Making Space for Pollinators 2024

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Content

Why are pollinators and pollination important?

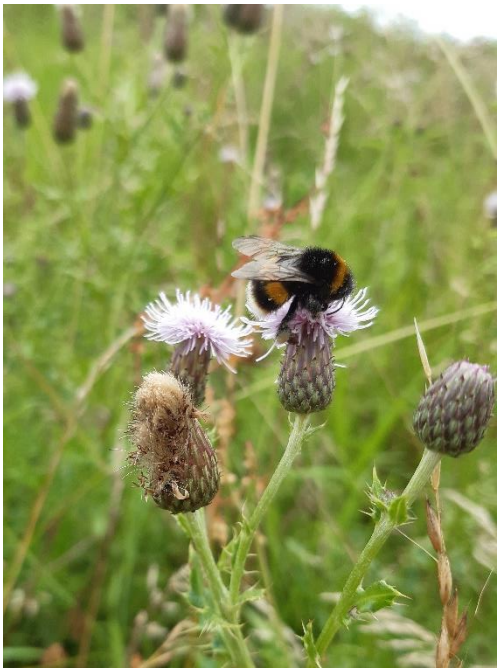


Photo 1: A bumblebee on a thistle flower at Milheugh LNR.

There has been a dramatic decline in the abundance and distribution of many of our pollinators. In the UK half of our 27 bumblebee species are in decline; three are already extinct and 71% of our butterflies are in long term decline.

Insect pollination plays a vital role in nature. Pollination involves the transfer of pollen from one plant to another, enabling them to sexually reproduce. The transfer of pollen is essential for plant fertilisation of many species. Insects obtain nectar and / or pollen for their energy requirements and to produce their offspring. Nectar provides a high energy sugar, while pollen is rich source of protein.

Pollination is an important ecological process that supports healthy plant communities and in turn, provides food, shelter and other resources for a multitude of species. They play a vital role in the ecology of our grasslands, woodlands and other habitats, shaping the nature and landscape that people depend upon and enjoy. It is essential that we work together to ensure the long-term survival of wildlife and provide a healthy environment for them to survive and thrive in Scotland.

There are many ways to support and enhance our native pollinator populations. They require extensive, well-connected areas in which to forage, nest and overwinter, so measures to safeguard their food and habitats must be carried out on a landscape scale. Creating Nature Networks through our urban areas linking public parks, greenspace to nature reserves, gardens and allotments, to the wider countryside can help keep Scotland pollinator friendly. Actions that help to maintain pollinators habitats in particularly reducing habitat fragmentation to facilitate dispersal, will offset some of the impacts in pollinators.

This Making Space for Pollinators Plan sets out our aims to help conserve and enhance local pollinators and their habitats. The plan has been prepared to support the Pollinator Strategy for Scotland 2017-27. The strategy states that globally, nearly 90% of flowering plant species depend, at least in part, on animals like insects to transfer pollen and to maintain healthy plant populations. The strategy values the economic input of pollinators in Scotland at £43 million per year for agricultural and horticultural crops, and honey.

National Context

Pollinators are a vital part of our biodiversity. Species such as bees and hoverflies are a familiar sight in our gardens, parks and countryside and they play a crucial role in our food and farming industries as pollinators. If we lose pollination services by insects, we risk damaging not only plants and animals but agricultural yields, our economy and our wellbeing. Many of our pollinators are under threat. Current pressures include land use changes, land management, pesticides, pollution, invasive non-native species, disease and climate change.

The Pollinator Strategy for Scotland 2017-2027 sets out how Scotland can continue to be a place where pollinators thrive, along with actions that are needed to help achieve that objective. The following extracts provide a summary of the objectives and outcomes to help pollinators in Scotland, and how this work ties in with Scottish Government priorities.

The Strategy aims: to address the causes of decline in populations, diversity and range of our pollinator species, and to help them thrive into the future.

Objectives:

- To make Scotland more pollinator-friendly, halting and reversing the decline in native pollinator populations.
- To improve our understanding of pollinators and their pollination service.
- To manage the commercial use of pollinators to benefit native pollinators.
- To raise awareness and encourage action across sectors.
- To monitor and evaluate whether pollinators are thriving.

Outcomes: By 2027:

- Action to support pollinators will be firmly embedded in relevant strategies, policies and practices across Government and the public sector.
- Our understanding of pollinator ecology, status and trends is improved to allow policies and practices to be informed by the best evidence.
- Regulation of honeybee and bumble bee importation will minimise the risks of introducing new pests and diseases.
- Local bee-based industries will be better supported.
- We will have a wide understanding of the value of Scotland's pollinating insects and strong public support to restore populations and habitats, monitor populations and research pollinator biodiversity.
- There will be a strong network of good-quality pollinator habitats in place.
- It can be demonstrated that Scotland's pollinators are thriving.

This Strategy links to all five of Scottish Government's Strategic Objectives, making a direct contribution to the 'Wealthier & Fairer' and 'Greener' objectives. By helping to secure and improve the resilience of our food supplies through a strong pollinator service, the strategy contributes to the Environmental Sustainability objective of Scotland's National Food and Drink Policy: Good Food Nation, and the development of a strategy for sustainable agriculture.

Pollinators are critical to the function of our natural environment. The strategy is a priority in the Scottish Biodiversity Strategy 2045 –'Tackling the Nature Emergency in Scotland' published in December 2022, which sets out clear ambitions for Scotland to be Nature Positive by 2030, and to have restored and regenerated biodiversity by 2045, where our:
Ecosystems will be diverse, healthy, resilient and deliver a wide range of ecosystem services.
Protected areas will be larger, better connected and in good condition.
The **abundance and distribution of species** will have recovered and there will be no loss of diversity within species.
Scotland's internationally important species will have increased in numbers and have healthy resilient populations.
Nature-based solutions, such as tree planting, peatland and blue carbon habitat restoration, will be central to our efforts to deliver NetZero and adapt climate change.
Harmful invasive non-native species will be managed so that established INNS no longer degrade native habitats and species or impede their restoration and regeneration.

Local context

South Lanarkshire council does not have a separate wildflower or pollinator strategy. Our Biodiversity Strategy and Biodiversity Duty Implementation Plan provide a strategic focus for conservation work with inclusions that will contribute to fulfilling the objectives of the Pollinator Strategy for Scotland, and focusing on making improvements to the way our land is managed. To date 155 grassland sites have been improved for pollinators and wildlife equating to 62.77ha throughout South Lanarkshire. A summary of some recent projects can be found in Appendix 1 with a list of pollinator friendly sites in Appendix 2.

South Lanarkshire Biodiversity Strategy: The South Lanarkshire Biodiversity Strategy brings together objectives and actions from a range of partners across the county. In South Lanarkshire, the main environmental pressures having an adverse effect on biodiversity include invasive non-native species, fragmentation of habitats affecting connectivity of systems and the inappropriate location of urban development or development that is insensitive to the local natural environment. Arguably, the greatest potential pressure on ecosystem function is climate change, with habitat fragmentation restricting the movement of species in response to this. The following extract from the strategy shows the objectives and actions with potential impact on pollinators.

Strategic Outcome 2: Designated and locally important sites are conserved.
Actions

- Manage and monitor all LNR's to benefit biodiversity.
- Continue to progress a variety of projects that benefit species / habitats of importance within South Lanarkshire.
- Investigate land coverage of designated and key sites within South Lanarkshire, with aim to expand to 30% of land use.
- Continue to work with GCV mapping key habitat sites, identify and create nature networks throughout South Lanarkshire.

