilience in farming:

- Identify farmland at greatest risk of climate change impacts and likely to benefit the most from nature-based solutions.

Priority LM3 – Prevent agricultural diffuse pollution of freshwater habitats and groundwater bodies in farmland, as a result of soil, nutrient or livestock management practices and physical modifications.

Wider measure LM3.1: Increased water capture, rainwater harvesting, reservoirs, ponds, holding areas, leaky wood dams.

Land management and land-use principles for water quality management in farming:

- Design wet habitat creation which is also beneficial to wildlife.
- Adaptive and judicious grazing/better grazing practice to keep more soil carbon. More resilient grazing, livestock can stay out for longer, results in less slurry, less runoff/pollution.
- Create wide environmental buffer margins within linear water ways (ditches, streams, rivers) to reduce runoff from agricultural land and nitrogen enrichment.
- Reduce pressure from livestock access.
- Reduce livestock-stocking density along clay rivers.

Supporting measures for water-quality management in farming:

- Work with farmers and farmer clusters to address water on a whole-farm basis and in the context of their catchment, improving soil health to hold and purify water, reducing the need for fertiliser and pesticide through integrated pest management.

Data, evidence and mapping needs for water-quality management in farming:

- Identify rivers most sensitive to diffuse pollution and over-abstraction.

Grass snake by Jim Higham

Priority LM4 – Publicly accessible open spaces managed to deliver benefits for wildlife, as well as the people that use them.

Potential Measures

Potential measure LM4.1: Protection of habitats and species sensitive to disturbance by employing site management, and other measures, which support connection to, and experience of, wildlife but ensures our most sensitive sites remain undisturbed.

Land management and land-use principles for delivering wildlife benefits alongside publicly accessible open space:

- Adopt principle of the 'least restrictive' management approach in publicly accessible areas, to enable nature and access to coexist and thrive.
- Create sites which draw visitors and can withstand public access impacts to reduce the impact of visitors on vulnerable sites.
- Tailor management to sensitive habitats.
- Provide a greater complexity of habitats – flowering plants, brambles, nettles, log piles, beetle banks, scrub – and increase variety in urban planting schemes, to provide year-round shelter, forage and food for wildlife.
- Vary topography in landscaping, including scrubby areas, low-nutrient substrates and bare or low growing planting areas.
- Reduce use of pesticides and herbicides.
- Plant the right trees, in the right place and with appropriate management, to ensure their successful establishment.
- Use herbaceous and perennial plants and shrubs in parks and gardens which are bee and pollinator friendly and use planting around the base of trees.
- Implement grass cutting technique where arisings are collected and removed from the site ('cut and collect') to reduce nutrient loading and support wildflower establishment.
- Retain deciduous deadwood (standing, felled or fallen) where safe to do so.
- Ensure any measures taken are in keeping with the local landscape setting and character.
- Use restrictive buffers to prevent disturbance by the public and dogs in sensitive areas.
- Use interpretation/public information to increase understanding of wildlife features and wild management.

Data, evidence and mapping needs for delivering wildlife benefits alongside publicly accessible open space:

- Identify the sites most sensitive to public access impacts.
- Identify areas where new public access sites could be established to reduced pressures on more sensitive sites.

Grassland habitat priorities and potential measures

Ambition for grasslands in Kent and Medway – **Our existing grasslands are conserved, with appropriate management returned, to restore, connect and extend these habitats to deliver high-quality, species-rich areas across the county.**

An overview of the county's grassland habitat, pressures and threats, and the importance of, and opportunities for, recovering this habitat.

Almost a third of the county (29.7%) is covered by improved grasslands. These are agricultural grasslands used for pasture, as well as the grasslands of urban parks and gardens. Agriculturally improved grassland is highly productive, resulting from intensive management using fertilisers and/or herbicides. As a result of this improvement, the grasslands are species poor, lacking many of the finer grasses and flowering plants found in semi-natural swards.

By contrast, good quality semi-improved grassland is important for sustainable food production and biodiversity. Good examples are found in the High Weald National Landscape, which features lots of historic, small, irregularly shaped fields. Semi-improved grasslands within both a national and local context are becoming an increasingly pressured habitat. When managed as either meadows or permanent pasture, the soils are undisturbed compared to temporary grassland or arable.

Although, semi-improved grasslands do not have the range and number of grass and wildflower species associated with unimproved species-rich grassland, they still support significant, and sometimes rare, species and, under appropriate management, they hold considerable potential to return to species-rich grassland.

Unimproved species-rich grasslands are an extremely rare and threatened habitat, so it is imperative that the opportunities presented by semi-improved grasslands for nature recovery at both a site and a landscape scale are not lost.

Amenity grassland, such as many playing fields, urban parks and urban road verges, are also intensively managed and have a limited range of plant species. Although these areas are species poor, they do offer the opportunity to increase space for nature through the introduction of features that can increase the area's value to nature, and can be important as potential connectivity corridors where they are located between fragmented areas of species-rich habitat.

For many people, chalk grassland, sometimes known as lowland calcareous grassland, is what first comes to mind when thinking about grassland habitats within the county. Although this habitat covers just 0.5% of Kent, it represents 5% of the UK's chalk grassland resource and supports many rare species. Orchids and butterflies are particularly associated with this habitat. Chalk grassland has been the focus of nature conservation efforts in Kent for decades; however, retention of this restored habitat requires ongoing management to prevent scrub encroachment. Fragmentation also needs addressing and there are still other areas in need of restoration and enhancement.

Species-rich lowland meadow is an even rarer habitat. The 2012 Kent Habitat Survey recorded 28,531ha of neutral grassland, representing the largest of the grassland broad habitat types across the county. However, just 27.7ha, less than 0.1%, of this was recorded as lowland meadow. This small fraction of high-quality grassland is a reflection of how lowland meadows have been lost through agricultural improvement and the abandonment of traditional hay meadow management. These small, flower-rich fields support a plethora of wildflowers and insects, many of which are rare and threatened. It is therefore important that we look to restore this lost habitat resource across the county by returning to more traditional and land-sensitive management practices. This can begin by first focusing on field margins and encouraging arable wild plants.

A very different grassland habitat, particularly typical of the North Kent coast, is coastal and floodplain grazing marsh, which is often found adjacent to saltmarsh and mudflats but separated hydrologically by coastal infrastructure. Coastal and floodplain grazing marsh is the county's greatest area of UK BAP habitat, covering 3.6% of the area. This habitat is vital for wading birds such as Lapwing and Redshank that nest in the tussocks of the grassland, as well as for large wintering populations of wildfowl and waders. Pressures include a lack of sufficient grazing animals, but also climate breakdown resulting in droughts – it is an ongoing battle for landowners and managers of these habitats to keep water on the land during spring and summer. Recreational disturbance is an additional pressure, particularly for birds.

The geology of Kent means that acid grassland and heathland are rare habitats (just 512ha and 71.5ha respectively), but important patches can be found. Recreational disturbance and vandalism, including fire, are an issue for more urban sites.

Linnet by Jim Higham

Nature-based solution opportunities from grassland habitat

Grassland provides a fantastic variety of nature-based solution opportunities. Increased grassland areas, particularly alongside road verges and in arable fields, provide vital refuges and foraging areas for pollinators. By reconnecting landscapes with native, pollinator-beneficial flowering plants and grasses, we can increase the diversity of our pollinating insects and therefore support crop production which relies on pollinators for success.

Different types of grassland store a different amount of carbon in their structures. Neutral grassland has been proven to store more carbon (100.5 tonnes CO2/ha) in the top 30cm of soil than acid grassland (63.6 tonnes CO2/ha) and chalk (92.01 tonnes CO2/ha). Grassland recovery, particularly good-quality and well-managed neutral grassland restoration, could contribute to carbon storage, therefore reducing the amount of carbon dioxide entering the atmosphere.

Well-managed grasslands in good condition can help combat some of the issues impacting water quality, while also providing other benefits such as water retention and slowing the rate at which rainfall reaches our watercourses. Buffer strips next to to watercourses can act as a safeguard, preventing pollutant runoff from adjacent fields.

Furthermore, species-rich and well-managed grasslands lead to improved soil quality, which helps with flood mitigation. Stronger soils improve water infiltration capability, so with more sustainable agricultural methods and rewilding of grasslands, we could reduce the risk of flooding and create a more climate-resilient landscape.

On the coast, grazing marsh is an incredibly important habitat for climate resilience. Coastal grazing marsh not only sequesters carbon in its unimproved soil structure, but it also has the capacity to hold fresh water as a floodplain, ensuring a year-round water supply as well as being a vital habitat for a range of species. It also provides a natural coastal defence, dissipating wave energy.

The balance of grazing animals used as a more organic way of managing grassland is important to achieve a productive and biodiverse landscape.

Wider benefits of healthy and functioning grassland habitat

Grasslands are often the sort of open environments with the nature and views that most appeal to people for walking – so the mental and physical health benefits are considerable when these areas are accessible.

When located close to urban populations and with access, grassland provides a crucial health role, particularly for deprived communities where health issues may be prevalent. Often there are psychological barriers to overcome for people to feel safe and welcome in these environments.

Priority GL1 – Chalk grasslands are safeguarded from land-use changes and other threats and restored to a better, species-rich condition. They are connected and buffered across the landscape to promote ecological integrity and resilience, particularly for the purpose of facilitating species movement in response to climate change.

Potential Measures

Potential measure GL1.1: Maintain and enhance core, high-quality and good condition chalk grassland sites through the application of conservation management sensitive to the existing and potential flora and fauna of the site.

Potential measure GL1.2: Increase the extent of high-quality, connected chalk grassland by bringing appropriate sites, adjacent to core/good condition sites, into conservation management.

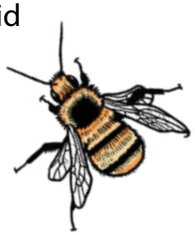
Potential measure GL1.3: Increase functional links between chalk grassland and other habitats to maximise nature-based solutions offered by improved connectivity.

Priority species requiring chalk grassland potential measures:

- Brown Hare

Priority species associated with chalk grassland, requiring additional bespoke measures:

- Maidstone Mining Bee
- Moss Carder Bee
- Shrill Carder Bee
- Omphalapion beuthini (beetle)
- Adonis Blue Butterfly
- Chalk Hill Blue Butterfly
- Dark Green Fritillary Butterfly
- Dingy Skipper Butterfly
- Duke of Burgundy Butterfly
- Grizzled Skipper Butterfly
- Silver-spotted Skipper Butterfly
- Small Blue Butterfly
- Wall Butterfly
- Porpolomopsis calyptriformis (fungi)
- Rufous Grasshopper
- Wart-biter Bush Cricket
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat
- Barred Tooth-striped Moth
- Black-veined Moth
- Forester Moth
- Liquorice Piercer Moth
- Milkwort Beauty Moth
- Scabious Leaf-miner Moth
- Straw Belle Moth
- Sussex Emerald Moth
- Adder
- Bedstraw Broomrape
- Dwarf Milkwort
- Green-winged Orchid
- Ground-pine
- Juniper
- Lady Orchid
- Lizard Orchid
- Musk Orchid



Land management and land-use principles for chalk grassland:

- Extend and increase chalk grassland flora, to be delivered in first instance by allowing natural regeneration and colonisation. Where not possible, green hay should be the preferred next option. Local provenance seed or other plant material should only be used when other techniques are not practically possible.

Data, evidence and mapping needs for chalk grassland:

- Develop an improved evidence base of the county's core species-rich chalk grassland sites.

Priority GL2 – Existing coastal and floodplain grazing marsh restored to better condition and retaining more freshwater, with sensitive areas, and the breeding waders they support, protected from land management and recreational disturbance. Opportunities taken to create and extend areas of this habitat and increase its climate resilience.

Potential Measures

Potential measure GL2.1: Increase opportunities to store winter water on land adjacent to grazing marsh to increase opportunities for 'wetting' during spring/summer.

Potential measure GL2.2: Deliver grazing marsh habitat restoration, extension and creation where it will offer the greatest gains to support the county's important grazing marsh flora and fauna and is designed to minimise recreational disturbance and reduce risk from predation.

Potential measure GL2.3: Reconnect rivers with their former natural floodplain and improve the water storage ability of floodplain in order to protect against climate change impacts and drought.

Priority species requiring coastal and floodplain grazing marsh potential measures:

- Barn Owl
- Corn Bunting
- Marsh Harrier
- Oystercatcher
- Pochard
- Shoveler
- Yellow Wagtail
- European Eel
- Brown Hare
- European Water Vole
- West European Hedgehog

Priority species associated with coastal and floodplain grazing marsh, requiring additional bespoke measures:

- Moss Carder Bee
- Shrill Carder Bee
- Kentish Clown Beetle
- Ophonus puncticollis (beetle)
- Pride of Kent Rove Beetle
- Haliplus variegatus (beetle)
- Brent Goose
- Lapwing
- Redshank
- Rufous Grasshopper
- Noctule Bat
- Fisher's Estuarine Moth
- Marsh Mallow Moth
- Borrer's Saltmarsh-grass
- Slender Hare's-ear
- Least Lettuce
- Greater Water-parsnip

Data, evidence and mapping needs for coastal and floodplain grazing marsh:

- Identify priority areas for the reconnection of rivers with their former natural floodplain.
- Identify priority areas for the improvement of floodplain water storage ability.
- Identify potential areas where the creation of new grazing marsh can be prioritised for sites which are likely to be most sustainable in the long term. Criteria for areas to include above predicted sea-level impacts, adequate freshwater supply and minimal (or manageable) recreational disturbance.

Priority GL3 : Existing species-rich lowland meadow is safeguarded from loss, restored to better condition and extended through sensitive land management practices to reduce soil nutrient levels. Through the extension of lowland meadow, this habitat is better connected, reducing the risk of isolated meadow species and declines in species richness.

Potential Measures

Potential measure GL3.1: Maintain and enhance core, high-quality and good condition lowland meadow sites through the application of grazing/cutting regimes sensitive to the existing and potential flora and fauna of the site.

Potential measure GL3.2: Increase the extent of high-quality, connected lowland meadow by creating new lowlandmeadow sites, in close proximity to core/good condition sites.

Priority species requiring lowland meadow potential measures:

- Barn Owl
- Brown Hare
- West European Hedgehog

Priority species associated with lowland meadow, requiring additional bespoke measures:

- Common Toad
- Great-crested newt
- Moss Carder Bee
- Shrill Carder Bee
- Dark Green Fritillary Butterfly
- Dingy Skipper Butterfly
- Grizzled Skipper Butterfly
- Wall Butterfly
- Adder
- Porpolomopsis calyptriformis (fungi)
- Rufous Grasshopper
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat
- Green-winged Orchid

Wider measure GL3.3: Increase connectivity of, and provision for wildlife in, lowland meadows by leaving field margins uncut, having varied sward heights, hedgerows well-connected and integrating some bare patches or banks within the grassland site.

Wider measure GL3.4: Establish neutral grasslands on floodplains, to create resilience to flooding and drought and protect water quality.

Land management and land-use principles for lowland meadow:

- The extension and increase of lowland meadow flora to be delivered in the first instance by allowing natural regeneration and colonisation. Where not possible, green hay should be the preferred next option. Local provenance seed or other plant material should only be used when other techniques are not practically possible.

Data, evidence and mapping needs for lowland meadow:

- Develop an improved evidence base of the county's core species-rich lowland meadow sites.

Priority GL4 – Retain, restore and extend the county's acid grassland and heathland habitat mosaics, to improve the species diversity that these habitats, with limited extent in Kent and Medway, support.

Potential Measures

Potential measure GL4.1: Implement appropriately designed acid grassland management that prevents succession into secondary woodland and scrub encroachment. Management ensures that acid grassland is maintained and retained but not at the expense of the mosaic's heathland resource. The grazing regime provides maximum diversity and a combination of larger open areas and smaller mosaic glades to provide habitat for breeding birds, reptiles and invertebrates. Climate resilience is built into management.

Potential measure GL4.2: Create new acid grassland sites from improved grassland and former arable sites.

Priority species requiring acid grassland and heathland potential measures:

- Grasshopper Warbler
- Linnet
- Yellowhammer

Priority species associated with acid grassland and heathland, requiring additional bespoke measures:

- Common Toad
- Four-banded Weevil-wasp
- Moss Carder Bee
- Anthicus bimaculatus (beetle)
- Nightjar
- Porpolomopsis calyptriformis (fungi)
- Forester Moth
- Adder
- Heath Dog-violet

Land management and land-use principles for acid grassland and heathland:

- Control/remove early successional species and invasive overabundant or non-native species.
- Where sites were originally wood pasture but have succeeded to secondary woodland, return to wood pasture habitat.
- Avoid nutrient enrichment by protecting sites from agricultural and road runoff.

Data, evidence and mapping needs:

- Develop an improved evidence base of the county's core lowland heathland and acid grassland sites.
- Identify and map lowland heathland and acid grassland areas that have been neglected (and other potential areas), for connectivity and restoration.

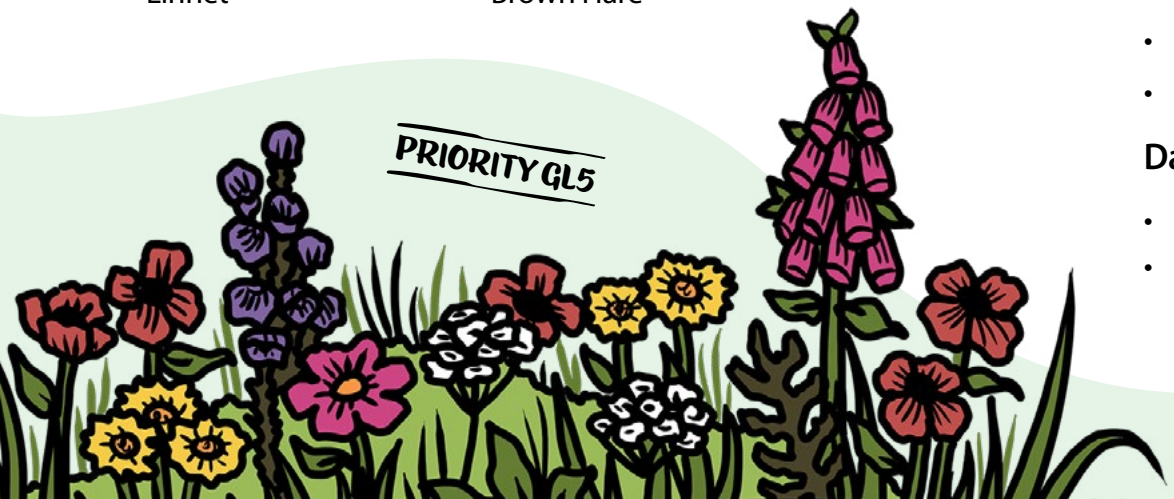
Priority GL5 – Safeguard, restore and increase fields with a diversity and abundance of arable wild plants.

Potential Measures

Potential measure GL5.3: Design and deliver location and soil-appropriate projects, targeted in the richest arable plant areas and on a variety of soil types, to create large new areas dedicated to the promotion of arable wild plant diversity and abundance.

Priority species requiring arable field margin potential measures:

- Barn Owl
- Corn Bunting
- Linnet
- Yellowhammer
- Yellow Wagtail
- Brown Hare
- West European Hedgehog



Priority species associated with arable field margin, requiring additional bespoke measures:

- Common Toad
- Great-crested Newt
- Moss Carder Bee
- Shrill Carder Bee
- Omphalapion beuthini (beetle)
- Brent Goose
- Lapwing
- Marsh Harrier
- Tree Sparrow
- Turtle Dove
- Serotine Bat
- Adder
- Ground pine

Wider measure GL5.1: Management of field margins to provide graduated field edges, with wider and cultivated margins.

Wider measure GL5.2: Management of fields, with mixed times of cultivation to encourage a diversity of arable wild plants.

Land management and land-use principles for arable wild plants:

- Integrate grazing livestock into conservation arable farming, including grazing of overwinter cover crops.
- Remove chemicals.
- Employ mixed timings for cultivating areas.

Data, evidence and mapping needs:

- Develop an improved evidence base of sites of arable wild plants.
- Map and identify priority species of arable wildflowers specific to soil types in Kent.

Successional habitat priorities and potential measures

Ambition for successional habitat in Kent and Medway – **The structural diversity of open mosaic habitat found on previously developed land (brownfield) and low-level scrub is safeguarded from loss and damage, for the benefit of species that rely on early successional habitats.**

An overview of the county's successional habitat, pressures and threats, and the importance of, and opportunities for, recovering this habitat

Successional habitats are dynamic and change over time. An example of successional habitat is scrub, which is vital for nightingales and reptiles, but only at a certain height and structure, after which the value for particular species declines as scrub transitions to woodland.

Open mosaic habitats found on previously developed land (also known as brownfield) often supports an extremely rich diversity of wildflowers and animals, including nationally scarce invertebrates. Often these areas are low in nutrients, which suits these species, but can also mean that scrub stabilises as a permanent rather than transitional habitat.

Often these valuable areas for wildlife are underappreciated or unprotected and can be at risk from development. A crucial basis to any action is increasing awareness of the importance of these sites and the need for their retention and management, to protect the important features that support some of our rarest and most threatened species.

Nature-based solution opportunities from successional habitat

Successional and mosaic habitats provide more resilience to climate change. The more varied the habitats and species, the less the shock to the ecosystem in terms of changes of temperatures, extreme weather and new diseases. Allowing these habitats to naturally regenerate rather than forcibly 'improving' them will allow habitats to adapt to our changing environment.

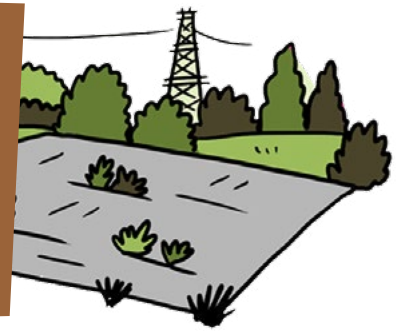
Wider benefits of healthy and functioning successional habitat

This habitat is often close to, or among, urban populations, so there are the benefits of health and connection with nature related to maintaining and managing these areas.

This could range from the experiences they provide (if accessible) to opportunities for community and volunteer groups to be involved in the management of these areas through activities such as scrub management.

When located close to urban populations and, with access, successional habitats provide a crucial health role, particularly for deprived communities where health issues may be prevalent. Often there are psychological barriers to overcome for people to feel safe and welcome in these environments.

Priority SH1 – Safeguard from loss and damage, open mosaic habitats found on previously developed land (brownfield), that support priority species which rely on early successional habitats.



Potential Measures

Potential measure SH1.1: Appropriate management plans in place for key open mosaic habitat on previously developed land (brownfield) sites, with measures that support the succession of habitats to occur naturally, increase edge habitat, create a graded profile of mixed habitat and provide features that support the species of interest most strongly tied to open mosaic habitats and, in particular, any species that the particular site in question is notable for.

