APPENDIX A

Sustainable Amenity Grassland Management Strategy*:*
Incorporating Community Choices to Grounds Maintenance

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Appendix to CE report 13/05/24

Contents

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General context

We are living in an unprecedented period of global crises which are interlinked and the effects of each are often influencing the other. The State of Nature report[1] highlighted the general negative trend in biodiversity loss of nature. Currently, one in nine (11%) of Scottish species are threatened with extinction. Since systematic monitoring of 407 species began in 1994, on average, Scottish Wildlife has decreased by 15%. Looking at flowering plants specifically, since the 1970's, almost half (47%) of Scotland's flowering plants have been lost from areas where they were previously found. Species associated with arable farmland and semi-natural grassland have shown particular decline with a 39% loss of lowland meadow sites[2].

Along with other Nations, Scotland has recognised the Climate & Nature Emergency. Scotland is committed to tackling the dual climate and nature crises by reaching a target of net-zero emissions by 2045 and for Scotland to be Nature Positive by 2030 (i.e. halt biodiversity loss by 2030), and to have restored and regenerated biodiversity across the country by 2045.

What are grasslands?

When you think of grasslands you may think of the vast savannahs of Africa, prairies of north America or the Central European Steppes but, grassland is a hugely important habitat type found all over the globe, except Antarctica. Put simply, grasslands are any areas of vegetation where grass is the most common or dominant species. In Britain, around 40% of the land surface is grassland and in West Lothian this special habitat type matches the national average.

Types of grassland

Grasslands can be categorised through different methods and this categorisation helps inform us of the importance and what species may be present. Commonly used methods range in complexity from the simple end of Phase 1 habitat survey[3], through to more complex categorisation by vegetative communities as is detailed through National Vegetation Classification (NVC)[4] surveys.

While there are many types of grassland found within West Lothian, for the purposes of this document and with specific reference to the management of West Lothian Council Amenity Grassland asset, we are discussing three main types: Amenity grassland, Semi-natural/Semi-improved grassland and Wildflower Meadows Sites.

- Amenity grassland is the type of grassland found in most of our urban areas and greenspaces. These grasslands have been heavily modified/improved by drainage/application of fertiliser etc. Amenity grassland areas are short, close mown grass with an even sword height, typically containing around 10% herb species and no shrubs. This limits the type of species able to grow and they typically support a relatively low abundance of species. Management of this type of grassland is typically done frequently in peak growing season.
- Semi-natural/Semi-improved grasslands: These have been modified through practices like fertilising, grazing, herbicides, or drainage. They are less diverse than Wildflower Meadows but offer a good balance with a variety of structures and species, supporting more wildlife. These areas may be unmanaged, managed, or grazed, but typically receive less intervention than amenity grasslands. Their conservation value varies, with higher-quality grasslands reflecting the base substrate (acid, neutral, or calcareous species). Less diverse grasslands still provide structural variety and more species than amenity grasslands.
- Wildflower Meadow Sites: Wildflower Meadow Sites are man-made, species-rich grasslands designed to enhance biodiversity and support invertebrates, especially pollinators. These semi-improved sites aim to reach an unimproved status, with high species diversity and low agricultural species. They are managed with minimal fertilisers and herbicides,

[1] State of Nature (2023), State of Nature Partnership. Available at https://stateofnature.org.uk/wp-content/uploads/2023/09/TP26056-SoN-Scotland-summary-report-v5-1.pdf

[2] Scottish Government, (2023). *Scottish biodiversity strategy: A strategy for the conservation and enhancement of biodiversity in Scotland*. Scottish Government. Available at: https://www.gov.scot/publications/scottish-biodiversity-strategy/

[3] JNCC, (2016 Revised), *Handbook for Phase 1 habitat survey – a technique for environmental audit*, JNCC, Peterborough, ISBN 0 86139 636 7.

[4] Rodwell (2006) *NVC Users Handbook*, JNCC

using grazing or traditional hay cuts to maintain diversity. In West Lothian, there are 34 perennial wildflower meadows, managed with a single end-of-season cut and lift or grazing.

Benefits of grasslands

Biodiversity

As with other ecosystems, grasslands supports a range of species and are home to many of our most threatened and declining species. Semi-natural grasslands have declined dramatically across the UK since the 1930's. Grasslands are important for many species of plants and animals and in general, species rich grasslands have associated higher levels of biodiversity both above and below the soil[5].

Invertebrates:

Invertebrates use grassland to breed, feed and overwinter. While species diversity is affected by a number of factors including region, soil structure, vegetation types, management measures, landscape structure and other environmental conditions; all grassland types are valuable for invertebrates. Structural diversity is one of the key factors influencing invertebrate diversity. The most diverse groups of invertebrates are found on sites where there is a variety of vegetational stages, from bare ground through grassland to patches of scrub vegetation. Longer grass acts as a refuge for many insects and many species rely on it to complete their lifecycle, such as the meadow brown butterfly. Semi-natural grasslands support more species of butterfly than any other habitat type in Britain.

Allowing amenity grass to grow to full height in some areas will create more semi-natural grassland communities across council land. This will benefit species diversity by increasing the variety of habitats available, as different insects rely on different plant species. The current mowing regime favours a few species, therefore many of the plant species that invertebrates rely upon don't get the chance to grow.

Birds:

As with invertebrates, diversity of bird species is related to a number of factors but many species are reliant on grassland for foraging and nesting. Increasing grassland diversity within areas is particularly valuable as different species are reliant on different types of grassland for different reasons and at different times of the year. Aerial feeders such as swifts and swallows feed on insects flying above grasslands and uncut areas typically attract large numbers. Starlings, rooks, jackdaw, magpie and buzzards all rely on grassland throughout the year. Skylarks and meadow pipits are common ground nesting species within unmown semi-natural grasslands. While short mown grass does have a benefit for a number of species (e.g. hedgehog) as it flushes out insect life and allows easier access to the soil and invertebrates, having a more diverse range of available habitats will allow a greater diversity of species to use an area. Areas of amenity grassland that are left to natural processes will eventually form scrub, if not managed. Scrub is an important and overlooked habitat. The presence of scrub in lowland grassland increases bird species diversity and supports the nesting of species of conservation concern such as Dunnock[6].

Reptiles and amphibians:

While West Lothian has few recorded reptiles, they are present across the region and are likely highly under-recorded. Reptiles are ectothermic, meaning they are reliant on the environment to regulate their body temperature, so Southern aspects and sunny rocks are favoured while basking. Equally as important are shady areas and taller vegetation which provides a more humid, cool area to avoid overheating. Taller grass areas are also used to hunt invertebrates and to avoid being hunted themselves.

[5] Baggaley *et al.* (2022) *Understanding carbon sequestration from nature-based solutions*. James Hutton Institute. ClimateXChange Publications.
[6] Blakesley & Buckley (2016). *Grassland Restoration and Management*, Pelagic Publishing, ISBN: 9781784270780, page 46.

Amphibians are common and widely distributed within grasslands of West Lothian with frogs, toads and newt species all utilising grassland. While breeding takes place within ponds and waterbodies, grassland forms an integral habitat to their survival as they use these areas to hunt for invertebrates typically within the longer rough grassland areas. They also make use of these grasslands for sheltering and avoidance of predators. Common frogs and toads tend to avoid short grasslands, preferring to forage for invertebrates in rough grassland, woodland and scrub. In general, the landscape within a kilometre or so of breeding ponds should comprise of a mix of semi-natural, scrub and hedgerows and woodland to support these species.

Mammals:

Whilst a large number of the mammal species in West Lothian are found within grassland habitats, they are not exclusively confined to these. Most are generalists, able to use several habitats, however, some are more specialised to woodland and aquatic habitats. Nonetheless, grassland plays an important role for foraging, commuting and shelter for mammals across West Lothian. Grasslands provide an abundance of food sources, such as plants, insects, and small animals, which are critical for the survival of herbivores and insectivores, while carnivores may hunt prey that inhabits these meadows. Additionally, grasslands often serve as corridors connecting different habitats, allowing mammals to move between woodlands, wetlands, or other ecosystems. For many species, grasslands act as a safe refuge, offering cover from predators and a place to raise young. Grasslands are an indispensable habitat that contributes to the overall health and sustainability of the mammal populations.

Ecosystem services:

The relationship between climate change and biodivesity loss is now well understood[7]. There is a need for solutions which mitigate climate change effects to also be delivering benefits to biodiversity[8]. Biodiversity is a key element in climate regulation. A resilient ecosystem is one with a diversity of species and is able to optimise ecosystem functions and services; allowing us to adapt to and mitigate the effects of climate change.

Natural systems can help us adapt to Climate Change by helping us to manage water, microclimates and human health– these are often called “nature-based solutions”. Longer grass and woodland can help reduce surface-water flooding: longer grass, through its increased surface roughness, can slow the speed of surface-water run-off[9] and therefore reduce overland flow in periods of extended rainfall.

A recent study[10] has examined the benefits of noise reduction by greening. Taller vegetation helps with buffering the noise from traffic, etc. and can help reduce noise more effectively than short mown grass. This may be particularly beneficial in areas where there is high traffic and therefore higher ambient noise.

