



Urban

ACTION PLAN



Urban Landscape

INTRODUCTION

“By taking action at a landscape scale, we can ensure high quality greenspace is able to provide clean air, water and safe retreats for people and wildlife. This is crucial for the future survival of our towns and cities”

Ian Mackenzie, Project Development Manager, Cumbernauld Living Landscapes

A Landscape Perspective..

Species populations exist in a habitat network, where core areas are surrounded by less suitable habitat. This is often the case in an urban setting, where an area of green space is surrounded by urban development and habitats are fragmented by features such as roads. Often, there are corridors linking these areas, creating a permeable matrix and allowing a green network to form.

Green networks provide multiple benefits such as facilitating species dispersal and resilience, improving the environment for people and improving the economic status of an area by making it a more attractive place to live and work.

The National Planning Framework (2009) and the Scottish Planning Policy (2010) encourages the promotion of green infrastructure to enhance the connectivity, enhancement, protection and provision of open space and habitats, within and between towns and cities and established the Central Scotland Green Network (CSGN) to meet environmental, economic and social goals through the natural environment. Brownfield sites, school grounds and even churchyards and golf courses can all contribute to biodiverse urban landscapes.

Why are urban landscapes important?

“Urban biodiversity adds colour and life to our towns and cities. From our garden to parks, brownfields to community woodlands, greenspace in urban areas are important for the health and well-being of both people and wildlife.”

Craig Macadam, Scotland Director, Buglife



Urban landscapes provide numerous opportunities to connect people with wildlife and green spaces. Urban green space provides breathing spaces in an otherwise developed area. Urban biodiversity has been shown time and time again to have positive impacts on our well-being. Our urban landscape provides opportunities to link people with their surrounding green spaces, providing venues for ecological and environmental education, and places for intrinsic enjoyment. Expanding and managing our urban green space promotes species diversity, increases our quality of life and attracts visitors to North Lanarkshire. Healthy ecosystems are the very foundations on which we build out society and economy, providing us with goods and services on which our quality of life depends.

Research indicates that there is a variety of species living in the urban landscape that have adapted to the unique habitats and ecological conditions in urban areas. Different land uses, a high diversity and abundance of micro-habitats and the influence of people have created a landscape that allows biodiversity to flourish alongside humans. The species that we find in our schools and backyards form a large part of our ecological and cultural identity.

Urban habitats under Threat

Development is constantly changing the ecological structure and nature of our urban landscapes, presenting opportunities, and threats, for our wildlife.

Urban habitats are beneficial for vulnerable species including bats, Swifts and pollinators. However, unsympathetic development and lack of breeding, nesting and foraging sites is posing a threat to these species. By considering these species on a landscape scale, more beneficial action can be taken forward that will protect and enhance biodiversity over the coming years.

Urban landscapes in North Lanarkshire

The Ecosystem Approach recognises that “humans, with their cultural diversity, are an integral part of many ecosystems”. In our urban areas, the people that live and work in North Lanarkshire are a part of the ecosystems around us.

There are nine local nature reserves in North Lanarkshire, each designated to protect the biodiversity value of the site, create educational opportunities and involve the community in local biodiversity. Many community groups have taken ownership of their local green spaces and hold weekly volunteer events and schools are doing more than ever to introduce children to nature.

Cumbernauld Living Landscapes – An Example of Ecosystem Scale Conservation

The Cumbernauld Living Landscape programme aims to reinforce and expand existing green networks and reconnect the people of the town to their natural environment to benefit local people, help wildlife and support the regional economy.

However, throughout its short history the new town of Cumbernauld has seen the loss and degradation of many of its important natural habitats.

Creating multifunctional ecosystems and quality green spaces through the heart of the town, the Cumbernauld Living Landscape will protect the environment and create places in which people want to live their lives.

Bats

ACTION PLAN

UK BIODIVERSITY LIST OF PRIORITY SPECIES:	COMMON PIPISTRELLE	YES
	SOPRANO PIPISTRELLE	YES
	NATHUSIUS PIPISTRELLE	NO
	DAUBENTON'S BAT	NO
	BROWN LONG-EARED	YES
	NATTERER'S BAT	NO
SCOTTISH BIODIVERSITY LIST:	COMMON PIPISTRELLE	YES
	SOPRANO PIPISTRELLE	YES
	NATHUSIUS PIPISTRELLE	YES
	DAUBENTON'S BAT	YES
	BROWN LONG-EARED	YES
	NATTERER'S BAT	NO
EUROPEAN PROTECTED SPECIES:	ALL SPECIES	YES

Summary

Bats are the only true flying mammals in the world, with at least 9 species found breeding in Scotland, all of which eat insects. For most species, the numbers of bats and bat colonies have declined significantly in recent years. This is mainly due to loss of roost and hibernation sites, as well as habitat fragmentation.

All bat species found in Scotland are considered in this Species Action Plan, however the text will have particular reference to the 6 species (including 3 species of Pipistrelle) that have been recorded in North Lanarkshire.

Bats need consideration and protection by local communities and the local authority, especially as many roost sites are found in buildings, and may be affected by development such as building alterations. Trees, woodlands and meadows are of importance to bats. Management of woodland habitat to retain habitat corridors is important, as is the retention of older trees.



Profile of species recorded in North Lanarkshire

Daubenton's Bat

Daubenton's bats forage over open water, taking insects from, on, or near the water surface. They prefer smooth flowing water with tree cover on both banks. They typically forage over a short stretch of water, but their foraging site can be up to 5 - 10km from the roost. Daubenton's also feed over canals, lochs and small ponds. Summer roosts are found in tree holes, the stonework of bridges, and in buildings close to open water. Known hibernation sites are primarily in caves, mines and bridges as well as large trees.

Pipistrelle Bat

Pipistrelles are Scotland's smallest and most common bat, most often associated with human habitation, often using houses for roosting. Pipistrelles are classified as species requiring a mosaic of habitats, and as such are excellent biological indicators of the health of a wide range of habitats. Pipistrelles in Scotland are primarily found in river valleys, foraging over water and around trees.

Brown Long-eared Bat

Brown long-eared bats select deciduous woodland as foraging habitat but also feed in mixed woodland and on the edges of coniferous plantations. Their roosts are usually within 0.5km of deciduous woodland and foraging mostly occurs within 1.5km of their roosts. Maternity roosts are usually found in houses; however they also use barns and churches, and nursery colonies have also been found in trees and bat boxes

Natterer's Bat

Natterer's often share their roost with other species of bat such as Pipistrelle and Daubenton's and are thought to be under recorded in Scotland. Half of the known colonies in Scotland live in occupied houses; however they have also been recorded in bridges, barns and farm steadings. They roost between end beams and gable walls, and often in small crevices in buildings. In winter they seek out cool entrance areas to hibernate, such as mines and limestone quarries in southern Scotland.



Legal Status in Scotland

All bats in Scotland are protected by the Wildlife and Countryside Act 1981, under Schedule 6, and under Schedule 2 in Scotland by the Conservation (Natural Habitats &c.) Regulations 1994 (as amended).

This protection means that it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat;
- Intentionally or recklessly obstruct access to a bat roost.

On a local level, negative impacts can be reduced by activities in accordance with NPPG14 Natural Heritage 1998 and PAN 60 Planning for Natural Heritage, Environmental Impact Assessment (Scotland) Regulations 1999. The presence of bats is a material consideration for a planning authority when considering a development proposal that would likely result in significant harm to the species.

Current Status

Daubenton's Bat

Population estimates of Daubenton's bat range in Britain from 150,000-560,000 and Scotland's population at 17,500-40,000. National population levels have been classified as showing a small but significant increases over the period 1997-2013.

Daubenton's are thought to be widely spread through North Lanarkshire's river valleys.



Pipistrelle Bat

The most recent population estimates for Soprano and Common pipistrelles in the UK are between three million and about two million, of which 550,000 are in Scotland. Pipistrelle population numbers appear to have increased from 1997.

All three Pipistrelle species (Common, Soprano and Nathusius) are present in North Lanarkshire. The Soprano and Common pipistrelles are the most likely species to be encountered by householders. As they are the bats most likely to be encountered by householders and those householders are responsible for the upkeep of housing stock, it is hoped that an improvement of bat engagement and education would aid considerably in their protection and population increase.