Priority species requiring open mosaic habitats found on previously developed land (brownfield) potential measures:

- Barn Owl
- Brown Hare
- Hazel Dormouse
- West European Hedgehog

Priority species associated with open mosaic habitats found on previously developed land (brownfield), requiring additional bespoke measures:

- Common Toad
- Moss Carder Bee
- Shrill Carder Bee
- Anthicus bimaculatus (beetle)
- House Martin
- Swift
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat
- Distinguished Jumping Spider
- Lizard Orchid

Land management and land-use principles for open mosaic habitats found on previously developed land (brownfield):

- Design the enlargement and connectivity of open mosaic (brownfield) habitats to the wider landscape by considering how important species associated with the site make use of adjacent land.
- Maintain open areas through vegetative management.
- Preserve and create water features.
- Prevent recreational disturbance.
- Deliver safeguarding through setting aside land and/or putting in place active management that prevents loss of, or damage to, the habitat.

Supporting measures for open mosaic habitats found on previously developed land (brownfield):

- Increase awareness and understanding of the importance of successional habitats and the worth and vulnerability of open mosaic (brownfield) habitats found on previously developed land.
- Plan land use to support the safeguarding of the county's best and most significant open mosaic (brownfield) habitats by setting aside land and/or restricting and managing land use to prevent loss and damage.

Data, evidence and mapping needs for open mosaic habitats found on previously developed land (brownfield):

- Survey the county's open mosaic (brownfield) habitats on previously developed land/brownfield sites to identify the county's best and most significant sites.
- Review abandoned railways as potential long corridors of open mosaic (brownfield) habitat.

Priority SH2 – Increase the extent of low-level, scrub/successional habitat, providing a mix of young and mature scrub with structural diversity, that supports a wide range of species. Link this scrub habitat with hedgerows, woodland and other habitats to support wildlife corridors.

Potential Measures

Potential measure SH2.1: Selective conservation grazing of areas within the scrub to create open areas and allow for natural regeneration.

Potential measure SH2.2: Maintain and integrate areas of scrub within arable land, woodlands, grasslands, wetlands and urban habitats to encourage successional habitats and provide wildlife corridors.

Potential measure SH2.3: Put in place active scrub management that provides a mix of young and mature scrub, bare ground and links with surrounding habitat.

Priority species requiring scrub/successional habitat potential measures:

- Grasshopper Warbler
- Linnet
- Yellowhammer
- Hazel Dormouse
- West European Hedgehog

Priority species associated with scrub/successional habitat, requiring additional bespoke measures:

- Moss Carder Bee
- Oak Mining Bee
- Shrill Carder Bee
- Nightingale
- Turtle Dove
- Brown Hairstreak Butterfly
- White-letter Hairstreak Butterfly
- Liquorice Piercer Moth
- Adder

Land management and land-use principle for scrub/successional habitat:

- Cut and remove when encroaching on other habitats.
- Preserve and create water features alongside scrub and foraging areas and ensure they are in close proximity.

Supporting measures for scrub/successional habitat:

- Increase awareness and understanding of the importance of scrub habitats.

Woodland, trees and hedgerows priorities and potential measures

Ambition for woodland, trees and hedgerows in Kent and Medway **– Kent and Medway's native woodland, trees and hedgerows are safeguarded from loss and under appropriate and active management, delivering robust ground flora and soil structures. A mixture of natural regeneration and new establishment improves connectivity and provides an even greater contribution to climate change mitigation and resilience.**

An overview of the county's woodland, trees and hedgerows, pressures and threats, and the importance of, and opportunities for, recovering this habitat

A recent tree canopy assessment (July 2023) calculated the county had 64,751ha of tree cover, with an average tree canopy cover of 17% and an average urban tree cover also of 17%. In terms of distribution across the county, West Kent districts have a far greater canopy cover (28–30%) than those in East Kent (4–9%). Areas such as Thanet and Romney Marsh have a particularly low canopy cover.

Our two National Landscapes are heavily wooded. The High Weald has the most wooded landscape in the country, with 28% woodland cover, and is particularly important for gill woodland, a rare habitat that is scarce elsewhere in the south-east of England. The Kent Downs has 23% cover, with the majority of this, 70%, being irreplaceable ancient woodland.

Kent has 11% of England's ancient semi-natural woodland, with more ancient woodland than any other county in the UK. Ancient semi-natural woods have developed naturally. Most have been used by humans – often managed for timber and other industries over the centuries – but the woodland cover has persisted for over 400 years. Ancient woods are our richest and most complex land habitat in the UK, and they are home to more threatened species than any other. It is the complex biodiversity which has accumulated over hundreds of years that classes these as irreplaceable.

Trees by Jim Higham

Plantations on ancient woodland sites are ancient woods that have been felled and replanted with non-native species. Although damaged, they still have the complex soil of ancient woodland and are considered to contain remnants of the woodland specialist species which occurred before, offering restoration opportunities.

Broadleaved, mixed and yew woodland is the county's largest semi-natural habitat, covering 44,490ha and 11% of Kent – over half of this can be found in the Kent Downs and High Weald National Landscapes.

The county also has areas of wet woodlands – the 2012 figure of 662.2ha was considered an underestimation because of survey difficulties. Wet woodland supports a range of uncommon species, with ground flora that require wet or humid conditions, such as mosses, liverworts, ferns and sedges. Dead wood within the woodland sites can be frequent, and its association with water provides specialist habitats not found in dry woodland.

In Kent, coniferous woodland is mostly plantation woodland, with non-native species grown for timber production – this covers just 0.9% of the county.

The county also has wood pasture and parkland, a mosaic of habitats comprising trees and scrub in grassland, where the trees are most often ancient or veteran. This habitat is not just important in terms of its natural heritage but also for the landscape history associated with its creation.

Trees in hedgerows and outside woodland are an important part of the picture for trees in the county, and hedgerows are recognised as a key habitat for many species, which can also help connect fragmented areas of woodland.

A history of fruit production has also left us with another habitat important for wildlife – traditional orchards. However, many of these orchards have been lost in the past half century and are now seen as unprofitable compared to commercial orchards, so the 1,676ha of traditional orchards recorded in 2012 by the Kent Habitat Survey is now likely further reduced.

Our woodlands are home to a vast array of wildlife, including some nationally threatened woodland species. The county is one of a small handful of locations where the woodland butterfly, Heath Fritillary, is found and the increasingly rare and now threatened Duke of Burgundy. Our woodlands are also important for some rare moths and spiders, including the Heart Moth and Money Spider, with Blean Woods being the only site in Britain where the latter is found. Kent is also a stronghold for the Hazel Dormouse, and our ancient broadleaved woodlands are hugely important for bats, with Kent's woodlands being home to one of the UK's rarest mammals, the Bechstein's Bat.

Most woodland requires some form of management, but many remain without. Traditional practices, such as coppicing, are considered unprofitable and the practice is declining, to the detriment of wildlife.

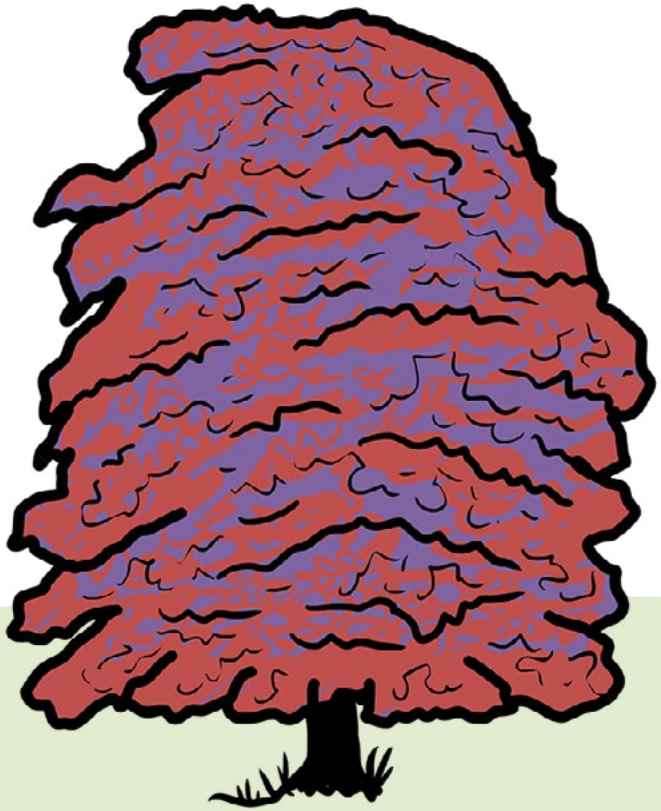
Wood lotting (the dividing up of woodland for sale) has been a particular problem for the county, resulting in habitat fragmentation, inconsistent management and sometimes inappropriate use. Close linear planting is not good for wildlife, creating woodland with little understory for flowers and butterflies and no deadwood for invertebrates.

Deer are problematic for woodland habitats and are increasing in number across Kent. Their damaging activities include bark stripping and eating saplings in woodlands, preventing natural regeneration. They also destroy newly planted saplings, whips and feathers, so that costly and wasteful tree guards are required. Grey squirrels also pose a problem for our woodland. Not only has their presence resulted in the loss of the UK's only native squirrel species, the red squirrel, across the country, but they can also affect the composition of native woodland by bark stripping and eating the seeds of certain trees.

Given its proximity to the continent, Kent is particularly vulnerable to invasive species and disease. Ash dieback, caused by a fungus which originated in Asia, is a prime example of how the county is often among the first to be impacted by new pests and diseases, with this disease having had a massive impact on ash trees in the county in recent years.

Climate change is another pressure on our trees and woodland, particularly for wet woodland, a rare and unique habitat that is found in various sites across the country, but is now suffering the impacts of drought.

In recognition of the importance of woodland, trees and hedgerows not to only biodiversity but also to the services they provide, the county adopted a target of extending tree cover by 1.5 million new trees and increasing the county's average canopy cover to 19%. Kent Plan Tree also aims to improve existing woodland and trees' health, safeguarding them from degradation and loss. Underpinning woodland, tree and hedgerow expansion and creation in the county is the principle of 'right tree, in the right place, for the right reason, with the right management and right monitoring'.



Nature-based solution opportunities from woodland, trees and hedgerows

Increasing tree canopy cover in Kent would bring a variety of benefits. Woodland, trees and hedgerows are natural solutions to storing carbon, cleaning air, absorbing surface water and regulating temperatures in urban settings.

Woodlands are important for carbon storage, with broadleaf and mixed woodland sequestering the most carbon in their trunks, roots and leaves. Well-managed, biodiverse woodlands provide an opportunity to deliver many other benefits alongside a nature-based solution to carbon sequestration.

Efforts to improve air quality through nature-based solutions could target the 43 Air Quality Management Areas throughout the county and specific roads with high emissions, by establishing roadside woodland and hedgerows.

Woodland, trees and hedgerows give structure to soil, and having these on higher land helps to absorb water and slow the flow of any runoff, preventing flooding downstream. Deep-rooted trees allow for more stable soil with improved structure and quality, thus improving water retention and the climate resilience of the trees.

Wet woodland can play an important role in flood risk management if managed for this purpose, using a technique called slowing the flow – using cut timber to hold water across the woodland floor. Using this nature-based solution presents an opportunity to extend this rare habitat.

In urban areas, trees provide a regulatory function, cleansing and cooling the air, but they also provide shelter and shade. In agriculture, the establishment of the trees can also offer shade for livestock.

Wider benefits of healthy and functioning woodland, trees and hedgerows

In an urban setting, trees provide mental health benefits through the opportunity to connect with nature. They also provide physical health benefits by regulating the temperature and air quality.

When located close to urban populations and accessible to people, woodland provides a crucial health role, particularly for deprived communities where health issues may be prevalent. People need to feel safe and welcome, however, and often there are psychological barriers to overcome.

Priority WTH1 – Retain the extent and improve the condition of existing woodland and trees outside woodland through active management, improving habitat provision for woodland species.

Potential Measures

Potential measure WTH1.2: Restore and extend lowland and upland wood pasture and parkland.

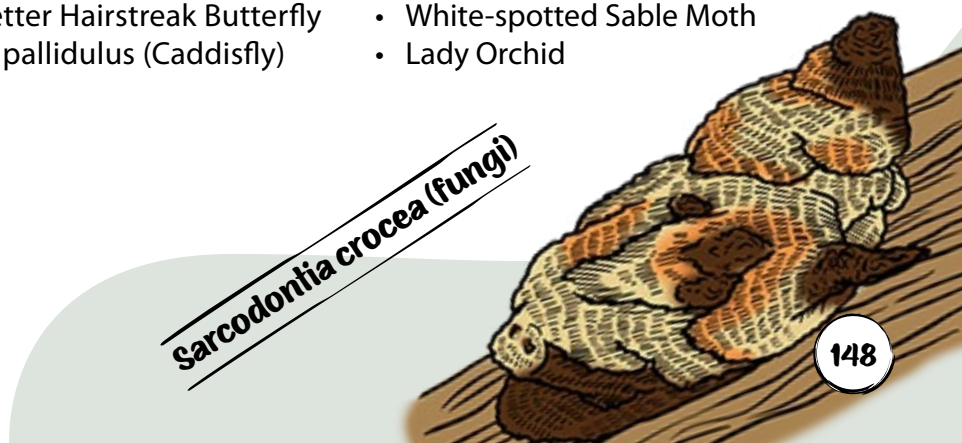
Potential measure WTH1.3: Safeguard and enhance small pockets of woodland to provide key stepping stones for species movement and connect with hedgerows and scrub.

Priority species requiring woodland and trees potential measures:

- Barn Owl
- Lesser Spotted Woodpecker
- Marsh Tit
- Hazel Dormouse

Priority species associated with woodland and trees, requiring additional bespoke measures:

- Fringe-horned Mason Bee
- Oak Mining Bee
- Shining Guest Ant
- Click Beetle
- Noble Chafer Beetle
- Phoenix Clown Beetle
- Pseudeuparius sepicola (beetle)
- Red-horned Cardinal Click Beetle
- Southern Oyster Mushroom Beetle
- Nightingale
- Nightjar
- Duke of Burgundy Butterfly
- Grizzled Skipper Butterfly
- Heath Fritillary Butterfly
- White Admiral Butterfly
- White-letter Hairstreak Butterfly
- Tinodes pallidulus (Caddisfly)
- Brilliant Emerald Dragonfly
- Cortinarius osmophorus (fungi)
- Cortinarius violaceus (fungi)
- Sarcodontia crocea (fungi)
- Enterographa elaborata (lichen)
- Bechstein's Bat
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat
- Boring Millipede
- Aspen Knot-horn Moth
- Daisy Case-bearer Moth
- Drab Looper Moth
- Forester Moth
- Scarce Goldenrod Plume Moth
- White-spotted Sable Moth
- Lady Orchid



Wider measure WTH1.1: Holistic management of woodlands and transitional open spaces to:

- sensitively consider the understory, ground flora and soil
- allow a variety of successional states and variety of species, developing to mature, providing different canopy layers
- manage internal edge, including creation of glades and rides
- preserve natural decay stages of woodland, including old growth, dead and dead standing wood
- (where appropriate) reinstate and increase coppicing as a management measure
- deliver targeted management in order to provide habitats for vulnerable woodland species

Land management and land-use principles for woodland and trees active management:

- Manage and/or remove invasive and inappropriate non-native species, in accordance with the latest guidance and statutory requirements.
- Do not convert natural and semi-natural woodlands into intensive woodland plantations or monocultures.
- Remove diseased trees and tree species targeted in disease control efforts.
- Control damaging Deer and Grey Squirrel populations on a landscape scale.
- Deliver safeguarding by setting aside land and/or putting in place active management that prevents loss of, or damage to, the habitat.

Data, evidence and mapping needs for woodland and trees:

- Identify woodlands in need of improved management.

Sleeping Barn Owl by Jim Higham

Priority WTH2 – Increase the average canopy cover of Kent through woodland and trees outside woodland.

Potential Measures

Potential measure WTH2.1: Extend existing woodland through natural colonisation and planting.

Potential measure WTH2.2: Convert unproductive land for arable into woodland.

Potential measure WTH2.5: Plant more urban trees and create urban forests and orchards, ideally siting tree planting to where they will provide flood management, air quality and temperature regulation benefits.

See Priority WTH1 for relevant priority species.

Wider measure WTH2.3: Plant more trees in hedgerows.

Wider measure WTH2.4: Use tree and hedgerow establishment and scrub to increase connectivity, provide wildlife corridors and address fragmented areas of woodland.

Land management and land-use principles for increasing canopy cover:

- For all tree establishment, follow the Kent Plan Tree principles of the right tree, in the right place, for the right reason, with the right management and right monitoring.
- Any action to increase canopy cover should consider existing habitats to ensure there is no detrimental impact to other high-value habitats, and to maintain appropriate soil types, a diversity of species and landscape character.
- Retain, replace and plant more highway trees.
- Create woodland to be species rich, using resilient species.
- Ensure active and long-term aftercare and monitoring so that planting sites survive.
- Integrate more trees into worked landscapes, such as agroforestry and silvopasture.
- Increase trees and hedgerows on agricultural land, with the siting to also provide additional benefit of increased shade for livestock.

Supporting measures for increasing canopy cover:

- Increase the number of local tree nurseries.

Data, evidence and mapping needs for increasing canopy cover:

- Additional mapping to establish appropriate sites, and suitable trees, for woodland creation/expansion, to identify opportunities for nature-based solutions and to set tree targets at the local level.

Priority WTH3 – Return the ecological function provided by native trees previously prolific in Kent, by restoring those lost to disease, pests, climate change and drought.

Priority species requiring native tree restoration potential measures:

- Hazel Dormouse

Priority species associated with native tree restoration, requiring additional bespoke measures:

- Red-horned Cardinal Click Beetle
- White-letter Hairstreak Butterfly
- Enterographa elaborata (lichen)
- Bechstein's Bat
- Aspen Knot-horn Moth
- Southern Oyster Mushroom Beetle

Land management and land-use principles for native tree restoration:

- Replace trees as they are lost from woodlands and hedgerows with a diversity of resilient species, to be planted appropriately and with the context carefully considered. Species to include Aspen, Alder, Small-leaved Lime, Sessile Oak, Field Maple, Wild Cherry, Bird Cherry, Rowan, Buckthorn, Pedunculate Oak, Sycamore and Birch.
- Ensure the targeted and strategic establishment, and natural colonisation, of resilient tree species, with focus on Beech, Black Poplar, Hornbeam, Oak, Juniper, Disease-Resilient Ulmus cultivars (Elm), Ash, and Wild Service and county varieties such as Kentish Cob.
- Carefully procure tree stock, from local provenance where possible, while considering biosecurity measures. If trees are succumbing to disease, it might be prudent to source trees from elsewhere to increase the genetic diversity.
- Retain standing and lying dead wood.

Data, evidence and mapping needs for native tree restoration:

- Establish a better understanding of areas where restoration of lost trees should be targeted.

Priority WTH4 – Ensure the resilience of the county's woodlands.

Potential Measures

Potential measure WTH4.2: Where appropriate, promote the restoration of plantations on ancient woodland sites to a more species-rich woodland.

Potential measure WTH4.4: Establish green bridges to connect woodlands fragmented by road and rail.

See Priority WTH1 for relevant priority species.

Wider measure WTH4.1: Management that facilitates and enables the natural regeneration of woodlands, by reducing grazing pressures.

Wider measure WTH4.3: Increase connectivity of woodland habitats by creating semi-natural habitat buffers strips, which reduce the gaps between patches and extend woodland edge habitats.

Land management and land-use principles for woodland resilience:

- When establishing new woodlands, and extending existing woodlands, use a diversity of appropriate tree species to safeguard against pests and diseases, including species that will be more resilient to climate impacts.
- Remove invasive species.

Woodland by Jim Higham

Priority WTH5 – Ancient woodland, and ancient and veteran trees, are safeguarded from loss, with damaged areas restored through natural processes, management and the removal of invasive trees and plants. Areas of ancient woodland are buffered and better connected.

Potential Measures

Potential measure WTH5.3: Buffer solitary ancient and veteran trees with open space, with further protections offered by establishing neighbouring wood pasture and agroforestry of mixed habitats.

Potential measure WTH5.4: Connectivity of ancient woodland improved by links to hedgerows, establishing standard trees and increasing standing deadwood.

Priority species requiring ancient woodland and ancient and veteran trees potential measures:

- Marsh Tit
- Lesser Spotted Woodpecker
- Hazel Dormouse

Priority species associated with ancient woodland and ancient and veteran trees, requiring additional bespoke measures:

- Click Beetle
- Noble Chafer Beetle
- Southern Oyster Mushroom Beetle
- Weevil
- Cortinarius osmophorus (fungi)
- Cortinarius violaceus (fungi)
- Bechstein's Bat

PRIORITY WTH5

Wider measure WTH5.1: Appropriate and targeted management of ancient woodland, in order to retain and enhance specific features of ancient woodland and enhance biodiversity.

Wider measure WTH5.2: Establish adequate buffer zones around ancient woodland that provide sufficient and suitable protection to the root system and other sensitive ecological features that the ancient woodland supports. Buffers are linked to hedgerows and other appropriate habitats, to extend habitat connectivity.

Land management and land-use principles for ancient woodland and ancient and veteran trees:

- Ensure management includes (as appropriate) coppicing, deer and grey squirrel management, retention of deadwood, veteranisation, succession techniques and removal of tree species that are subject to disease control measures, are invasive or are of low ecological value.
- Employ veteranisation techniques (the deliberate damaging or wounding of trees) on mature trees to accelerate the development of features and their associated microhabitats that are typical of veteran trees.
- Buffer strips to be provided by scrub or grasslands, ditches or natural woodland regeneration. They should not include built elements (such as back gardens).

Data, evidence and mapping needs for ancient woodland and ancient and veteran trees:

- Carry out detailed mapping and identification of all veteran and ancient trees, through combined efforts between landowners, community, local authorities and land managers.
- Map out potential future veteran trees.

Autumn Leaves by Jim Higham

Priority WTH6 – Increase the extent of high-quality wet woodland in the county and improve connectivity with the freshwater habitat network.

Potential Measures

Potential measure WTH6.1: Establish and implement long-term management plans for wet woodland and surrounding land, which ensures connectivity between waterways and woodland and incorporates nature-based water management solutions, such as leaky dams, felling, and blocking drainage channels to allow for seasonal flooding.

Potential measure WTH6.2: Create ponds within woodlands and naturally regenerated riparian zones.