Longer grass can help with urban heat effects. As longer grass tends to hold more moisture, this in turn can help to cool an area. This will be ever more important as the effects of climate change become more noticeable. Evidence suggests that grass, like trees, has an important role to play in the cooling of urban areas[11]. Higher species diversity within grasslands is likely to have positive effects as certain species are naturally more tolerant/resilient to the effects of climate change including in periods of drought. Certain species perform better than others for both

[7] IPBES (2019): *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. 1148 pages

[8] Pettorelli *et al.* (2021). *Time to integrate global climate change and biodiversity science-policy agendas*. Journal of Applied Ecology, 58, 2384–2393.

[9] Collentine and Futter (2018). *Realising the potential of natural flood water retention measures in catchment flood management: trade-offs and matching interests.* Journal of Flood Risk management. 11, 76-84.

[10] Attenborough & Taherzadeh (2023), *Noise reduction by greening,* Academia Engineering, Vol 1. Iss 1.

[11] Armson *et al.* (2012), *The effect of tree shade and grass on surface and globe temperatures in an urban area,* Urban Forestry & Urban Greening, Vol. 11, Iss. 3, pg 245-255.

evapotranspiration and carbon dioxide exchange[12] therefore, there is a benefit in diversifying grasslands to combat the effects of climate.

Woodlands and peatlands are well recognised in for their important role in climate change mitigation and adaptation, however, grasslands are overlooked and do contribute to alleviating the climate and biodiversity crises. While mature woodland will store more carbon overall than grasslands, the bulk of the stored carbon is above the surface (within the woody biomass). Grassland stored carbon is 90% underground[13]. Therefore, when considering the future effects of climate change e.g. climate related fires, increases in pest species/pathogens affecting trees[14,15], grasslands' ability to store carbon is arguably even more important to consider within land management.

Evidence of increased biodiversity through species-rich grasslands directly affecting carbon sequestration is limited and further research is required. However, it has been shown that increased diversity of plant species has an effect on the ability to deliver carbon deeper into the soil; deeper rooted plants being able to deliver carbon to different soil layers[16]. It is also accepted that semi-natural grasslands contain a greater carbon stock than amenity grasslands[17].

Amenity grassland (mown) is not thought to contribute to carbon sequestration. If anything, it has a negative effect, acting as a slight emitter[18]. However, Semi-improved grassland is considered to sequester approximately 0.397 tonnes of CO2 per hectare per year[19].

Grasslands are important for our health and well-being[20]. NHS Scotland has recognised the importance of improving their amenity grasslands for the multitude of benefits as has been discussed above. They are embarking on changes to the management of their grassland estate to benefit people and biodiversity. Changes are being made to benefit patients including: planting to improve local air quality, green space creation for therapeutic and community use, and the opportunity for patients, staff and visitors to connect with nature[21].

It's clear there are multiple benefits associated with grasslands and managing them in a sustainable way has an important role to play in mitigating the biodiversity and climate crises.

Local Authority context

The Nature Conservation act (2004) places a statutory duty on all public bodies in Scotland to further the conservation of biodiversity. Section 1 of the Act states:

"It is the duty of every public body and office holder, in exercising any functions, to further the conservation of biodiversity so far as it is consistent with the proper exercise of those functions"

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[12] Craine *et.al.* (2013) *Global diversity of drought tolerance and grassland climate-change resilience*. Nature Climate Change volume 3, pages 63–67

[13] Dass *et al.* (2018). *Grasslands may be more reliable carbon sinks than forests in California*. Environmental Research Letters, 13(7), 074027.

[14] Forest Research Website. Pests & Diseases. Climate change Hub accessed 18.08.24

[15] Forest Research. Riddell & Frederickson-Matika (2021). *Factsheet: Climate change and diseases of tree foliage*.

[16] Ostle *et al.* (2009) *UK land use and soil carbon sequestration*. Land Use Policy; 26: S274-S283.

[17] Emmett *et al.* (2007). *Countryside Survey: Soils Report from 2007.* CS Technical Report No. 9/07.

[18] Alonso *et al.* (2012). *Carbon storage by habitat: Review of the evidence of the impacts of management decisions and condition of carbon stores and sources* (Natural England Research report No. NERR043. Natural England.

[19] White *et al.* (2015), *'Developing ecosystem accounts for protected areas in England and Scotland: Technical Appendix'*, Department for Food, Environment & Rural Affairs/ The Scottish Government.

[20] Public Health England. (2020). *Improving access to greenspace: A new review for 2020*.Available at : https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904439/Improving_access_to_greenspace_2020_review.pdf

[21] NHS Scotland (2024), *Grassland management Improved grassland management for biodiversity and greenspace enhancement.* NHSScotland Assure. Available at https://www.nss.nhs.scot/publications/grassland-management-improved-grassland-management-for-biodiversity-and-greenspace-enhancement-report/

Diversifying the council's current managed amenity grassland habitat which equates to 6,959,304 m^2 (approximately 975 full sized [FA] football pitches) will increase resources available for flora and fauna and create a network of habitats aiming to support biodiversity. A reduction in the number of cuts an area receives is a method being used widely by other local authorities as a way to increase biodiversity with minimal intervention. In order for this approach to be meaningful, we need to change how amenity grassland is managed across our landholdings. We are aiming to increase the potential for biodiversity through considered management of our sites. The changes to management of amenity grassland in some areas will not only benefit biodiversity through increased structural diversity but it will benefit the wider community through its provision of ecosystem services.

West Lothian Council adopted a revised service standard for grounds maintenance in 2019, which saw changes to the previous cutting regime and introduced zones in order to better prioritise areas in terms of usage and availability of staff. Delivery of meaningful benefits in relation to the community while simultaneously tackling the dual crisis of climate change and biodiversity loss is a challenge. Local authorities are under extreme pressure with resourcing and budget cuts. Implementing change can take a considerable time due to various factors. Within West Lothian factors affecting our ability to implement change include but are not limited to:

- Finance - Budget cuts. The council is required to make cost saving reductions.
- Staffing and Resources – limited resources to meet increasing pressures;
- Conflicting interests – needs and aspirations are different depending on location and demographics;
- Competing priorities – meeting government targets for carbon sequestration, biodiversity, public health etc. all within a finite space.

As a result of the Community Empowerment (Scotland) Act 2015, public authorities are required to "facilitate the participation of members of the public in the decisions and activities of the authority, including the allocation of its resources". An exercise was undertaken by the Council as part of the Community Choices process to understand the priorities with regards to grounds maintenance. The following key themes were identified from the 1208 responses received:

- Grass cutting -priority 1. The majority of comments suggested the council adopts a more flexible approach to grass cutting; introducing the collection and removal of grass in some high amenity areas whilst leaving grass uncut to grow naturally in some areas of parks and open spaces to improve biodiversity.;
- Maintenance of Roadside Verges and Roundabouts -priority 2. Feedback from participants suggests the council should consider increasing the frequency of cutting at junctions to maintain sightlines. Survey results also suggest that verges are untidy on the approaches to towns and villages, and ask the council to consider introducing some planting or wildflowers on these approaches and on roundabouts to improve the appearance of roadside verges and roundabouts at key locations throughout West Lothian.;
- Wild flower meadows and Summer Bedding- priority 3. Over 40% of participants said they wanted to see more wildflower meadows and summer bedding areas across West Lothian to improve the natural habitat and biodiversity within West Lothian. In particular, the comments suggest introducing wildflowers along roadside verges and on roundabouts to improve the appearance of these features which links to the other comments regarding the maintenance of roadside verges.

The Community Choices consultation (stage 1) survey also identified areas deemed of most importance in terms of applying grounds maintenance measures.

- Zone 1- Town Centre – deemed most important;
- Zone 5- Open Spaces and Parks -second most important;
- Zone 2- Residential (high density)- third most important.

The results of the initial consultation suggested that grass cutting was a priority for communities. The reduction in cutting regimes in some areas was valued highly to improve the aesthetic and availability of resources for pollinating insects and wildlife, contrasting this view was the need for increased mowing in areas of high foot fall/ recreational

facilities. In order to make sense of the consultation and implement meaningful measures within the limitations of available resources, we need to look at the current service standard in more detail. A review of the current data sets and management systems will be required in order to make best use of the services from the council.

Currently, the council has adopted Service Standards for Grounds Maintenance within eight zones which are managed in accordance to service needs determined primarily through level of "traffic/ footfall" and availability of resources.