Over the past 2 years, several records of Nathusius pipistrelle have been recorded in North Lanarkshire. However, these records have only been of fly over's and no roosts have been recorded. There is a need to survey and manage for this European summer visitor and potential breeder.



Brown Long-eared Bat

National population figures from 2005 put the population at 245,000 and the Scottish figures at 27,500. Trends from 1997 to 2013 show a very small increase in the population of this species.

This species is uncommon in North Lanarkshire and has a scattered distribution. They have been recorded throughout North Lanarkshire within areas to the north and the south, however very few roosts have been found.

Natterer's Bat

National population figures from 2005 put the population at 148,000 and the Scottish population at 17,500, but these estimates are based on very limited information and are likely to be inaccurate.

Little is known about the current status of Natterer's bat in North Lanarkshire. It has only been recorded in 2 sites, both to the far north in Kilsyth. They are known to populate sites in South Lanarkshire and could therefore be under recorded in the area between. Under recording may be due to the fact that they are a shy, elusive and relatively quiet bat whose colonies can be overlooked in buildings, particularly when shared with other species of bat.



Current Factors Affecting These Species

- Reduction in insect prey abundance, due to high intensity farming practices and inappropriate riparian management e.g. river engineering practices, heavy grazing pressures and water pollution.
- Loss of maternity roost sites through damage or destruction, resulting from factors such as a lack of public understanding of bats, as well as a misunderstanding of the legislative process, often leading to a lack of consultation with Greenspace development or Scottish Natural Heritage.
- Loss of hibernation and other seasonally important roost sites for the same reasons. These sites include buildings, trees and underground sites.
- Lack of professional understanding in Housing, Arboricultural and Planning and Environment staff resulting in accidental roost destruction.
- Loss of insect rich feeding habitats and flyways, due to loss, degradation and isolation of wetlands, riparian, hedgerow and woodland habitats.
- Climate seriously affects both wintering bats and foraging females. Wet weather in spring is a major factor in reducing breeding viability in certain years.
- Predators such as Grey squirrels have had a major impact on North Lanarkshire tree roosts.
- Wind farms can be an issue for bats in the UK, not only because of the risk of direct collision if turbines are placed on migration or commuting routes, but also because of displacement from foraging habitat.

Current and Past Actions

- Regular surveying and monitoring. National Bat Monitoring Programme involvement by CSGNT and Countryside Rangers.
- Bat box surveys by the Countryside Ranger Service.
- Over 10 hibernation boxes have been erected in North Lanarkshire.
- NLC guided walks/events and information provided at events.
- Close working relationship with Scottish Natural Heritage/BCT/Clyde Bat Group.
- Many key bat sites are designated as Sites of Importance for Nature Conservation (SINCs). There is a presumption against development of (SINCs) in the NLC local plan.
- Appropriate mitigation, at sites where development or land-use change threatens the species, is ongoing through Greenspace Development .
- Ecological surveys from developments are identifying new colonies of bats.
- Guidance Notes have been provided for Planners and other council departments whose activities could affect bats e.g. pest control firms, building industry arboriculturists, planners, professional contractors, developers and road engineers.
- A programme of publicity and education activities delivers at least 4 walks and talks per year.
- Enhancement of hedgerows through other projects, for example the Barn Owl project, which planted 4 km of hedgerow and hedgerow margin plants in 2010/2011.

Proposed Objectives, Targets and Actions.

Objectives

1. Maintain and enhance existing populations and distribution of bats in North Lanarkshire.
2. Assist in the development and implementation of monitoring procedures for the identification of population trends.
3. Improve public understanding and appreciation of bats.

Action	Meets objective number	Action by	Target
Site safeguard and management			
1.1 Continue to encourage favourable management of land adjacent to known breeding sites to benefit foraging bats.	1	SNH, NLC, SWT	Identify key breeding sites by 2017, and undertake positive management in land adjacent to 3 of these sites by 2020.
1.2 Continued enhancement of habitat by the addition of hedgerows, tree lines etc.	1	NLC	Habitat enhancements at 10 sites by 2020.
Advisory			
2.1 Offer training to planners and other council departments whose activities could affect bats.	1, 3	NLC, SNH, CBG	Training to be delivered by 2017
Future research and monitoring			
3.1 Improve bat records database.	2	CBG, SNH, NLC	Develop Data Sharing Agreement with CBG by 2016
Communications and publicity			
4.1 Continue with publicity and educational activities.	3	CBG, SNH, BCT, NLC, RSPB, CSGNT	At least one event, talk, article etc. per organisation delivered annually from 2015.
4.2 Investigate the possibility of the construction of a purpose-built hibernacula.	1	NLC	Identify potential sites and funding sources by 2018 with aims to deliver project by 2020.





Abbreviations:

SNH: Scottish Natural heritage

NLC: North Lanarkshire Council

CSGNT: Central Scotland Green Network Trust

CBG: Clyde Bat Group

BCT: Bat Conservation Trust

Authors:

Plan written by Ian Cornforth (Scottish Wildlife Trust). Updated by Jonathan Willet (Biodiversity Officer). Updated by Laura Whyte, Biodiversity Officer, (2008). Updated by Kirsty Mooney, Assistant Biodiversity Officer (2014)

References

Joint Nature Conservation Committee 2014, The State of the UK's bat 2014, National Bat Monitoring Programme Population Trends

The Bat Conservation Trust, UK Bats, Resident species http://www.bats.org.uk/pages/uk_bats.html#Resident

John Haddow , 2011. The Status of Scottish Bats, 2011. www.snh.gov.uk/docs/13953637.pdf.

JNCC, 2005. UK Mammals: Species Status and Population Trends. Edited and compiled by Jessamy Battersby, First Report by the Tracking Mammals Partnership

Churchyards and Cemeteries

ACTION PLAN

SCOTTISH BIODIVERSITY LIST HABITAT:

NO

UK BIODIVERSITY LIST OF PRIORITY HABITATS:

NO

Summary

Churchyards and cemeteries are both burial grounds, with churchyards found within the grounds of a church and cemeteries outside the boundaries of a church. These burial grounds include ornamental trees and shrubs as well as areas of regularly mown grass. They may also contain ponds, wetland areas or rough unmanaged areas of grasses, scrub and woodland. Furthermore, burial grounds may be bordered by hedgerows or stone walls and these features are valuable wildlife habitats.

Current Status

Churchyards and cemeteries are particularly good for lichens, fungi, mosses and liverworts. They are also home to all kinds of wildlife including small mammals, amphibians, insects and birds.

The quiet nature of churchyards and cemeteries in urban and rural areas often results in them becoming havens for biodiversity in what might otherwise be a hostile environment. They are often valuable areas of green infrastructure within urban landscapes. Due to the antiquity of many burial grounds, they may support rare or uncommon plant species which were formerly much more widely distributed.

In the majority of burial grounds, areas of grassland are kept closely mown. These areas may provide a suitable habitat for a variety of fungi if they have been left unfertilised for many years. A diversity of wildflowers may also occur, which in turn attracts butterflies and moths. Reptiles and amphibians find shelter under stones, and compost heaps may serve as breeding sites. Church buildings, boundary walls and trees can provide roost and nest sites for bats and birds, including many species characteristic of open woodland and woodland edge habitat.

Distribution

There are 32 Cemeteries and Churchyards in North Lanarkshire. Ten of which are operational cemeteries, seven closed cemeteries and fifteen closed churchyards. Cumulatively, they cover approximately 120 ha.

Legislation and Site Designation

Nationally a few churchyards have been legally designated as Sites of Special Scientific Interest (SSSIs) and some churches and churchyards can also provide habitats for a number of statutorily protected species such as bats, Badgers and reptiles.

In North Lanarkshire 2 Cemeteries are designated Sites of Importance for Nature Conservation (SINC's) and both of these, Globe Cemetery and St.Patrick Churchyard, are in Motherwell.