Strategic Outcome 3: People have opportunities to connect with nature.
Actions

- Raise awareness and understanding of the issues affecting biodiversity to provide opportunities for people to engage with nature.

- Natural spaces are used for volunteering, citizen science, education, and health improvement.
- Continue to support nature-based education, skills and volunteering.
- Community groups are involved with local site management

Strategic Outcome 8: The urban environment of South Lanarkshire benefits biodiversity.
Actions

- Continue to create areas of wildflower meadow, in partnership with local communities.
- Review grass management with the aim to improve the biodiversity value of amenity grassland throughout South Lanarkshire.
- Ensure we secure positive effects for biodiversity from National Planning Framework 4 (NPF4).
- Improvement of nature networks to create corridors for species movement, link to neighbouring authorities to improve ecological connectivity across Scotland.

Strategic Outcome 9: Vacant and Derelict Land (VDL) contributes to biodiversity.
Actions

- Reduce the area of land on the VDL register due to naturalisation or other land use.
- Deliver project on VDL site projects to remediate the land or bring it into practical use.

The Biodiversity Duty: South Lanarkshire council has a statutory duty to further the conservation of biodiversity as set out by the Nature Conservation (Scotland) Act (2004). Our role is to support biodiversity from direct actions, through to educating others and raising awareness. Our Biodiversity Duty Implementation Plan (BDIP) reflects the priorities and outcomes set out within the South Lanarkshire Biodiversity Strategy and articulates we will achieve its duty to conserve biodiversity.

The Wildlife and Natural Environment (Scotland) Act (2011) requires the council to make a report publicly available on our compliance with the Biodiversity Duty every three years. Our online reports summarise biodiversity action achieved to date, including work on pollinators; see Appendix 1 extracts relevant to pollinators from the report made to Scottish Government.

The following extracts from the BDIP highlight actions with potential impact on pollinators and their habitats:

Actions

- Continue to review the current grass management practices, particularly for sites with actual or potential biodiversity value.

- Continue to review the application of herbicides on council land with the aim of reducing use as much as possible.

- Leave road verges to grow outside settlements for wildflowers, except where safety is required otherwise, cut once at the end of the year.

- Continue to investigate opportunities to maximise the use of native and pollinator friendly plants on council owned land.

- Investigate the use of green infrastructure to improve air quality, particularly that which favours native and pollinator friendly species.

- Continue to identify and progress a variety of projects that benefit species or habitats of importance within South Lanarkshire, linking where possible with external partners.

- The Unpaid Work Service, via community payback orders, will continue to work in our LNRs' and greenspaces, occasionally working alongside the country rangers and local community groups to improve sites for nature and access.

- The countryside ranger service continues to provide training, events and information to volunteers and communities.

- The countryside ranger service provides regular opportunities for volunteers and community groups to be involved with improving greenspaces for people and biodiversity.

- We continue to work with external partners including the Glasgow and Clyde Valley Green Network Partnership, Butterfly Conservation, Froglife, Buglife, Green Action Trust to further the conservation of biodiversity.

- Continue to monitor, maintain, and expand areas of wildflower meadow in partnership with Buglife and GCV.

- Survey relevant vacant and derelict land sites and deliver site projects, in partnership with external organisations.

- Work in partnership with GCV on the Clyde Peatlands project to improve lowland raised bog, Clyde Climate Forest and other biodiversity / nature network projects.

- The importance of biodiversity and its place in South Lanarkshire is promoted to staff and the public.

- Staff and contractors are made aware of protected or important species and habitats.

- The importance of biodiversity in mitigating the effects of climate change is promoted, as well as the need for biodiversity to be capable of adaptation.

What we need to do:

Photo 2: A photo of a species rich grassland Bothwell LNR.

Aim: We aim to have a healthy and diverse population of pollinating species.

Objectives:

- Where we deliver the actions within our Biodiversity Strategy and Biodiversity Duty Implementation Plan to benefit pollinators.
- To continue to manage wildflower grasslands and other habitats to promote biodiversity.
- To create, enhance and maintain nature networks throughout South Lanarkshire for pollinators, through the restoration and creation of flower rich habitats in the countryside and urban areas, linking to neighbouring and national networks.
- To continue to work with partners and communities providing training, practical activities, events and monitoring to encourage community involvement. Encourage citizen science and other volunteer projects that add value to existing monitoring schemes.
- Develop demonstration sites on public land, parks, woodlands and Local Nature Reserves.
- Support the use and development of pollinator friendly pest control methods.
- Recognise the importance of brownfield sites and manage these to benefit pollinators and other species.
- To raise awareness of the plight of pollinators and actions needed to help reverse species declines.

Why have long grass?

Photo 3: One of the many common spotted orchids in the long grass at Greenhall Local Nature Reserve in Blantyre.

Short mown amenity grassland supports very little biodiversity, naturalised grass is significantly better for wildlife, it provides vital shelter and food for a wide range of animals including invertebrates, amphibians and mammals. Wildflowers provide a crucial source of nectar for pollinating insects like bumblebees and hoverflies. Bats and birds will often swoop over long grasslands to catch insects, will many animals be feeding on the seeds.

Naturalised grass is created by allowing the grass to grow longer and more naturally. Wildflowers already in the sward can flower and set seed. The grass is cut once a year at the end of the growing season (Sept-Oct) using a tractor driven flail and the cutting are either left or ideally removed.

Naturalised grass can absorb approximately 0.397 tonnes of carbon dioxide per hectare per year. In comparison short grass will not sequester any carbon dioxide. Naturalised grass is generally more resilient to the impacts of climate change as it shades the soil and lower vegetation from extreme heat, and will withstand and absorb heavy rainfall, intercepts pollution and helps to reduce soil erosion.

There are many benefits to areas of long grass in our greenspaces. This doesn’t mean that all the grass must be left unmown; having a mixture of different areas provide a variety of options for how people and wildlife use the site. Various supporting documents and links for further information can be found in Appendix 3.

Providing pollinator plants near allotments and growing spaces helps ensure crops will be pollinated. Many insects such as wasps and ladybirds are natural pest control as they feed on garden pests. Different grass management can improve aesthetic and interest value; paths through long grass are more interesting than short grass and gives us a connection with nature. The link between our mental and physical wellbeing and time spent in the outdoors is becoming increasing recognised. Meadows change with the seasons, and over time; there is always something to see.

Options for grassland management

Open and sunny places are best to allow plants to thrive. Areas of long and diverse grassland will be of benefit to pollinators wherever they are created, however most insects will not travel far from their home. Enlarging existing pollinator habitats and creating new “stepping-stones” forms a corridor that many species can travel along.

To identify areas of grassland in the urban areas for urban wildlife to thrive, it is critical that a network of connected habitats to move through are established. We need to identify sites that help create nature networks, nature networks improving grassland areas to link to much larger urban networks such as local nature reserves, country park, play parks, pocket parks and existing areas of greenspace that support wildlife. Buglife have identified B-lines across central Scotland that can be used as a focus for this network.

Source: NatureScot - From Urban Grey to Urban Green. https://www.nature.scot/urban-grey-urban-green

Partnership and community work

We have a good history of working with external partners on various grassland improvement projects. We recently created several B-line sites with Buglife and have worked on various projects with Butterfly Conservation to create wildflower areas from amenity grassland. We wish to continue to create areas of long grass and wildflowers to benefit biodiversity, particularly pollinators and expand on this work throughout South Lanarkshire. There is also a role for communities to play, especially where there is a potential for change to how local greenspaces are managed. Communication is key to understanding why different types of habitats are a benefit for our wildlife, and a balance needs to be found for the various uses of sites. The opportunities for sites are variable, and a change does not need to take away the amenity and aesthetic value; it can enhance it.