Priority species requiring wet woodland potential measures:

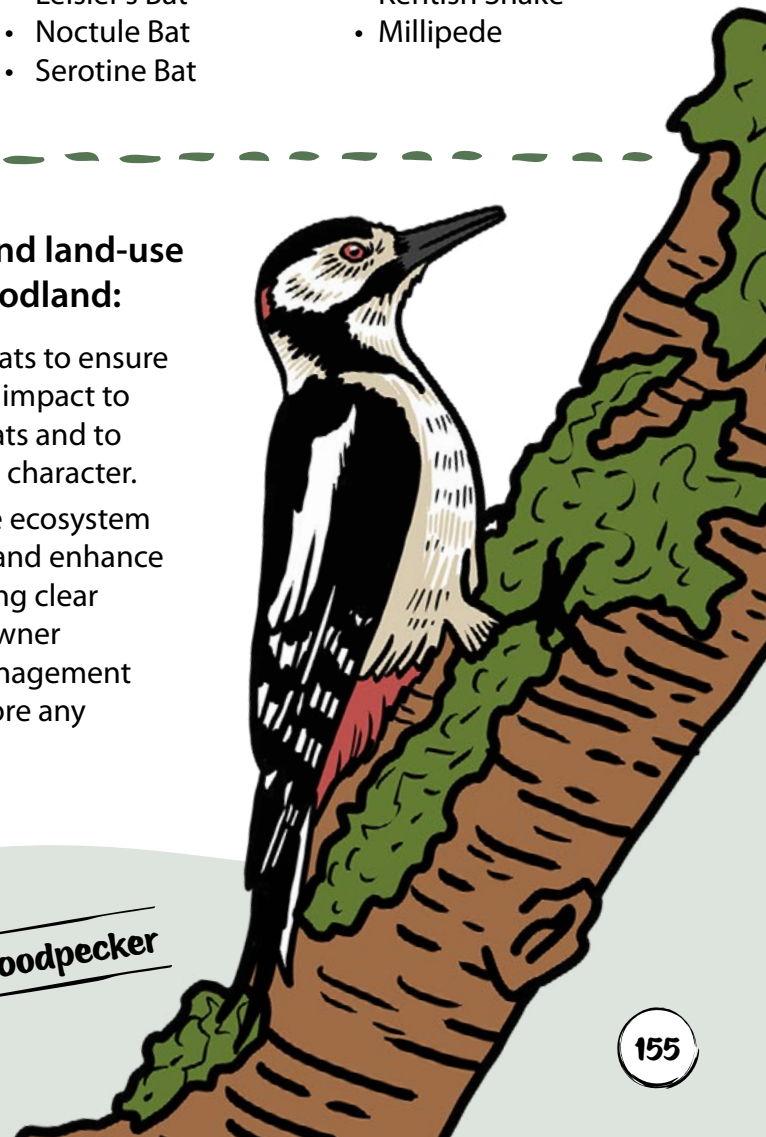
- Lesser Spotted Woodpecker

Priority species associated with wet woodland, requiring additional bespoke measures:

- Beaver
- Bechstein's Bat
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat
- Kentish Snake
- Millipede

Land management and land-use principles for wet woodland:

- Consider existing habitats to ensure there is no detrimental impact to other high-value habitats and to respect the landscape's character.
- Where appropriate, use ecosystem engineers to maintain and enhance wet woodlands, ensuring clear communication, landowner engagement and a management strategy is in place before any action commences.



Great Spotted Woodpecker

Comma butterfly by Jim Higham

Priority WTH7 – Retain and safeguard the High Weald's unique gill woodland, the plant species they support and the important functions they provide for the wider river catchment.

Potential Measures

Potential measure WTH7.1: Create buffer zones around the gill woodland to ensure they remain largely undisturbed.

Land management and land-use principles for gill woodland:

- Restore the natural function and geomorphology of gill streams that have been the subject of historical human interventions.
- Avoid management approaches that would harm the special character and species found in the woodland and its wetland features.
- Maintain the natural functioning and water quality of gill streams running through gill woodlands.
- Control invasive species that may impact gill woodlands.

Priority WTH8 – The extent of species-rich hedgerows throughout the county is increased, with lost hedgerows replaced, gaps filled and existing hedgerows managed to improve the quality as well as quantity. Hedgerows provide a coherent network of shelter, nesting and forage for wildlife across the landscape, allowing other habitats to be linked.

Priority species requiring hedgerow potential measures:

- Grasshopper Warbler
- Linnet
- Yellowhammer
- Hazel Dormouse
- West European Hedgehog

Priority species associated with hedgerows, requiring additional bespoke measures:

- Common Toad
- Great-crested newt
- Nightingale
- Tree Sparrow
- Turtle Dove
- Brown Hairstreak Butterfly
- White-letter Hairstreak Butterfly
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat
- Lappet Moth
- Adder

Wider measure WTH8.1: Actively manage the county's hedgerows, fill gaps and remove invasive species. Rejuvenate and restore hedgerows that have declined in structural condition. Increase the extent of hedge laying, coppicing and gapping up within this management.

Wider measure WTH8.2: Buffer hedgerows with grass margins, scrub and headlands.

Wider measure WTH8.3: Strategically site new and extended hedgerows to aid habitat connectivity and support species forage, shelter and movement. Restore links to copse and woodland.

Land management and land-use principles for hedgerows:

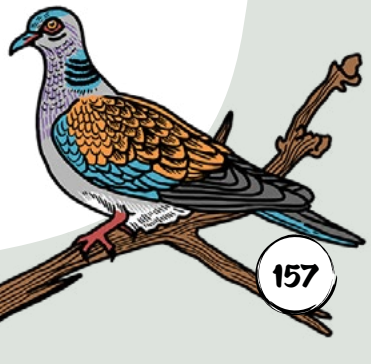
- Preserve and restore ancient hedgerows along ancient field patterns, in association with ditches and banks.
- Maintain a varied structure so there are some taller, denser areas and emergent trees, with tree root systems contributing to soil health, mycorrhiza and biophytes.

Supporting measures for hedgerows:

- Carry out 'hedgeucation' to support all aspects of planting, managing and restoring hedgerows, as well as explaining the funding available and the benefits of hedgerows.

Data, evidence and mapping needs for hedgerows:

- Map and survey existing hedgerows to determine their condition and quality, and to better target management.
- Map historic hedgerows to identify lost hedgerows and potential areas for establishing or re-establishing hedgerows.



Priority WTH9 – An increase in traditional orchards, under sensitive management, supporting an abundance and diversity of wildlife.

Potential Measures

Potential measure WTH9.1: Restore and bring established traditional orchards back into positive management, including maintaining long sward length, establishing wildflower meadow strips between trees, limited or no spraying, sensitive pruning and retaining dead wood/dying trees.

Potential measure WTH9.2: Establish new community orchards in appropriate areas, with a focus on urban locations.

Priority species requiring traditional orchard potential measures:

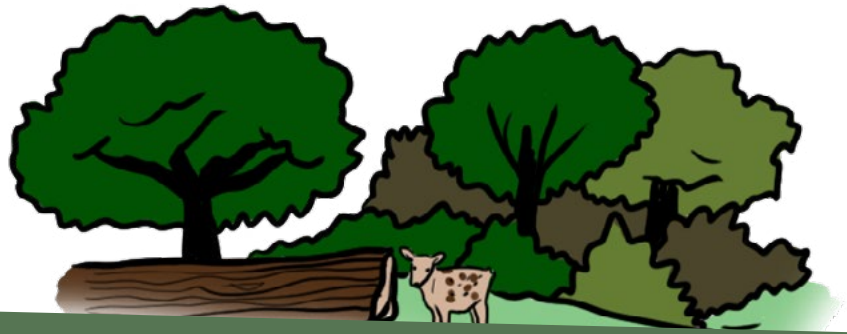
- Lesser Spotted Woodpecker
- Brown Hare
- West European Hedgehog

Priority species associated with traditional orchards, requiring additional bespoke measures:

- Common Toad
- Great-crested newt
- Noble Chafer Beetle
- Turtle Dove
- Sarcodontia crocea (fungi)
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat
- Adder

Data, evidence and mapping needs for traditional orchards:

- Identify areas for establishing new community orchards and re-establishing of traditional orchards.



Priority WTH10 – Appropriate and co-ordinated Deer management in woodland and connecting areas, on a landscape scale, to reduce their impacts and to support new planting and natural regeneration.

Land management and land-use principles for Deer management:

- Implement culling activity in priority control areas, to achieve and maintain populations at a level of acceptable impact on the natural landscape.
- Install fences and other physical barriers to prevent Deer damaging ecologically sensitive areas.
- Take a cross-landownership/landscape-scale approach to Deer control.
- Ensure any infrastructure installations to address habitat fragmentation (e.g. wildlife crossings) do not enable the unintended increased movement of Deer.

Data, evidence and mapping needs for Deer management:

- Improve understanding of Deer numbers and distribution in Kent via surveys and assessment of impact.
- Establish ongoing monitoring to develop a clear and up-to-date understanding of Deer populations, and establish priority areas for control.

Fallow Deer by Jim Higham

Freshwater habitat priorities and potential measures

Ambition for freshwater habitat in Kent and Medway
– Our freshwater habitats are clean, sufficient and stable, in a healthy and good ecological state that supports an abundance and diversity of species. Catchments' functions are restored to deliver a connected mosaic of wet habitats, improving water quality and managing flood risk across the county.

Chalk stream – a globally rare habitat in Kent

An overview of the county's freshwater habitat, pressures and threats, and the importance of, and opportunities for, recovering this habitat

The country's freshwater catchments are wide and varied, featuring rivers and streams and their associated floodplains, and a range of habitats from groundwater-fed chalk streams and reedbeds to fen and valley mires. These habitats are home to some specialist and iconic freshwater species, including Bullhead Fish, Kingfisher, Grey Wagtail and Water Vole.

The main freshwater rivers in Kent are the Medway, Stour and Darent. The River Medway is a major tidal river and forms an east-west divide in mid-Kent. The River Stour is the major watercourse in East Kent, and the River Darent is a chalk stream.

Chalk streams are a globally rare habitat; of only 200 in the world, approximately 85% of them are in England. Kent is particularly important due to its chalk geology, with chalk streams emerging from the North Downs and forming the source of the rivers Darent, Cray, Shuttle, Dour, Nailbourne and stretches of the Great Stour, Little Stour and North Stream. With such a small number of these freshwater environments and their rich aquatic ecology globally, Kent's chalk streams are both nationally and internationally significant.

Chalk streams are typically characterised by their stable flow conditions and temperature regimes, with low energy and low sediment inputs from groundwater spring sources. This results in clear, high-quality water and productive environments, rich in fine aquatic flora and a diversity of invertebrates and fish, including wild Brown Trout, White-clawed Crayfish and European Eel. Chalk streams are particularly vulnerable to over-abstraction, where excessive groundwater extraction for public supply or agriculture causes streams to run dry, and nutrient enrichment, especially from agricultural runoff and wastewater, which degrades water quality and aquatic habitats.

Other important rivers in Kent include those on clay geology, including the River Beult, the only riverine Site of Special Scientific Interest in Kent. When designated, the River Beult was described as one of the UK's most valuable lowland river ecosystems. Its designation reflects its importance as a habitat for a wide range of species, including nightingales and water voles and a wealth of dragonfly, aquatic plant, invertebrate and fish species. Its ecological balance is finely tuned and even small changes in water quality can have cascading effects on biodiversity. A combination of drainage of the surrounding wetlands, physical modifications of the river channel and pollution impacts from farmland, waste water and roads has resulted in the river being in unfavourable condition, despite its designation.

Reedbed, while not extensive, can be found across Kent, with 545ha in total. Fen is the county's rarest freshwater habitat, with just 12ha in the Strategy area.

Ponds are important still-water wildlife habitats that support a variety of wetland plants and animals, but many have been filled in to facilitate human land uses, or have been neglected over the decades and so are much less common now. There is 4,628ha of standing open water in Kent, covering 1.2% of the county. This includes natural systems of open water areas such as lakes, ponds and pools, as well as artificial water bodies such as ditches, canals, reservoirs, gravel pits and flooded mineral workings.

The pressures of water scarcity and water pollution are high in Kent. Multiple pressures increase the impact, including climate change, a growing population, aging and overburdened water and wastewater infrastructure, and greater water demand. Within the county, river channels and riparian areas, including floodplains, have been heavily modified to support human activities, water use and infrastructure.

Water quality in Kent and Medway is chronically impacted by nutrient pollution, particularly from nitrates and phosphates, which are key contributors to the failure of many water bodies in the region to achieve good ecological status. This is especially true in areas dominated by agriculture and wastewater discharge. The River Darent is the only river in Kent that does not receive discharges from major wastewater treatment works and is one of the few that currently meets environmental standards for nutrients. However, it is still affected by smaller, permitted discharges from private sources.

With increasing summer droughts, nutrient levels in rivers are expected to rise due to reduced dilution. Elevated nutrients can lead to eutrophication, which reduces biodiversity among aquatic plants, invertebrates and fish. In severe cases, algal blooms can deplete oxygen levels, causing extreme declines or die-offs. Untreated sewage discharges add further pressure, with toxic levels of ammonia posing acute risks to aquatic life. Drought also dries out natural riverbank habitats, leading to habitat loss for water voles and other species.

To safeguard water supplies in Kent, it is essential to allow chalk aquifers to recharge naturally and to retain water in freshwater habitats such as nature reserves and protected wetlands. Over-abstraction – taking too much water from underground – prevents aquifers from refilling properly. This leads to low river flows in summer and less dilution of pollutants, making water quality worse.

Source Protection Zones are areas around groundwater sources – like wells and boreholes – used for drinking water. They help to safeguard water quality by limiting nearby activities that could cause pollution, such as fuel storage or waste disposal. The Environment Agency uses Source Protection Zones to identify risks early and apply stricter controls closer to the source. In Kent, Source Protection Zones are commonly found over chalk aquifers in areas like Canterbury, Dover, Folkestone, Ashford and the Medway Valley – where groundwater is a key source of the public water supply. These zones often overlap with grassland habitats, which can help support water quality by using nature-based solutions. Because groundwater moves slowly, pollution is difficult to clean up once it occurs, so preventing it at the source is essential for safeguarding public health and the environment.

Because land in and around river catchments is managed by many different landowners, farmers and organisations, a more joined-up approach is needed to tackle water quantity and quality. The Catchment Based Approach brings together local communities, environmental groups and public bodies to improve rivers and wetlands at a landscape scale. Catchment Partnerships, working on a Catchment Based Approach, are active across all river catchments in Kent and Medway, working to reduce pollution and restore natural flows.

A wide range of actions is needed. These include changing land use, restoring natural river channels, planting reedbeds to filter pollution and removing barriers that block fish migration. These measures help build resilience to climate change and support biodiversity across Kent's water environments.

Nature-based solution opportunities from freshwater habitat

Nature-based solutions in freshwater habitats deliver multiple benefits, by addressing a range of different issues and requiring little maintenance or operational resources, making them efficient and cost effective.

Naturalising rivers and reinstating wetlands not only increases the quality and quantity of habitats available, but can also increase flood resilience, improve water quality, slow the flow of water and trap sediment and nutrients in the wetland vegetation, reducing the amount entering the river systems.

Restoring wetlands allows water to be held within the landscape and released slowly over time, increasing water storage capacity that can reduce peak flows and downstream flooding, and maintain summer flow levels.. The Ramsar Convention considers that the conservation of wetlands should form part of drought management policies (RCS, 2015) due to the key role they play in harnessing water in the landscape and releasing it slowly into the natural groundwater system. With our climate changing to wetter winters and drier summers, it is important to consider these natural options to cope with extreme weather events.

Wetland and wet grassland habitat are also significant carbon stores. When arable and neutral grassland is turned into wetland through damning ditches and restoring historic floodplains, it can increase carbon sequestration by up to 120 tonnes CO2/ha.

Sustainable urban drainage systems help to reduce flood risk. They intercept surface water and provide temporary water storage, which reduces water entering drains and increases water infiltration into the ground. Integrating sustainable urban drainage systems into planning for new developments in urban areas will significantly improve Kent's resilience to climate. Sustainable urban drainage systems can also be retrofitted into existing green infrastructure as a means of improving surface water management.

Restoration of urban wetlands have also been shown to help regulate temperatures, by reducing ambient temperatures in the surrounding built environment. Creating sustainable urban drainage systems, ponds and swales not only mitigates surface water run off but also contributes to urban cooling.

Priority FW1: All rivers and streams and their associated floodplains have a more natural form, free from physical modifications and barriers, allowing them to achieve at minimum good ecological status or potential and supporting natural processes. All freshwater habitats support a diverse native flora.

Potential Measures

Potential measure FW1.2: Undo historical physical modifications which have disconnected rivers and floodplains and restore natural processes through a range of approaches, including supplying woody material and allowing it to remain in the channel where it is not causing a flood risk, restoring channel stage zero, restoring historic meanders, bed raising, regrading banks to create shallow edges, and establishing mosaics of water meadows, wet grasslands and wet woodlands to allow inundation of floodplains above Q10 flows.

Potential measure FW1.3: Restore a more natural shape of channels by narrowing overwide channels, especially where siltation, uniform and low flows, and lack of habitat diversity are a pressure.

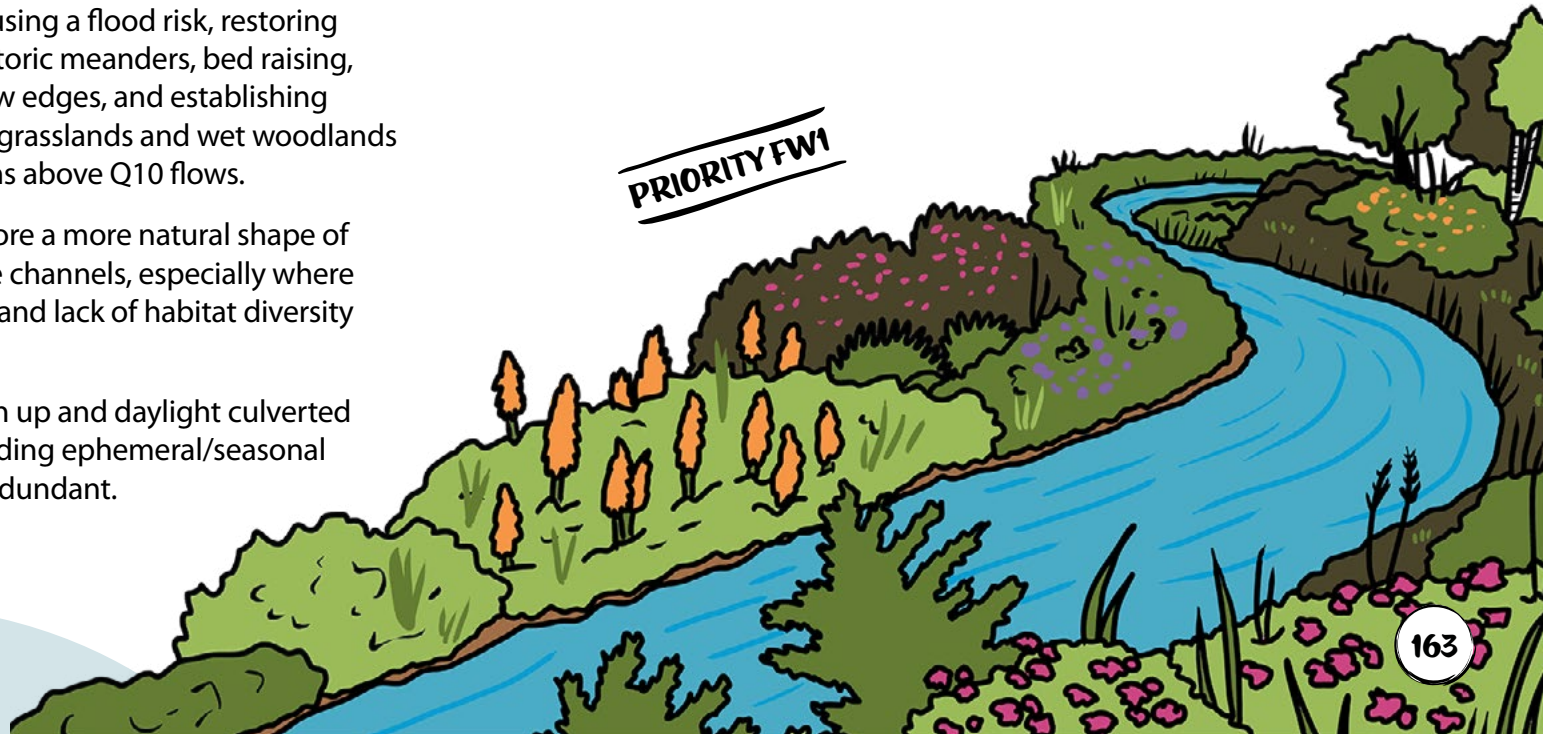
Potential measure FW1.4: Open up and daylight culverted rivers, streams and ditches, including ephemeral/seasonal streams where modification is redundant.

Priority species requiring rivers and streams potential measures:

- Grey Wagtail
- Kingfisher
- European Eel
- River Lamprey
- Sea Lamprey
- Smelt
- European Water Vole
- Opposite-leaved Pondweed
- True Fox-sedge

Priority species associated with rivers and streams, requiring additional bespoke measures:

- Common Tern
- Tinodes pallidulus (Caddisfly)
- White-clawed Crayfish
- Beaver
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat



Wider measure FW1.1: Monitor, manage, control expansion and remove invasive species from ponds, lakes, wetlands, rivers and streams and lowland drains.

Wider measure FW1.5: Increase longitudinal connectivity in rivers by removing redundant barriers and making any remaining barriers passable for fish, riverine mammals and natural sediment.

Wider measure FW1.6: Support the delivery of protected freshwater sites restoration plans, through addressing drought and water-quality impacts across the wider catchment.

Land management and land-use principles for naturalised rivers and streams

- Before removing any in-river structures, consider the potential impact of removal on the downstream ecology.
- Avoid removing downstream in-river structures that are protecting White-clawed Crayfish from invasive Signal Crayfish and other non-native crayfish species.
- Restore gravel beds in chalk streams, using material similar to that found locally.
- For clay rivers, restore banks and channel, through regrading and creation of more shallow banks and associated wetland areas, to undo historic physical modification.

Supporting measures for naturalised rivers and streams:

- Develop a county-wide/catchment-wide management strategy for freshwater invasives, including addressing their distribution from headwaters and through vessels such as houseboats in the estuary.

Beaver kit by Jim Higham

Data, evidence and mapping needs for naturalised rivers and streams:

- Identify priority areas where channel shape needs restoration.
- Identify catchment areas where drought and water quality are impacting protected freshwater sites.
- Identify and better map extent of chalk streams across the county, including the small streams and tributaries.

Priority FW2 – Ensure freshwater habitats and groundwater bodies are supplied with clean water, and are safeguarded from, and able to withstand, the impacts of pollution.

Potential Measures

Potential measure FW2.4: Prevent road runoff entering rivers by installing sustainable urban drainage systems or similar nature-based interception features on highways and local roads.

See Priority FW1 for relevant priority species.

Wider measure FW2.1: Discharge agricultural land drains into appropriate interception features in buffers, rather than the stream network.

Wider measure FW2.2: Establish and manage functional buffer strips and other interception features for all flow pathways to hold runoff and remove pollutants, including chemicals, nutrients and sediment, before it enters rivers and streams.

Wider measure FW2.3: Reduce the input of diffuse phosphate and nitrate pollution into surface and groundwater bodies by using integrated constructed wetlands and reedbeds, in addition to hard-engineered treatments.

Wider measure FW2.5: Reduce the risk of combined sewer overflows by reducing surface water entering the drainage system, for example by using sustainable urban drainage systems, natural flood management measures or similar.