Current Factors Affecting the Habitat

- Decline in church attendance leading to many smaller churches and chapels being closed, often followed by sale for residential or commercial use/development.
- Lack of resources to meet the cost of maintenance as a whole.
- Poor understanding by the public and local authorities of the biodiversity value of burial grounds.
- The need to maintain a “neat and tidy” appearance as expected by relatives of the interred.
- Lack of biological records for burial grounds.
- Grass is cut on a weekly basis throughout the months of April to September inclusive, weather permitting. Litter is collected weekly or when required. Employees also plant-out and maintain soil borders and flower beds/shrub beds as required, including weeding, feeding and pruning.
- Greenspace Development advises cemetery staff and other organisations that deal with cemeteries, graveyards and crematoriums as to the potential benefits of these grounds to biodiversity.
- Biodiversity enhancements have been undertaken within existing cemeteries, including planting young native trees and shrubs at both Bothwellpark and Benhar cemetery
- A new cemetery was created at Bothwellhaugh in which biodiversity enhancements were incorporated, including wildflower meadows, landscape planting using plants with a rich nectar source, and wet and dry swales (very shallow channels that are used to collect and/or move water and also remove pollution). Several sustainable urban drainage systems (SUDS) ponds were also created.

Current and Past Actions

- Cemeteries and churchyards are maintained by cemetery staff. Maintenance within cemeteries includes grass cutting, litter collection, interments, re-instatement, shrub beds, flower beds, trees and weed control.





Proposed objectives Targets and Actions

Objectives

1. To increase awareness of the biodiversity value of churchyards and cemeteries.
2. To work with those responsible for managing churchyards and cemeteries to conserve and enhance biodiversity.

Actions	Meets objective number	Action by	Target
Policy and legislation			
1.1 Encourage the incorporation of biodiversity objectives within management contracts for churchyards and cemeteries.	2	NLC	New biodiversity objectives incorporated within management contracts for 2 cemeteries by 2018.
Site safeguard and management			
2.1 Designate sites as SINC's where the site meets criteria and designation would be beneficial.	2	NLC	Incorporate cemeteries within next SINC review
Future research and monitoring			
3.1 Where sites meet SINC criteria ask experts to help survey grounds for specific species.	1, 2	NLC	Relevant conservation groups to be invited to survey 1 site per year.
Communication and publicity			
4.1 Improve public understanding of biodiversity within graveyards.	1	NLC	Organise walks and talks, plus annual open days at 1 site per annum. Could be taken forward through the Open Doors Day event.



Sources of Information

Jackson, D.L. 2000. Guidance on the interpretation of the Biodiversity Broad

Habitat Classification (terrestrial and freshwater types): Definitions and the relationship with other habitat classifications.

JNCC Report No. 307 Other House of Commons, Select Committee on Environment, Transport and Regional Affairs, Eighth Report –Cemeteries.

Martin Palmer and Nigel Palmer. 1997. Sacred Britain (ICOREC)

Authors:

Laura Whyte, Senior Biodiversity Officer (2008), Kirsty Mooney, Assistant Biodiversity Officer (2014)

Swift

ACTION PLAN *Apus apus*

UK LIST OF PRIORITY SPECIES:	NO
SCOTTISH BIODIVERSITY LIST:	YES
BIRDS OF CONSERVATION CONCERN:	AMBER

Summary

Swifts are summer visitors to Britain. These birds, with their distinctive screaming calls, are a localised sight in our towns and villages. Their numbers declined by 62% in Scotland between 1994 and 2004 (BTO survey). In a UK context, it is estimated that the population has declined by 38% from the period 1995 to 2010. Action to secure nesting spaces, in known nesting areas, is underway, as is a change in the management of urban green space, which will increase the abundance of insects, their main food source. It is possible that factors in the wintering habitat of Swifts could also be responsible for the decline in their numbers.

Species Profile

Swifts are summer visitors to Britain, arriving in Scotland from Africa from late April to mid May and leaving in August. During this time they are notable for their wild aerobatics and shrill screaming around roofs and chimneys, when they reach incredible speeds.

Swifts nest almost exclusively in buildings. They generally require an entrance hole at least 5 metres above the ground. They are known to nest in church towers, under tiled roofs, under the eaves of buildings where they gain access via gaps and cracks in stonework, bricks or concrete and holes in walls.

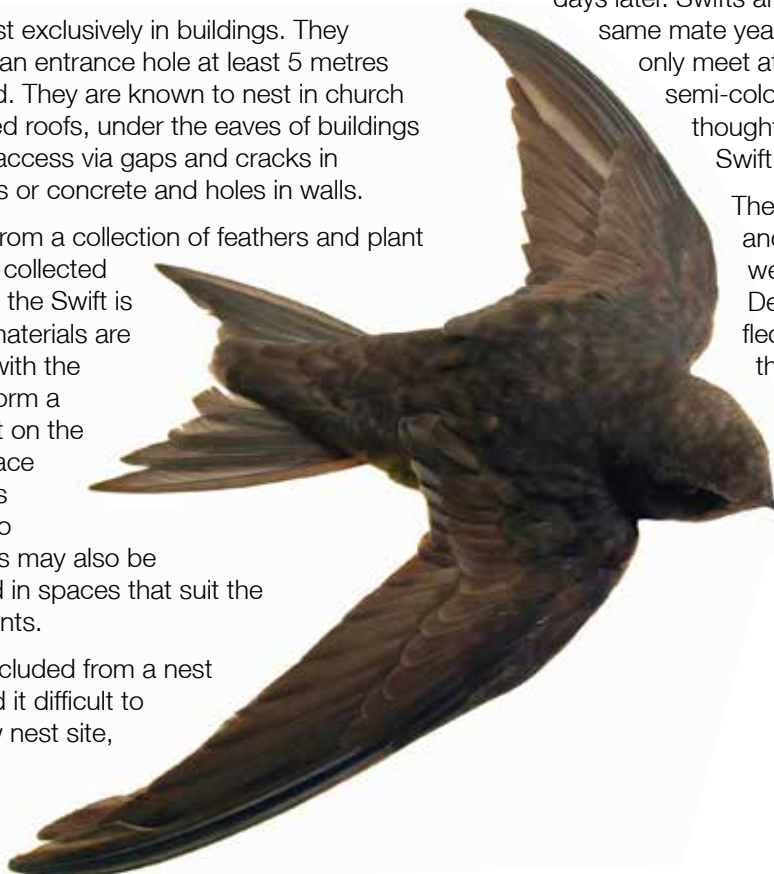
The nest is built from a collection of feathers and plant debris; these are collected from the air while the Swift is in flight. These materials are bound together with the Swift's saliva to form a shallow cup; built on the floor of a roof space or hole. Old nests once belonging to other bird species may also be used when found in spaces that suit the Swift's requirements.

If disturbed or excluded from a nest site, they can find it difficult to relocate to a new nest site, at least for that season. Young pairs find new

unoccupied nest sites during their initial summers as adults, and return to breed in them when they are 3-4 years old.

Males arrive at the nest site first and females a few days later. Swifts are reported to maintain the same mate year after year, although they only meet at the nest site. Swifts nest semi-colonally and nest sites are thought to be a limiting factor in Swift colonies.

The eggs are laid in late May and they hatch about 3 weeks after laying. Depending on food supply fledging takes 5-8 weeks, and the young Swifts have normally left the nest by the first week in August.



Legal Status

Swifts are protected under the Wildlife and Countryside Act 1981, and by the Nature Conservation Act (Scotland) 2004, in accordance with which it is an offence to recklessly injure or kill any bird or to take its eggs. It is also an offence to disturb an active nest site or to obstruct or prevent any wild bird from using its nest, such disturbance can occur through the erection of scaffolding.

Current Status

Swifts are widespread all over Europe and the Middle East, breeding mainly in the urban environment. However, there is growing concern at the decline in numbers, attributed to the loss of nest sites through building repairs and modernisation, reduction in their insect food source and climate change.

The present population of Swifts in North Lanarkshire is not accurately known. They are mainly concentrated in the lower-lying areas of the region, with smaller colonies in the Motherwell/Clyde Valley area and the largest colonies in populations around Coatbridge, Airdrie and Kilsyth. Strathclyde Park is an important feeding area for local Swifts.

Future Status

There are ongoing and future actions in place to ensure that suitable nesting provision is made for Swifts.