Photo 4: Banking at Glen Doll in East Kilbride which was sown with yellow rattle with the local community in winter 2019. This parasitic plant helps keep grasses down allowing other wildflowers to grow. The connecting hedgerow also provides refuse and movement for invertebrates.

We are already working with many communities across South Lanarkshire to improve the outdoors for both people and wildlife, which includes areas of long grass, allotments, woodlands and even a raised bog. The network of volunteers plays a vital role in delivering enhancements planting spring bulbs, sowing and harvesting wildflower seed, planting trees to creating orchards. We welcome suggestions on how to improve our greenspaces for pollinators and will work with local communities where suggestions are made.

Case studies

Butterfly Conservation - Helping hands for Butterflies Project 2020 - 2022

The Countryside and Greenspace Team worked in partnership with Butterfly Conservation for the duration of their Helping Hands for Butterflies Project. The three-year project that ended in October 2022, engaged with over 700 people throughout the central belt of Scotland. The project was funded by the National Lottery Heritage Fund and NatureScot to create new habitats for butterflies in urban places.

The project introduced the world of butterflies and moths to new volunteers, through training events and workshops to help people identify and monitor species. The project also created flower-rich grasslands in urban parks that were specifically intended to help butterflies and moths. Management plans were created for each site, with four main aims to reduce the cutting, remove the cuttings, plant yellow rattle for the first year, then plant with butterfly friendly species.

Three sites were chosen in South Lanarkshire at Stonefield Park and Hunthill Road Whitegate Community Orchard in Blantyre and Bothwell Park, in Hamilton. Staff and volunteers helped create and improve these sites for invertebrates removing the cuttings to reduce the nutrient content going back into the soils and the addition of wildflower seed.

We aim to maintain and expand the three project sites for wildlife. A full report and films of the project highlights produced by Butterfly Conservation can be found on their webpage.

Photo 5: An example of one of the signs for the Helping Hands for Butterfly project areas.

Brighter Bothwell examples of pollinator friendly projects
Over the last few years Brighter Bothwell have been encouraging residents to grow wildflowers with the aim of becoming "Bee friendly Bothwell", by making packets of seeds available for free. These have been made up by the Beekeeping group at Bothwell Community Garden and are mainly borage or phacelia. The community garden has two demonstration borders, one for bees the other for butterflies, showing pollinator friendly plants which could be chosen for growing at home. Wildflower areas are managed for wildlife and supports an orchard with 28 fruit trees. The ground for the garden is leased from SLC and managed by the committee of The Organic Growers of Bothwell.

Photo 6: Wildflowers at Colliers Corner.

Plug plants are added to the Nature Trail which are grown at the community garden each year to add to the biodiversity and they gather yellow rattle seeds to scatter in other grassed areas along the path. SLC own this land.

A partnership approach is working well, with SLC and the Bothwell community looking after various elements of many sites:

- Gilchrist Garden in Green Street was gifted to the community by Marion Gilchrist, the first female medical graduate from Glasgow University; 3 pollinator friendly borders
- Green Street playpark; 3 large herb planters, fruit trees, climbers, rowan trees, wildflowers and pollinator friendly plants.
- Sensory Garden on Hamilton Road; 3 large, raised beds (pollinator friendly) with roses and clematis on the wall.

- Jubilee Garden has a very long border containing a wide range of shrubs, perennial plants and trees.
- The top of the Glebe is a private road managed by Brighter Bothwell; a wide range of small trees, shrubs and perennials are grown along with underplanted bulbs.
- At the war memorial and opposite the Bothwell Bridge Hotel; large planters and mangers host a mix of permanent and annual plants.
- Colliers' Corner is a newly planted area, names as it was near to the pit and miners' housing. There is a border planted with shrubs and perennials with bulbs recycled from tubs. Under the trees at the front wildflowers have been sown along with plants recycled from the Sensory Garden. The Coal Hutch is looked after by Brighter Bothwell and is planted up with bulbs and pansies for spring display which are then replaced with Summer plants. There is a small wildflower border nearer the pavement.
- Three areas on Fallside Road at Waverley Place, the Community Centre and the junction with the roundabout at Olifard Avenue, SLC have sown wildflower borders. At the junction of Uddingston Road and Blantyre Road we have The Miners' wildflower garden. This was sown with native seeds and plug plants to form a biodiverse haven for pollinators. It is maturing well now and even had orchids this year.

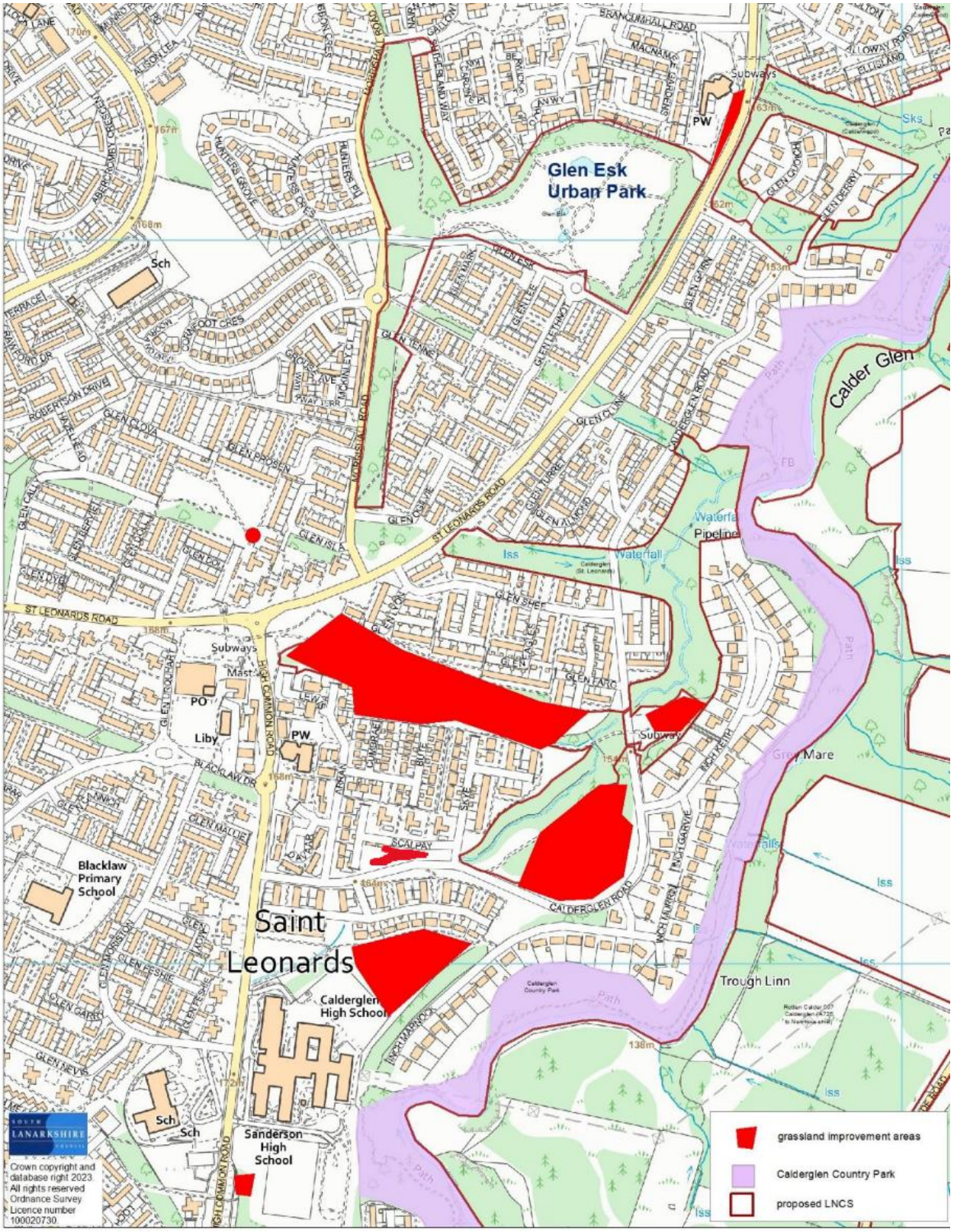
Every autumn, Brighter Bothwell volunteers plant up 26 large tubs with a range of bulbs and pansies to provide a spring display. All our choices are pollinator friendly to provide early nectar as well as looking lovely. Every summer a display of 56 large tubs, in recent years 12 of these tubs "perfect for pollinators" by including nectar rich plants such as buddleia and lavender. There are also a further 4 tubs which have sustainable permanent planting.