Table 1: Grounds Maintenance Service Standards as adopted 2022-23

Zone / Category		Zone Summary / Remarks	Mowing	Weed Spraying	Hedge Cutting
1	Town Centre	This would include areas of high footfall associated with educational establishment, particularly secondary and primary schools	12 x annually	Shrub beds, tree bases, fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	1 x annually
2	Residential (high density)	Terraced, tenement, flatted housing and educational establishments	12 x annually	Shrub beds, tree bases, fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	1 x annually
3	Residential (low density)	Detached and semi-detached Housing and educational establishments	12 x annually	Shrub beds, tree bases, fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	1 x annually
4	Sports fields and facilities	Football pitches, athletic fields etc. and all sports facilities managed by West Lothian Council	16 x annually	Shrub beds, tree bases, fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	Ad Hoc
5	Open spaces and parks	Open spaces and parks not classified as common ground	12 x annually	Shrub beds, tree bases, fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	Ad Hoc
6	Industrial areas	Areas of common ground within industrial estates	12 x annually	Shrub beds, tree bases, fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	Ad Hoc
7	Classified roads and verges not included in zones 1 - 3	Classified Roads (A, B and C) linking towns and residential areas	1 x annually	Ad Hoc	Ad Hoc
8	Rural roads and verges including Livingston Greenways	These areas have specific health and safety requirements to ensure safe operation	1 x annually	Ad Hoc	Ad Hoc

Since the consultation, a number of things have changed that have had an effect on how the Council is approaching delivery of services. The Council signed the Edinburgh Declaration in November 2021 which demonstrates a commitment to addressing the nature crisis. The Council created an Ecology & Biodiversity team at the end of 2021/beginning of 2022 to actively address the biodiversity crisis. In May 2023, WLC declared a Nature Emergency, further demonstrating the commitment to aiding in the recovery and restoration of the natural environment. In order for the themes identified from the Community Choices exercise to be implemented appropriately, a more strategic look at the habitats across West Lothian was required.

Results from the Biodiversity Baseline Assessment[22] habitat surveys conducted as part of the local biodiversity action plan (LBAP) study have provided useful insight into regional grassland values. Across West Lothian, improved grassland which is primarily associated with agriculture, comprises 25% of the region, arable agricultural land occupying a further 12%. Semi-natural grassland occupies around 15.4% of the area, around 5.2% of the region is amenity grassland and 4.3% is private gardens.

However, when we look at the council owned land and compare the figures, we see that improved grassland is around 8%, arable/agricultural is insignificant and semi-natural grassland recorded at just 6.3%. WLC landholdings currently have around 21% amenity grassland and council-tenanted residential gardens comprise around 5.4%.

It's clear that there is potential within the amenity grassland managed by West Lothian to be able to support the priorities identified in the consultation and to help contribute to wider biodiversity and climate change objectives.

Limitations

Presently, there are limitations as to what can be done to meet the priorities from the Community Choice exercise. A degree of updating and modernising existing asset management software and mapping tools is required. This will allow operational planning to be made spatially, ensuring the decisions to manage grassland in certain ways is captured digitally and this information can used to help inform the public of any changes in their area. As previously mentioned, there have been many changes made to grounds maintenance and grassland management over the years resulting in a range of different cutting regimes across the landholdings. Until each area maintained under a regime is mapped with a cutting regime assigned to it, it is difficult to gain an accurate representation of the current management being applied across West Lothian. At present, we do not have enough detail mapped to be able to precisely state how the Council is contributing to nature recovery through grassland management or identify which settlements are contributing what percentage towards the semi-natural grassland etc, to ensure equality across the area. This will need to be explored further in connection with the grounds maintenance team and asset management software before being reviewed by the other teams, namely: open space, ecology and biodiversity and trees and woodland.

Other limitations to implementing changes to grassland management within West Lothian are due to a challenging climate. In order for the grounds maintenance team to ensure they are meeting their KPI's and maintaining the current standards, they need to work flexibly and adapt to the changing weather each season. There are limitations with regards to flexibility of periods for cutting / management to take place due to unpredictable weather patterns. Currently, unavoidable periods of inclement weather affect the length of time it takes to ensure all areas have received appropriate cuts. Particularly wet summer seasons present a challenge to delivering the service. Climate change has the potential to make this worse, with more unpredictable weather expected in coming years[8].

Additional considerations: Changing management to be more in line with current climate and biodiversity objectives will also require significant investment in equipment and could have implications on waste services. Presently, the majority of grass cutting machinery owned by the council does not have the ability to simultaneously cut and lift arisings and there has been a move away from using machines which direct the arisings via an offshoot, therefore further limiting the potential to reduce nutrient enrichment of the grasslands. Reducing the fertility of the soil by

[22]WLC, Biodiversity Baseline Assessment (2023). WSP and Natural Capital Solutions: Report available at: https://www.westlothian.gov.uk/media/60085/West-Lothian-Baseline-Biodiversity-Report-2023/pdf/West_Lothian_Baseline_Biodiversity_Report_2023_FINAL_compressed.pdf

removing the arisings is key to increasing the diversity of species in an area. Therefore, to increase diversity of the area, the Council needs to be able to remove arisings and then deal with them as green waste. Green waste could potentially be incorporated into sustainable energy projects or be composted therefore working towards a circular economy. Alternatively, using the arisings as "green hay" may be an option to be explored as there is a market for this. The removal of arisings in areas and its potential application requires further investigation and investment but is an aspiration and a challenge to overcome if we are to ensure the management of grassland is sustainable and maintained for biodiversity.

There will likely be the requirement for some upskilling within the grounds maintenance team to allow them to manage the land appropriately e.g. training in any new equipment, grassland management techniques, guidance on recognising areas of importance for biodiversity etc. and adapting to the needs of the community. Additionally, awareness raising and promotion of the benefits within the wider Council and general public will be required to ensure success.

The above are current limitations however, as we look forward to 2035 and beyond, we need to look at addressing these limitations to help combat biodiversity loss and be more resilient to the effects of climate change.

The aims and vision for Amenity Grassland in West Lothian

The aim is for amenity grassland management in West Lothian to be flexible, adaptable to the growing populations needs, to deliver an excellent service for the community while balancing the needs to adapt to climate change pressures and halt biodiversity loss. The aim is for current amenity grassland to be diversified and contribute to an increased network of species rich sites and for this network to be contributing to other council schemes/strategies e.g. the climate strategy, Local Biodiversity Action Plan, nature networks, Open Space Strategy etc.

The vision is that by 2035 West Lothian will have continued and improved upon its proven success for managing amenity grassland for both its people and for wildlife. There has been an increase in the available habitat for plants and animals to use and there is a diverse range of flora and fauna found across the Council landholdings. People in West Lothian value the diversity of grassland types and are enjoying more diversity on their doorstep. By 2035, West Lothians total Amenity Grassland will be managed 60% for amenity and 40% managed for NATURE (biodiversity); creating a network for wildlife to thrive. There will have been progress made on the ability to remove arisings in places that are showing signs of being more biodiverse. Entranceways to settlements and roundabouts will be managed for biodiversity and be aesthetically pleasing.

Approach:

Grass cutting -priority 1

With majority of the comments suggesting that the council adopts a more flexible approach to grass cutting; introducing the collection and removal of grass in some high amenity areas whilst leaving grass uncut to grow naturally in some areas of parks and open spaces to improve biodiversity

NATURE management in appropriate amenity grass zones:

What do we mean by "NATURE management"

This acronym focuses on the holistic and collaborative approach to grassland management, while emphasising sustainability, adaptability, and ecosystem resilience.

- **N** – **Nurturing**: Fostering a healthy, sustainable grassland ecosystem through responsible management.
- **A** – **Adaptive**: Adjusting management practices to address climate change and the evolving needs of both the land and its users.
- **T** – **Thriving**: Supporting biodiversity and ecosystem resilience to ensure long-term environmental health.
- **U** – **Unified**: Bringing together different stakeholders for a collaborative approach to grassland management.

- **R** – **Resilient**: Ensuring that our local places are resilient to the effects of climate change and can withstand environmental pressures.
- **E** – **Ecosystem-driven**: Making decisions that prioritise the ecological needs of the area while balancing human use.

In order for the council to address the current biodiversity and climate crisis, a modern and suistainable approach to grassland management is required. Short amenity grass supports little biodiversity[25]. A reduced mowing regime, moving away from intensive management (cutting regimes) in areas of amenity grassland is a proven method to help boost biodiversity of an area[23]. There are already large areas within West Lothian where a similar approach has already been adopted through previous interventions. "NATURE management" put simply, is the reduction in intensive management in certain areas from multiple cuts per year to one cut or, in some cases, leaving areas for longer than one season of growth. It is a modern and sustainable approach to managing amenity grassland, one which will help diversify the grassland habitats, support wildlife, and benefit people.

We are taking a phased approach and one which will look at amenity grassland on a ward basis to help contribute to the overall aim of having 40% amenity grassland mangaed for NATURE by 2035. In the short term, for the majority of areas, there will be little/ no noticeable change. However, in some areas it may be appropriate for a complete cessation of cutting regime to allow natural process to take place. Other areas will see minimal changes with the majority of the grass receiving the standard cutting regime and a portion of the area being left for the majority of the year. The appropriate cutting regime for each area in settlements will be determined through completion of a desktop study looking in detail into the spatial resources of settlements within wards and through the operational phase where changes will be made to adapt to local circumstances.

Areas where there is likely to be a complete cessation of grass cutting are likely to be confined to areas where there is low/no use by the public or there is a benefit to biodiversity by stopping the cutting in that particular area. For example, stopping mowing in an area of tree cover may allow a woodland understory to develop, allowing a more natural habitat to form, creating a more biodiverse area.

To address the biodiversity crisis while taking into consideration input from the community choice exercise, we need to make changes to the current service standards. As of 2025 cutting season, the aim for each settlement is for a minimum of 10% amenity grassland to be managed under the NATURE management regime, receiving at most, one cut per annum. This initial reduction in cutting regime of amenity ground will allow the grounds maintenance team the flexibility required to deliver additional cuts elsewhere. Refer to Table 2 below for the proposed service level changes.