Current Factors Affecting This Species

- It is assumed that a loss of nest sites coupled with cold wet summers are leading to their decline, but factors affecting their wintering grounds may also be contributing factors.
- Refurbishment, repairs and demolition of buildings used as Swift nest sites. This has led to a decline in nest spaces and hence to a decline in Swift colonies.
- Most new buildings do not provide opportunities for Swifts to nest.
- A reduction in their insect prey possibly linked to pesticides, air pollution and loss of green space.



Current and Past Action

- Surveys undertaken by Concern for Swifts (Scotland) in 2001 and 2002 identified Swift breeding and feeding sites. 2001 data has been added to NLC's GIS system.
- Concern for Swift's Scotland (CfSS) continue to monitor known colonies and locate new ones, involving members of the public and volunteer groups
- Information from the aforementioned surveys used by interested parties as part of the planning application process.
- All planning applications within Swift breeding areas are recommended to include Swift breeding provision by Greenspace Development and Concern for Swifts (Scotland).
- Swift provision and survey requirements included in Biodiversity Supplementary Planning Guidance for developers.
- Concern for Swifts (Scotland) continuing liaison with NLC Property Services regarding the protection and conservation of Swift nest sites during renovation and repair programmes, such as those at Lomond Way, Holytown in 2011, and New Stevenson in 2008.



- 30 Swift boxes erected on properties at Craigneuk, Airdrie.
- Detailed guidance provided to those in the council involved in demolitions in 2009 and 2013. Advice and guidance on legislation also provided through planning process where demolition is part of a planning application.
- Since 2008, Greenspace development has requested that Swift nesting provision is incorporated in to 7 schools either undergoing modernisation or new build schools. However this recommendation has only been taken forward as a condition by the Planning department on two occasions at Coltness High School, Wishaw and Calderhead High School, Shotts.
- A Swift ID and survey leaflet published and distributed to key areas in March 2009. The survey was publicised through local press, and a Council publication was delivered to all residents in June 2009.
- Strathclyde Country Park Ranger Service and Concern for Swifts (Scotland) worked with school pupils from St Andrews High at Old Monklands, Coatbridge in 2009 to make Swift boxes with pupils for erection on site.

Proposed Objectives, Targets and Actions

Objectives

1. Prioritise retention of existing Swift nest sites in repairs, and building renovation.
2. To keep the Swift breeding colony data up to date.
3. To increase awareness of Swifts and their requirements.

Action	Meets objective number	Action by	Target
Policy and legislation			
1.1 Ensure swift nest site retention/provision is considered in all planning applications in and adjacent to recorded Swift priority areas.	1, 3	NLC, CfSS	Greenspace development to advise in all relevant planning applications. Where appropriate, seek advice from CfSS.
Species management and protection			
2.1 Review existing information on Swift breeding areas, update and identify any new sites.	1, 2	NLC, CfSS	Review to be carried out by 2016.
Advisory			
3.1 Liaise with historic building conservation sections to promote conservation of Swift nest sites when considering grant aid for the repair or renovation of historic building	1, 3	NLC	Arrange meeting with Historic Scotland and NLC Property and promote conservation and creation of Swift breeding sites. Meeting to be undertaken by 2016,
3.2 Undertake regular meetings to promote Swift conservation in North Lanarkshire.	1, 3	NLC, CfSS	Hold annual meetings with CfSS to discuss Swift conservation in North Lanarkshire.
Future research and Monitoring			
4.1 Repeat the North Lanarkshire Swift survey.	2	NLC, CfSS	To be repeated by end of 2017.
4.2 Monitor nest boxes and record results.	2, 3	NLC, CfSS	Strategy to be agreed by end of 2016.
Communication and publicity			
5.1 Promote the use of Swift nesting boxes as a tool for education and awareness e.g. on schools and in Country Parks. To make links with the Eco-Schools or Sustainable Schools projects	1, 3	NLC, CfSS	Swift nest boxes erected in the grounds of 1 public establishment per year, along with associated talk or discussion from 2016.
5.2 Involve eco-schools in Swift surveys and projects where possible.	1, 2, 3	NLC, CfSS	3 Eco-schools involved in Swift projects by end of 2017.
5.3 Involve communities in surveys.	2, 3	NLC, CfSS	2 surveys involving local communities over the survey period.

Authors:

Plan written by Clare Darlaston (Concern for Swifts (Scotland)). Updated by Jonathan Willet (Biodiversity Officer). Updated by Laura Whyte, Biodiversity Officer 2008. Updated by Laura McCrorie, Senior Biodiversity Officer 2014.

Abbreviations:

NLC: North Lanarkshire Council
CfSS: Concern for Swifts (Scotland)

Parks and Public Open Spaces

ACTION PLAN

SCOTTISH BIODIVERSITY LIST HABITAT:	NO
UK BIODIVERSITY LIST OF PRIORITY HABITATS:	NO

Summary

North Lanarkshire has extensive areas of urban development, within which there is a high proportion of green space which is formally managed parkland or amenity grassland. These parks and open spaces are often carefully designed and support historical value, whilst providing important features for local communities. However, their ecological value can be variable.

Regularly mown sites, such as Centenary and Westend Parks in Airdrie, with planted trees and some limited planting of exotic shrubs tend to support little wildlife but are valuable for a range of recreational activities.

Sites that incorporate a variety of semi-natural habitats such as woodlands, wetlands, flower-rich grasslands, former wood pasture, tall herb and scrub as well as collections of old trees tend to have a higher value for wildlife, providing more opportunities for education and public involvement. Exemplary sites for biodiversity include Cumbernauld Town Park, Dalzell Estate in Motherwell, and Colzium House and Estate in Kilsyth. There are also Country Parks, Green Spaces, and Local Nature Reserves (LNRs), owned and managed by North Lanarkshire Council.

These sites and additional features such as trees, rivers and ponds are known as 'Green Infrastructure'. Green infrastructure can contribute to climate change mitigation and adaptation, natural disaster risk mitigation, protection against flooding and erosion as well as biodiversity conservation. Links and networks between these features are referred to as 'Green Networks'.

Parks and public open spaces provide valuable opportunities to promote habitat creation or act as wildlife corridors in a manner that helps address national targets for various habitats. The Scottish Biodiversity Strategy, Scotland's Biodiversity It's in your hands – Strategy Implementation Plans 2005 - 2007 (Scottish Biodiversity Forum, 2005) regards parks and urban green spaces as a Priority Policy Issue stating:



“4.3 Key Priorities and Resources, (I) To integrate the conservation and enhancement of biodiversity in to the management of all urban spaces.”

Green space is important not only for biodiversity, but for our own health and well-being. Green space provides venues for exercise, recreation and education and has been consistently shown to improve happiness and well-being. It can also improve the economic status of an area by making it a more attractive place to live and work. The “2020 Challenge for Scotland’s Biodiversity” highlights that the number of visitors to the outdoors is a key Scottish Government indicator of success, as this encourages greater personal commitment to biodiversity.

Recent research reported in the “State of UK Parks” (2014) highlights the importance of parks to local residents, especially in urban areas, with 71% of people considering spending time in their local park as important or essential to their quality of life. However, the survey also indicates Scottish parks are declining. The decline of our parks at a national level, and the importance of them to residents, indicates the need to maintain and enhance our parks and public open space. The latest Scottish Household Survey (SHS) indicates over two thirds of adults in Scotland have access to a useable green space that is within a six minute walk to their home. However, less than a third use this local green space every day or several times a week, and 32% do not use it at all.

The “Scottish Biodiversity Strategy-It’s in Your Hands” encourages development and preservation of the places where people can see the best of biodiversity, such as Local Nature Reserves and green spaces.

The aim of this Habitat Action Plan is to maximise the wildlife value of parks and public open spaces whilst enhancing the recreational value and safety of such areas.



Current Status

Changes to resource targeting as well as alterations to open space management objectives could greatly increase the biodiversity value of some sites.

There are 3 Country Parks in North Lanarkshire - Palacerigg Country Park, Strathclyde Country Park and Drumpellier Country Park. There are also 6 town parks and 3 gardens within North Lanarkshire: Colzium House Estate, Dalzell Estate and Viewpark Gardens.