Land management and land-use principles for clean water:

- Address water on a whole-farm basis and in the context of the catchment.
- Establish good farming practices to reduce runoff, including cover crops, minimum till, infield buffer strips and green swales, restoring hedges across slopes, restoring woodland and creating ponds in fields and reduced livestock density along rivers and streams. Good farming practices are especially important for land holdings in chalk stream and clay river catchments.
- Improve soil health and structure and restore grasslands to support recharge to chalk streams.

Supporting measures for clean water:

- Protect reaches that are currently least affected by effluent from new discharge points.
- Provide a water toolkit for landowners and farmers and provide opportunities for peer-to-peer learning.

Data, evidence and mapping needs for clean water:

- Increase the extent of water-quality monitoring across rivers (including those not included in the Water Framework Directive monitoring) and habitats.
- Clearly map the source of pollution incidents, including sewage, litter and pesticides, to directly address issues at source.

Priority FW3 – Freshwater habitats and groundwater bodies are supplied with sufficient water and resilient flows, supporting their natural hydrological and hydrogeological regime.

Potential Measures

Potential measure FW3.2: Retain and enhance habitats that support infiltration, such as grasslands, woodland, reedbeds and lowland peat. Avoid reducing infiltration in key recharge areas and around chalk stream winterbournes.

Potential measure FW3.3: Slow the flow and store water in the catchment in areas of low agricultural productivity or where there is space in urban areas, by working with natural processes to implement natural flood management e.g. by installing large woody material, and creating wet woodlands, lowland meadows, reedbeds, flood attenuation ponds and similar, especially where they can reduce flood risk and provide clean recharge to the groundwater body.

See Priority FW1 for relevant priority species.

Wider measure FW3.1: Safeguard rivers, chalk streams and freshwater habitats in the county that are most sensitive to low water levels through measures to reduce abstraction and water use in the catchment.

Land management and land-use principles for freshwater supply:

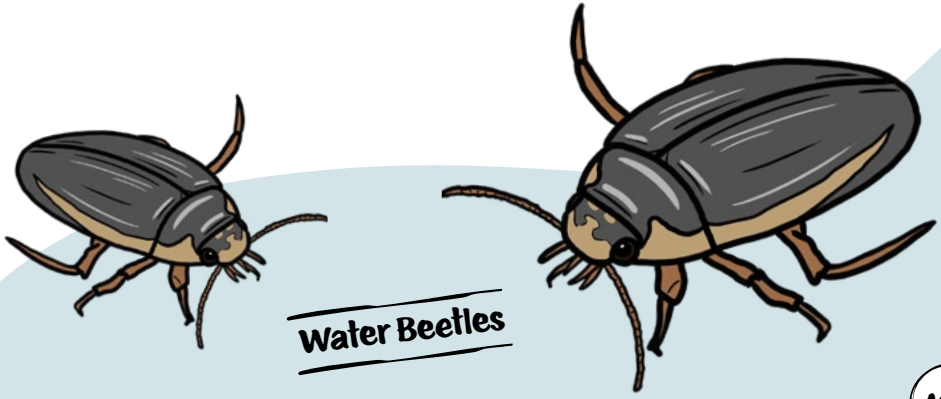
- Manage natural habitats and farmlands to maintain and restore their infiltration ability by prioritising soil health and groundcover.
- Hold and slow water in headwater streams through nature-based solutions (e.g. leaky woody dams and large woody debris, reedbeds, etc.), and approaches such as stage zero to restore a more natural channel shape and processes, especially where this can provide flood risk benefits and improve stable flows.
- Introduce gravel riffles in clay rivers to improve flow diversity and create areas of wet terrace.

Supporting measures for freshwater supply:

- Reduce demand for water by increasing water efficiency measures, using water more sustainably and using alternative sources of water.

Data, evidence and mapping needs for freshwater supply:

- Identify and map drought and low-flow hot spots.
- Monitor abstraction and flow of chalk streams.



Priority FW4 – Rivers, streams and springs, and their associated waterbodies, have wide, more natural buffer strips with a diverse vegetation structure, which allow natural processes, provide a balance of light and shade, create mosaics of wetland habitats and safeguard from pollution and drought.

Potential Measures

Potential measure FW4.1: Establish and maintain wide areas of semi-natural, complex habitats along the banks of rivers and streams (including seasonal and headwater reaches), allowing light grazing of wet grassland areas with a focus on native livestock breeds, and encouraging woodland, particularly where there is a need for more shading of rivers to provide cooler temperatures, by increasing riparian tree cover to 30%. Allow the natural regeneration of habitats and recolonisation.

Potential measure FW4.2: Use the redevelopment of old infrastructure as an opportunity to re-naturalise river corridors (e.g. old industrial sites).

Potential measure FW4.3: Combine buffers with the use of nature-based solutions to hold water on floodplains in areas upstream of communities at risk of flooding, and clean water. This could include, for example, large woody debris, sediment traps and floodplain wetlands.

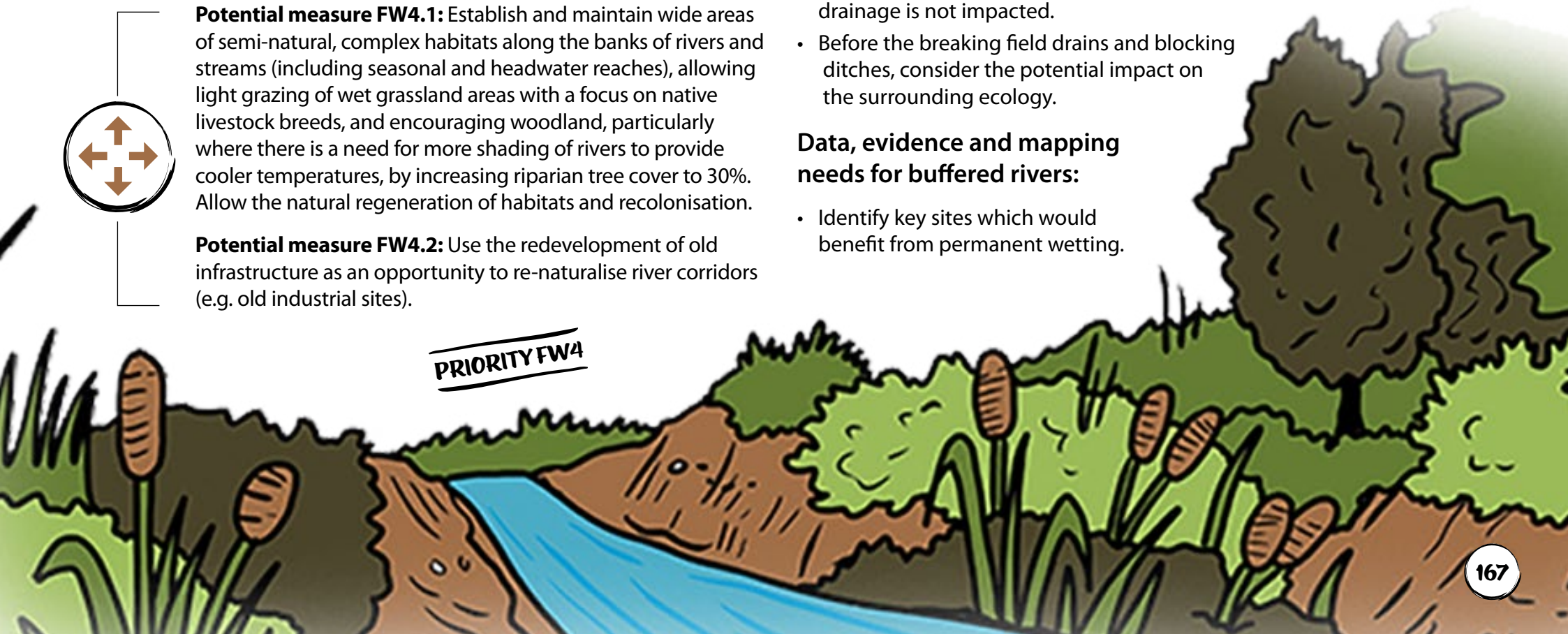
See Priority FW1 for relevant priority species.

Land management and land-use principles for buffered rivers and streams:

- Break field drains and block ditches where habitats next to the stream network can wet up permanently, ensuring that agricultural land drainage is not impacted.
- Before the breaking field drains and blocking ditches, consider the potential impact on the surrounding ecology.

Data, evidence and mapping needs for buffered rivers:

- Identify key sites which would benefit from permanent wetting.



Priority FW5 – Headwater streams have a natural form and natural processes, functioning as part of a mosaic of (seasonally) wet habitats including grasslands and woodlands, providing resilient flows to rivers and supporting a wide range of wildlife.

Potential Measures

Potential measure FW5.2: Restore and establish wetlands in headwater areas and around natural springs by reversing and preventing further drainage of springs and seepage areas.

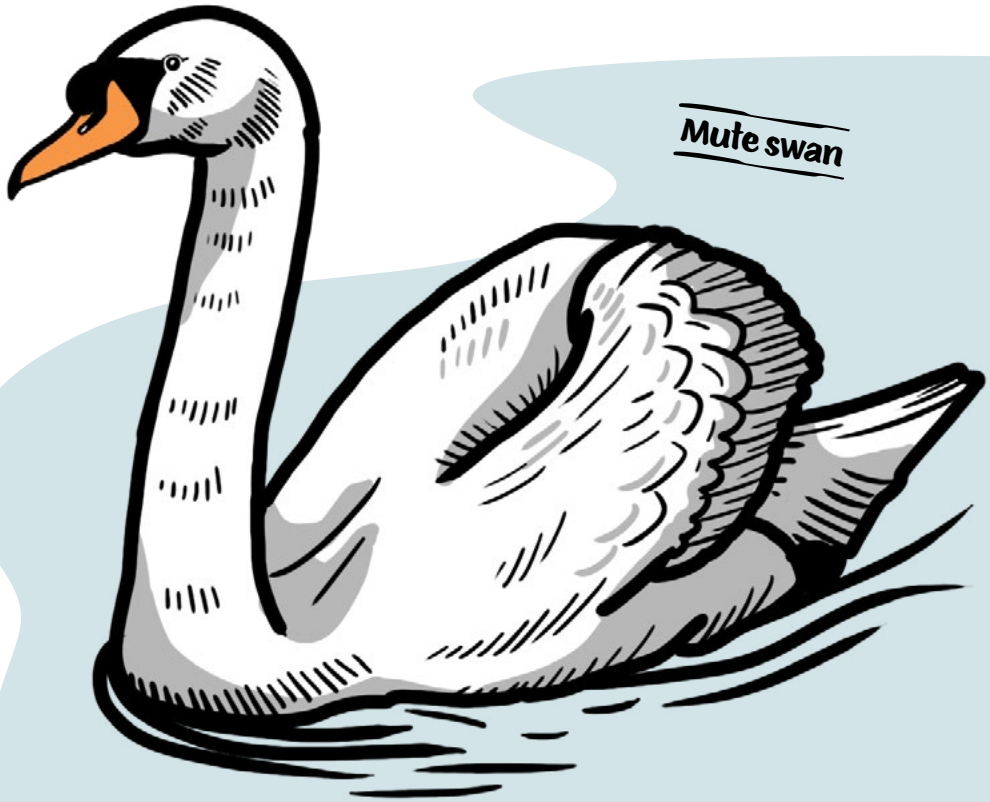
Potential measure FW5.3: Re-naturalise urban and modified sections of headwaters, including ephemeral streams such as winterbournes, (e.g. where they have been straightened and deepened to drain woodlands and agricultural land), including through approaches such as stage 0 restoration.

See Priority FW1 for relevant priority species.

Wider measure FW5.1: Safeguard headwater streams from agricultural pollution, erosion and road runoff by using semi-natural buffer strips and interception features.

Data, evidence and mapping needs for buffered rivers:

- Identify and clearly map headwater streams and associated drainage areas.
- Identify and map sections of headwaters which require modifications to be reversed.
- Improve the monitoring and understanding of the county's headwater systems and their water quality, flow and biodiversity.



Priority FW6 – Maintain and enhance ponds with high ecological value and restore those that have been lost or degraded. Enhance lake habitats and create new ponds, especially as part of a mosaic of habitats. Safeguard all pond habitats from runoff pollutants and invasive species, while allowing successional habitats to develop where appropriate.

Priority species requiring pond and lake potential measures:

- Haliplus variegatus (beetle)
- Kingfisher
- Pochard
- Shoveler
- European Eel
- European Water Vole
- True Fox-sedge

Priority species associated with ponds and lakes, requiring additional bespoke measures:

- Common Toad
- Great Crested Newt
- Common Tern
- Brilliant Emerald Dragonfly
- Brown Long-eared Bat
- Shining Ram's-horn Snail
- Frogbit

Wider measure FW6.1: Restore ghost ponds, including dew ponds and dip slope ponds, and hammer and furnace ponds.

Wider measure FW6.2: Enhance lakes to include a mosaic of habitats and watercourses.

Land management and land-use principles for ponds and lakes:

- Connect ponds through associated habitats and ensure their connectivity in the landscape as part of a mosaic. Use this approach to reduce the distance between waterbodies.
- Create ponds as nature-based solutions, including as a treatment train for runoff and to capture rainfall, for example on farmland and in new developments to reduce flood risk.
- Restore native and appropriate plant and fish communities, considering the removal of carp or planktivores.
- Safeguard ponds from agricultural runoff and road runoff by implementing and maintaining wide buffers around them, including considering livestock fencing.
- Manage people and dogs entering the water.

Pond by Jim Higham

Priority FW7 – Lowland mire sites (fen and valley mires) and lowland peat habitats are well managed and enhanced, with the provision of buffers to allow the habitat extent to increase.

Potential Measures

Potential measure FW7.1: Manage existing fen and bog sites to reduce encroachment, including through scrub management and appropriate grazing.

Potential measure FW7.2: Create and maintain wide buffers around existing fen and bog sites to safeguard them from diffuse pollution.

Potential measure FW7.3: Restore lowland peat habitats by reversing drainage and supporting re-wetting of areas.

Priority species requiring lowland mire sites potential measures:

- Black Night-runner Beetle
- Grasshopper Warbler
- Pochard
- Shoveler
- European Eel
- European Water Vole
- Opposite-leaved Pondweed

Priority species associated with lowland mire sites, requiring additional bespoke measures:

- Moss Carder Bee
- Shrill Carder Bee
- Haliplus variegatus (Beetle)
- Bittern
- Redshank
- Beaver
- Kentish Snake Millipede
- Marsh Mallow Moth

Land management and land-use principles for lowland mire sites:

- Maximise opportunities for water retention including by creating bunds and managing water levels in associated drainage systems.

Data, evidence and mapping needs for lowland mire sites:

- Confirm the extent of existing fen habitat and identify suitable areas for opportunities to create.

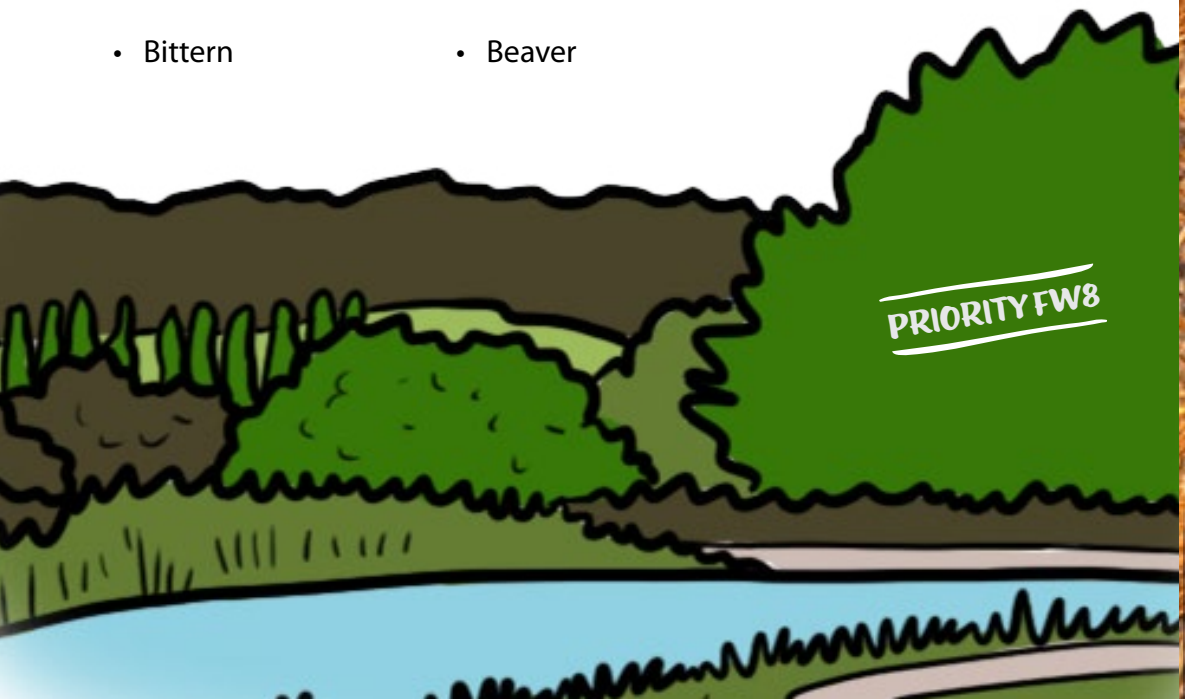
Priority FW8 – High-quality natural reedbeds across Kent are increased, and existing reedbeds are in appropriate management.

Priority species requiring natural reedbeds potential measures:

- Bearded Tit
- Marsh Harrier
- European Water Vole

Priority species associated with natural reedbeds, requiring additional bespoke measures:

- Bittern
- Beaver



Wider measure FW8.1: Manage reedbeds to prevent encroachment of woodland, and by managing associated ditches and dykes, conservation grazing, minimal chemical interventions and consider management of saline flooding.

Land management and land-use principles for natural reedbeds:

- Create reedbeds on lakesides with shallow edges, in disused quarry sites or at similar open-water sites.
- Create natural reedbeds along river corridors and integrate them with the wider landscape, allowing them to connect sites.

Data, evidence and mapping needs for natural reedbeds:

- Identify suitable project sites across the county for creating reedbeds, including floodplains, industrial sites and quarries.

Reeds with kingfisher by Jim Higham

Priority FW9 – Enhance and restore wildlife-rich and functioning freshwater wetlands across the county, providing not only shelter, nurseries and breeding grounds but also carbon sinks and water management.

Potential Measures

Potential measure FW9.1: Enhance reservoirs and similar waterbodies to provide a better wildlife habitat. Ensure that any such water bodies include features that enable wildlife to get out of the water.

Priority species requiring freshwater wetland potential measures:

- True Fox-sedge
- European Eel

Priority species associated with freshwater wetland, requiring additional bespoke measures:

- Brown Long-eared Bat

Wider measure FW9.2: Manage, restore and expand river valley wetlands, for example floodplain meadows, floodplain grazing marshes, reedbeds and mudflats.

Wider measure FW9.3: Provide opportunities for spring flooding (e.g. for waders) by creating water storage areas for winter rainfall.

Wider measure FW9.4: Connect existing wetlands through a mosaic of habitats.

Land management and land-use principles for freshwater wetlands:

- Allow a mosaic of habitats to develop within wetlands.
- Design new wetlands to function as water storage and retention areas that retain water in high flows and release it slowly in dry periods.

Data, evidence and mapping needs for freshwater wetlands:

- Identify freshwater wetland areas affected by saltwater intrusion and prioritise areas for action to restore freshwater habitats, while maintaining a balance between saltwater and freshwater marshes.

Priority FW10 – Restore and enhance semi-natural lowland drains and associated marshlands through integrated water-level management and habitat restoration to reduce flood risk, mitigate drought impacts and promote biodiversity.

Priority species requiring semi-natural lowland drains and associated marshlands:

- True Fox-sedge
- European Eel

Land management and land-use principles for naturalised rivers and streams:

- Manage more sensitively by following natural cycles, including considering retaining in-channel vegetation, woody material and partial desilting to create shallow margins where possible.
- Adapt vegetation management in channels to account for the species present, including reducing or delaying the cutting regime, implementing alternative bank cutting on priority reaches and leaving a marginal fringe.
- Enhance lowland drains by introducing meanders, backwaters and associated ponds.
- Remove redundant barriers and ensure eels and other fish and riverine mammals can pass any remaining structures.
- Allow floodplain reconnection without removing floodbanks where this is likely to cause issues.
- Before removing any barriers and structures, consider the potential impact on the surrounding ecology.
- Avoid removing structures that are protecting White-clawed Crayfish from invasive Signal Crayfish and other non-native crayfish species.

Reedbeds by Jim Higham

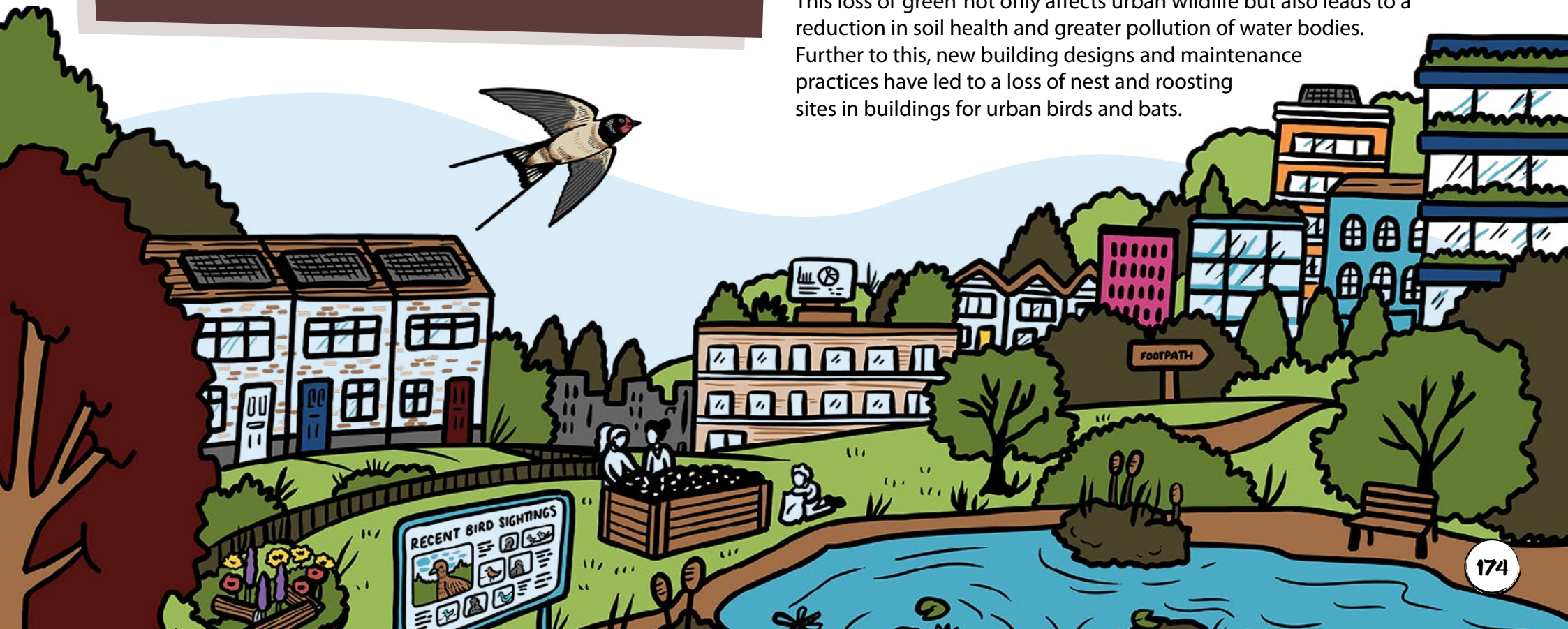
Urban and built environment priorities and potential measures

Ambition for urban habitat in Kent and Medway – **Nature plays a central role in shaping the county's built-up environments, with wildlife benefiting from a network of connected green, blue and grey spaces, which also provide nature-based solutions to the environmental challenges of urban areas.**

An overview of the county's urban and built environment, pressures and threats, and the importance of, and opportunities for, recovering this habitat.