Improving grasslands in East Kilbride

In May 2023, SLC Countryside and Greenspace Team and Grounds Services were approached by a group of enthusiastic members of the local community in East Kilbride to enquire about improving several amenity grassland areas for wildlife. After a series of meetings and a site visit, we identified seven areas in St Leonards. We are now reducing the mowing regime to once a year, removing the cuttings to reduce the nutrient levels to encourage the growth of wildflowers and will be monitoring the changes to the flora and fauna in each location. The grasslands link to a network of greenspaces in the local area including Calderglen Country Park, Glen Esk Urban Park and many proposed Local Nature Conservation Sites.

Photo 7: One of the seven sites selected in East Kilbride along St Leonards Road.

The map below highlights the grassland areas in East Kilbride and the proximity to larger greenspaces at Glen Esk Urban park and Calderglen Country Park.


Glen Esk
Urban Park
Calder Glen
Saint
Leonards
Blacklaw
Primary
School
Calderglen
High School
Sanderson
High
School
Trough Linn
Grey Mare
ST LEONARDS ROAD
CALDERGLEN ROAD
HIGH COMMON ROAD
BLACKLAW DR
Subways
PW
PO
Liby
Mast
Sch
Waterfall
Pipeline
grassland improvement areas
Calderglen Country Park
proposed LNCS
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Appendix 1: Biodiversity Duty Report Extracts

The following information has been taken from the SLC Biodiversity Duty Report 2023-2026; actions taken to improve habitat for pollinators.

Nature Restoration Programme (NRP)

The NRP brings together Scottish Governments Nature restoration Funding (NRF) with South Lanarkshire council's Climate Emergency Fund during 2021 to 2023. The focus of the programme was to deliver positive effects for biodiversity, local ecosystems, mitigate the impacts of climate change and promote nature-base solutions. Most of the groundwork was completed by seasonal grounds employees, to keep work in house and be cost effective.
The initial focus of the program was on pollinators, whose decline has been well documented in the media. Building on previous work on council land over the last few years, of improving grassland and other habitats. The project also included other nature-based solutions that have many benefits for our natural environment.

Improvements made within the programme:

Local Nature Reserves, Country Park, and National Nature Reserve: creating and improving wildflower areas, small access repairs, tree planting and removal of invasive and non-native species.

District Parks: old and degraded shrub beds were replaced with plants chosen to benefit pollinators throughout the year. Some of these plants are also noted to help improve air quality, which can be incorporated as appropriate. District parks have also been chosen to host the covid memorial orchard, which contribute a biodiversity benefit to pollinators as well as enhancing tree canopy cover.

Photo 8: The Friends of Calder sowing wildflower seeds in one of the two meadows created as part of the NRF. More than 900 trees were also planted to improve this large expanse of amenity grassland in the LNR for wildlife.

Green Flags

Three parks in South Lanarkshire maintain Green Flag Awards which recognise and reward well managed parks and greenspaces. These are Strathaven park, Cambuslang park and Castlebank park. Biodiversity friendly elements of site management include reducing the use of peat and chemical and appropriate managing natural features and wildlife. Theses site have associated active community groups. Strathaven park has a new sensory garden which includes planting to encourage pollinators, a new hedge and improvement to the watercourse for wildlife. We are currently working with the Friends of Calder community group to work towards a Greenflag award for Greenhall Park and LNR in Blantyre.

Air quality

Photo 9: Grow 73 maintaining the raised bed in Rutherglen.

SLC has declared three Air Quality Management Areas and has an Action Plan which sets out the local measures to be implemented to improve air quality. These actions aim to reduce particulates and nitrogen oxides which will improve air quality as well as having a positive impact on biodiversity. Over the next year we plan to revise the current air quality action plan and this time we will look to see how we can strengthen the links to biodiversity.

As part of that process, we will look to the Cleaner Air for 2 Strategy produced by Scottish Government and in particular reference the use of nature based solutions. Environmental Services produced an 2022 Air Quality Annual Progress report highlighting projects in South Lanarkshire to improve air quality. We are working in partnership with a local community gardening group 'Grow 73' several large wooden planters with pollution fighting plants, some of which are pollinator friendly were installed adjacent to a busy road junction in Rutherglen. The project has been running for several years and Grow 73 continue to maintain the planters and engaged with the Royal Horticultural Society who have supported the project by providing advice, compost, and additional plants.

Vacant and Derelict Land (VDL)
The remediation and redevelopment of vacant and derelict land is a priority for the SLC. Such action is critical to the process of area renewal and regeneration, providing opportunities for economic development, new housing, recreation provision and enhancement of the environment. Between 2006 and 2020, 393.47 ha of previously vacant and derelict land have been taken forward for development or greening in South Lanarkshire. The Biodiversity Strategy encourages the removal from the register of derelict sites which have become naturalised. Since 2016, 18 sites, totalling 23.63 ha have been surveyed and removed. Some of these have become Local Nature Reserves and potential Local Nature Conservation Sites.

Contaminated Land
In 2020/21, significant site works were undertaken at Milton LNR a former brick works covering around 14 hectares, in Carluke thanks to the Vacant and Derelict Land Fund. Three new access points were created, paths and boardwalks were installed along with benches, drainage has been improved throughout the site and a dipping platform installed at one of the ponds. Wildflower seeds were sown in many areas to improve both grassland diversity and pollinator habitats. The site has now been designated as a LNR and is managed for biodiversity, so becoming assets to the local community as well as attracting visitors from further afield. In addition to recreation, with its attendant health and well-being benefits, the sites are used for

outdoor education and several of them have inspired involvement by the local community groups and individuals in maintain them and recording wildlife.

Photo 10: Milton LNR, one of the areas improved for pollinators and wildlife.

Roadside verges
Since 2015 we have reduced the number of grass cuts to all verges owned by SLC from six to one cut per year, except where safety reasons demand a more regular cut. Wildflower and landscaped areas and hedges associated with road infrastructure are maintained.

Community Groups and Volunteer capacity building
We continue to support community groups with an interest in engaging with their local greenspace by assisting with events and conservation activities, attending meetings, and applying for funding.

Many of our designated Local Nature Reserves have a dedicated “friend’s” community groups attached to them. These groups are an important link within the community, and they are invaluable in protecting and promoting biodiversity through community engagement, practical conservation work to providing ecological data for national surveys. Examples include installing and repairing dams along old forestry drainage channels within our peatland reserve, to planting trees and expanding our nature networks to improving grasslands for pollinators. Many volunteers have a keen interest and extensive knowledge of flora and fauna, from butterflies, moths, bats, dragonflies, mammals, and amphibians.