At present, North Lanarkshire has the second highest amount of designated Local Nature Reserves (LNRs) in Scotland: Braedale Hill, Brownsburn Community Park, Dumbreck Marsh, Gartcosh, Greenhead Moss, Kingshill, Ravenswood, Mosswater and Cambusnethan. A Local Nature Reserve is a statutory designation, and refers to a place with special local natural interest, set up to protect nature, and for people to enjoy and appreciate.

Legislation and Site Designation

There are various pieces of legislation which protect and enhance habitat potential. These include Conservation Areas, Tree Preservation Orders, Green Belt, SSSIs (Sites of Special Scientific Interest), LNR (Local Nature Reserves) and SINCs (Sites of Importance for Nature Conservation). At a local level the "North Lanarkshire Local Plan" lists and zones specific sites in plan maps. Many of these green spaces are protected through policies relating to Protecting Community facilities, Country Parks, and Areas of Great Landscape Value.

Current Factors Affecting This Environment

- **Development pressure** – a number of areas of public open space have been lost to development or are currently threatened. The habitat can become fragmented due to roads, car parks or new development, until the area becomes unsustainable for the wildlife that occupies it and the impact increases on the remaining habitat.
- **Unsympathetic landscaping or restoration** – Amongst other problems, this can reduce the extent of semi-natural habitat or the abundance of other ecologically interesting features at a site.
- **Public perception** – local residents can sometimes strongly object to the presence of informal habitat within public open space, seeing it as untidy, a source of hay fever, harbouring vermin, a threat to safety or a fire risk.
- **Restoration potential** – some areas of amenity grassland still retain semi-natural grassland in a suppressed form and can recover to produce species-rich habitat. Sites with potential restoration opportunities should be identified.
- **Poor tree regeneration** – leading to limited age and structural diversity as well as gaps in dead wood accumulation.
- Limited woodland management resulting in loss of structure and re-growth of stands.
- Damage to trees through soil compaction.
- Isolation and fragmentation of parklands, resulting in poor dispersal between sites and low genetic exchange, making populations of species vulnerable to local extinctions.
- **Public pressure** – Vandalism and other inappropriate activities such as motor biking impact wildlife. Unfortunately people can commonly blame the green space rather than look to deal with the source of the anti social behaviour.
- Management practices, such as unnecessary mowing, can lead to isolation of habitats and features such as mature trees as well as root and bark damage to trees often leading to the death of the tree.



Current and Past Action

- Specific nature conservation management takes place at a number of sites. This is carried out by North Lanarkshire's Land Management and Greenspace Development and can involve contractors, local residents or groups. The most successful projects are the trial and expansion of areas managed to increase the abundance and diversity of native flowering plants.
- Some sites are regularly used for educational purposes such as Palacerigg Country Park, Strathclyde Country Park, Drumpellier Country Park and Greenhead Moss (by the Countryside Ranger Service); Cumbernauld Glen (by the Scottish Wildlife Trust) and Gartcosh Local Nature Reserve by schools and The British Dragonfly Society. Some sites also contain interpretation boards explaining the history of the site, species found on site and/or plans for restoration.
- There are 9 LNRs in North Lanarkshire
 - SNH designated the 70th LNR in Scotland, Cambusnethan Woodlands, in 2014.
- There were 7 woodland management plans in place through the Woodlands In and Around Town Project.



- Countryside Stewardship Sites – The Countryside Ranger Service visits, patrols, monitors and reports on these sites on a regular basis. The rangers compile appropriate maps and site histories, and establish contacts with neighbouring communities and other Council staff, including Land Management Officers and Environmental Wardens.
- “North Lanarkshire Open Space Strategy” 2004 -This Strategy indicates the long term commitment by North Lanarkshire Council to provide accessible and high quality open spaces across its communities that is in keeping with the Social and Environmental Justice priorities of the Scottish Executive.
- Scotland-wide “Open Space Survey” – Greenspace Scotland published the Open Space Survey in 2011, providing the first public record of urban open space in North Lanarkshire.
- “Integrated Habitat Network” – Produced by Central Scotland Green Network Trust (CSGNT), this report focuses on the green spaces between urban areas.
- There are 4 green space sites in North Lanarkshire officially designated as Queen Elizabeth Fields: Colzium-Lennox Estate, Kilsyth; Dalzell Estate, Motherwell; Glenboig Village Park and The Langriggs, Cumbernauld Village. This included community and school involvement and boulders have now been installed to mark the sites.
- Scottish Wildlife Trust’s “Cumbernauld Living Landscapes” have undertaken a Greenspace audit of Cumbernauld in 2014 and created “Living Windows” to encourage people to connect with local green spaces.
- Five sites grassland sites converted to woodland as part of the Diamond Woods project.

Proposed Objectives, Actions and Targets

1. To maintain and enhance the extent and quality of semi-natural habitats in and around parks and public open spaces.
2. To promote good management practice in parks and public open spaces, maximising their wildlife value without compromising safety.
3. To encourage local communities to undertake local action for biodiversity.

Actions	Meets objective number	Action by	Target
Policy and Legislation			
1.1 Protect and enhance designated sites, wildlife corridors and public open space through the planning process	1	NLC	Ensure biodiversity is considered in all planning applications and development and sites are protected in the local plan
Site Safeguard and Management			
2.1 Encourage botanical diversification of grassland in parks and open spaces	1, 2	NLC, Land Management, SWT, RSPB, CSGNT, Buglife	20 new diverse grassland sites developed and managed for biodiversity by 2020
2.2 Facilitate the creation and enhancement of accessible wildlife habitat in residential areas	1, 2, 3	NLC	2 new projects annually from 2017.
2.3 Develop Local Nature Reserves	1, 2, 3	NLC	Complete management plans for all Local Nature Reserves by 2016. Monitor through annual meeting from 2016.
2.4 Promote Local Nature Reserves	1, 3	NLC	1 event annually on at least 3 LNRs.
2.5 Develop and encourage community action groups to undertake action for nature conservation	1, 2, 3	NLC	Facilitate 3 groups annually. Investigate the possibility of forming a "Friends of North Lanarkshire's Greenspace" group and organise meeting by 2017,
2.6 Encourage surveying of local green space	3	NLC, Buglife	Take forward biological recording through 3 projects by 2020.
Advisory			
3.1 Raise awareness of the importance of roadside verges and encourage more sympathetic management	1, 2	NLC	Provide guidance notes for grounds maintenance. Promote successful case studies in local press and on web pages.
Future research and monitoring			
4.1 Promote wildlife observation and conservation by the public through local and social media	2, 3	NLC, RSPB, CSGNT, SWT	Promote survey of one species and one site per year from 2015
4.2 Survey wild flower meadows established by NLC to establish importance	1, 2	NLC	Survey 5 wildflower meadows per year from 2016
4.3 Develop a programme of survey for the Local Nature Reserves	2	NLC	Survey programme developed by 2016.
4.4 Quantify the condition and management of LNRs	1, 2	NLC	All LNRs to be assessed and in positive management by 2020.
4.5 Establish potential SINC and features of interest	1	NLC	Maintain a list of potential SINC and species records
Communication and Publication			
5.1 Establish and maintain an Officer Working Group incorporating all Council departments involved in green space management	1, 2	NLC	Group initiated in 2016
5.2 Promote the benefits of biodiversity in public spaces to the public	1, 2, 3	NLC	Annual biodiversity themed event
5.3 Encourage creative approach to promoting biodiversity	3	NLC, RSPB, SWT, CSGNT	Annual competition, linked with an LNR, to be developed with local schools from 2016

Plan written by Laura Whyte Biodiversity Officer, 2008. Updated by Jasmine Caulfield, Graduate Biodiversity Records Officer (2014)



Further information

Local Nature Reserves in Scotland: A Guide to their Selection and Declaration, <http://www.snh.org.uk/pdfs/lnrs/finguide.pdf>. Scottish Natural Heritage July 2000

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Greenspace Scotland <http://www.greenspacescotland.org.uk/>

Keep Scotland Beautiful-It's Your Neighbourhood <http://www.keepsotlandbeautiful.org/environmental-quality/its-your-neighbourhood/>

Heritage Lottery Fund, 2014. The State of UK Public Parks: Research Report to the Heritage Lottery

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Scottish Government, 2013. 2020 Challenge for Scotland's Biodiversity

Scottish Government, 2004. Scotland's Biodiversity Strategy: It's in Your Hands-A Strategy for the Conservation and Enhancement of Biodiversity in Scotland

School Grounds

ACTION PLAN

SCOTTISH BIODIVERSITY LIST HABITAT:

NO

UK BIODIVERSITY LIST OF PRIORITY HABITATS:

NO

Summary

All school grounds, large or small, are potential nature reserves. Within wider rural or urban areas in which wildlife is increasingly under threat, they have the potential to act as “wildlife corridors” and “stepping-stones”, allowing wildlife to migrate between larger areas of suitable habitat.