With 16% of the county covered by urban habitats, it is critical that any nature recovery work incorporates action for these areas. Habitats in the urban environment are varied and provide a lifeline for a range of wildlife, but many green spaces are not well managed for nature. They are often over-mown and manicured, with planting that offers no or little food source or shelter. Tree planting can be inappropriate and without the long-term management needed to reach maturity.

Green space in residential areas is increasingly being lost to parking spaces, artificial grass, paving stones, decking, gravel and impermeable plastic layers. Often, hedgerows are replaced with impenetrable fencing. This loss of 'green' not only affects urban wildlife but also leads to a reduction in soil health and greater pollution of water bodies. Further to this, new building designs and maintenance practices have led to a loss of nest and roosting sites in buildings for urban birds and bats.



However, developments present significant opportunities for nature through the good design of green and blue infrastructure and carefully considering the built aspect. This can range from hedges, planted verges and trees to fencing which allows Hedgehog and other wildlife movements to the installation of bird, bat and bee/bug boxes. The mandatory requirement to leave more biodiversity than has been impacted, through biodiversity net gain, also positions new development as a key delivery mechanism for nature recovery.

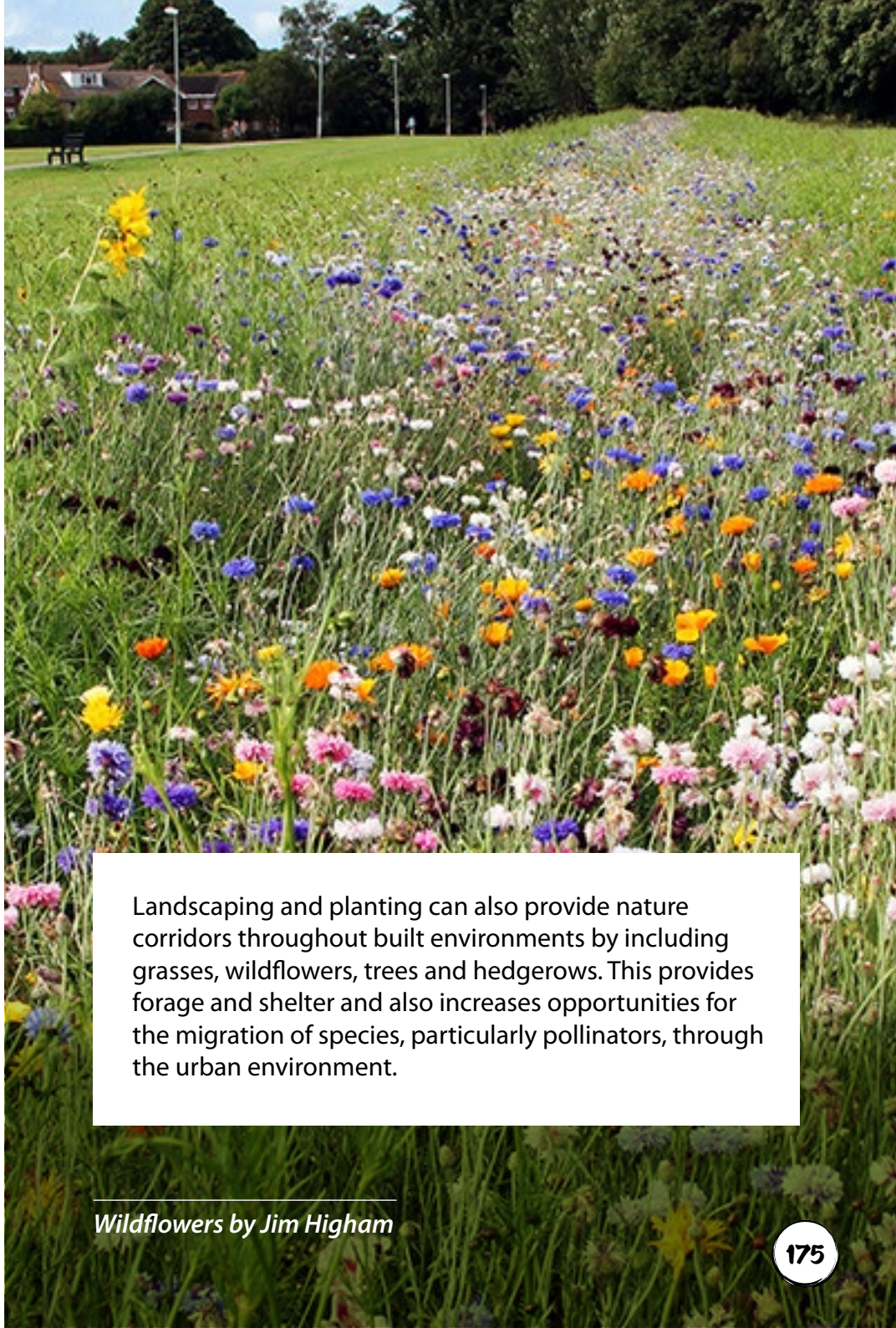
Opportunities in existing urban areas largely relate to improving the management green space, linking together urban and rural green spaces to improve connectivity, addressing fragmentation across the urban landscape, and increasing the amount of green space, trees and hedgerows.

Enhancements for certain species, such as nest sites for Swifts and access for Hedgehogs, or approaches such as No Mow May, for pollinators are considerable, and the public often responds very well to such initiatives.

Nature-based solution opportunities for urban and built environments

Within urban environments, there is a cross over with other habitat-related nature-based solutions. An example is planting trees and hedgerows in urban areas and alongside major roads to tackle air quality, temperature regulation and carbon sequestration. Another opportunity for carbon capture and temperature and air-quality regulation in urban spaces is provided by green walls, balconies and roofs being either retrofit to existing structures or designed into new developments.

Sustainable urban drainage systems and swales are another freshwater management option which addresses water drainage issues in built environments. Sustainable urban drainage systems are effective in alleviating flood and drainage issues for both existing urban areas and new developments, by incorporating swales, wetland and pond features. Green roofs can also offer water management benefits by absorbing rainwater, reducing runoff and neutralising acid rain. Permeable pavements and gardens are another way to reduce runoff and slow the amount of water entering combined sewerage systems.



Landscaping and planting can also provide nature corridors throughout built environments by including grasses, wildflowers, trees and hedgerows. This provides forage and shelter and also increases opportunities for the migration of species, particularly pollinators, through the urban environment.

Wildflowers by Jim Higham

Greenspace by Jim Higham

Wider benefits of healthy and functioning urban and built environments

A healthy and functioning natural environment, with clean and plentiful water, good air quality and suitable green and blue infrastructure, should be the first consideration before any housing development goes ahead, as these wider benefits are essential for people as well as wildlife.

Biodiversity supports people's health and wellbeing through day-to-day connection with nature, improving mental and physical health. Biodiversity also provides regulating services – including contributing to clean air and temperature regulation. These wider advantages can reach people most readily in the urban environment, but only if nature is properly considered as part of infrastructure and the benefits of existing habitats and green spaces are recognised.

Urban environments with plenty of green space and wildlife corridors can offer a connection with nature and health and wellbeing benefits, particularly when habitats have been improved, increased, added to or joined up close to populations otherwise lacking natural green space.

Opportunities to deliver for both people and wildlife include the following:

- Green transport routes that allow both people and wildlife to move through the urban landscape.
- Access and stepping stone green sites to give a variety of experience of natural green space from town to countryside, benefiting people's health and wellbeing and providing a habitat for wildlife.
- Allotments and orchards to provide healthy activity opportunities for people and to help them connect with nature.
- Community projects focused on improving green areas for nature that offer health benefits and combat loneliness and isolation, while also benefiting wildlife.
- Gardens, parks, verges, window boxes, SuDS, tree planting and green roofs to help to bring nature close to people in urban environments.

Priority URB1 – Address habitat fragmentation in the urban and built environment, ensuring urban species can freely move about and developed areas and infrastructure does not impede passage.

Priority species requiring urban environment connectivity potential measures:

- Barn Owl
- Hazel Dormouse
- West European Hedgehog

Priority species associated with urban environment, requiring additional bespoke measures:

- Common Toad
- Moss Carder Bee
- Shrill Carder Bee
- House Martin
- Swift
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat

Wider measure URB1.1: Employ conservation cuts, minimise mowing and leave wild strips, buffers and corners on verges and grass areas in areas known to be of importance for pollinator connectivity.

Wider measure URB1.2: Enhance and safeguard existing green space and trees that provide key stepping stones between larger natural spaces that are either within or at the edge of urban areas.

Wider measure URB1.3: Establish wildlife corridors and provide habitat stepping stones across urban and developed landscapes by enhancing, extending and creating new green spaces, ponds, tree cover, green roofs and walls and wild verges/swathes.

Land management and land-use principles for addressing habitat fragmentation in the urban and built environment:

- To minimise the impact on species mobility in new builds, ensure any boundary features are passable and that landscaping provides wildlife corridors and passage across the development site, with connections out to wider landscape, including natural grass lawns, shared green space with dedicated wildlife areas, native, uninterrupted hedgerows and a tree canopy.
- Establish native mixed hedgerow and street trees to link urban green spaces and to connect these areas to the wider landscape and rural fringes.
- Use green roofs, walls and other features at bus shelters, bus and train stations and bridges, to extend the wildlife network.
- Install green bridges and tunnels (or existing crossings modified) to traverse new and existing barriers to wildlife movement in the urban environment.
- Deliver safeguarding by setting aside land and/or putting in place active management that prevents loss of, or damage to, the habitat.

Supporting measures for addressing habitat fragmentation in the urban and built environment:

- Make measures to address habitat fragmentation standard practice for all new builds across the county.
- Plan land use to support the safeguarding of areas that are strategically important in reducing habitat fragmentation in the urban environment, by setting aside land and/or putting in place land-use restrictions and management that prevents loss and damage.
- Mobilise the population of Kent to help support connectivity through wildlife-friendly gardening measures, retaining grass, hedgerows and trees, and ensuring any boundary features are passable.

Data, evidence and mapping needs for addressing habitat fragmentation in the urban and built environment:

- Identify and map existing barriers to wildlife movement in the county's major towns.

Gardens by Jim Higham

Priority URB2 – Deliver benefits for wildlife and support its recovery and growth in the urban environment through green space, building and land management.

Potential Measures

Potential measure URB2.1: Manage areas of urban green space to maximise nature provision in urban areas, providing a greater complexity of habitats, with year-round shelter, forage and food.

Potential measure URB2.2: Naturalise urban river corridors by removing river obstacles where appropriate and replacing hard river banks with native buffer verges and riverside trees.

Potential measure URB2.3: Target urban tree establishment to areas of low canopy cover.

See Priority URB1 for relevant priority species.

Land management and land-use principles for supporting wildlife recovery in the urban environment:

- Integrate year-round wildlife habitat, shelter, forage and food in new and existing developments by designing in, and retrofitting, features and landscaping that are maintainable, sustainable and appropriate to local species.
- Features to support wildlife (all installed in accordance with best practice guidance) could include:
  - Swift bricks
  - House Martin artificial nest cups
  - nest boxes
  - bat tiles
  - Hedgehog highways
  - bug hotels
  - reptile refuges.
- Landscaping could include food plants, structural features for hibernation and overwintering, a mosaic of habitats and varied l andforms and water features.
- Particular priority should be given to Local Nature Recovery Strategy priority species associated with the urban environment, where the population is locally significant or species known to be declining.

- Consider also typically urban species that are declining in numbers, such as House Sparrows and Starlings.
- Use green roofs, walls and other features at bus shelters, bus and train stations, and bridges to provide additional areas of shelter, forage and food within built-up areas.
- Use minimal, and if possible do not use, pesticides and herbicides.
- Plant the right trees, in the right place and with appropriate management to ensure their successful establishment.
- Before removing any in-river structures, consider the potential impact on downstream ecology.
- Avoid removing downstream in-river structures that are protecting White-clawed Crayfish from invasive Signal Crayfish and other non-native crayfish species.
- Ensure any measures taken are in keeping with the local landscape setting and character.

Supporting measures for supporting wildlife recovery in the urban environment:

- Incorporate ecological features as standard practice for all new builds across the county.
- Safeguard existing nest sites for building-dependent species, such as Swifts and House Martins. Provide mitigation where these cannot be safeguarded.
- Use interpretation/public information to increase public understanding of wildlife features and wild management.

Greenspace by Jim Higham

Priority URB3 – Safeguard and increase the extent of green space, trees and hedgerows within urban areas to not only provide more habitat for wildlife but also to deliver other benefits, including urban cooling, air and noise pollution regulation and surface water management.

See Priority URB1 for relevant priority species.

Wider measure URB3.1: Plant trees and hedgerows specifically to deliver air quality, temperature regulation/cooling and surface water management benefits and targeted to areas where it is most needed and will deliver the greatest impact.

Wider measure URB3.2: Prioritise the use of natural flood management/nature-based solutions over engineered, hard solutions, to manage areas at high risk from surface-water flooding.

Wider measure URB3.3: Use new and retrofitted green walls and roofs to enhance biodiversity, while also providing temperature regulation in settings most at risk from urban heat island effects.

Wider measure URB3.4: Increase green and blue infrastructure, and more natural space, targeted to communities where they are most needed to deliver health and wellbeing benefits and greater connection with nature.

Land management and land-use principles for nature-based solutions in the urban environment:

- Ensure any measures are in keeping with the local landscape setting and character.

Supporting measures for nature-based solutions in the urban environment:

- Use interpretation/public information to increase public understanding of how nature is being used to deliver services and benefits.
- Install nature-based solutions with long-term management in places that ensure the benefiting features are retained and maintained.

Data, evidence and mapping needs for nature-based solutions in the urban environment:

- Identify and map priority areas that have severe heat stress, in order to direct the use of green infrastructure.

Coastal priorities and potential measures

Ambition for coastal habitat in Kent and Medway – **Coastal and estuarine areas are allowed to evolve, with natural processes and progression restored, to enable them to adapt and be resilient to climate change. Habitat succession is managed strategically and holistically, to minimise loss and support a range of high-functioning, connected coastal habitats.**

An overview of the county's coastal habitat, pressures and threats, and the importance of, and opportunities for, recovering this habitat.

The Kent and Medway marine, intertidal and coastal area is extensive and rich in biodiversity, with habitats ranging from blue mussel beds and ross worm reefs to saltmarsh, mudflats, chalk reefs, sand dunes and vegetated shingle. This contributes to the wider UK marine environment, which has the widest range of marine habitats of any coastal waters in Europe.

The intertidal area, exposed as the tide moves in and out, often takes the form of mudflats around the Kent coast and in particular across North Kent. Mudflats have a high biological productivity, with abundant invertebrates such as Ragworms, Lugworms, Sandhoppers, Cockles and Hydrobia Snails that provide food for internationally important populations of migrant and wintering wading birds.

Coastal saltmarsh is another habitat of the intertidal area, again found mainly around North Kent and East Kent. It is rich in rare and scarce plant assemblages, but is also an important resting and feeding area for wading birds. Over 80% of the intertidal area in Kent is designated and protected.

Across the North Kent Marshes is an association between the intertidal habitats and freshwater grazing marsh behind the sea walls – with wildfowl and wading birds commuting between the two areas, depending on the daily tides.

Saline lagoons are a rare and restricted habitat. Cliffe Pools near Gravesend, managed by the RSPB, is the most notable example in the county but there are other smaller, isolated sites which together make up the 286ha of resource. These sites are important for an assemblage of specialist lagoon invertebrates, breeding Terns, Avocets and wintering wildfowl and waders.

Seagrass beds are a rare habitat nationally – the 2012 Kent Habitat Survey recorded just 29.4ha, with more than half of this found in water off Medway. Seagrass need good levels of light to photosynthesise, so they grow in shallow waters and sheltered areas such as estuaries, bays and inlets. Seagrass is the food plant of the Brent Goose, which winters in Kent.

Native Oysters fuse together as they grow, forming rock-like reefs that provide another habitat for other marine animals and plants. Native Oyster reefs are mainly found in the Thames Estuary.

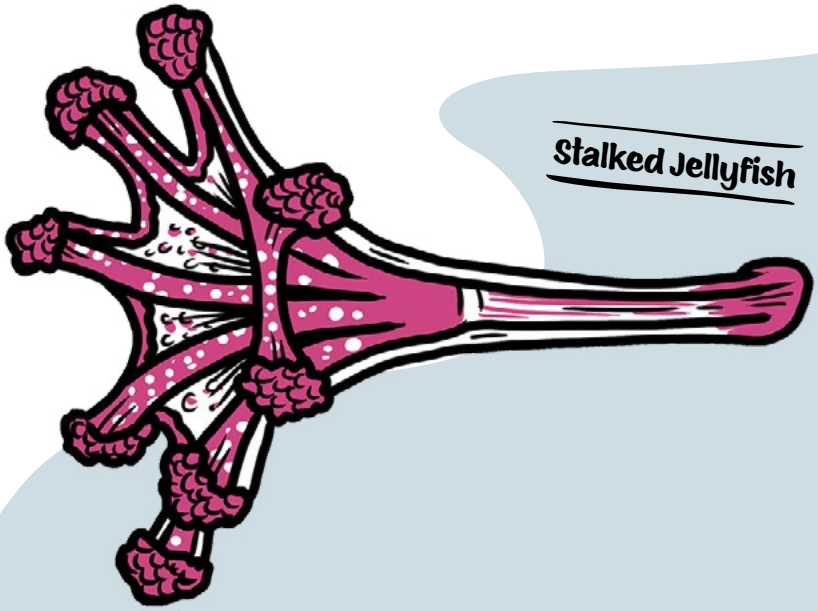
Sand dunes occur mostly on the south and east coast of Kent in small areas such as Sandwich Bay and Greatstone Beach. Sand dunes are ever-changing structures, but provide important homes for a variety of unique flora and fauna.

Generally vegetated shingle occurs mainly in small, narrow strips at various locations along the Kent coastline. Narrow bands of shingle may support annual vegetation of drift lines and, in some places, perennial vegetation of shingle may develop. At Dungeness, however, an extensive cuspid shingle foreland has been formed by the action of storms over many centuries. This extensive area of around 2,000ha supports a unique series of habitats and is the UK's largest shingle structure (there are only five other structures more than 100 ha in extent in the UK), making it both nationally and internationally important. A variety of rare invertebrates and plants depend on vegetated shingle, their concentrations varying according to the extent to which the normal tide limit reaches these areas, but the whole habitat is governed by dynamic coastal processes.

Chalk defines a lot of Kent's geology and ecology and the coast is no exception, with both maritime chalk cliffs and chalk reef providing important habitat.

There is 415ha of intertidal chalk around the coastline of Kent, accounting for 56% of England's chalk coastline. The Thanet coast has the second largest unbroken stretch of chalk reef in the UK, at 23km. It offers a large area of intertidal and subtidal habitats, including chalk caves that are home to unique algal species. The diverse substrates – ranging from sand and coarse sediments to chalk rock – support a variety of marine life, including the rare Stalked Jellyfish.

Kent has a number of other marine habitats, including clay, greensand, intertidal rock, offshore sandbanks, Blue Mussel beds and Ross Worm reefs.



The Kent coast and marine area is facing a range of pressures. Sea levels in England have risen by 16cm since 1900. In Kent, the sea level is expected to rise by up to 30cm by 2040 and 80cm by 2080. The impact of sea-level rise is exacerbated in habitats, such as saltmarsh and mudflat, which are gradually lost as they are squeezed against the artificial walls that are put in place to prevent inundation by the sea. In certain areas, sea walls can be removed as part of a managed realignment, so saltmarsh and mudflat can migrate landward. The impacts on habitats such as freshwater grazing marsh and saline lagoons on the landward side of sea walls also need to be managed.

Another effect of the urban coast and artificial/hard infrastructure is that habitats cannot always act in a natural dynamically functioning way. Vegetated shingle requires longshore drift to replenish itself, a process which is disrupted by our coastal infrastructure.

A higher sea temperature and lower oxygen levels have a significant impact on a range of species, including coldwater fish, while acidification negatively affects calciferous species. Increasing temperatures may also create a more hospitable environment for pests, diseases and invasive non-native species. Some of the latter, such as the Carpet Sea Squirt, have colonised at the expense of some native species, in areas where they were previously unable to survive.

Coastal waters in Kent are polluted as a result of a number of factors, including agriculture, land management, sewage and fuel and other spillages from shipping.

Mediterranean Gull

The human population in Kent is considerable and growing, and the coast is an obvious place for recreation, both on land and in the water. This is having a negative impact on wildlife in some areas, particularly for birds which are easily disturbed. Disturbance reduces the birds' feeding opportunities, meaning they may have insufficient energy to survive the winter or to complete their migratory journey to their breeding sites, leading to a reduction in the bird populations.

Nature-based solution opportunities from coastal habitat

Our coastal habitats are the first line of defence for the effects of climate change. Coastal saltmarshes can help buffer increased storminess by absorbing the energy of powerful waves. Studies that have modelled the ability of saltmarsh habitat to reduce wave impacts suggest that up to 50% of wave energy can be attenuated in the first 10 to 20m of vegetated saltmarsh, which in turn would reduce the scale of artificial defences needed on the landward side.

Saltmarshes, seagrass, sand dune grasses and kelp beds, as well as coastal grazing marsh, sequester carbon and reduce soil and sand erosion from coastal sites. Most blue carbon is stored in the soil below ground, which differs from forests. Erosion of these sites is a considerable problem, as they release stored carbon into the atmosphere when they are damaged. Estuarine expansion could provide additional carbon-storing habitats. Sediment dredged from nearby harbours could be reused to build up and restore these habitats and to provide protection from sea-level rise. The beneficial use of dredged sediment is being considered for areas in the Thames Estuary.