Table 2- proposed new service standards as of 2025. Changes from the previous standard are in blue

Zone / Category		Zone Summary / Remarks	Mowing	Weed Spraying	Hedge Cutting
1	Town Centre	This would include areas of high footfall associated with educational establishment, particularly secondary and primary schools	12 x annually	Shrub beds, tree bases (only where required), fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	1 x annually
2	Residential (high density)	Terraced, tenement, flatted housing and educational establishments	12 x annually	Shrub beds, tree bases (only where required), fence lines/channels & obstructions 2 x annually	1 x annually

[23] Garbuzov *et al.* (2015). *Public approval plus more wildlife: twin benefits of reduced mowing of amenity grass in a suburban park in Saltdean, UK*. Insect Conservation and Diversity. Vol. 8 Iss. 2, pg 107-119.

				Highway kerbs, path edges, slabbed & whin paths 1 x annually	
3	Residential (low density)	Detached and semi-detached Housing and educational establishments	12 x annually	Shrub beds, tree bases (only where required), fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	1 x annually
4	Sports fields and facilities	Football pitches, athletic fields etc. and all sports facilities managed by West Lothian Council	16 x annually	Shrub beds, tree bases (only where required), fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	Ad Hoc
5	Open spaces, parks and cemeteries	Open spaces and parks not classified as common ground. Cemeteries will receive the same standard of cutting as parks.	12 x annually	Shrub beds, tree bases (only where required), fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	Ad Hoc
6	Industrial areas	Areas of common ground within industrial estates	12 x annually	Shrub beds, tree bases (only where required), fence lines/channels & obstructions 2 x annually Highway kerbs, path edges, slabbed & whin paths 1 x annually	Ad Hoc
7	Classified roads and verges and roundabout (up to first 2m) not included in zones 1 - 3	Classified Roads (A, B and C) linking towns and residential areas	2 x annually	Ad Hoc	Ad Hoc
8	Rural roads and verges (Up to 1m) including Livingston Greenways (not including public parks)	These areas have specific health and safety requirements to ensure safe operation	2 x annually	Ad Hoc	Ad Hoc
9	Central reservations	Potential for a second visit if required/ appropriate	X1 annually	Ad Hoc	Ad Hoc
10	Areas managed for biodiversity/wildlife verges/ Wildflower meadows etc.	A number of sites are being managed where they've been identified to be of significance for biodiversity.	X1 (and lift/ or grazed) annually	Ad Hoc (only where required e.g. INNS)	Ad Hoc

A change in mowing regimes (where appropriate) is proposed across all zones following a set of guiding principles. These principles will be adopted by maintenance staff across all council landholdings. They have been designed to be flexible whilst still delivering positives for biodiversity and retaining valued amenity space. The finer detail for each area managed by the council will be refined through operational plans, making use of digital mapping to assign mowing regimes to the individual areas. The main changes that the public will benefit from are an increase in cutting frequency from one to two cuts on roadside verges will address the concerns some members of the public have around sightlines.

The additional cutting of the verges will partly address comments raised for Priority 2 (maintenance of roadside verges and roundabouts).

The purpose of introducing a NATURE management regime across all areas means that there is a greater diversity of available habitats across the councils' landholdings allowing better species movement throughout West Lothian. Cutting less frequently and later in the season allows more native species the opportunity to flower and set seed. It means that there will be a more opportunity for invertebrates to thrive which will have knock-on effects further up the food chain, helping to halt biodiversity loss.

Table 3: Guiding Principles that apply to all amenity grassland areas

Principle	Guiding Principles for Amenity Grassland management	Justification
P1	Areas selected to be under "NATURE management", receiving up to one cut per year will be selected where there is low activity/low use, or where it is of ecological benefit to the area, or where it makes operational sense e.g. an area that is typically wet/marshy etc. Areas selected to be under NATURE management will remain as such unless a review of the area indicates need for change. **All of the following principles will apply to areas being managed for NATURE.**	Monitoring and adaptive management: This is to ensure we are allowing the grassland to change structure and become more diverse. Cutting additional cuts or at the wrong time of year will have an undesirable effect and not improve the diversity. Change to ecological diversity can take time and reacting too quickly will undermine natural processes.
P2	Regardless of the management regime at any area, safety will be a priority and grassland at junctions or crossing points will be maintained to road safety standards.	Public safety: Public safety is a priority and consideration to sight lines will be maintained.
P3	Paths, desire lines and margins should be mown as per service standard cuts to allow access, additional paths are to be cut on large areas under NATURE management e.g. if over 200m² (approximately tennis court size).	Maintain Accessible Spaces: Keeping edges and paths open to allow access/use of open space and maintain a feeling of the area being well managed and not abandanoned.
P4	Entrances and existing/new furniture should be maintained as per normal service standard with regular cuts to allow access to these features.	Maintain Accessible Spaces: Ensuring the public can enjoy/make use of existing furniture/infrastructure and have a clear path to access these is of upmost importance.
P5	No chemical spraying and no cutting within 30cm (minimum) of the base of all established trees. An exception to this may be specific new planting areas where it's required to allow trees to fully establish. The margin of grassland left around trees should extend to the dripline (canopy) of the trees **unless** this affects access or H&S in which case a judgement should be made by the operator as to what is practicable but the minimum margin to leave should still be 30cm from the base of the established tree.	Sustainable management: This will help avoid machinery accidentally damaging trees by getting too close. Reducing the number of damaged trees will hopefully mean that less trees are exposed to pathogens which may affect their potential lifespan which, in turn will mean that they may require removal/ replacement earlier than would have been expected. Reduction in the use of glyphosate/chemicals where it is no longer required.

Upon completion of the desktop/operational planning exercise to map cutting regimes, a review will take place to determine the current values of amenity grassland under the new management. From here, plans will be further refined and areas will be mapped outlining where there could be additional room to meet the targets set out in the vision where 40% of the current amenity grassland is managed for biodiversity (NATURE) and 60% for amenity by 2035.

It is expected that each ward will contribute towards the total target of 40% of all amenity grassland but it is possible that individual settlements may only ever contribute a minimum amount i.e. 10% of the total amenity grassland being brought over to NATURE management within their settlement. This is due to some settlements being smaller and therefore amenity grassland and its demand is greater than a settlement with a larger volume of amenity grassland that could in theory, more easily accommodate NATURE management areas without affecting user needs.

Maintenance of Roadside Verges and Roundabouts -priority 2

The feedback from participants suggests that the council should consider increasing the frequency of cutting at junctions to maintain sightlines. The survey results also suggest that verges are untidy on the approaches to towns and villages, and ask the council to consider introducing some planting or wildflowers on the approaches to towns and villages, and on roundabouts to improve the appearance of roadside verges and roundabouts at key locations throughout West Lothian.

While acknowledged as a priority area from Stage 1 of the community choice consultation, roadside verges and roundabouts represent a more complicated problem both logistically and spatially (they're essentially disconnected islands). However, the potential to create a network of valuable habitats which both look pleasing and deliver benefits to wildlife is unquestionable. 700 species of wildflower grow on UK road verges which is nearly 45% of total flora, but there has been a 20% reduction in diversity due to poor or lack of management[24]. Road side verges have the potential to be highly diverse areas and act as important corridors for many of our threatened species.

Changes to the frequency of roadside verge cuts from the current one cut per annum to two cuts has been discussed in the section above. A two-cut management approach is ideal for suppressing coarse grasses and encouraging wild flowers, so reducing management burden over time. Where possible, the verge will be cut Feb-March and then again at September- October (when seeds have shed). The option for verge management will take the principles from Plantlife's Good Verge Guide[25]. Not all verges will be able to be cut to this programme as the resource output required to complete all verges cut on the same cycle would be disproportionate to the likely benefits. Instead, where verges have been identified as being in better/more diverse condition, these will be scheduled as a priority for cuts at the most appropriate time of year. Over time, as the effects of the changes elsewhere are implemented, there is potential that the timing of the cuts could change to see more verges managed in the optimal period as resources become available.

There is a variety of types of roundabouts in West Lothian. They are vegetated in different ways with some lacking vegetation altogether, to the most extreme where the roundabout is almost entirely wooded. Some are grassy, some are densely planted with trees and scrub and others have artwork or structures within them. Roundabouts will receive a cut in line with the roadside verge regime. The edges will be cut (up to the first 2m) of the grass within roundabouts to maintain sightlines.

In order to create meaningful changes both to the aesthetics and the diversity of species present, further consideration is required and any enhancement measures/implementation will need to be specific to an area, taking into consideration the existing diversity, surrounding habitat and growing conditions. Options to enhance verges and roundabouts will be looked at and implemented where appropriate over the next 10-year period. Different options are described later within this report.

Wildflower meadows and Summer Bedding -priority 3.

Nearly 500 participants said they wanted to see more wildflower meadows and summer bedding areas across West Lothian to improve the natural habitat and biodiversity within West Lothian. In particular, the comments suggest introducing wildflowers along roadside verges and on roundabouts to improve the appearance of these features which links to the other comments regarding the maintenance of roadside verges.