School grounds can support a range of wildlife, including: flowering plants, mosses, liverworts, lichens, fungi, small mammals, birds and insects. Flowers and shrubs provide food for butterflies and moths, whilst frogs, toads and newts may breed in school ponds.

The new “Curriculum for Excellence” firmly establishes the role of the outdoors in educating pupils. The curriculum encourages young people to study biodiversity within their school grounds, predominately through science and geography. However, natural habitats within school grounds can also provide a context for literacy, numeracy, information communication, technology and art. Therefore, developing school grounds for biodiversity can contribute positive action towards a range of objectives.

The “2020 Challenge for Scotland’s Biodiversity” builds on this, noting more needs to be done, particularly in Central Scotland, to make green space and contact with nature more accessible. The “Curriculum for Excellence through outdoor learning” (2010) recognises that school grounds are often the first step in taking pupils outdoors, and envisions creative and progressive outdoor learning being embedded in the curriculum. This can be done by building on the existing work that has been done, for example with Grounds for Learning, Eco Schools and the Forest Schools Programme.

There are clear opportunities to encourage North Lanarkshire’s youth to have direct contact with biodiversity, in a fun and educational way, and to learn how to look after and encourage wildlife.

Current Status

Within North Lanarkshire Council area, there are approximately 121 primary schools, 24 secondary schools, 13 special schools, 16 nursery establishments and 72 nursery classes incorporated within mainstream educational establishments. 63% of school ground is land rather than buildings; this is a significant area of land and has the potential to make a large contribution to North Lanarkshire’s biodiversity.

A substantial amount of this land is managed open grassland used to play sports. However, areas are being developed that focus on biodiversity. There are currently approximately 176 schools registered with the Eco Schools programme; 112 that have Green Flag Awards, and 3 that have permanent awards, with 20 schools focussing on school grounds as a topic for their award.



Legislation and Site Designation

Whilst there are not currently any conservation designations covering North Lanarkshire school grounds, there is the potential to designate school grounds as Local Nature Reserves (LNRs), as has been done in other Local Authority areas.

- Sharrow School in Sheffield has been designated as a LNR due to the school's green roof. This shows the potential schools have to be developed as nature reserves.

Current Factors Affecting this Habitat

- Increase in pupil numbers leading to extension of school buildings and car parking facilities
- Loss or relocation of schools and sale of land for development
- New build schools lacking land set-aside for wildlife
- Lack of appropriate management
- Vandalism
- Pressure for competing land use such as use for sports
- Lack of long term biodiversity action management plans and commitment may diminish the long term impact of biodiversity action



Current and Past Action

- School grounds are areas of protected open space and cannot be put to alternative uses without special permission from the relevant government department.
- Eco Schools is a European-wide project designed to encourage action for the environment by the whole school community. It is a recognised award scheme, rewarding and accrediting schools (including primary, secondary, special and early years establishments) that have made a commitment to continuously improving environmental performance.
- The Eco School project includes a specific Biodiversity component as well as an optional topic focussing on School Grounds.
- Green flags must now be renewed every two years, encouraging ongoing action for the environment by schools.
- Management and maintenance of school grounds is carried out through Service Level Agreements between schools and NLC Grounds Maintenance.
- Support for the Eco School Awards is provided by the Quality Improvement Officer-Science Education.
- North Lanarkshire Council's Greenspace Development Service offers advice and support to schools wishing to enhance their school grounds for biodiversity.
- North Lanarkshire Countryside Rangers hold Forest Schools with a number of schools in North Lanarkshire and provide support developing biodiversity areas
- "Garden for Wildlife" leaflet includes information for schools
- Numerous projects on school grounds and local biodiversity areas have been taken forward at various local schools
- Planting a wildflower meadow, orchard trees, and installing interpretation boards at Orbiston Lawmuir Primary School
- Planting wildflowers at St. Maurice's Pond with St. Maurice's, St. Francis and St. Helens Primary and Nursery
- Biodiversity improvements taken forward at Ravenswood Primary, including bird box installation and a nature classroom
- Wildlife Garden management plan produced for Petersburn Primary School
- Advice and resources provided for planting and species mix for wildlife at schools including St. Patrick's

- Project developed to provide accessible vegetable gardens and orchard at Glencryan Special Needs School
- Eastfield Primary School developed an eco garden with NLC and Watch Us Grow
- Various schools, including Whitelees Primary School and Cumbernauld High School, have constructed successful eco gardens and wildlife ponds
- Alexander Peden Primary School have taken forward their school grounds topic and are planting flowers and vegetables and investigating marshes
- Chapelhall Primary School have their own allotment
- Grounds for Learning provides support for outdoor play and learning with a variety of online resources which schools can pay a membership fee to access
- Every nursery in North Lanarkshire has a Forest Schools resource box
- CSGNT have produced a resource box for schools annually for the past 5-6 years
- “Love our Ladybirds” campaign in 2014 involved engaging pupils with biodiversity through a species focussed campaign
- Educational packs produced by the Forestry Commission, including the Wolf Brothers Wildwoods resource pack, which aims to educate children through a story explored indoors and in woodlands
- Forest Education Initiative provided downloadable resources and case studies of schools using innovative outdoor learning techniques

Proposed Objectives, Targets and Actions

Objectives

1. To raise awareness and knowledge of biodiversity and encourage educational opportunities.
2. To ensure that school grounds within North Lanarkshire are appropriately managed to conserve and enhance biodiversity.

Actions	Meets objective number	Action by	Target
Habitat Management and Protection			
1.1 Promote cross-directorate local authority teams to support management of school grounds to conserve and enhance biodiversity.	1, 2	NLC	Invite appropriate officers to discuss a partnership by 2020.
1.2 Increase the number of North Lanarkshire Council Eco-schools focusing on the ‘School Grounds’ topic	1, 2	NLC	3 new schools annually from 2016.
1.3 Encourage schools to develop and adopt a school grounds biodiversity management plan.	1, 2	NLC	1 new management plan annually from 2015.
Advisory			
2.1 Offer advice and support to schools wishing to manage their grounds to develop biodiversity areas	2	NLC, CSGNT, RSPB	Provide advice to at least 10 schools annually from 2015 and develop biodiversity areas.
Future Research and Monitoring			
3.1 Encourage schools to undertake biodiversity audits of school grounds and participate in annual surveys (as part of the Eco-schools programme where appropriate), and encourage the submission of records to the Biodiversity Partnership.	1, 2	NLC	Develop a simple survey of key species for schools. Promote to schools annually from 2016.
Communication and publicity			
4.1 Develop a School Grounds Biodiversity Competition.	1	NLC, CSGNT	Develop annual competition with local schools from 2016.
4.2 Ensure new schools take on environmental enhancements.	2	NLC	Encourage environmental additions such as wildflower meadows, Swift boxes and green roofs where appropriate.



Links with Other Policies and Organisations

- Statement of education improvement objectives 2004 - 2007
- Education service improvement plan 2004-2008 Curriculum for Excellence Scottish National Curriculum for 3 - 18 years)
- Curriculum for Excellence through Outdoor Learning
- Grounds for Learning

Sources of Information

The 2020 Challenge for Scotland's Biodiversity

Scotland's Biodiversity Strategy: It's in Your Hands

Building Excellence: Exploring the implications of the Curriculum for Excellence for School Buildings (2007)
'Aiming for Excellence in School Grounds'

Curriculum for Excellence through Outdoor Learning

Grounds for Learning

Forestry Commission Scotland, 2013. Wolf Brother's Wildwoods, Imagining Mesolithic life in Scotland's forests and woodlands, An Outdoor Learning Resource for Teachers of Curriculum for Excellence Level 2

Abbreviations

CSGNT: Central Scotland Green Network Trust

NLC: North Lanarkshire Council

RSPB: Royal Society for the Protection of Birds

Authors:

Laura Whyte, Senior Biodiversity Officer (2009), Jasmine Caulfield, Graduate Biodiversity Records Officer (2014)

Pollinator Species

ACTION PLAN

Summary

Pollinators include bees, some wasps, butterflies, moths and hoverflies, some beetles and flies.