Coastal habitats also play an important role in pollution control by filtering pollutants and contributing to nutrient cycling. Saltmarshes and seagrass beds can trap sediment, nutrients and pollutants carried by runoff from land. This helps to reduce the amount of pollution entering coastal waters and helps maintain water quality. In addition, they can help to remove excess nutrients from the water, which in turn prevents harmful algal blooms. Our Native Oysters are also a powerful tool in water quality management, with a single Native Oyster filtering over 200 litres of seawater per day.

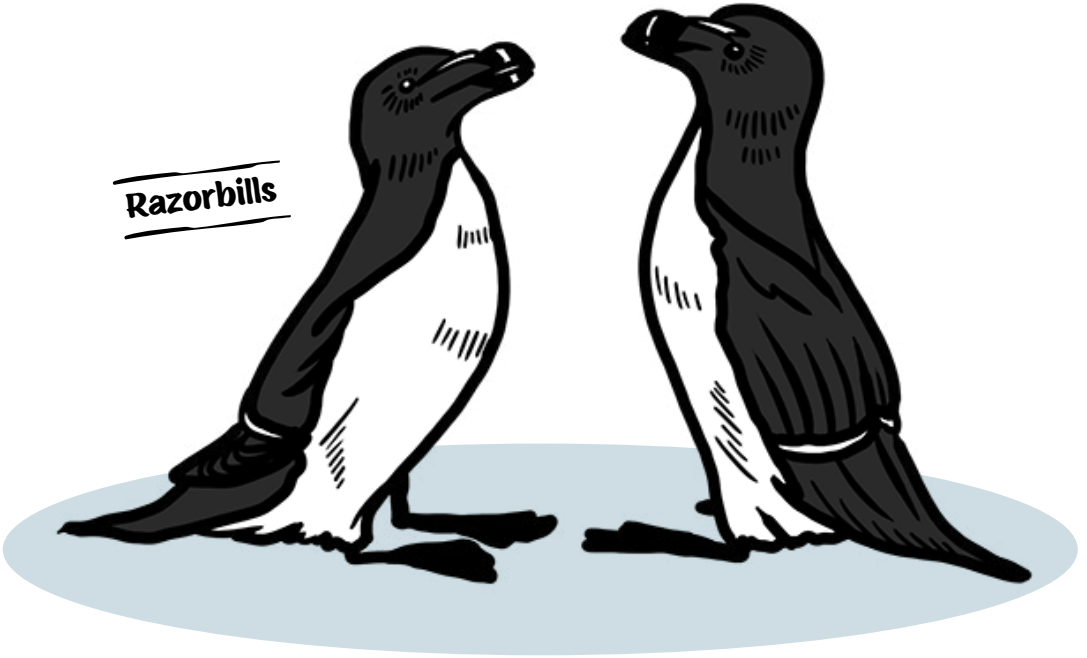
Enjoying the coast by Jim Higham

Wider benefits of healthy and functioning coastal habitat

Access to coastal habitats near coastal urban populations provides mental health benefits and the opportunity to connect with nature. Coastal and marine areas are also the location of many recreational pursuits – a number of which rely on clean and healthy water. However, some recreational pursuits in these areas do conflict with the wildlife that relies on these coastal habitats.

Fisheries industries benefit from healthy and functioning marine and coastal habitats, but sustainable fishing practices are also part of the answer to some of the pressures facing marine species.

Note: the priority and potential measures for grazing marsh can be found under grassland habitats (GL2)



Priority CL1 – Sustainable and strategic management of estuaries and open coast to create functionally linked coastal habitats that are allowed to evolve, creating areas for wildlife to thrive. Natural dynamic processes and progression is restored, to enable adaptation and resilience to climate change and minimise the loss of intertidal habitats.

Potential Measures

Potential measure CL1.3: Remove hard defences where appropriate (ensuring that both the natural and built environment is not at risk of inundation, damage or loss as a result), to allow space for tidal ingress and to enable the managed realignment of the coastline, to mitigate coastal squeeze and to allow intertidal habitats to be more resilient to climate change.

Potential measure CL1.4: Create areas for saltmarsh restoration, seagrass regeneration and high-tide roosts, and provide breeding areas for seabirds and/or waders, with appropriate measures to prevent or reduce disturbance and predation.

Priority species requiring open coast and estuaries potential measures:

- Oystercatcher

Priority species associated with the open coast and estuaries, requiring additional bespoke measures:

- Four-banded Weevil-wasp
- Leaf Beetle
- Ophonus puncticollis (beetle)
- Little Tern
- Redshank
- Ringed Plover
- Sand Martin
- Sandwich Tern
- Fisher's Estuarine Moth
- Juniper
- Ox-tongue Broomrape

Wider measure CL1.1: Where hard defences must remain, apply the 'greening the grey' approach, following Estuary Edges design principles to soften edges to encourage wildlife.

Wider measure CL1.2: Refuges for wildlife created with access managed to reduce disturbance.

Wider measure CL1.5: Remove hard defences where appropriate to enable reconnection of fragmented habitats through managed realignment.

Supporting measures for the open coast and estuaries:

- Establish a strategic management approach which recognises, minimises and mitigates the likely loss of one habitat over another as a result of managed realignment.

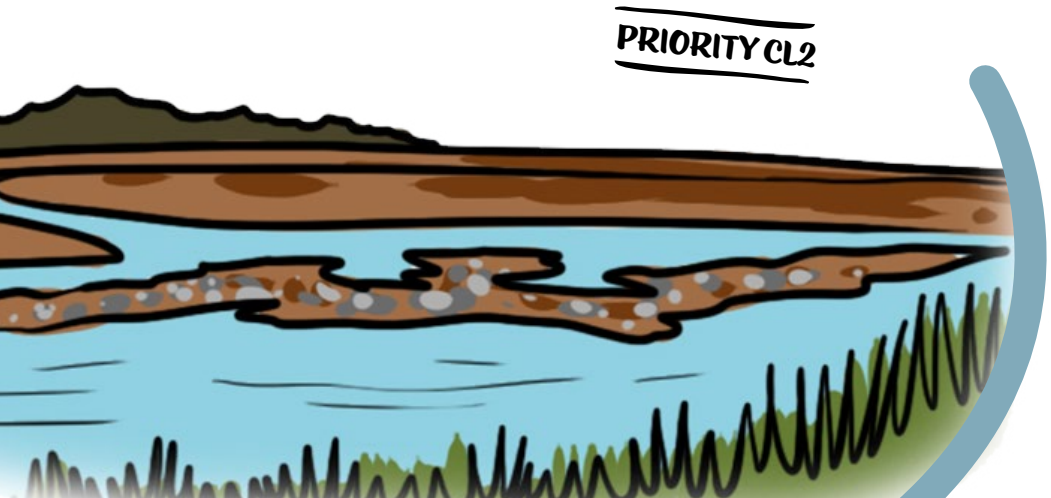
Priority CL2 – Reduce small-scale loss, improve condition and increase connectivity of saltmarsh and mudflats, providing functioning ecosystems that are safeguarded from recreational disturbance.

Potential Measures

Potential measure CL2.2: Restore small-scale saltmarsh using traditional materials to slow down loss.

Potential measure CL2.3: Create new high-tide roosts in areas less vulnerable to rising sea levels.

Potential measure CL2.4: Link areas with other wetland habitats to form a landscape mosaic of wetlands to reduce the tendency for waders and seabirds to be concentrated at key hotspots and reserves.



Priority species saltmarsh and mudflats potential measures:

- Shoveler
- Waders and wildfowl
- Duffey's Bell-head Spider
- Yellow-striped Bear-spider

Priority species associated with saltmarsh and mudflats, requiring additional bespoke measures:

- Sea Aster Bee
- Brent Goose
- Common Tern
- Lapwing
- Redshank
- Ringed Plover
- Borrer's Saltmarsh-grass
- Least Lettuce

Wider measure CL2.1: Maintain high tide roosts and nesting sites, with key sites fenced off, to limit disturbance and safeguard inland feeding, breeding and overwintering areas.

Land management and land-use principles for saltmarsh and mudflats:

- To support fish nurseries, use embryonic structures and channels to create natural drainage channels (ripples, eddies, pools and meanders), create saltmarsh islands and minimise overengineered structures.
- Create more space for nesting seabirds to avoid competition and predation.
- Create areas for saltmarsh restoration by raising the height of the coastline through managed realignment and the beneficial use of dredged sediment.

Data, evidence and mapping needs for saltmarsh and mudflats:

- Identify and monitor saltmarsh and mudflat recreational disturbance in order to better target preventative measures.

Priority CL3 – Reverse the decline in seagrass off Kent's coast to safeguard this important habitat for marine species and their breeding grounds and nurseries, and to preserve its vital function as a blue carbon store.

Potential Measures

Potential measure CL3.1: Address threats to seagrass beds by putting in place management which:

- reduces and addresses pollution sources that impact seagrass restoration and growth
- removes invasive spartina where it is known to be invading, smothering or limiting seagrass extension and restoration.
- minimises damage from boat anchors, dredging, fishing and trampling.

Potential measure CL3.2: Increase areas of existing seagrass beds.

Priority species requiring seagrass potential measures:

- Short-snouted Seahorse
- Spiny Seahorse

Priority species associated with seagrass, requiring additional bespoke measures:

- Brent Goose

Land management and land-use principles for seagrass:

- Address and minimise pollution of coastal waters.

Data, evidence and mapping needs for seagrass:

- Identify priority areas for sampling of water quality and corrective action.

Priority CL4 – Chalk cliffs and reef communities thrive in their natural state and are safeguarded from damage from recreational and leisure activities, development and bottom fishing methods.

Wider measure CL4.1: Manage problematic non-native species.

Wider measure CL4.2: Control leisure boat and other recreational activity in chalk reef areas.

Data, evidence and mapping needs for chalk cliffs and reefs:

- Identify new sections of profile where natural erosion can be allowed to occur, forming new sea caves and chalk reef.

Priority CL5 – Sustainable management of native reef building shellfish to allow them to reach their habitat-providing potential.

Potential Measures

Potential measure CL5.1: Safeguard established areas of Native Oysters and Blue Mussels by developing protected areas with management measures, in collaboration with local stakeholders, including the local fishing community.

Potential measure CL5.2: Where practical, remove invasive non-native species from the beds of Native Oysters and Blue Mussels.

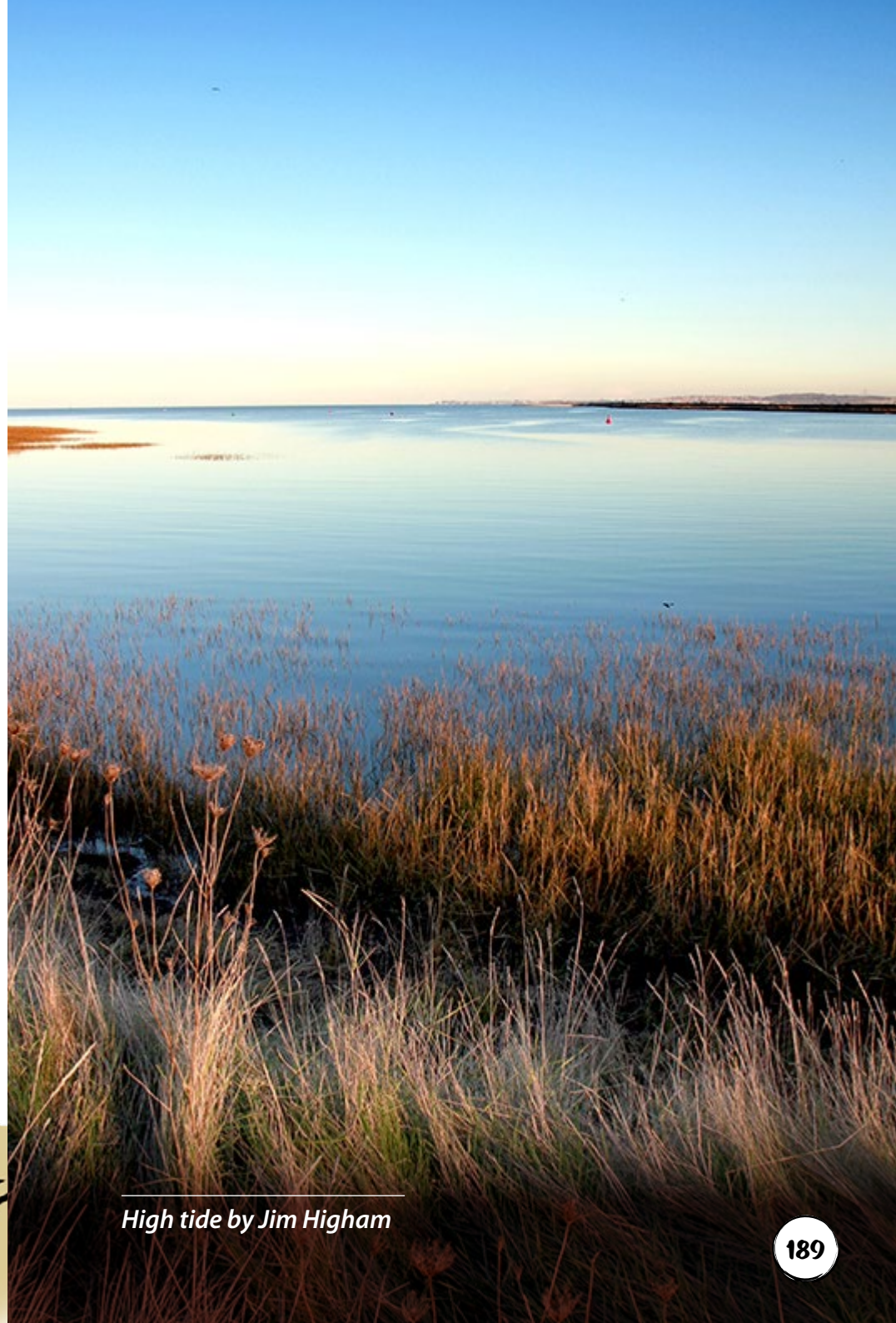
Potential measure CL5.3: Create suitable substrate for native oysters to colonise, focusing on existing/historic areas, and address the lack of larvae in the landscape.

Potential measure CL5.4: Create suitable substrate for Blue Mussels to colonise, focusing on existing/historic areas.

Data, evidence and mapping needs for native oyster and blue mussel beds:

- Map and monitor the Native Oyster and Blue Mussel beds to identify priority areas and actions for restoring them.

Native Oyster bed



High tide by Jim Higham

Priority CL6 – Saline lagoons are appropriately safeguarded and managed to increase their resilience and adaptation to climate change and to secure their ecological functions, including the role they will play as transitional habitats.

Potential Measures

Potential measure CL6.1: Safeguard existing saline lagoons from loss and damaging activities that harm and/or pollute the lagoons.

Potential measure CL6.2: Establish buffer zones and/or adjust site features and topography to ensure the ecological function of saline lagoon is not undermined by disturbance, and enhance marginal habitat.

Potential measure CL6.3: Create new saline lagoons to connect wetland sites in transitional areas that are likely to flood, taking into account their proximity to sources of recreational disturbance.

Priority species requiring saline lagoon potential measures:

- Tentacled Lagoon Worm
- Pochard
- Shoveler
- Ringed Plover
- Sandwich Tern

Priority species associated with saline lagoons, requiring additional bespoke measures:

- Brent Goose
- Common Tern
- Little Tern
- Redshank

Data, evidence and mapping needs for saline lagoons:

- Identify where new saline lagoons will be required to ensure they provide their ecological function as a transitional habitat at the coast.

PRIORITY CL6

Priority CL7 – Safeguard and restore vegetated shingle, ensuring there is no unavoidable loss and areas remain in, or are returned to, a favourable condition.

Potential Measures

Potential measure CL7.1: Safeguard existing habitat through access management and interventions (e.g. allocated routes and boardwalks) that minimise the impact of footfall and recreational disturbance on this delicate habitat.

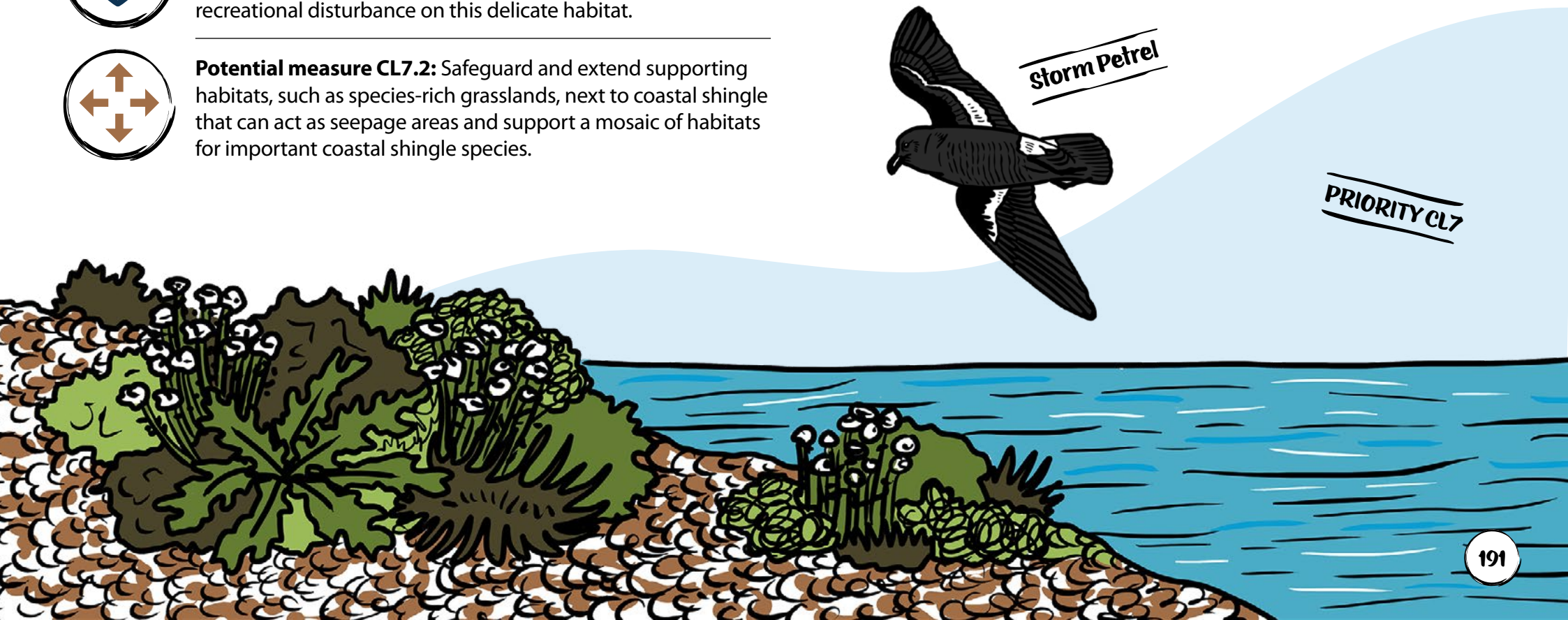
Potential measure CL7.2: Safeguard and extend supporting habitats, such as species-rich grasslands, next to coastal shingle that can act as seepage areas and support a mosaic of habitats for important coastal shingle species.

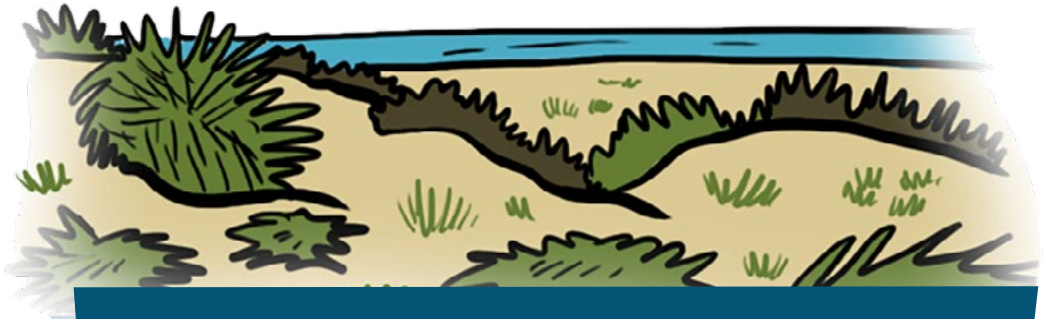
Priority species requiring vegetated shingle potential measures:

- Oystercatcher
- Brown Hare

Priority species associated with vegetated shingle, requiring additional bespoke measures:

- Long-spined Ant
- Anthicus bimaculatus (beetle)
- Smicronyx coecus (beetle)
- Ophonus puncticollis (beetle)
- Kentish Clown Beetle
- Ringed Plover
- Wheatear
- Cladonia mitis (lichen)
- Sussex Emerald Moth





Priority CL8 – Restore sand dunes, enabling, where possible, the natural mobile function of the dune system to be reinstated or use management to maintain a full range of successional stages of sand stabilisation across the dune system.

Potential Measures

Potential measure CL8.1: Manage dunes to reduce scrub encroachment, remove invasive species and reduce disturbance pressures of recreational activities. Management to include year-round low-intensity grazing in the absence of endectocides, and with high-quality fodder in winter to maintain high dung quality.

Potential measure CL8.2: Enable more naturalised and mobile sand dune systems through a full range of successional stages of sand stabilisation across the dune system, from mobile sparsely vegetated foredunes, young dunes with dense Marram Grass clumps, to more established dunes with varied vegetation, stable sandy grassland or heath, open sandy areas and dune slacks. Address overstabilisation of the dunes to increase dune mobility and sand movement.

Priority species associated with sand dunes, requiring additional bespoke measures:

- Four-banded Weevil-wasp
- Long-spined Ant
- Anthicus bimaculatus (beetle)
- Dune Tiger Beetle
- East Coast Dune-walker
- Sandwich Click Beetle
- Ophonus puncticollis (beetle)
- Hohenbuehelia culmicola (fungi)
- Forester Moth
- Sand Running Spider
- Greater Streaked Shieldbug
- Prostemma guttula (true bug)
- Bedstraw Broomrape
- Bur Medick
- Green-winged Orchid
- Heath Dog-violet
- Lizard Orchid

Land management and land-use principles for sand dunes:

- Maintain the water table in dune slacks but do not deepen them, to make them permanently wet.
- Discourage the removal of biodegradable material from the foreshore and dune.

Fishing Boats by Jim Higham

Priority CL9 – Reduction in coastal wildlife disturbance resulting from leisure pressures at the coast.

See all coastal priorities for relevant priority species.

Wider measure CL9.1: Develop zoned recreational areas that limit, restrict or prevent leisure activities which can disturb wildlife and damage sensitive habitats, and safeguard offshore islands.

Wider measure CL9.2: Build up existing and create new seal haul-out sites, which are adequately managed to provide safe areas for them.

Supporting measures for reducing coastal wildlife disturbance:

- Support management measures by increasing the number of wardens at key sites and installing signage and fencing as appropriate, based on up-to-date guidance.

Data, evidence and mapping needs for reducing coastal wildlife disturbance:

- Identify and map key and vulnerable sites in order to better target preventative measures.