[24] Plantlife (2019). *Managing grassland road verges. A best practice guide*. - https://www.plantlife.org.uk/wp-content/uploads/2023/03/Managing-grassland-road-verges_2020.pdf

[25] Plantlife (2021) *Good Verge Guide* - https://www.plantlife.org.uk/wp-content/uploads/2023/03/Good_verge_guide_2021.pdf

A total of 34 wildflower meadows are already being managed on WLC ground. A previous partnership with Buglife and supported by WLC and Heritage lottery funding created 14 meadows. Additionally, there are 6 meadows managed within the three country parks and a number of other interventions that have occurred to add to this work including areas managed by community/volunteer groups. Management of wildflower meadows is essential to their permanence. The management methods are different from the rest of the amenity grassland currently being managed. Wildflowers thrive on poor soil therefore removing the arisings is an essential part of meadow management. If arisings are left on the site, it increases the available nutrients in the soils and this favours only a few species resulting in declines in species richness. Meadows require cutting and lifting and they also require a period in-between the cut and lift for a few days to let the seeds fall.

Current staff numbers and the more involved processes surrounding meadow management mean we do not have capacity to create more at present. It is aimed that over the course of the next 10 years, as amenity grassland management is changed to its maximum potential (40% of amenity grassland will be manged for biodiversity and therefore receive up to one cut per year) there will be more available resource for creation and maintenance of meadows by WLC.

Summer bedding planting that was previously delivered by grounds maintenance in past years is unsustainable both in terms of its cost/labour requirements and its impact on the environment. However, over the next 10 years, we will look to support communities and individuals who wish to adopt a former flower bed as a perennial bed. Additionally, as part of this plan, we will make use of the Scottish Government Nature Restoration Fund allocation to deliver high density bulb/perennial planting at settlement entrances and key roundabouts. This will increase the available food for pollinators and aim to address the third priority the community choice exercise in a more sustainable manner.

To increase the number of wildflower meadow sites we will need to look at having additional staff time to manage them or encourage local groups to take ownership of and create and manage new meadow sites. Local volunteers already help to manage several sites in collaboration with the Ranger Service and Countryside operatives. Blackridge Railway/NCN75, Skolie Burn SSSI (grazed but also present here is an active community group), Blackmoss Nature Park and Little Boghead Nature Park all have or have had active community engagement in the management process at some stage. The value provided by volunteers for nature is undeniable. The contribution to make their local greenspace better for the people and wildlife living there must not be undervalued. During the lifespan of this plan, we will look to investigate options to engage the community in nature-based volunteering. Over the next 10 years, we anticipate there will be increase in the number of amenity grassland sites being aided by volunteer effort. This may be in the form of citizen science and recording their local greenspace species or be involved in practical conservation tasks such as meadow management.

How and when will changes be roled out

The programme of amenity grassland under NATURE management will commence as of 2025 growing season. A desktop exercise will be undertaken to map all areas of amenity grassland and gain an understanding of the volume of amenity grassland being manged under the different cutting regimes. In the first year, it is anticipated that many settlements will already be performing at or above the 10% and so many areas will not see any noticeable changes beyond leaving a margin around trees or minimal areas left with longer grass. As time progresses, in order to meet the 40% target, additional areas will be looked at on a ward basis. Any required changes to larger expanses of amenity grassland e.g. within parks will be consulted on to ensure the management of the grassland is appropriate to the community's needs.

Priority 1 will be addressed in the 2025 season through the changes discussed above. Priority 2 & 3 will be partly delivered in the 2025/6 season through securing a contract to deliver high density bulb planting and/or perennial planting at settlement entrances/ key roundabouts. It is anticipated that throughout the 10-year period that additional enhancements in line with the options below will be looked at and put into place where funds and resources are available. Areas will be prioritised where they fall within the B-lines network – see Figure 2 and Table 6. This does not mean that areas out with this network will not be looked at, simply that there will be a priority on areas where there

is strategic significance i.e. the b-lines areas or areas which will help deliver other strategic priorities e.g. Nature Networks.

Note, the changes are to create a better resource for West Lothian's plant and animals and people. We understand that longer grass and grassland management in general can be an area of contention. There is often a split in opinion on the subject and some strong opinions on how appealing or unappealing it can look. However, the evidence suggests that by introducing changes to amenity grassland, increasing areas of semi-improved habitat will help to combat biodiversity loss and have the additional benefits for climate, health and well-being. Any customer comments/enquiries will be fully investigated and dealt with appropriately. However, there will not be a 'knee-jerk' reaction and changes made to the management regime of an area based on the results from a single enquiry. Changes to management of any area under a NATURE management regime will be based upon there being legitimate concerns over safety or an overwhelming majority of the local community responding to the area in question. Changes will not be made based solely on aesthetic grounds. Where there is a genuine concern over safety or enjoyment by the majority of the settlement, actions will be taken to resolve this. This may mean that the amenity grassland which is under a NATURE management regime is relocated elsewhere within the settlement.

It is the intention that the public are engaged and informed on changes and we work with communities to deliver benefits. During the lifespan of this plan, we will aim to make the public more aware of their local amenity grassland and their cutting regimes by digitising management regimes and making this publicly available.

Potential enhancement options that will be explored over the next 10 years will be:

"Framing the verges"[25]:

Cutting a minimal linear strip next to the carriageway to maintain appearance of "tidiness" while other management measures are put in place to increase the diversity of wildflowers more naturally. This "edge" cut keeps the road safe, maintaining visibility and offers structural diversity within the area having short grass in the front and long in the back.

Note for Grounds Maintenance*: A **two-cut management approach is ideal** for suppressing coarse grasses and encouraging wild flowers, so reducing management burden over time. If possible, the verge should be cut Feb-March and then again at September- October. **If only 1 cut is possible,** full cut and lift once seeds have been shed i.e. end August- Sept.*

-Where there is existing species richness/diversity within the verge (to be confirmed) a relaxation of cutting regime would benefit the area ensuring the arisings are removed or they are stored in sacrificial areas (i.e. if it can be spread out over into the scrub sections or if not possible, stored in sacrificial areas every hundred metres or so). Additional sowing of wildflowers may be appropriate to help boost the changes.

-Where the grass verge is species poor and or dominated by brambles/ nettles/ dock/ hogweeds etc. then further initial measures are likely required e.g. removal of scrub/ woody vegetation (in winter) and scarifying the land. In addition to this, donor areas will be sown with a mixture of seeds/ plants suitable for the area as identified by the Ecology and Biodiversity team. It is possible that the use of green hay translocated from existing wildflower sites may be used to improve species diversity as opposed to using seed mixes etc.

"Awash with wildflowers"

High density bulb planting or native plug planting, or sowing perrenial wildflowers on areas leading into West Lothian to provide colour and food for pollinators. Creating more of a meadow-like appearance. Enhancing areas may also be done by sowing yellow-rattle, nature's meadow maker.

Note for Grounds Maintenance: *A range of nectar rich bulb and plug plants suitable for the area should be planted as per specification of the Ecology and Biodiversity team. These areas will need to be mapped and managed to avoid cutting too early. Sowing of wildflowers may be possible on small linear areas such as central reservations, however, consideration to winter road maintenance and salination of the area may mean this is not practicable.*

"Buzz cut for biodiversity"[25]:

In some areas e.g. high amenity areas or for example within cemeteries/graveyards, where grass is normally kept to below 10cm, it may be possible to increase the species diversity through inclusion of a short flowering lawn mix. These short flowering lawns full of species such as clovers, self-heal and yarrow provide another valuable nectar resource for pollinators.

Note for Grounds Maintenance: *This option may also be suitable in areas where for example a fire assembly point is located on grassland or where there is a requirement to maintatin a short mown path amongst larger growing grass areas to maintain access.* It is posible that the use of green hay translocated from existing wildflower sites may be used to improve species diversity.

Media and Communications

Communication and signage will be paramount to the success of the scheme. Educational materials will be produced and a social media campaign developed to promote biodiversity and sustainable grass management across the region. Posters/ signage will be installed in strategic locations across the council particularly where high footfall occurs. The signage produced will be clear and unambiguous. E.g.:

- ***"We are managing this area for biodiversity"***
- ***"Feeding the bees"***
- ***"This area is under a NATURE management regime for wildlife"***

We will seek to to provide the public with more information, linking signage to the councils webpages around biodiversity and grounds maintenance.

We will link in with third sector campaigns such as those from Plantlife or Buglife to champion better grassland management and encourage a cultural mindset change towards viewing amenity grassland as more than just a lawn. The benefits of NATURE management and wildflower meadows will be promoted through social media and enaggement with the community at events such as Wild Wednesdays or bioblitz events. We will work with partners within the council to deliver a consistent and positve message to the public that grassland management is more than just mowing.

Measuring Success

Success of the project will be interpreted from feedback received from general feedback collected throughout the duration of the plan and from a review of the ground being managed. Where possible, additional measurements will be taken to understand the effects in biodiversity over time. This may be in collaboration with third sector parties or in connection to other relevant pieces of work.

Success will also be measured in terms of percentage of ground cover attributed to amenity and that which is under NATURE management regime. The aim is to increase the volume of semi-natural grassland habitat throughout West Lothian. Table 4 below indicates the planed timescale targets for conversion of amenity grassland in West Lothian. It is anticipated that by 2030, at least 25% of the current amenity grassland will have been changed over to up to one cut per year to benefit wildlife. At this point, a review of the NATURE management regime grassland areas will be undertaken to determine whether the management regime for any particular area needs to change to best benefit biodiversity or the needs for the settlement in line with current use.