Wild pollinators, which include bumblebees and butterflies, are also important pollinators for crops like fruit and oil seed rape, for clovers, which help to improve pastures for livestock grazing and wild flowers. They contribute to the diversity of plant species, habitats and wildlife.

Pollination is a very important service. Twenty percent of the UK cropped area contains crops which are dependent on pollinators. A lot of wild flowering plants also rely on insect pollination for reproduction. The value of pollinators to UK agriculture is over £430 million per year.

However, bee and pollinator health and declining populations have been increasingly highlighted as a cause for concern in the UK and globally. The main areas of concern for pollinators are land-use intensification, habitat destruction and fragmentation, disease, the use of agro-chemicals, and climate change, although the importance of each of these and the extent to which they are inter-related is less well known.

The benefits of supporting our pollinators are numerous; they are an essential part of healthy functioning ecosystems, providing, for example:

- food production – directly as honey, and indirectly as crops
- a diverse, functioning and attractive environment

and supporting:

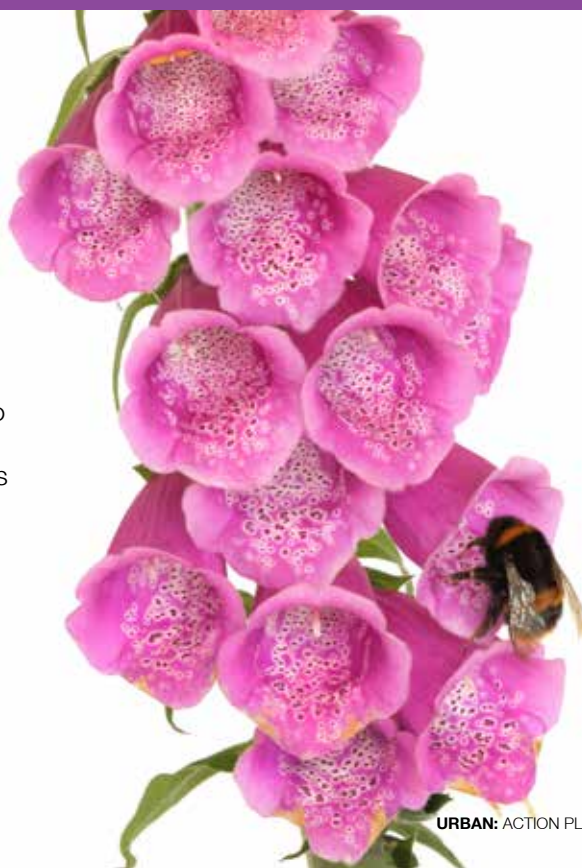
- health and well being
- tourism
- rural economies
- urban green space

Species profiles

Bees and wasps visit flowers to collect pollen and nectar to feed themselves or their developing young. Flowering plants have evolved to take advantage of this by offering nectar to insects most likely to carry their pollen to another plant.

The honeybee is the main managed pollinator of crops. Modern honeybee hives are sometimes moved from crop to crop and beekeepers may charge for the pollination services provided whilst also harvesting the honey and other products. Crops which benefit from this include orchards and soft fruits (rose family) oil seed rape and other seed brassicas (cabbage family) and peas and beans (legumes).

Bumblebees and solitary bees are very important pollinators that are essential to the maintenance of wild plant populations and to commercial crop production, particularly orchard and soft fruits and protected crops such as tomatoes.





Species focus

Bumblebees are part of the very large insect Order, the Hymenoptera, which also include honeybees, solitary bees, wasps, sawflies and parasitic wasps. There are 267 species of bee in Britain, which, apart from the bumblebees, are mostly solitary, lacking workers.

All our bumblebees are in the genus *Bombus*, which is derived from the Latin word *Bombus*, meaning 'booming'.

The 25 bumblebees found in Britain comprise of:

- 6 cuckoo species
- 5 carder species
- 14 underground nesting species

Details of life style of each of these bumblebee species are varied.

One species is a recent addition:

Tree bumblebee (*Bombus hypnorum*), has been found in the Southampton area and Hertfordshire and more recently in East Dumbartonshire. It is brown with a white tail so very distinctive and can confidently be regarded as a new colonist in Britain.

Bumblebees are of crucial importance as pollinators of wildflowers, and because they depend on the presence of an abundant and diverse flora, they are useful indicators of the health of the environment. Bumblebees are important economically as pollinators of commercial fruit and vegetables.

Many plants, for example, Red clover are largely dependent on bumblebees for pollination and the monk's-hoods are completely dependent on long tongued bumblebees. Bumblebees are also the hardiest of the pollinators, often coming out at low temperatures; their coat of finely branched hair both helps insulate the bee and captures extra pollen.

In Britain, Bumblebee colonies tend to last for only one season. You are first likely to see bees in spring,

Woken by the increase in temperature the queen bees come out of their underground hibernation and stock up on energy rich nectar before beginning the hunt for a suitable nest. Queen bumblebees are distinctive; they are much larger than your average bee. You will see them flying low to the ground investigating any holes or crevices.

Pollen is very important for a queen bumblebee. It is eaten to aid the development of eggs and collected and carried in pollen baskets on their hind legs and stored in wax cells in the nest to provide food cells for the larvae. Once the queen has established this store she can begin to lay eggs. The eggs hatch into workers. Some workers take over the foraging, bringing home supplies of nectar and pollen to the nest, while others stay at home and maintain the nest and larvae so the queen is free to spend her time at home laying more eggs.

Later in the year the queen begins to lay unfertilized eggs which develop into males, around the same time some of the last fertilized eggs develop in to new queens. The males have a short life lounging around on flower heads, consuming nectar and mating with young queens. Eventually all bees in the colony come to the end of their life except for young mated queens, and these, after having built up their fat reserves, dig into the ground to hibernate until the following spring.

Bumblebees are vital for pollinating our wildflowers and crops such as apples and raspberries. Unfortunately these popular and hard-working insects are in decline and urgent action is required to save them.

Bumblebees have undergone a rapid decline in their range and population. This is largely due to changes in our countryside, such as loss of habitat and intensive agricultural farming and the loss of valuable flower-rich "brownfield" sites for housing and retail development.

Wasps often feed on nectar whilst on the lookout for other insects to prey upon, many of which are crop pests.

Butterflies and moths pollinate plants to various degrees by the action of the adult feeding on nectar. They are not major pollinators of UK food crops, but are pollinators of many wild flowers which, like bumblebees, makes them very valuable in the conservation of native biodiversity.

Hoverflies are abundant on flowers for much of the year and the adults feed on nectar and pollen carrots and apples being examples of crops that benefit from hoverfly pollination benefitting crops such as carrots and apples. However, the larvae eat a much more varied diet that often includes other insects. For this reason predatory species of hoverfly are utilised as part of Integrated Pest Management (IPM) as biological control agents.

Habitat

Pollinators need food in the form of pollen and nectar foraged from a variety of flowering plant species as well as diverse vegetation structure, e.g. hedgerows, scrub and tall grass for shelter, nesting and overwintering such as burrows and holes in tree trunks. The larval stages of many pollinators also have many differing requirements. In order to support a variety of pollinator species, nectar sources need to be available from early spring through to late autumn.

Although most honeybees have their shelter provided for them, all pollinators need flowering semi-natural habitats such as wildflower meadows, hedgerows and woodland edges, and agricultural landscapes which include unimproved grassland, hay meadows, clover rich grasslands, orchards and arable crops. However, many of these habitats and land uses are declining or in short supply in Scotland.