8. Species priorities and potential measures

Ambition for species in Kent and Medway **– Habitat management, restoration, extension or creation is specifically targeted to halt the decline, and support the recovery, of the Strategy's priority and threatened species and, in doing so, reduces the risk of losing species through extinction from the county.**

Overarching approaches to ensure that the Strategy benefits all rare, threatened and significant species in Kent and Medway

Although the Strategy development process requires a focused list of priority species, identified as the species in most urgent need among other considerations, it is still important to take account of all the county's rare, threatened and significant species in any habitat management, restoration, extension or creation work.

The Strategy therefore identifies overarching approaches that ensure this wider suite of species, while not the focus of bespoke action, still benefits from action taken within the strategy area.

1. **During the design of works to deliver a Strategy potential measure, the habitat assemblages of the species longlist (see Appendix 3.2b) should be consulted for the relevant habitat, and all action should consider and take account of the species that depend upon it, recognising and supporting the interdependencies that exist.**

   Where works are taking place in **locations where a longlist species for Kent and Medway is known to occur**, the habitats, structures, host species or other features supporting the species concerned should be maintained in extent and quality, and, where possible, should be locally extended, improved and connected.

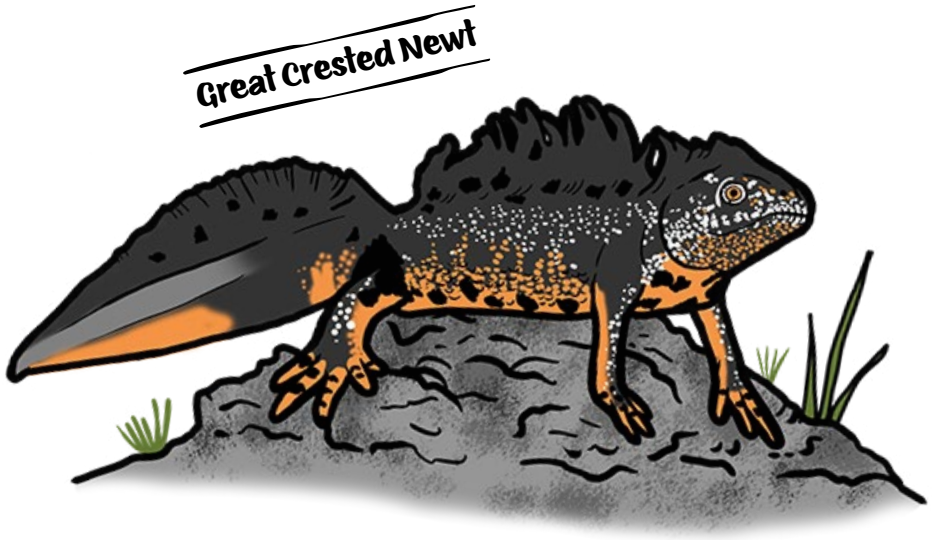
   Where works are taking place in **locations where a longlist species for Kent and Medway was previously known to occur and/or might naturally establish populations**, planning and delivery of land-use planning, nature conservation activities or other land management work should take the needs of the relevant species into account. This should include avoiding action which would decrease the ecological connectivity between potential sites and those sites already supporting the relevant Kent and Medway Local Nature Recovery Strategy longlist species.

2. **During the design of works to deliver a Strategy potential measure, and where those works occur on or near the borders of the Strategy area, the neighbouring Local Nature Recovery Strategy's priority species list should be consulted to ensure that action in the Kent and Medway Strategy area does not undermine efforts for that species in the neighbouring area. Opportunities to facilitate the spread of a local population within the works should be identified, particularly where that species is currently absent from the county.**

3. **Action design should also recognise the contribution that species may make to the habitat and utilise, where appropriate, species within its management to help deliver more dynamic, natural, intact and climate-resilient ecosystems.**

8.1 Kent and Medway Local Nature Recovery Strategy priority species and potential measures

The remainder of this chapter sets out the agreed priority species for the Kent and Medway Local Nature Recovery Strategy area. In total, there are 146 priority species – this is a large number of priority species but is a reflection of the large number of species in the original species longlist. These priority species represent 11% of the county's rare, threatened and significant species – it is expected that targeted action for these 146 species will offer wider benefits to the other 1,210 species not identified as a priority.



The breakdown of priority species across the different taxa is as follows:

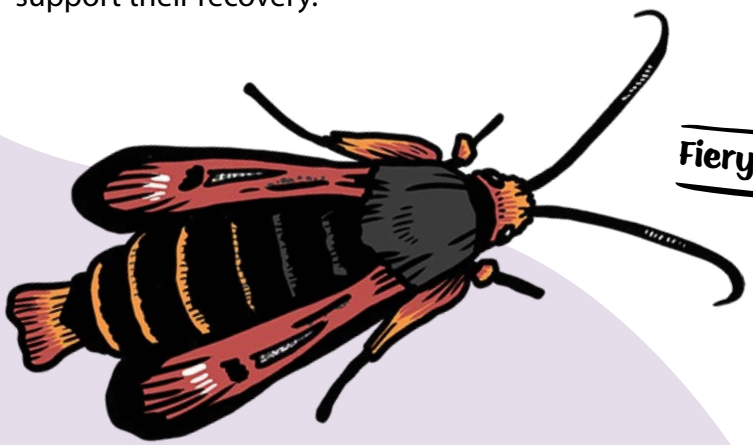
Taxa	Number of species identified as a priority
Amphibian	2
Annelid	1
Bee, wasp and ant	9
Beetle	18
Bird	31
Butterfly	13
Caddisfly	1
Crustacean	1
Dragonfly and damselfly	1
Fish	6
Fungi	5
Grasshopper, cricket and allies	2
Lichen	2
Mammal	10
Millipede	2
Mollusc	1
Moth	16
Reptile	1
Spider	4
True bugs	2
Vascular plant	18

The non-statutory guidance on priority species for a Local Nature Recovery Strategy recommends that only species that require bespoke measures are identified and that these bespoke measures are presented alongside the relevant species. However, acknowledging that many of the habitat measures designed for the benefit of a priority species offer wider benefits to other species of that habitat assemblage, it was determined that these should be embedded into the habitat potential measures.

Consequently, a number of the Kent and Medway priority species, while meeting the criteria as a priority, seemingly do not have dedicated potential measures. These are noted in this chapter as priority species requiring broad habitat measures, and the relevant habitat priority is identified alongside them.

Where a species requires a bespoke measure that will only benefit that particular species, this is noted in this chapter as priority species requiring bespoke measures. The bespoke measures for the priority species are provided in Appendix 3.1.

Appendix 3.2a details all the rare, threatened and significant species of the Strategy areas, while Appendix 3.2b identifies these against the habitats they are most commonly associated with. Appendix 3.3 details which of these species require further evidence and understanding in order to determine whether or not they require targeted action in the county to support their recovery.



Fiery Clearwing Moth

Kingfisher by Jim Higham

Common Frog by Jim Higham

Amphibian priority species

Of the five native species of amphibian in Kent, two are frogs and toads, and three are newts. They are the Common Frog, the Common Toad, the Smooth Newt, the Palmate Newt and the Great Crested Newt. The Great Crested Newt has European Protected Species status, and the Common Toad is on England's list of species of principal importance. All these amphibians have partial protection under the Wildlife and Countryside Act. The Natterjack Toad became extinct in Kent in the 1960s and native Pool Frogs have never been recorded in the county.

Amphibians are dependent upon the presence of breeding ponds with suitable terrestrial habitat. Lowering pond density can result in damaging levels of population fragmentation. The Low Weald has the highest pond density in Kent and is consequently the stronghold of great crested newts.

Although trends at a county level are difficult to establish, the distribution and status of Kent's amphibians is better known now than ever before, and expert opinion suggests that populations of all of Kent's amphibian species are reasonably stable. However, significant losses of all species are likely to have occurred throughout the 20th century, primarily linked to the loss of breeding ponds. The Marsh Frog has become established in Kent over the last 80 years and the range of the species continues to expand. The impact of the Marsh Frog on native amphibian species is still unclear.

Habitat availability, disease and climate change all pose considerable threats to amphibian species.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Common Toad
- Great Crested Newt

Annelid priority species

Annelid species, also known as segmented worms, include bristleworms (polychaetes), earthworms and leeches, and are found in the sea, on land and in freshwater.

Bristleworms are found throughout the intertidal zones of the county and form part of the rich foraging grounds of North Kent. The Tentacled Lagoon Worm is a tiny bristleworm that creates and lives in tubes made of mud within its estuarine habitat. It has numerous tentacles around its mouth, which it uses to feed on the surrounding mud. It is a nationally scarce species, found in the Medway and Thames Estuary, and is particularly vulnerable to changes in its habitat. The Medway Estuary and Swanscombe Marine Conservation Zones are the only designated area where the Tentacled Lagoon Worm is protected.

An annelid of particular note in the county is the Medicinal Leech, with significant populations found at various locations across Romney Marsh.

Priority species requiring broad habitat measures	Relevant Local Nature Recovery Strategy priority
Tentacled Lagoon Worm	Saline lagoons CL6 Mudflats CL2

Oare Marshes by Jim Higham

Bee, wasp and ant priority species

Bees, wasps and ants (aculeates) in Kent total 523 species. However, 42 of these are regarded as extinct, meaning that the current total of species is 481, which includes 219 species of bee, 221 species of wasp and 41 species of ant. Kent has a nationally important aculeate fauna, with one of the highest diversities in the UK. This results from a variety of habitat types that are suitable for a broad range of species, as well as from warm summers and the county's proximity to Europe, as the continent provides a source of new arrivals. Among these species, Kent is nationally important for White-bellied Mining Bee, Maidstone Mining Bee, Grey-backed Mining Bee, Shrill Carder Bee, Four-banded Weevil-Wasp (also known as Four-banded Digger Wasp), Square-jawed Sharp-tail Bee and Hairy-horned Mining Bee (also known as Fringe-horned Mining Bee).

Ants, bees and wasps in Kent are generally suffering from downward trends. This is particularly true of some of the more specialist species in this group. However, some generalist species appear to be on the increase and the number of ants, bees and wasps recorded in the county is growing year on year, because of new species colonising from continental Europe or variable species being recognised as multiple cryptic species. There has been a total of six aculeate species lost in the last century in Kent, some of which are also now nationally extinct. However, 17 aculeate species have been added to the county list, with the majority being discovered in the last decade.

Habitat loss is the main driver of change for this fauna, whether this is through the direct loss of sites to development or inappropriate habitat management. Other important factors affecting their populations include climate change and pesticide use. With a changing climate and more development pressure, it is likely that the general trend will continue to decrease.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Four-banded Weevil-wasp
- Fringe-horned Mason Bee
- Long-spined Ant
- Maidstone Mining Bee
- Moss Carder Bee
- Oak Mining Bee
- Sea Aster Bee
- Shrill Carder Bee
- Shining Guest Ant

Beetle priority species

Almost 68% of Britain's beetles have been recorded in Kent – the known Kent fauna currently comprises 2,758 species in 99 families. Beetles can be found in almost all habitats in Kent, but semi-natural habitats hold the richest diversity of species. Kent's beetle fauna is dynamic with new species being found annually. Kent is home to many threatened and specialised species vulnerable to the effects of environmental change and degradation, although the recording of beetles is patchy both in terms of space and time, so trends are difficult to determine.

Generalist species seem to be doing well in Kent, but there is no baseline data on their abundance. Specialist species are restricted by the availability of their habitat and are threatened by habitat loss, degradation and fragmentation. However, some, at the northern edge of their climate envelope in Kent, may be able to broaden their niche and thrive as the climate warms. Kent's position close to the continent makes it a gateway for new species to arrive either by natural dispersal or by human-assisted migration. The effects of non-native species are rarely studied unless they are potentially economically important pests.

Local Nature Recovery Strategy priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Anthicus bimaculatus
- Dune Tiger Beetle
- East Coast Dune-walker
- Kentish Clown Beetle
- Longitarsus aeruginosus
- Noble Chafer
- Omphalapion beuthini
- Ophonus puncticollis
- Phoenix Clown Beetle
- Pride of Kent Rove Beetle
- Pseudeuparius sepicola
- Red-horned Cardinal Click Beetle
- Sandwich Click Beetle
- Smicronyx coecus
- Southern Oyster Mushroom Beetle
- Spangled Button Beetle

Priority species requiring broad habitat measures	Relevant Local Nature Recovery Strategy priority
Black Night-runner	Lowland fens FW7
Haliplus variegatus	Lowland fens FW7

Wood anemones by Jim Higham

Bird priority species

About 245 bird species have been recorded regularly in Kent during the past 100 years, 150 of them breeding. Kent's location in the south-east makes it well placed to receive new colonists of Britain, and also to support birds at the limit of their European range. The long coastline and especially the estuaries are vital to huge numbers of wintering and passage birds, most notably waterfowl.

Kent is located on migration routes used by thousands of terrestrial and coastal birds that make annual journeys between their breeding grounds in the northern hemisphere and wintering areas in the south. Almost 430 species of bird have been recorded in Kent, including both residents and migrants, but this total includes some that are rare visitors, occurring only occasionally and in very small numbers.

Kent supports national strongholds of species, whose ranges are contracting towards the south-east, including the rapidly declining Turtle Dove and Nightingale. Being close to the continent, Kent is well placed to receive the first pairs of colonising species that are expanding their range, such as Cetti's Warbler in the 1970s and Black-winged Stilt in the last decade.

Kent's long coastline and the estuaries are vital for large populations of non-breeding waterfowl (taken here to include Ducks, Geese, Swans, Waders, Herons, Cormorants, Divers, Coots and Rails, Gulls and Terns). The more important species depend on a range of habitats – intertidal mud, freshwater bodies and grassland – and include, for example, Brent Goose, Shoveler, Black-tailed Godwit and Dunlin.

The most important habitats at a national and international scale are coastal ones (shallow offshore waters, estuaries, and grazing marsh), which support important populations of wintering and some breeding birds. Also noteworthy are the large areas of woodland and the many artificial and natural wetlands. However, all land-use types, including farmland and built development, have their distinctive features for birds.

Over the past century, bird species' fortunes seem to have been fairly evenly matched. Broadly speaking, the numbers of increases are similar or a little greater than the numbers of decreases, but this masks a good deal of complexity within the lists of species involved, and this comparison does need to be qualified for several reasons. Firstly, measuring change simply by the number of species increasing or decreasing ignores changes in abundance. Evidence at national level is that, for the past 50 years, many species groups, most notably specialist farmland and woodland breeding birds, have been declining in abundance. Even those groups that had been increasing in abundance, such as wintering waterfowl, are now showing declines.

Secondly, there is a strong possibility that the qualitative descriptions of species' abundance on which we relied until around 1970, are not precise enough to be able to infer actual changes, and the imprecision of status descriptions may well have obscured many real changes.

Thirdly, some species – perhaps many – have not simply increased or decreased over the century. At some times, populations have declined and at others they have recovered. Such ups and downs have occurred over the long term or even within short periods. Such a pattern of changes makes judging the overall trend difficult.

These limitations should be considered while observing that, up to the 1970s, most species seemed to undergo little change, and increases outweighed decreases. From that point on, with better evidence, more changes were apparent, but the balance was still towards more species showing a population increase. In the most recent period, since 2010, that situation has reversed and decreases have exceeded increases. Taking abundance changes into account, as well as species richness, the current picture is one of a substantial and worrying loss of bird biodiversity. There is strong evidence of declines of specialist farmland and woodland birds and, recently, declines have started to affect groups, such as wintering waterfowl, that were formerly increasing.

Land use and habitat change has been the primary driver of changes in bird numbers, now exacerbated by climate change, although altering levels of disturbance and persecution, and introductions of non-native species, have played their part. For migrant birds, similar effects on migration routes or on breeding or wintering grounds also are influential.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Bittern
- Brent Goose
- Common Tern
- House Martin
- Lapwing
- Little Tern
- Nightingale
- Nightjar
- Redshank
- Ringed Plover
- Sand Martin
- Sandwich Tern
- Swift
- Tree Sparrow
- Turtle Dove
- Wheatear

Priority species requiring broad habitat measures	Relevant Local Nature Recovery Strategy priority
Barn Owl	Lowland meadows GL3 Arable field margins GL5 & LM1 Wood pasture and parkland WTH1
Bearded Tit	Reedbeds FW8
Corn Bunting	Coastal and floodplain grazing marsh GL2 Arable field margins GL5 & LM1
Grasshopper Warbler	Acid grassland and heathland GL4 Scrub SH2 Hedgerow WTH8 Lowland mire sites (fen and valley mires) FW7
Grey Wagtail	Rivers FW1
Kingfisher	Rivers FW1 Standing waters FW6
Kingfisher	Lowland mixed deciduous woodland WTH1 Ancient woodland WTH5 Wet woodland WTH6 Traditional orchards WTH9
Linnet	Lowland heathland GL4 Arable field margins GL5 & LM1 Scrub SH2 Hedgerow WTH8
Marsh Harrier	Coastal and floodplain grazing marsh GL2 Arable field margins GL5 Reedbeds FW8
Marsh Tit	Lowland mixed deciduous woodland WTH1 Ancient Woodland WTH5
Oystercatcher	Coastal and floodplain grazing marsh GL2 Coast CL1 Vegetated shingle CL7
Pochard	Coastal and floodplain grazing marsh GL2 Lowland mire sites (fen and valley mires) FW7 Saline lagoons CL6 Ponds and lakes FW6
Shoveler	Coastal and floodplain grazing marsh GL2 Ponds and lakes FW6 Lowland mire sites (fen and valley mires) FW7 Saltmarsh and mudflats CL2 Saline lagoons CL6
Waders and wildfowl	Coastal and floodplain grazing marsh GL2 Intertidal mudflats CL2 Saline lagoon CL6
Yellowhammer	Lowland heathland GL4 Arable field margins GL5 & LM1 Scrub SH2 Hedgerow WTH8
Yellow Wagtail	Coastal and floodplain grazing marsh GL2 Arable field margins GL5 & LM1

Heath Fritillary butterflies by Jim Higham

Butterfly priority species

Kent has 42 of Britain's 59 resident species of butterfly. The last decade has seen an improvement in the fortunes for several species of butterfly in Kent. The nationally scarce species Heath Fritillary and Duke of Burgundy have increased in number and extended their range slightly. Several other species, including Adonis Blue, have also expanded their range, although the spread of Silver-spotted Skipper has slowed. Brown Hairstreak, which had not been seen in Kent since 1971, was recorded again in 2016, and is slowly expanding its range in Kent, colonising from Surrey. However, one of our native species, the Grayling, is on the brink of extinction in the county, with a sighting in 2020 the first for seven years.

A number of the county's species include regular migrants from continental Europe, such as painted lady and clouded yellow, which breed here most years. In addition to the 42 resident species, there are rarer migrants, such as the continental form of Swallowtail, Large Tortoiseshell, Scarce (Yellow-legged) Tortoiseshell, Camberwell Beauty and Queen of Spain Fritillary. The Long-tailed Blue has reached Kent on several occasions since 2013 and has produced another generation, although it did not survive the winter.

Although records paint a favourable picture for butterfly populations, it is not entirely representative, as many colonies of our more common butterflies have been, and continue to be, lost to an increase in the built environment. The short grassland of the North Downs is a key butterfly habitat, especially for Adonis and Chalk Hill Blues, but a lack of management to maintain these grasslands as a suitable habitat poses a threat to these species. Lack of management is also an issue in the county's woodlands, with a reduction in coppicing making most woods unsuitable for many butterflies.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Adonis Blue
- Brown Hairstreak
- Chalk Hill Blue
- Dark Green Fritillary
- Dingy Skipper
- Duke of Burgundy
- Grizzled Skipper
- Heath Fritillary
- Silver-spotted Skipper
- Small Blue
- Wall
- White Admiral
- White-letter Hairstreak

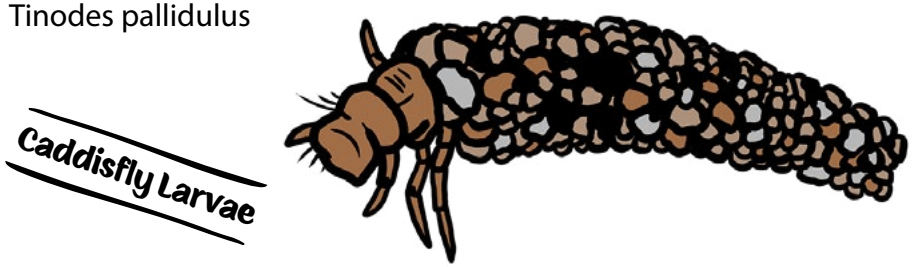
River Stour by Jim Higham

Caddisfly priority species

Caddisfly, also known as Sedge Flies, can be found in all types of wetlands and are often found in large numbers near water bodies. Adults are moth-like insects with hairy wings. They are an important food source for freshwater species including the Brown Trout and Atlantic Salmon, as well as birds and bats.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Tinodes pallidulus



Crustacean priority species

The UK has only one native freshwater crayfish – the White-clawed Crayfish, a bronze-coloured crustacean with pale undersides to its claws, hence its name. It is an omnivorous crustacean that eats invertebrates, carrion, water plants and dead organic matter. It inhabits small freshwater streams of a depth less than 1 metre, hiding underneath stones and rocks and in small crevices where it forages for food. The species is in decline due to the introduction of the non-native North American Signal crayfish, which has brought disease that the indigenous crayfish has no natural resistance to.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- White-clawed Crayfish

Dragonfly and damselfly priority species

When it comes to dragonflies, Kent is one of the most species-rich counties in the UK. The county currently hosts 36 species of odonata that are classified as resident or regular migrants. Of these, one, the Norfolk Hawker (Aeshna isoceles), is listed as legally protected under the Wildlife and Countryside Act (1981) and five are listed in the Red Data List for Great Britain (2008).

The abundance and diversity of wetlands in Kent is a significant factor influencing the abundance and diversity of dragonflies. Kent's large swathes of grazing marshes form a rich mosaic of pools and ditches that support some of the country's rarest species, including the UK's only Dainty Damselfly populations.

In the case of many dragonfly species, maintaining an accurate profile of their status and trend history poses a significant challenge. Over the past 100 years, Kent has gained eight new species through natural colonisation. There is no evidence to suggest that any of these new arrivals have had a negative impact on the wetland communities of the sites they have colonised; consequently, none are classed as 'invasive'.

Climate change is causing rapid changes in species distribution and the county is likely to become home to more new colonists soon. Climate change also threatens several of Kent's resident species – those that occupy low-lying flood plains and coastal marshes that are at risk from sea-level rise, as well as peat bogs and shallow streams or pools that are at risk from desiccation because of rising summer temperatures and increasing droughts. The future of these species-rich habitats is uncertain, as sea-level rise is predicted to threaten many of these coastal and flood plain wetlands. In addition, changes in rainfall patterns, another result of climate change, are threatening some of Kent's rarest wetland habitats, in particular lowland bogs and their associated peatland specialist dragonflies.