Photo 11: Langlands Moss LNR, a large health monitoring event with Butterfly Conservation (Summer 2022).

We have worked with many external partners providing training for our volunteers, topic range from conserving peatlands, butterfly and moth identification workshops to habitat creation and management for pollinator species.

The Countryside and Greenspace Team (CAG) continue to work with volunteers and community groups, supporting various types of work. The average time spent volunteering each year is 4746 days (2018 to 2023), which equates to £474,600 annually (based on £100 per day). 2022 was a great year for our volunteers a huge 5342 days were accrued equating to £534,200. This is an under-representation of the work carried out in South Lanarkshire by volunteers as we do not receive information from all our groups every year. CAG promote all their events, activities and projects on the South Lanarkshire Countryside Rangers Facebook page .

In 2021, a draft report was compiled, celebrating the achievements of the volunteers we work with and support, detailing the positive outcomes for biodiversity. CAG produced a draft report summarising the work of our volunteer (2011 to 2021). The report found that 900 hectares of land have been improved for biodiversity and access over the ten-year period.

The Friends of Holmhills Wood Community Park LNR
The group is a sub-group of Cambuslang community council, they are a small group of volunteers dedicated to promoting and conserving the reserve through awareness raising and regular public events. The friends hold regular public meetings, themed meets up, for pond dipping, practical conservation days, public activities and events for all ages and abilities, a weekly health walk and work with the local primary, secondary and additional support needs schools located near the reserve.

Members of the group are keen naturalists; they regularly record the wildlife at the reserve and contribute to casual wildlife records to the appropriate recording scheme throughout the year and one member of the group is a talented wildlife photographer and regularly shares the photos on the friends Facebook page.

Photo 12: Monitoring and recording for dragonflies and damselflies at the ponds at Holmhills LNR.

Ongoing conservation task include thinning of the willow scrub around the three ponds at the reserve to maintain the ponds but also for breeding warblers, the creation of wildflower meadow and control on INNS. In December 2022 they achieved an outstanding award from Keep Scotland Beautiful “It’s your neighbourhood award” the scheme recognised the wildlife survey work done by the volunteers contributed to the success.

The Friends of Langlands Moss

Photo 13: The Friends of Langlands Moss community group gathered after a day of conservation work with Butterfly Conservation's Bog Squad.

Since 2015 they have worked with Butterfly Conservation's Bog Squad conducting projects include, a peat depth survey, installing dams along the former commercial conifer plantation drainage ditches, to removing scrub and trees from the bog to improve the hydrology of the peatland. A butterfly transect runs through Langlands Moss, since the removal of the trees in at the moss in 2019 the number of butterflies and moths recorded at the reserve has increased significantly. CAG and the Friends of Langlands Moss continue to improve the reserve for wildlife, repairing any damage dams, removing scrub and trees from the peatland to improving the grasslands with the addition of wildflower seed and plugs.

Managing and monitoring B-Line in Clyde Valley

In 2019 SL Grounds Service Team and CAG worked with Buglife (The Invertebrate Conservation Trust) to improve 12 sites throughout Lanark, Kirkfieldbank and Crossford for pollinator species such as bees and hoverflies, staff and volunteers changed the management at the sites to increase the wildflower content within the grassland.

Photo 14: One of our B-line sites at Castlebank Park, Lanark

The project was funded by the Biodiversity Challenge Fund, due to be completed in 2020, extra funding allowed the work to be extended to 2021, which allowed us to sow more wildflowers at the sites. In 2022 and 2023 we have continued to monitor the development of these sites, recording species within the FIT Count app.

Food Growing

The Amenity Service team are working with associations and groups on a range of formal allotment and informal community growing projects. Where possible sustainable growing

methods are incorporated, and advice is given on how to improve biodiversity beyond food growing. The Food Growing Strategy (2020-25) and the Food Growing annual report (2021-22) has a section of biodiversity and the environment and highlights the work done at various allotments for nature. Allotment holders are provided with information and are encouraged to improve their site for biodiversity.

Existing food growing sites already contribute positively to biodiversity, when developing new sites, we consider green corridors for wildlife and havens for insects and pollinator species. For example, at Lammermoor in East Kilbride the site is being designed to incorporate a sustainable drainage system, to collect water and channel it into an attenuation pond. This will enable the improvement of the landscape to include wildflowers to attract pollinators and pond plant to improve the wetland area to hopefully attract frogs, toads and newts to the site.

Recent projects include:

- Planted two small orchards in Cambuslang Park (LNR) and Castlebank Park.
- Addition of six trees in Whitegate Orchard in Milheugh LNR in Blantyre.
- Provided wildflower seed to all council managed allotment sites and some community growing sites for pollinator species.
- Supplied seed for window boxes and herbs to 55 groups and primary schools, who are participating in a council run food growing scheme.
- Planted 800 trees in 13 covid memorial orchards in 11 district parks and two country parks.
- Established a link between GreeningCamglen with EK Development Trust to co-ordinate seed exchange.
- East Kilbride Development Trust issued 2500 seed packs to schools and community organisations.
- Grow 73 / Healthy n Happy distributed grow at home packs to schools and community groups in Rutherglen.

Photo 15: The community orchard “Whitegate” at Milheugh LNR.

Glasgow and Clyde Valley (GCV) Green Network

We continue to work in partnership with GCV establishing the Clyde Climate Forest and the Clyde Peatlands, as part of their green network blueprint and strategic habitat network. In January 2023, GVC received funding from NatureScot to support a green network regional grassland project, to conduct a study to assess the extent and condition of all species rich grassland across the Glasgow region. In October 2023 maps were produced highlighting the species rich grasslands and habitat networks within South Lanarkshire.

Udston and Glenlee - Wildflower Meadow Creation
In autumn of 2022, an area at Udston and Glenlee Woods was identified for wildflowers. An area of over 1500 square metres was cut, raked off and planted with wildflowers. The meadow will continue to be managed and surveyed from now on.

Milton Woods LNR
A site of a former brick and tile works on the outskirts of Carluke. Identified by SLC as vacant and derelict land, it is around 14 ha in size and was inaccessible to the local community.

Photo 16: One of the boreholes at Milton Woods newly renovated LNR.

In 2020/21, significant site works were undertaken at Milton thanks to the Vacant and Derelict Land Fund. Three new access points were created, one of which has parking spaces. Paths and boardwalks were installed along with benches and a central design incorporating reclaimed bricks in a Celtic knot pattern. Drainage has been improved throughout the site and a dipping platform was installed at the larger pond. Wildflower seeds were sown in many areas to help improve both grassland diversity and pollinator habitats. This new LNR now provides a much-welcomed asset to the local community.

Fernbrae Meadows
In 2021 a group of volunteers came together to devise a new butterfly transect for Fernbrae Meadows. Joining in training online with Butterfly Conservation and SL Countryside Rangers. The Lunchtime Heroes sessions gives people a chance to gather once a fortnight to participate in conservation tasks including citizen science, removal of invasive species, litter-picking and removing guards from newly planted trees.

Photo 17: One of the many wildflower meadows improved for wildlife at Fernbrae Meadows.

The health walks and buggy walks continue to run giving people a chance to experience nature close to home. Some of the **walkers at Fernbrae Meadows** produce several film clips talking about what nature means to them. Project 31 hold outdoor play sessions, the local nurseries and primary schools regularly visit Fernbrae Meadows using the outdoor space for play and learning. The Friends of Fernbrae Meadows and CAG support many events throughout the year exploring the ponds, gardening sessions in the allotments, creating new habitats to removing INNS. They continue to work on the meadow reducing the nutrient levels, harvesting seed, and learning about meadow as a habitat.