Monitoring will take place throughout the length of the plan on an ad hoc basis dependent on resources available. It is proposed that a subset of areas under NATURE management will be monitored for their species richness (number of species present) and the abundance (number of individuals) with the potential for citizen science activities and/or partnership work with external third sector organisations or University students. As a general 'rule of thumb' increasing habitat diversity and connectivity will lead to increased biodiversity. Proposed changes to amenity grassland will help deliver this. An update on the success of monitoring efforts will be reported back to the Environment &

Sustainability PDSP at the Mid-point review (2030). Additionally, Grounds Maintenance will report back on the numbers of enquiries and queries related to amenity grassland management through the LAC process.

Table 4: Targets for increasing NATURE management regime within amenity grass

% total amenity grassland under NATURE management (up to one cut per annum)	**Equivalent to average Football Association full sized pitches**	**Year of target (end of growing season) *[1]**
10	97	2025
20	195	2027
25	244	2029
30	292	2031
35	341	2033
40	390	2035

** 1 Upon results of the desktop review, it may be that we readjust the timescales depending on the current volumes under specific management. Additionally, timescales may be moved in light of changes to machinery or staffing resources.*

Concluding remarks

The council's Climate Change Strategy recognises that "Building a nature rich future is critical in addressing the causes and impacts of climate change" Outcome 4 - Adaptation, Resilience & Biodiversity states that "We will continue to build a resilient and well adapted West Lothian where natural ecosystems are protected, sustainably used and strengthened while services, communities and places are adapting to cope with climate change impacts (including land use, buildings and infrastructure)."

WLC is committed to improving and maintaining biodiversity. "*It is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions."* Biodiversity is therefore at the front of Scottish Government priorities and this responsibility is devolved to the Local Authorities. In response to this duty, WLC is focussing on enhancing and maintaining biodiversity by making best use of current landholdings to benefit both the local community and the wider ecology. There are wider ecosystem services provided by amenity grassland that contribute to our health and wellbeing and there is the need to find balance in meeting priorities for biodiversity and climate change with the enjoyment of the local green space. We will encourage public participation in the management of their greenspace and work towards achieving the vision.

The changes are necessary to help address biodiversity loss by increasing the area available for species movement and to be more resilient to a changing climate. It will help the grounds maintenance deliver a better service in areas where there is a greater demand for grass cutting. It will help the Council contribute to the actions of the Scottish Biodiversity Strategy. Throughout the lifespan of the plan, officers will seek to engage with the community and provide updates where appropriate. It is the intention that officers will adapt plans as is necessary where there are genuine and significant concerns.

Annex 1

Common concerns

Long grass and litter: A common complaint/ concern is that longer grass will hold the litter. While this is potentially true, the issue of littering is the main problem, not the grass itself. In fact, longer grass if it catches litter will mean it doesn't end up moving into our waterways and adding to blockages. There will need to be a considered effort by society to reduce littering in the first instance and stop the issue before it reaches the grassland or beyond.

Long grass and dog fouling: Under the Dog fouling (Scotland) Act 2003, Dog fouling in a public or communal place is an offence. West Lothian Council advises all dog owners that it is an offence for any person who is in charge of a dog not to immediately remove, and dispose of appropriately, any excrement, if the animal defecates in any public place without reasonable excuse or the consent of the landowner. This includes pavements, footpaths, roads, parks, recreational pitches, cycleways, communal land, back greens, stairs, closes, and any open land that the public has access to. Excrement should be picked up and disposed of in a responsible manner by either depositing it in the nearest dog waste bin, litter bin or in your domestic waste at home. While we understand that longer grass can make it more difficult to collect the waste, it is the dog owner's responsibility to collect it regardless of the grass height or environment. We believe that the benefits of biodiverse areas outweigh the potential risks of accidentally encountering dog fouling that has not been removed by the owner. You can request a dog waste bin or report dog fouling via the council webpage and forms: https://www.westlothian.gov.uk/article/32090/Dog-Fouling

Long grass and rats: A common concern is that by having long grass there will be an increase in rats. There are a number of factors which affect species abundance and distribution and those affecting rats are as follows: The presence of (food) waste, the maintenance/age/ownership of buildings and houses, the presence of impervious surfaces, the number of restaurants in the area, socio-economic status of inhabitants, type of sewage system present and human population density[29]. The available literature suggests that although they can be found in dry areas, brown rats prefer to be in close proximity to water[26,29]. They make burrows into the ground where the substrate is not too hard/ compacted and where it's not too dry /light[27]. Long grass as a factor in itself is not thought to be a major determinant of population size. The most important factor affecting presence of rats appears to be the occurrence of available waste/ improperly disposed waste[28,29]. For information on proofing your property from rats, or for services to deal with rats please see: https://www.westlothian.gov.uk/article/34387/Rats-Rattus-norvegicus

Ticks and Grass:

Ticks are found in a range of habitats and with climate change, it is expected that there will be an increase in the number of ticks and the habitats which they will be found in[30]. Ticks can pose a health issue with Lyme disease being the most common tick-borne disease; however, not all ticks carry the bacteria which causes Lyme disease. A recent study conducted a literature review and analysed the data to show that ticks are overall more abundant in forests than in any other habitat within the same landscape[31]. However, as mentioned, they can be found in a range of habitats

[26] Van Adrichem *et al.* (2013) Lutra 2013 56 (2): 77-91

[27] Twigg, G. (1975). *The brown rat*. David & Charles, Newton Abbot, UK

[28] Becker, K. (1973). *Probleme der Rattenbiologie und Rattenbekämpfung.* Beihefte der Zeitschrift für angewandte Zoologie. Heft 3. Duncker & Humbolt, Berlin, German Democratic Republic

[29] Traweger *et al.* (2006). *Habitat preferences and distribution of the brown rat (Rattus norvegicus Berk.) in the city of Salzburg (Austria): implications for an urban rat management.* J Pest Sci, 79: 113–125

[30] Worton AJ, Norman RA, Gilbert L & Porter RB (2024) *GIS-ODE: linking dynamic population models with GIS to predict pathogen vector abundance across a country under climate change scenarios.* Journal of the Royal Society Interface, 21 (217).

[31] Audrey Bourdin, et al. (2023), *Forests harbor more ticks than other habitats: A meta-analysis, Forest Ecology and Management,* Volume 541, 121081, ISSN 0378-1127,

including grasslands (mown or long[32]); anyone enjoying the outdoors needs to be aware of their potential and should take measures to prevent being bitten:

- Wearing clothing that covers your skin to make it more difficult for ticks to access a suitable place to bite.
- Use insect repellent such as N,N-Diethyl-meta-toluamide, also called diethyltoluamide (DEET) and consider wearing light coloured clothing so that you can easily spot ticks and brush them off.
- After spending time outside, check yourself, your clothing, your pets and others for ticks. Remove any attached tick as soon as you find it using a tick-removal tool or fine-tipped tweezers.

Further information can be found at the Lyme Resource Centre.

[32] Lerman SB, D'Amico V (2019) *Lawn mowing frequency in suburban areas has no detectable effect on Borrelia spp. vector Ixodes scapularis (Acari: Ixodidae).* PLoS ONE 14(4): e0214615

Annex 2: Action plan

A broad action plan sumarising the key items within the report and associated timescales are presented in Table 5 below*Table 5:* .

Table 5: Plan for implementation of required changes

Action	**Timescale**	**Delivered by (Lead)**
Desktop exercise to record current management regimes and establish suitable areas for NATURE management cuttign regime within each settlement. Identify the settlement entrances and roundabouts proposed for enhancement.	December 24 -May 2025	Grounds Maintenance; Ecology and Biodiversity
Create educational materials – raise awareness of future changes and reasons for. At least one social media post and one article mentioning benefits of grassland to go out. Order signage for areas of high footfall in preparation for 2025	May 2025	Grounds Maintenance; Ecology and Biodiversity; Media team
Notify the public of upcoming changes. Promotion of educational materials for schools, web page updates and communications via social media.	May/June 2025; then updates on alternate years where required as per Table 4.	Grounds Maintenance; Ecology and Biodiversity; Media team
Internal training with Grounds Maintenance staff	Summer 2025 – (in the field) Autumn/ Winter 2025 (classroom)	Ecology and Biodiversity
Implement new service standards and NATURE management regime of a minimum of 10% per settlement in the first year and exapnding this in line with Table 4 above.	Growing season 2025 - 2035	Grounds Maintenance
Secure a contract to deliver the high density bulb planting/perrenial planting at settlement entrances and roundabout (enhancement work).	Summer 2025 procurment. Delivery within appropriate planting season 2025/6	Grounds Maintenance; Ecology and Biodiversity
Public engagement activities -Wildflower/ bug hunt -anticipated to be delivered as part of wider community engagement activities	Summer 2025 -2035	Ecology and Biodiversity; Ranger Sevice with Buglife
Explore options for a volunteer progragramme to encourage local appreciation of and maintenance of local green space. Explore options for monitoring. -Connect with schools/colleges/universities and third sector.	Summer 2025 - 2035	Ecology and Biodiversity; Community Regen officers; Education Services

Review of measures – effects, public perception, areas to improve. Summary of enquiries and feedback received. Discuss any necessary changes for 2026.	Autumn/ Winter 2025	Nets, Land and Countryside Service
Digitising management regimes and making this publicly available	By end of 2030	Nets, Land and Countryside Service
Mid-point review: Stand alone report (separate to annual update that will be included in the Ecology & Biodiversity Annual report) back to ENV PDSP on the progress made including any monitoring	End 2030	Nets, Land and Countryside Service
Have further explored collection of arisings on a wider basis and potential usage of the material for circular economy uses.	By 2030	Nets, Land and Countryside Service

The following roads and associated roundabouts will be investigated for their potential to support biodiversity through good verge management implement a change in management where the sections align with the B-Line as a priority/ preferred location for enhancements.