Changes in land use and land-use practices, such as urban development and the intensification of agricultural practices, have been historically, and continue to be, a key driver of species trends through the destruction, fragmentation, and degradation of habitat.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Brilliant Emerald Dragonfly

Migrant Hawker Dragonfly by Jim Higham

Fish priority species

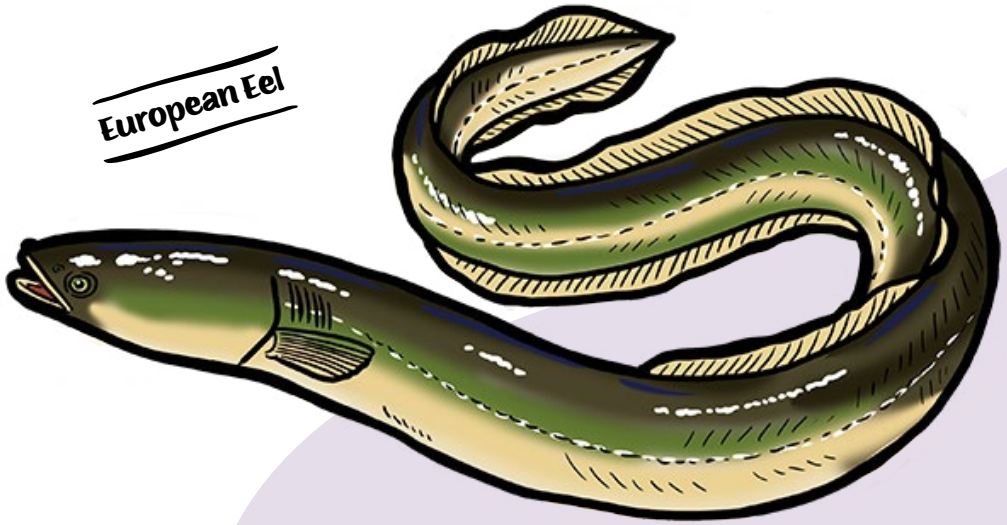
Kent has a variety of freshwater fish species, including both native and introduced species. Common fish include Brown Trout, Rainbow Trout, Gudgeon, Minnow and Tench. Our waters are also home to the European Eel, a very long, narrow fish that can grow to over a metre in length. They can be found in rivers and ditches across the county. Once widespread, they are now one of the most endangered species in the UK and have seen a 95% population decline in the last 40 years. Similar in appearance to the Eel are the River Lamprey and Sea Lamprey, which are widespread in Kent and Medway but are, nevertheless, rare. All three of these fish species migrate between rivers and seas to spawn.

It is because of these movements, which are so critical to the lifecycles of many freshwater species, that the construction of dams and other human-made structures in our rivers pose an issue, creating barriers to their movement. Habitat loss and degradation, and in particular water quality, are also threats to our freshwater species.

Kent's marine waters are home to a diverse array of fish species, including Bass, Mullet, and various flatfish like Plaice and Sole. There are various Skate and Ray species, including the Thornback Ray and Common Skate. In the intertidal areas, rockpool fish such as the Tompot Blenny, Butterfish and Rock Goby are commonly found. Both of the two seahorse species found in UK seas are present in our coastal waters – the Spiny Seahorse (Or Long-snouted Seahorse) and the Short-snouted Seahorse – and are found in shallow waters, often in estuaries or associated with seagrass meadows.

Threats to our marine fish include the overexploitation of fish stocks, pollution from sewage discharge, oil spills, and nutrient and physical disturbance from dredging, mobile fishing gear, boat anchoring and coastal development.

Priority species requiring broad habitat measures	Relevant Local Nature Recovery Strategy priority
European Eel	Coastal and floodplain grazing marsh GL2 Rivers FW1 Standing water FW6 Lowland mire sites FW7 Freshwater wetlands FW9 Ditch networks of marshes and lakes FW10
River Lamprey	Rivers FW1
Sea Lamprey	Rivers FW1
Smelt	Rivers FW1
Short-snouted Seahorse	Seagrass CL3
Spiny Seahorse	Seagrass CL3



Fungi priority species

Kent has a rich assemblage of fungi, with 859 species known in the database held by Kent and Medway Biological Record Centre. Four Kentish species are protected by the Wildlife and Countryside Act 1981, and a further eight boletes are on the UK Red Data List. In addition, there are 43 species of fungi on the Red Data List for Kent. Many common species are widespread across the county, with the rare or endangered species restricted to the county's unimproved chalk grasslands, meadows, ancient woodlands, traditional orchards, parkland with veteran trees, churchyards and sand dunes.

The vast number of species, relative paucity of recording effort for fungi, and lack of structured, methodological survey schemes mean that assessing trends in the abundance of fungi is highly challenging and therefore it is not possible to summarise anything meaningful for this Strategy. Some newly recorded and interesting species of fungi have been discovered in Kent in the past 10 years.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Marram Oyster Fungus
- Orchard Tooth
- Pink Waxcap
- Purple Webcap
- Sweet Webcap

Marram Oyster Fungus

Rufous Grasshopper

Grasshoppers, crickets and allied priority species

There are 25 species of bush-cricket, cricket, grasshopper and groundhopper which are regularly recorded in Kent and Medway, around five species of cockroach found outdoors and four species of earwig. Several species are rare or scarce nationally.

Climate change has resulted not only in the spread of previously restricted species but has led to the arrival and establishment of a number of new species from the near continent over recent years. Changes in habitat management have led to declines in the distribution of several species.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Rufous Grasshopper
- Wart-biter Bush Cricket

Lichen by Jim Higham

Lichen priority species

A diverse range of lichen species in the UK can be seen in a variety of habitats – rocks, walls, twigs, bark and exposed soil surfaces. Some species are able to occupy a wide range of habitats, while others require very precise conditions of humidity, shade, substrate or nutrient enrichment. Lichens are non-parasitic and do not harm any plants they grow on. In fact, they are useful to other wildlife by offering nesting material for birds, and food and shelter to many invertebrates – which in turn feed other creatures. Woodlands rich in lichens support more wildlife than any other.

Lichens are incredibly sensitive to pollution and can highlight the quality of the surrounding air. Crusty lichens are hardier to pollution, whereas the more delicate beard-like lichens are mostly found in cleaner locations and are rarer.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Enterographa elaborata
- Cladonia mitis

Mammal priority species

Twenty-nine terrestrial mammal species are found in Kent. Eight mammal species in Kent are of major conservation concern; these are the IUCN Red Listed: Water Vole, Hedgehog, Hazel Dormouse, Harvest Mouse, Otter, Polecat and Eurasian Beaver, which is a critically endangered mammal. Terrestrial mammals occupy all identified Kent priority key habitats and occupy a range of niches. The Hazel Dormouse stronghold is predominantly the woodlands, hedgerows and scrub areas of Kent and other southern counties. The Beaver, Otter and Water Vole all require sympathetic freshwater habitats. Hedgerows are an important priority habitat for many other mammal species including Harvest Mouse and Hedgehog.

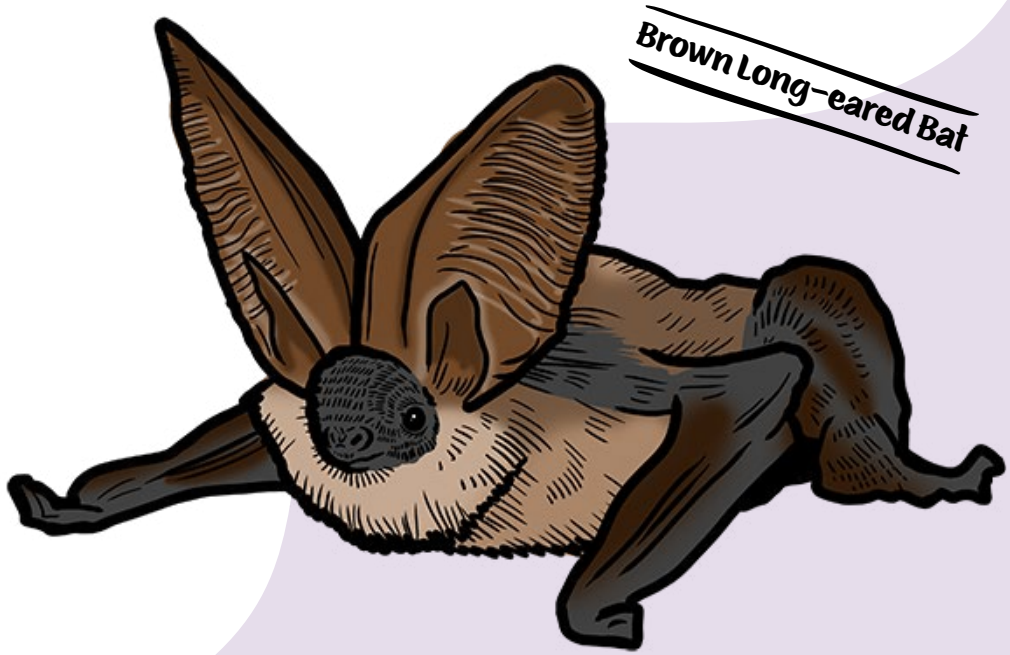
The Red Squirrel was lost from Kent in the 1950s, along with the Otter. The Otter has returned in small numbers, but the Grey Squirrel (introduced more than 100 years ago) has supplanted the Red Squirrel. The Polecat and Wild Boar have also returned to Kent in recent years. Official and unofficial reintroductions of Eurasian Beaver have seen the return of this species to East Kent. Trends over time indicate that Hedgehog, Water Vole, Hazel Dormouse and Brown Hare populations are all declining. The most recent 'State of Britain's Hedgehogs' (2022) report estimated that Hedgehogs in rural areas have declined by half, and in urban areas by a third since 2000 – there is no reason to suggest that the national decline is any different in Kent. The Water Vole has suffered a catastrophic reduction in population as a result of loss/degradation of habitat and predation by the non-native American Mink.

Kent has a rich fauna of bats, with 17 of the UK's breeding species recorded in the last 10 years. The importance of Kent coastal waterbodies to migrating Nathusius' Pipistrelles has become apparent by trapping. Two of this species trapped in East Kent had been ringed in Lithuania. The loss and 'improvement' of grazed grasslands are of particular concern. Native woodland is overmanaged, with excessive coppicing in much of Kent, to the detriment of the less common woodland bats.

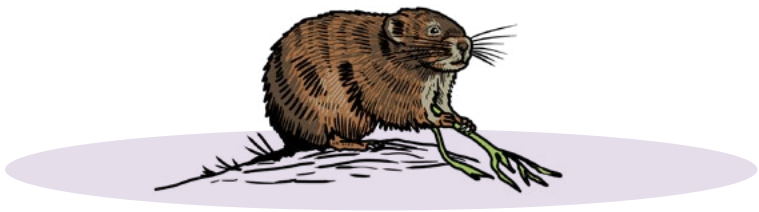
Populations of most species have much reduced in recent decades but three species of bat new to Kent have been recorded in the last 10-year period – Kuhl's Pipistrelle, Lesser Horseshoe and Greater Horseshoe. It is significant that both Horseshoe species were recorded in an area of restored grassland habitat. There have been several records of Kuhl's Pipistrelle, as elsewhere in the UK – there is a suggestion its presence may be linked to climate change. The status of the three species in Kent is currently unknown.

Local Nature Recovery Strategy priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Beaver
- Bechstein's Bat
- Brown Long-eared Bat
- Leisler's Bat
- Noctule Bat
- Serotine Bat



Priority species requiring broad habitat measures	Relevant Local Nature Recovery Strategy priority
Brown Hare	Chalk grassland GL1 Coastal and floodplain grazing marsh GL2 Lowland meadows GL3 Arable field margins GL5 & LM1 Open mosaic habitats on previously developed land (brownfield) SH1 Traditional orchards WTH9 Vegetated shingle CL7
European Water Vole	Coastal and floodplain grazing marsh GL2 Rivers and streams FW1 Ponds and lakes FW6 Lowland mire sites (fen and valley mires) FW7 Reedbeds FW8
Hazel Dormouse	Open mosaic habitats on previously developed land (brownfield) SH1 Scrub SH2 Woodland WTH1 Ancient Woodland WTH5 Hedgerow WTH8 Urban URB1
West European Hedgehog	Lowland meadows GL3 Arable field margins GL5 & LM1 Open mosaic habitats on previously developed land (brownfield) SH1 Scrub SH2 Hedgerow WTH8 Urban URB1



Brown Hare by Jim Higham

Snail on a leaf by Jim Higham

Millipede priority species

Millipedes are a common invertebrate found in various habitats like gardens, woodlands and under rocks, feeding on decaying vegetation and playing a role in nutrient recycling. There are around 62 millipede species in the UK.

Increased development pressures and agricultural/land-use changes threaten undisturbed soils that could potentially support some of our rarer and endangered millipedes.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Boring Millipede
- Kentish Snake Millipede

Mollusc priority species

Molluscs are a varied group of species, ranging from the cephalopods of octopus, squid and cuttlefish to the gastropods of slugs, snails and limpets. Molluscs are found in terrestrial, freshwater and marine environments.

This group of species includes the Native Oyster. As a result of overharvesting, disease, pollution, habitat loss and invasive species, this once-common species has seen a 95% decline and now has just a few strongholds – one of them in the Thames Estuary, off the Kent coast.

Along with Blue Mussels, a more commonly found marine mollusc, the Native Oyster is prioritised by the Kent and Medway Local Nature Recovery Strategy under the coastal ambition, owing to their habitat building potential.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Shining Ram's-horn Snail

Moth priority species

All key habitats in Kent hold at least one population of nationally important macro or micro moth species. Approximately 750 species of macro moth have been recorded in Kent, which includes some very scarce migrants and some now believed to be extinct, representing about 80% of the UK macro moth species. New species continue to be recorded every year in Kent. Kent has important populations of a number of rare moth species, including Straw Belle and Black-veined Moth on the Kent Downs, the principally coastal species Bright Wave and Fiery Clearwing, and Fisher's Estuarine Moth around the Thames Estuary.

Kent is currently home to somewhere between 1,300 and 1,400 species of micro moth, the list being in constant flux. The positive news is that many species have been added to this list in the last few years, some also representing the first record for the UK.

Trends in Kent for all moths show a mixed picture over the last 10 years, but it appears that more species show an increase than a decrease. An increasing number of species are establishing breeding populations in Kent. It appears that climate change is now the main driver of change for populations of Kent moths. Other factors include land use (including the use of chemicals and eutrophication) and artificial light at night.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Aspen Knot-horn
- Barred Tooth-striped
- Black-veined Moth
- Daisy Case-bearer
- Drab Looper
- Fisher's Estuarine Moth
- Forester
- Lappet
- Liquorice Piercer
- Marsh Mallow Moth
- Milkwort Beauty
- Scabious Leaf-miner
- Scarce Goldenrod Plume
- Straw Belle
- Sussex Emerald
- White-spotted Sable

Cinnabar Moth by Jim Higham

Reptile priority species

Kent's native reptile fauna includes two snakes – the Grass Snake and Adder – and two lizards – the Viviparous (or Common) Lizard, and the Slow Worm. Sand Lizards were reintroduced to a dune system in East Kent from 2004 to 2006, following their extinction in the late 1960s – the species is actively monitored and was observed in 2025. Non-native species include the Wall Lizard, which has breeding populations at several locations in Kent. Terrapins have also been found in various water bodies, but without evidence of reproduction.

Kent's reptiles use a range of habitats, of which chalk grassland and its associated low scrub is particularly important. While areas of chalk grassland are often wildlife reserves, reptile populations may still be threatened by unsympathetic management. Brownfield sites are important but sometimes overlooked as reptile habitats.

Expert opinion suggests that all four native species are in decline, although all have partial protection under the Wildlife and Countryside Act (1981). Of most concern is the Adder, which is thought to be in urgent need of new conservation efforts. Habitat loss and fragmentation are currently the most significant drivers of change; however, the first evidence of the negative impacts of climate change – especially for Adders and possibly also Slow Worms – is beginning to emerge.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Adder

Spider priority species

Kent has a rich spider fauna, with 473 species representing almost 71% of the 670 recorded from the British Isles. In total, 22 spider species that occur in Kent are listed as threatened with extinction in Britain, with a further 11 listed as Near Threatened. Among these 33 species there are six for which all UK records are from Kent, while a seventh, Clubiona pseudoneglecta, is only known in the Scilly Isles and Kent.

Hot spots for these species are to be found in Kent's chalk grasslands, ancient woodlands and coastal habitats. The county's warm climate, together with the mix and variety of habitats, are the likely major drivers of species richness, but proximity to continental Europe is also important. Kent is in the front line for spider species colonising both naturally by aerial dispersal – so-called ballooning – and as hitchhikers in freight and luggage.

Of the 12 species newly recorded in Kent in the last decade, most are non-native and relatively new to Britain. Half are likely to have colonised via the Thames corridor. Historically, the destruction of most of the county's extensive tracts of heathland and lowland meadows through agricultural intensification and urbanisation is likely to have caused the loss of many specialist spider species dependent on these habitats. The semi-natural habitats for which the county is best known – ancient woodland, chalk downland and coastal sand dunes, shingle and mud flats – are now hot spots for species richness and species of conservation concern. Among many drivers of population change, pressures on coastal habitats from development, tourism and the impacts of climate change are likely to cause most losses from the county's spider fauna in the next decade, and should be a focus for conservation action.

Although numbers of non-native species are increasing, with evidence that the Thames Gateway is an important route of entry, no evidence is available on their impacts on native species. Our ability to detect trends in spider populations is restricted by a lack of systematic recording but increasing interest in this challenging and important group will encourage the use of new recording methodologies, which are urgently needed to inform more effective spider conservation.

Priority species requiring bespoke measures(see Appendix 3.1 for details of measures)

- Distinguished Jumping Spider
- Sand Running Spider

Priority species requiring broad habitat measures	Relevant Local Nature Recovery Strategy priority
Duffey's Bell-head Spider	Saltmarsh CL2
Yellow-striped Bear-spider	Saltmarsh CL2

Elmley by Jim Higham

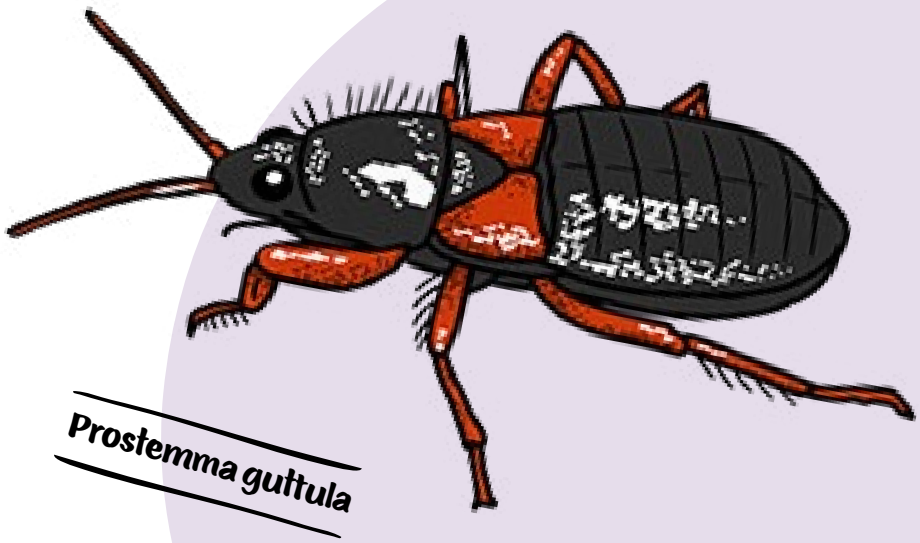
True bug priority species

True bugs are one of the major groups of insects found in the UK, comprising nearly 2,000 species and including shieldbugs, froghoppers (spittle bugs), pond skaters and aphids.

True bugs face the same threats as other insects, including habitat loss and pesticide use. Climate change, and the resulting altered temperature and weather patterns, is another threat, disrupting breeding cycles, affecting the availability of food sources and potentially favouring invasive species.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Greater Streaked Shieldbug
- Prostemma guttula



Prostemma guttula

Vascular plant priority species

As a reflection of its enormously varied topography and geology, more than 2,500 species, subspecies and hybrids of vascular plants have been recorded growing wild in Kent. Of these, around 950 are native and the remainder were introduced by humans, either deliberately or accidentally. In Kent, we have 194 plants with Red List status, six of which are Critically Endangered, 33 are Endangered and 77 are Vulnerable. The remainder are listed as Near Threatened. The county's Rare Plants Register currently lists 333 species – all Threatened and Near Threatened plants are included, along with nationally rare or nationally scarce plants such as Wild Cabbage (Brassica oleracea var. oleracea) and Coralroot (Cardamine bulbifera), both of which have significant Kent populations.

The Kent flora is better documented now than ever before and recording our flora helps us to identify those plants most in need of assistance. In the last 10 years, four native species have been added and 14, previously thought to have been lost, have been re-found. Some coastal plants have continued to increase their range but there have been declines elsewhere. Species including threatened orchids, thought 10 years ago to have been suffering serious declines, are faring much better than was feared.

A few non-native species from warmer climates have reached Kent and colonised motorways and other roads. Plants of nutrient-poor soils, grasslands, wetland habitats and waterbodies have suffered the largest population decreases.

The last 10 years have seen great advances in habitat improvement for wild plants on Kent's nature reserves and elsewhere in the county. Kent Wildlife Trust has produced pioneering evidence-based information to inform management decisions and provide better outcomes for plants on its reserves and in the wider countryside. Many farmers and landowners have successfully taken part in voluntary schemes aimed at encouraging uncommon arable weeds and grassland plant communities, while landscape-scale partnerships, such as the Upper Beult Farming Cluster, involving farmers, landowners and water authorities, can be expected to benefit aquatic and meadowland plants in the Low Weald by improving water quality and habitats.

However, wildflowers continue to decline – particularly those which grow on nutrient-poor grasslands and those associated with water bodies and wet habitats. Insufficient grazing, scrub invasion and nutrient enrichment together alter soil composition and reduce the number of wildflowers that can survive in grasslands. Nitrogen-hungry broadleaved grasses and herbs outcompete delicate grassland plants for space so that no bare ground remains for annual species to germinate. For plants of ponds, rivers and ditches, water extraction and lack of management causes water bodies to dry up, while poor water quality affects the survival of species that grow submerged in the water. Without help, some of our grassland and wetland species are at risk of disappearing, and more needs to be done to persuade land managers to implement appropriate measures for their long-term conservation.

Priority species requiring bespoke measures (see Appendix 3.1 for details of measures)

- Bedstraw Broomrape
- Borrer's Saltmarsh-grass
- Bur Medick
- Dwarf Milkwort
- Frogbit
- Greater Water-parsnip
- Green-Winged Orchid
- Ground-Pine
- Heath Dog-violet
- Juniper
- Lady Orchid
- Least Lettuce
- Lizard Orchid
- Musk Orchid
- Ox-Tongue Broomrape
- Slender Hare's-ear

Priority species requiring broad habitat measures	Relevant Local Nature Recovery Strategy priority
Opposite-leaved Pondweed	Rivers and streams FW1 (chalk streams) Lowland mire sites (fen and valley mires) FW7
True Fox-sedge	Rivers and streams FW1 Ponds and lakes FW6