In Spring 2023, CAG and volunteers started to monitor the 400m hedgerow which runs across the centre of the reserve. Using the Healthy hedgerows app and the Great Hedgerow Survey we were able to access the health of the hedgerow and with the community produce a plan to maintain and improve it for wildlife. As part of the NRF 15kg of urban pollinator wildflower seed was sown in one of the five new wildflower meadow areas improved for nature at the reserve.

Pollinator boost: New Bee & Butterfly border at Calderglen Zoo gardens:
One of Calderglen Zoos traditional herbaceous borders has been transformed into a pollinator heaven, targeting bees, butterfly, and moth species, guided by expert advice from the Butterfly Conservation Society. The planting provides butterflies with food, shelter, and environments in which to lay their eggs. This incorporated a balanced mixture of both ornamental and wild species to create a beautiful space full of nectar-rich plants, featuring various trees, shrubs, and herbaceous planting.

Appendix 2: Database of pollinator sites in South Lanarkshire

The following tables list the grasslands that have been improved for nature since 2021. In total 155 grassland sites have been improved for wildlife equating to 62.77ha.

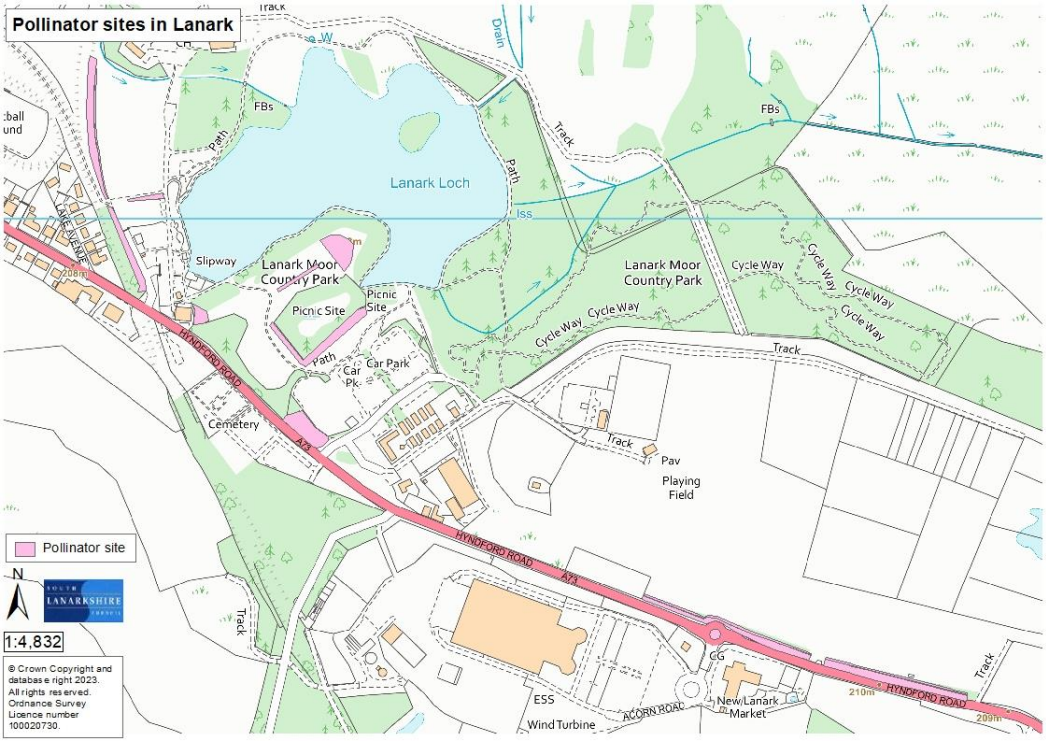
Site	Type of habitat or management change	Area (m2)	Ownership	Partnership
Blantyre	Euromix WF	188	SLC	
Blantyre – Stonefield Park	Wildflower	783	SLC	Butterfly Conservation
Bothwell Road Park	Wildflower	795	SLC	Butterfly Conservation
Cambuslang Park	Wildflower	6980	SLC	
Cambuslang Park	Long grass, wildflower	3373	SLC	
Carluke	Long grass, wildflower	430		CCI
Carluke	Orchard	2752	leased	Carluke development Trust
Castlebank Park	Horti base, wildflower	5633	SLC	Castlebank horti group
Cathkin relief Road	Wildflower, trees, shrubs	95485	SLC	
Chatelherault CP	Amenity to long grass	5584	SLC	
Crossford Park	Biobank	216	SLC	
Crossford Park	Wildflower	506	SLC	Buglife
Crossford Park	Wildflower	17	SLC	Buglife
Crossford Park	Wildflower	27	SLC	Buglife
Crossford Park	Long grass, yellow rattle	105	SLC	Buglife
Crossford Park	Long grass, yellow rattle	297	SLC	Buglife
Crossford Park	Long grass, yellow rattle	210	SLC	Buglife
Crossford Playpark	Wildflower	113	SLC	Buglife
Fairhill Valley	Old tip, wildflower area	30142	SLC	
Fernbrae Meadows LNR	Wildflower, tree planting, allotment	152619	SLC	Friends of Fernbrae Meadows
Glen Doll, EK	Yellow Rattle	82	SLC	
Greenhall, Milheugh LNR	Orchard, beds, wildflowers	1509	SLC	Friends of the Calder
Greenhall, Milheugh LNR	Amenity to long grass	10401	SLC	Friends of the Calder
Greenhall, Milheugh LNR	Amenity to long grass	17178	SLC	Friends of the Calder
Greenhills biobank	Roadside verge	507	SLC	
Hazelbank Park	Wildflower	147	SLC	Buglife
Hazelbank Park	Hedgerow gaps filled with pollinator species	390	SLC	Buglife
Holmhills Wood Community Park	Unmanaged, mixed grassland, scrub, pond edge	11611	SLC	Friends group
Kirkfieldbank	Verge wild carrot mix	53	SLC	
Kirkfieldbank	Long grass, yellow rattle added	2965	SLC	Buglife
Kirkfieldbank	Wildflower	183	SLC	Buglife
Kirkfieldbank	Hedgerow gaps filled with pollinator species	85	SLC	Buglife
Kirkfieldbank Community Orchard	Orchard, wildflowers	15537	private	Kirkfieldbank community orchard
Lanark	Verge wild carrot mix	75	SLC	
Lanark	Roundabout wild carrot mix	166	SLC	
Lanark – Bellefield Road	Wildflower	274	SLC	Buglife
Lanark – Castlebank	Wildflower	1587	SLC	Buglife