Table 6: Major roads which at least partly fall within B-Lines

Road	
A705	A801
A706	A803
A7066	A89
A71	A899
A779	A904
A800	

Annex 3: Figures

Figure 1: Summary of Services provided by Grasslands-Plantlife

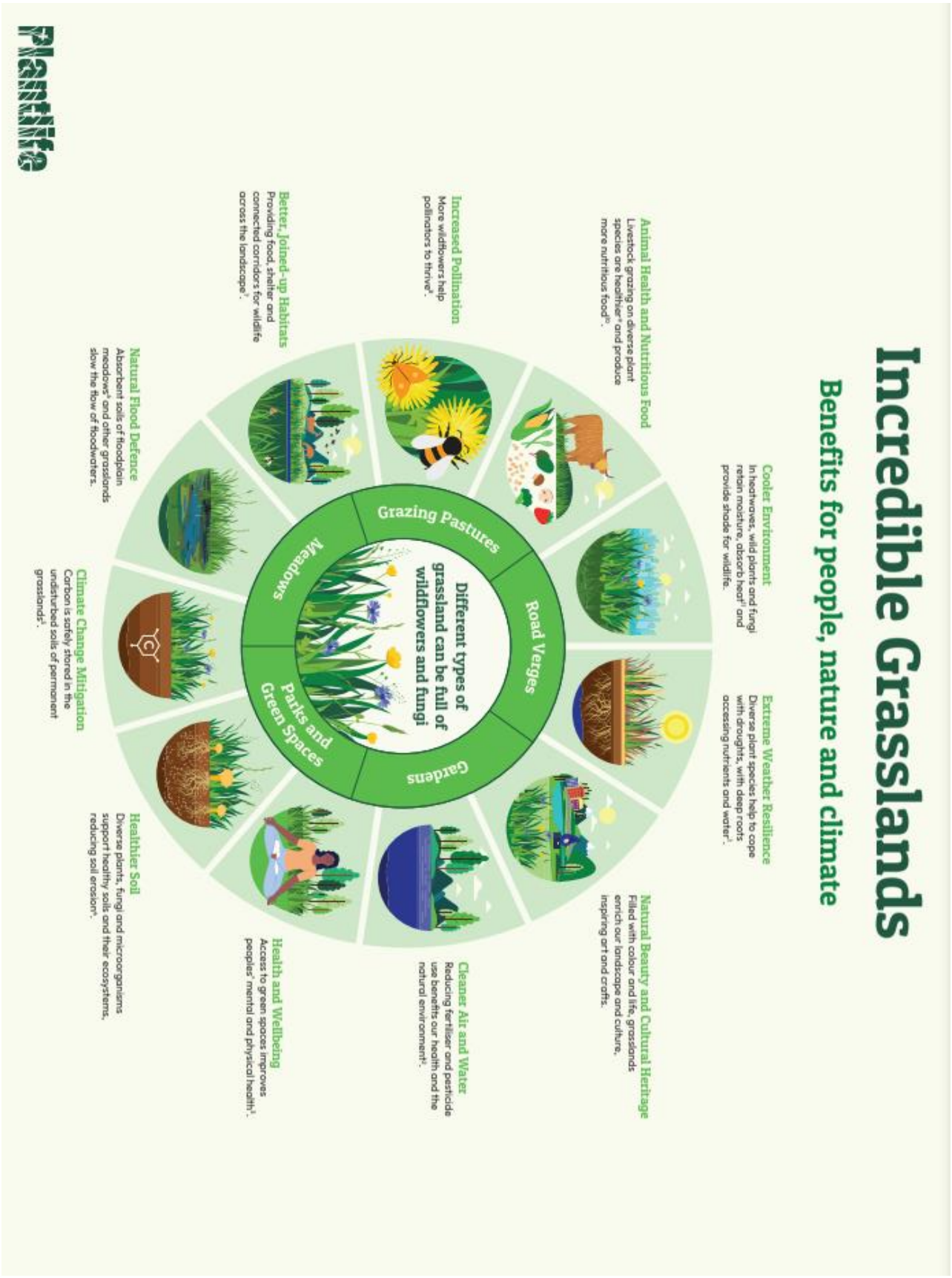


Figure 2: B-Lines across West Lothian

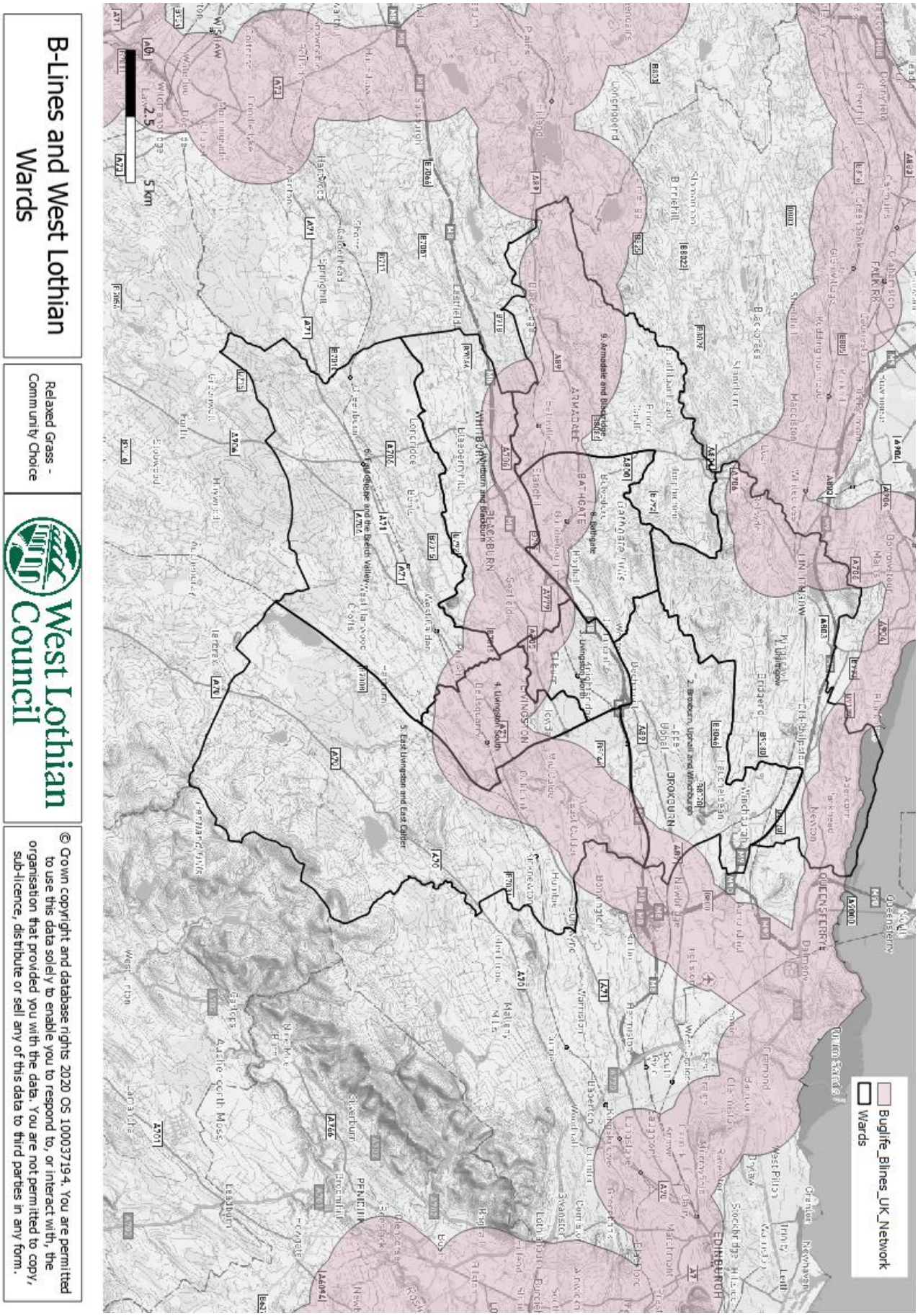


Figure 3: Images of managed grassland within West Lothian

Image 1: Ideal example of an area managed already existing with the NATURE management approach. Note the variety of species and how an access path has been cut. Play parks and path edges have received a full cut. West Lothian.

Image 2: Almond Park, West Lothian. Managed area. Note the mown margin next to paths with shortest at the path and then the vegetation structure increases in height towards the woodland.

Image 3: Managed area in Livingston. West Lothian. April. Note large pathway cut through areas of managed grassland.

Image 4: the same area as Image 3 (slightly closer) July. Note the range of wildflowers present providing a source of nectar for insects.