Site	Type of habitat or management change	Area (m2)	Ownership	Partnership
Lanark – Castlebank	Wildflower	1313	SLC	Buglife
Lanark – Castlebank	Pollinator shrubs	104	SLC	Buglife, Castlebank Horti group
Lanark – Castlebank	Wildflower	72	SLC	Buglife, Castlebank Horti group
Lanark – Castlebank	Wildflower	69	SLC	Buglife, Castlebank horti group
Lanark – Castlebank	Wildflower	10	SLC	Buglife, Castlebank horti group
Lanark – Castlebank	Pollinator shrubs	11	SLC	Buglife, Castlebank horti group
Lanark – Castlebank	Pollinator shrubs	11	SLC	Buglife Castlebank horti group
Lanark – Kildare	Yellow Rattle	1267	SLC	Buglife
Lanark – Kildare	Wildflower	583	SLC	Buglife
Lanark – St Leonards St	Bulbs	107	SLC	Buglife
Lanark – St Leonards St	Bulbs	87	SLC	Buglife
Lanark Loch	Verge wild carrot mix	978	SLC	
Lanark Loch	Long grass yellow rattle	1763	SLC	Buglife
Lanark Loch	Long grass yellow rattle	242	SLC	Buglife
Lanark Loch	Wildflower	311	SLC	Buglife
Lanark Moor Sensory Garden	Various	1484	SLC	CCI
Lanark Moor Country Park	Wildflower	385	SLC	Buglife
Lanark Moor CP	Wildflower	1638	SLC	Buglife
Lanark Moor CP	Wildflower	1272	SLC	Buglife
Lanark Moor CP	Orchard & long grass	291	SLC	Buglife
Lanark Racecourse	Wildflower	614	SLC	Buglife
Lanark Racecourse	Long grass, yellow rattle	1984	SLC	Buglife
Lanark Racecourse	Long grass yellow rattle	1625	SLC	Buglife
Lanark Racecourse	Wildflower	509	SLC	Buglife
Langlands Moss LNR	Long grass, wildflower	575	SLC	Friends of LM
Linn Crescent, Linnville, KFB	Wildflower	153	SLC	Buglife
Linn Crescent, Linnville, KFB	Wildflower	256	SLC	Buglife
Overtoun Park	Biobank	286	SLC	GROW73
Priory Bing	Long grass, wildflower, scrub	158817	SLC	
Stonehouse Park	54m	44	SLC	
Stonehouse Park	Wildflower	82	SLC	
Stonehouse Park	Wildflower	22	SLC	
Stonehouse Park	Wildflower	23	SLC	
Stonehouse Park	Wildflower	85	SLC	
Stonehouse Park	Wildflower	40	SLC	
Strathaven Park	Biobank, native hedge, wet	759	SLC	
Strathaven Park	Long grass	153	SLC	
Strathaven Park	Long grass	1109	SLC	

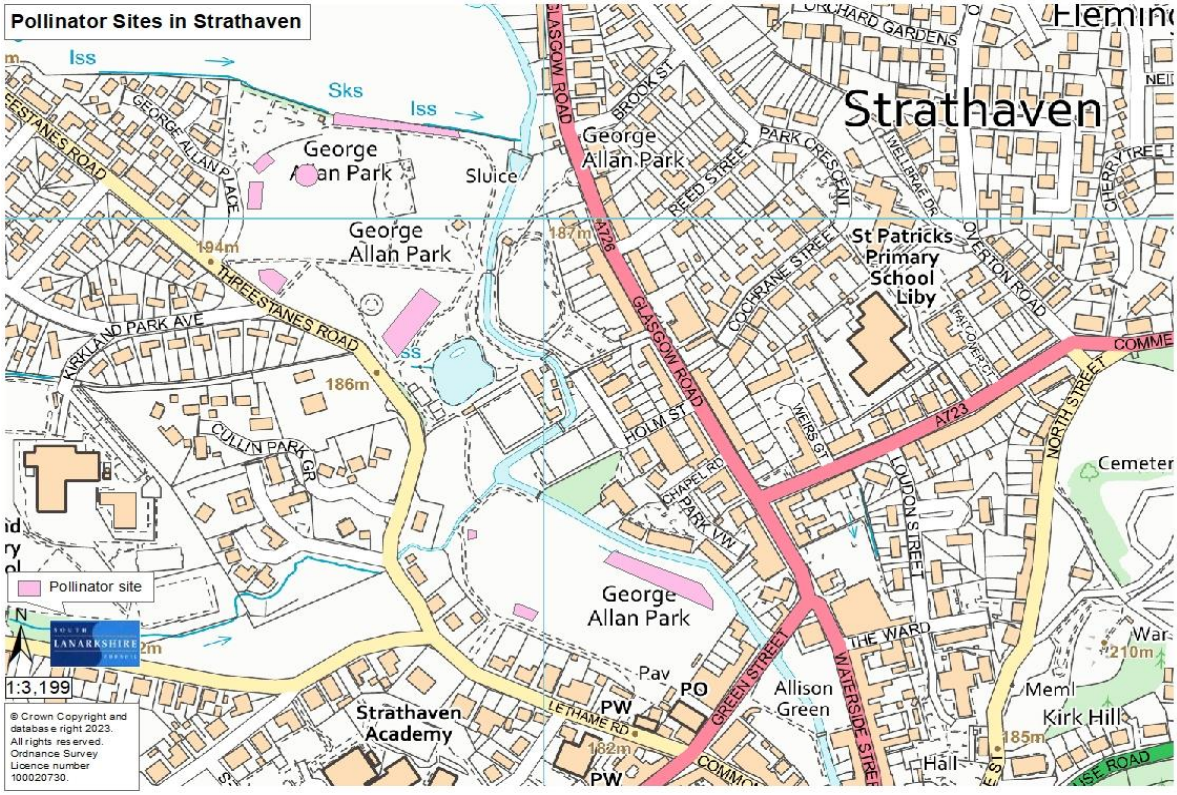
Site	Type of habitat or management change	Area (m2)	Ownership	Partnership
Strathaven Park	Long grass	249	SLC	
Strathaven Park	Biobank with wet area	265	SLC	
Strathaven Park	Wildflower	50	SLC	
Strathaven Park	Wildflower	160	SLC	
Strathaven Park	Wildflower	1299	SLC	
Strathaven Park	Orchard with unmown grass	283	SLC	
Total Area m^2		550445		
Total area Ha		**55.04**		

Nature Restoration Fund 2021/22	Grassland Improvements / Location	Area
Cathkin Road	Bulbs	1450
East Kilbride Area	Glen Shee Park	360
	Whitemoss	40
	High Common Road interchange	1000
	Mauchline	100
	Scalpay	100
	Lammermoor	100
	Newlandsmuir loop Road	1000
	Derwentwater	1000
Hamilton Area	Woodhead underpasses	3738
	Woodean, Ballantrae, Priory Calder Greenhall wildflower plus tree planting	8500
Clydesdale Area	63 locations	60000
Total area m^2		77388
Total area ha		**7.73**

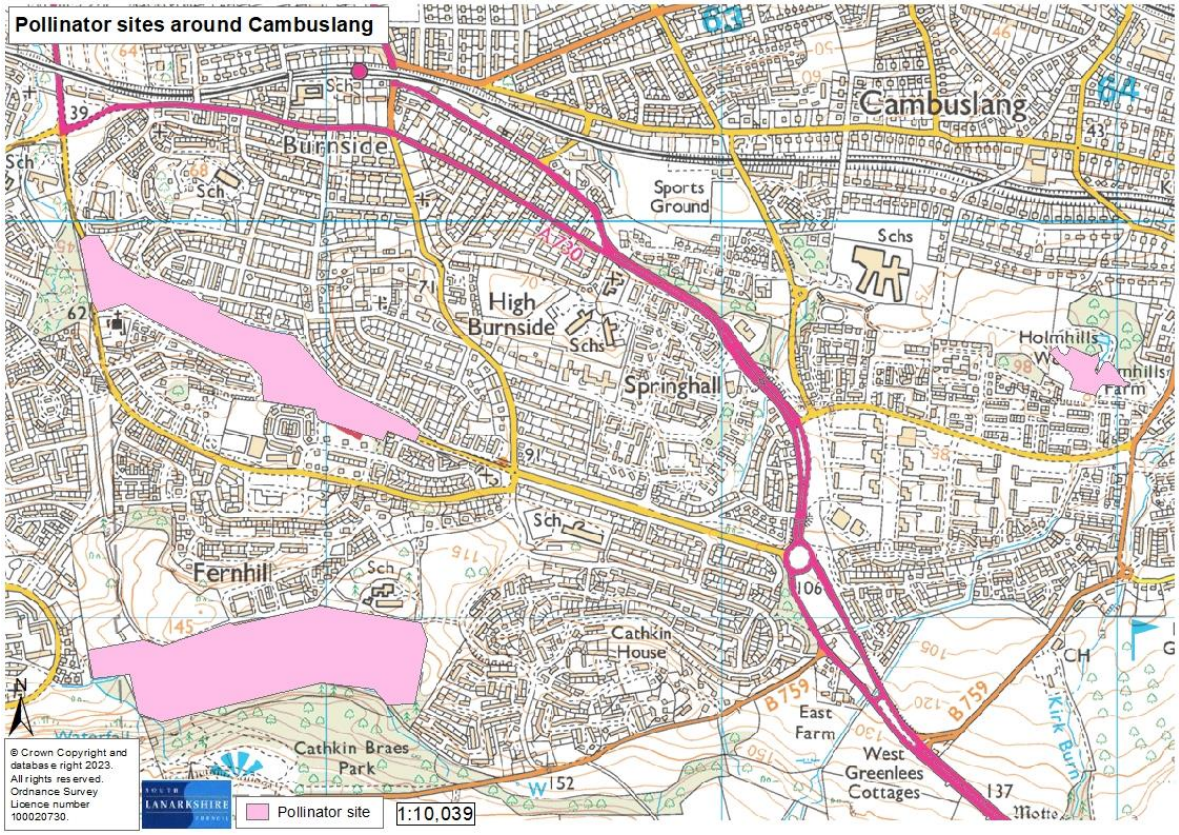
The map below highlights the location and extent of the improved grassland areas in Lanark.



The map below highlights the location and extent of the improved grassland areas in Strathaven.



The map below highlights the location and extent of the improved grassland areas in Cambuslang.



Appendix 3: References for support and further information

General guidance and information

- IUCN guides to conserving pollinators, including pollinator friendly cities and a guide for citizens.
- Buglife pollinator hub: guidance, advice and case studies.
- Naturescot pollinator resources: videos, species information, land management advice
- Plantlife: managing grassland road verges
- Butterfly Conservation Scotland provides guidance and case studies.

Grassland management

- Save our magnificent meadows: advice on managing various types of grassland, for example: urban
- Conservation evidence: restoring species rich grassland benefits various wildlife. Effective grassland management techniques include grazing, adding plant species and mowing. Time taken for effectiveness of grassland community restoration various from under five years to under ten years.
- Conservation evidence: use of wildflower strips or blocks provides benefit to various wildlife.
- Falkirk Council: Sustainable Grassland Management Pilot report This project trialled changes to manage grassland at 35 greenspace sites (including parks and road verges). The changes helped to create diverse and healthy greenspaces for local people to enjoy.

Pollinators and biodiversity of grasslands

- Improving grassland verge and amenity grassland: Pollinators such as bees, butterflies and hoverflies benefit from the plants and flowers in road verges, which form a network of "corridors" that provide food and shelter. They found that verges can be dramatically improved for pollinators by measures such as reducing nutrient levels in the soils, creating flower-rich verges, reducing mowing.
- Enhancing pollinator biodiversity in intensive grasslands: Extensification of conventional grass management by stopping fertilization, reducing cutting frequency and not grazing, benefits butterflies. However, to enhance bumblebees requires a more interventionist approach in the form of sowing flower-rich habitat.
- Plant–pollinator networks in grassland working landscapes reveal seasonal shifts in network structure and composition: native bee abundance showed no relationship with floral abundance and instead was positively associated with floral richness in our system suggests conservation actions should promote native floristic resources to benefit native bees.

Grasslands for people

- A step into the unmown creates a 'win-win' for wildlife and humans
  Creating unmown areas in an urban park can significantly increase flowers and pollinating insects while also leading to a greater enjoyment of the space by people, according to a University of Sussex study.

  They found that, during the course of one year, the blocks of unmown land at Saltdean Oval saw a three-fold increase in the density of flowers, while the numbers of flower-visiting insects such as bees, butterflies and moths was up to five times higher in the least-mown areas compared with the areas mown regularly as normal, every two weeks.

  A public opinion survey of the park's users revealed that more than a quarter of the visitors said the new land management scheme improved their enjoyment of the park, while 64 percent said their enjoyment was unaffected. In particular, park visitors noted

that they enjoyed more colour brought in by wildflowers and butterflies. Only one in ten said the scheme had led to a decrease in their enjoyment.

- Public attitudes toward biodiversity friendly greenspace
  When asking about converting lawns into meadows for the sake of biodiversity, we found strong support by urban populations across Europe. This clearly stresses the need and the opportunity to consider biodiversity conservation as mandatory aspect of future policies for public greenspace and city planning. Due to the wide geographic gradient across 19 cities differing in size, climate and culture, this study conveys several important messages to stakeholders in and out-side Europe. Most prominently, our study encourages everybody concerned with greenspace planning and management to engage in urban biodiversity conservation, as this is clearly supported for by large parts of urban populations.

  From our results, we conclude that measures to manage greenspaces more biodiversity-friendly should achieve an overall tidy and neat appearance. Thus, both near-natural but also more classical elements of urban greenery could be combined, such as lawn-like mowing strips along the edges of tall-grass meadows.

  In parallel, environmental education and information are crucial measures to address sceptical members of society, especially those that are older, those perceiving wild urban nature as potential health risk and those that use greenspaces for only few activities. Taking into account these prerequisites, the doors for biodiversity conservation in public greenspaces seem to be widely open, with potential benefits for biodiversity, but also for the well-being of the city residents.

Grasslands and carbon storage

- Grasslands more reliable carbon sink than trees where increasing temperatures make wildfires more likely [North America].

- Huge carbon stores under grasslands discovered: A nationwide [UK] survey by ecologists has revealed that over 2 billion US tons of carbon is stored deep under the UK's grasslands. Findings suggest that by managing our grasslands in a less intensive way, soil carbon storage could be important to our future global carbon targets but will also bring benefits for biodiversity conservation."

- Links Between grasslands and carbon storage: Grasslands, because of their expanse and high carbon density, are a prominent part of that global carbon cycle. One of the most significant roles of native [Canada] grasslands is that they act as a repository of carbon already stored. Therefore, where possible, leaving large tracts of native prairie intact will likely have the greatest overall benefit. Although a great deal of work has been done in recent years, estimates of carbon storage in terrestrial ecosystems worldwide vary widely and more work is still required.

Appendix 4: Acronyms

BC	Butterfly Conservation
BDIP	Biodiversity Duty Implementation Plan
CAG	Countryside and Greenspace Team
CCI	Clydesdale Community Initiatives
ES	SLC Environmental Services
FOC	Friends of the Calder
FOHWCP	Friends of Holmhills Wood Community Park
FOLM	Friends of Langlands Moss
GAT	Green Action Trust

GCV	Glasgow and Clyde Valley Green Network Trust
GS	SLC Grounds Services
INNS	Invasive, Non-Native Species
LNCS	Local Nature Conservation Sites
LNR	Local Nature Reserves
NS	NatureScot
PED	SLC Planning and Economic Development
RT	SLC Roads and Transportation
SLBP	South Lanarkshire Biodiversity Partnership
SLC	South Lanarkshire Council
VDL	Vacant and Derelict Land