Image 5: Balbardie Park. West Lothian. Example of an area where a meadow mix has been sown and the area is under meadow management.

Image 6: short growing pollinator friendly clover, self-heal and buttercup near the Civic Centre. Livingston. West Lothian.

Image 7:Balbardie Park Golf Course paths. West Lothian. Clear paths cut through maintain access while creating an attractive landscape.

Figures 4-7 represent what different percentages of areas under NATURE management cutting regime could look like. This is for illustration purposes only and as a visual guide to show how different the same volume of areas can look.

Figure 4: 4 examples of how 10% could look in an area. With green indicating areas of NATURE management.

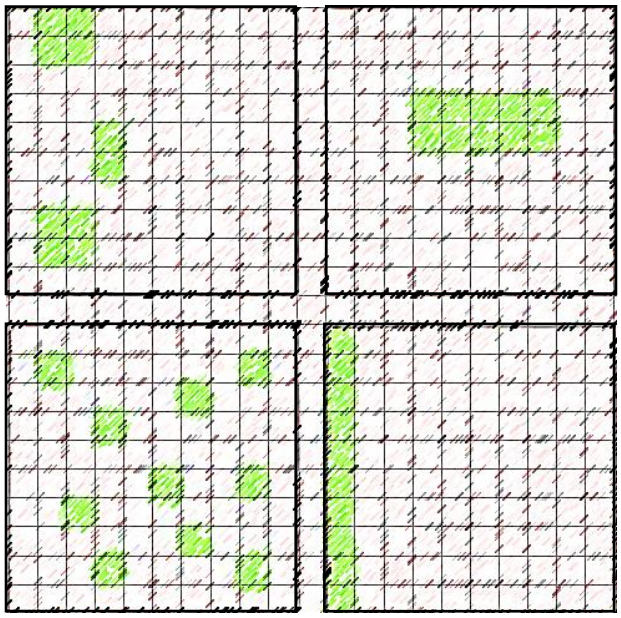


Figure 5: 4 examples of what 20% looks like across an area. With green indicating areas of NATURE management.

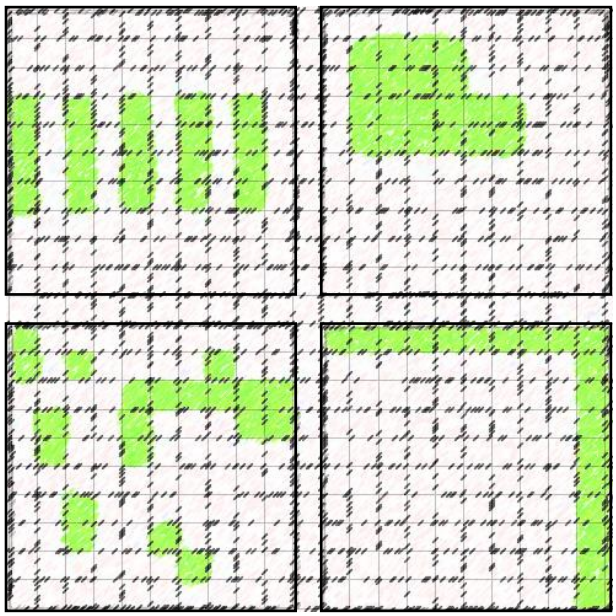


Figure 6: 4 examples of what 30% could look like across an area. With green indicating areas of NATURE management.

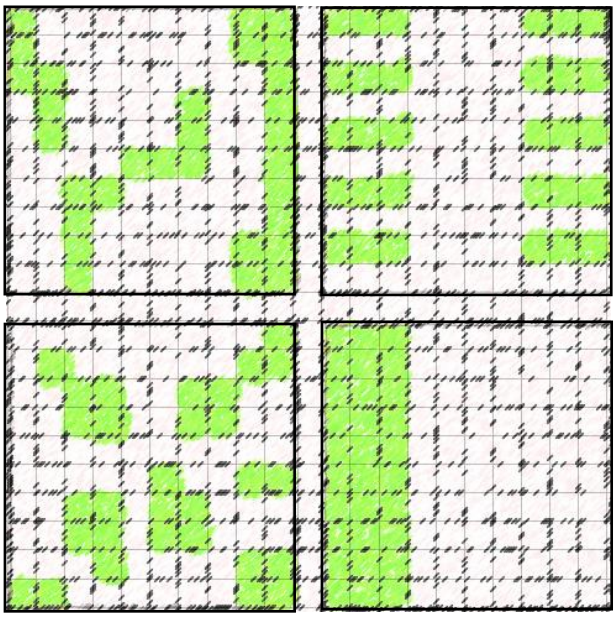
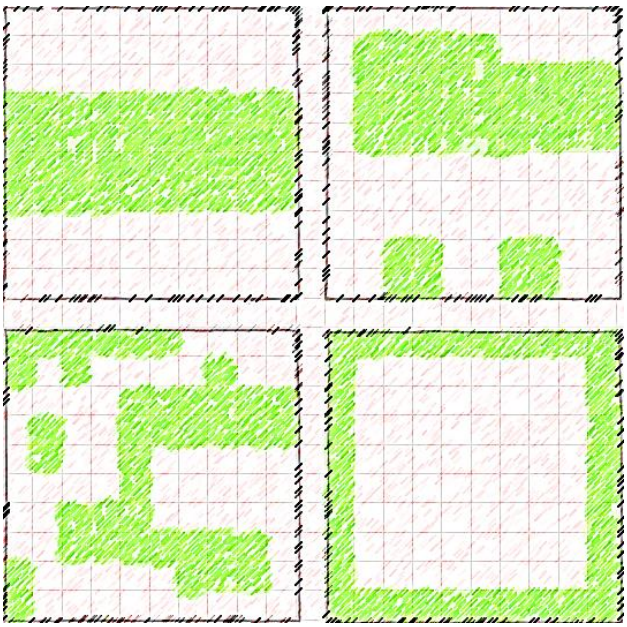


Figure 7: 4 examples of what 40% could look like across an area. With green indicating areas of NATURE management.



Annex 4:

Additional information on selecting areas for NATURE management cutting regime.

When selecting areas to implement the minimum 10% area, staff should consider first the guiding principles (Table 3) and then take into consideration the following:

- Does the area receive higher or lower foot fall and will leaving grass to grow cause potential problems?
- By leaving this area long, will it likely affect any services/ other maintenance?
- Is there a particular risk for areas under the NATURE management regime to affect sight lines when in peak growing season?
- Have there been particular concerns over previous management in the area which could be avoided by selecting an alternative or compromising? If so, can you incorporate the minimum area into an adjacent parcel of land leaving the area of concern as maintained but have an increased area of long grass in the adjacent area?
- Are there known problem areas which may benefit from a change to a NATURE management regime to help water/ sediment management?
- Are there areas known to be more diverse (as a rule of thumb, more different shades and textures can indicate diversity in grassland plants) already and could be excellent areas to leave?
- Within the wider area, are there a diversity of grassland management areas? If no or it's limited, consider having the area under NATURE management cutting regime.
- In larger areas of grassland: are the cut paths/desire lines wide enough or too wide? Are there adequate paths through the area?

Glossary:

Arisings	The cut material left from operations.
Biodiversity	Short for Biological Diversity, the variety of life in all forms and their interactions.
B-Line	A series of insect pathways running throughout the country. This is a spatial network promoted and maintained by Buglife.
Carbon dioxide exchange	Gaseous exchange of oxygen and carbon dioxide. Carbon dioxide is taken in from tiny pores (stomata) on plants and oxygen is released.
Carbon Sequestration	A process by which carbon dioxide is removed from the atmosphere and held in a solid or liquid form.
Commuting	To travel between a place of rest and another site
Ecosystem Functions	The capacity of natural processes including energy flow, nutrient and water cycling, ecological succession and the ability to provide goods and services
Ecosystems	A biological community of interacting organisms and their environment.
Evapotranspiration	The process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants.
Foraging	The process of searching for and gathering food
Impervious	Not allowing fluid to enter/pass through
Invertebrates	An umbrella term to describe Animals lacking a backbone.
Mitigate	To lessen the severity/gravity of an issue
Natural Succession	Referring to the ecological succession where a natural process of change in community over time
NVC	National Vegetation Classification: a system of classifying natural habitats in Great Britain.
Pathogen	A bacterium, virus, or other microorganism that can cause disease.
Perennial	Lasting or existing for a long period of time over several years.
Phase 1 Habitat Survey	a system of classifying natural habitats in Great Britain.
Structural Diversity	The range of different physical landscapes within a habitat.
Substrate	An underlying substance or layer
Semi-natural grasslands	Semi-natural grasslands is an umbrella term for a number of types of grassland but typically is used in reference to better quality. Typically, when referring to semi-natural grasslands we are including: Species rich grasslands, semi-improved grassland (of which these may be managed or not and of varying quality/diversity) and also unimproved grassland.
Unimproved grassland	Type of grassland that is rare in the lowlands. Their management may be varied from little to no management to mown/grazed. They may have had low levels of treatment with farm manure but should not have had sufficient application of herbicides/fertiliser or have been heavily grazed or drained. Species diversity is generally high and species present are characteristic of the soils, with a low level of agricultural species found.