Food and shelter can also be provided in gardens, parks, road verges, and any other open area. Pollinators are relatively easy to provide for, for example by planting or retaining appropriate plant species such as Common knapweed in wildflower meadows, Red clover in pasture, and Hawthorn and Bramble in hedgerows and woodlands. Heathlands and wetlands are very important to pollinators because they provide a great abundance of flowers late in the season.

Legal Protection

Pollinators currently receive no legal protection.



Current Status

Despite their popular appeal, bumblebees have undergone a rapid decline in their range and population – at least nine species are of conservation concern, and one, the Short-haired bumblebee (*Bombus subterraneus*), has not been seen in Scotland since 1989 and is presumed extinct.

The reasons for the decline have been attributed to the loss of habitat from intensive agricultural farming, collateral pesticide damage, and insensitive development.

This could in time lead to further extinctions of British bumblebees. But all is not lost. Gardens, parks and brownfield sites continue to provide important habitats for bumblebees, especially if they are managed specifically for wildlife.



Current Factors Affecting Pollinators

The biggest threat to pollinators in Britain is habitat loss and fragmentation. There is no danger from predators or disease and humans do not persecute them deliberately. There has been a marked decline in bumblebees in the past 15 years largely due to increasing intensification of land use for agriculture and development.

- Changes in agricultural practice, including an increase in the use of chemical fertiliser and pest and weed control, has led to a profound loss of semi-natural habitat in rural areas, particularly in the lowlands.
- Rapid urbanisation has had a profound effect on insect populations. The ubiquitous species of bumblebees would be expected to remain abundant, or even increase in abundance, in mature gardens in towns, though it is possible that shortages of food immediately after land clearance for building may have eliminated more local species.
- Brownfield development of previously developed and now derelict land can mean the loss of important local food sources and habitats. These sites are sometimes replaced with inappropriate landscaping schemes and, more often than not, all the opportunities to utilise engineering solutions such as green roofs are not taken forward, meaning that there is a net loss of biodiversity through the development which will have a negative effect on wildlife in general.
- The introduction of cheaper and more effective non-selective insecticides may have led to declines in bumblebee populations in urban areas through increasing horticultural use and at an agricultural scale.
- Recent research suggests that three neonicotinoid pesticides (clothianidin, imidacloprid and thiamethoxam) may have an adverse impact on the health of bees. Such concerns led the European Commission to restrict the use of the three neonicotinoids for seed treatment, soil application (granules) and foliar treatment on bee attractive plants and cereals. There are a few exceptions in respect of greenhouses and open-air trials.
- There is uncertainty about the degree of potential impact of climate change on UK pollinators. Warm, dry summers are likely to have positive effects, while wetter summers are likely to be negative. There could be a mismatch between flowering dates of food plants and emergence dates of pollinators if they respond differently to environmental cues. Blackcurrant and its pollinators have diverged by 28 days since the 1970s. This could expose pollinators to periods of starvation, particularly affecting populations of wild pollinators with little food stored. Bumblebees are particularly sensitive as they are completely dependent on the landscape, without the potential for artificial dietary supplements potentially available for managed honeybees.
- Many modern horticultural cultivars lack scent and do not produce nectar. These have tended to replace “old-fashioned” varieties and this will have reduced the available food supply for bumblebees in gardens.
- The fashion for decking and paved gardens, and for plants grown for foliage rather than blooms, has reduced the number of flowers available for bumblebees.
- General ‘tidying up’ may remove the undisturbed sites required for nesting and over-wintering.



Current Action

- In order to establish further information about the needs, impacts on and management for pollinators, there is much research being carried out globally, in Europe and in the UK. The STEP project (Status and Trends of European Pollinators), funded by the European Commission aims to assess the current status and trends of pollinators in Europe, quantify the relative importance of various drivers and impacts of change, identify relevant mitigation strategies and policy instruments, and disseminate this to a wide range of stakeholders. In the UK, the Insect Pollinators Initiative is a fund of up to £10m supporting several projects to improve understanding and identify priorities for further research and evidence needs.
- There is much work being carried out to support and provide for pollinators. Across the UK, initiatives include the Bumblebee Conservation Trust's Local Authority Toolkit, and the Co-operative's Plan Bee.
- North Lanarkshire Council's Greenspace Development has developed a number of wildflower meadows in public spaces such as parks, museum grounds, Local Nature Reserves and school grounds.
- North Lanarkshire Council's Land Management has developed and maintained wildflower rich roadside verges on a number of sites throughout North Lanarkshire.
- B in the Park is an annual Biodiversity Partnership event taken forward since 2007 to raise awareness of pollinators and the actions members of the public can undertake to help protect and conserve them.



Proposed Objectives, Targets and Actions

Objectives

1. Establish distribution of key pollinators in North Lanarkshire
2. Deliver optimum management of pollinator habitat in North Lanarkshire
3. Raise awareness of pollinators and their conservation in North Lanarkshire

Actions	Meets objective number	Action by	Target
Site safeguard and management			
1.1 Work with farmers and land managers to manage and enhance habitat, through increasing the extent of flower rich margins and conservation headlands.	2, 3	NLC, Buglife	Atleast 2 management schemes, which include habitat improvements for pollinators, implemented by end of 2020.
1.2 To work with the local partners in the creation of at least one new wild flowering area in a public open space per year.	2, 3	NLC, Buglife	1 new wildflower verge, roundabout, meadow, hedgerow, orchard each year from 2015.
1.3 Increase availability of nectar through the season by promotion of sympathetic planting schemes in public and private gardens and allotments.	2, 3	NLC	Planting schemes promoted through planning conditions and guidance to the public.
1.4 To continue to promote the installation of biodiverse green roofs.	2, 3	NLC	Through planning guidance and conditions.
Monitoring and research			
2.1 Establish public wildlife survey for key species including pollinators.	1, 3	NLC	One key species annually from end of 2015
2.2 Promote partner organisations surveys and share data.	1, 3	NLC	From 2015
2.3 Organise internal pollinator ID course for more detailed ID.	1	NLC	By end of 2016
2.4 Include pollinator ID in LNR surveys, site stewardship reports and SINC surveys.	1	NLC	From 2017
Communications and publicity			
3.1 Raise skills level for pollinator ID by establishing and advertising an ID course.	1, 3	NLC, Buglife	Delivery of pollinator ID course established from end of 2015.
3.2 Increase public knowledge of sympathetic land management for pollinators by providing demonstration gardens and allotments.	2, 3	NLC	Demonstration sites identified and promoted by end of 2017.
3.3 Promote pollinators through leaflets, websites and other means, as a 'flagship' urban invertebrate species and highlight ways in which the public can assist pollinators through nest site provision and / or gardening practices.	2, 3	NLC	Website updated. Species leaflet produced, by end of 2016.

Author:

Laura McCrorie, Senior Biodiversity Officer (2014)

Open Mosaic Habitat on Previously Developed Land

ACTION PLAN

SCOTTISH BIODIVERSITY LIST HABITAT:

YES

UK BIODIVERSITY LIST OF PRIORITY HABITATS:

YES

Summary

The rich industrial heritage of North Lanarkshire has resulted in over 1,300 hectares of land being listed as vacant or derelict. These brownfield sites can be incredibly important for biodiversity, often supporting nationally important populations of rare and endangered invertebrates, alongside other wildlife such as birds, reptiles, plants and lichens. With the loss of natural habitats in the wider countryside through agricultural intensification and development, wild areas within the urban environment have become crucial to the survival of many increasingly threatened species in the UK. As a result, Open Mosaic Habitat on Previously Developed Land (OMHPDL) was recently included as a UK Biodiversity Action Plan priority habitat.

Vacant and derelict land provides an often unrecognised contribution to wildlife habitat. Frequently sites have a variety of small-scale habitats within them, such as: pools, areas of rocky ground, exposed soil, and scrub. This complex make-up can, in turn, provide home to a wide variety of species. Many of these have only a brief existence, but where heavy disturbance ceases and re-development is delayed, semi-natural habitats such as grasslands, wetlands, ruderal habitats, scrub and secondary woodland start to develop and can evolve in to highly complicated habitat mosaics.

As vacant and derelict land sites tend to be in urban environments, the wildlife using them has an added value in being able to be enjoyed by large number of people who pass by these sites. Despite this, there is a sometimes a tendency to view them as unsightly areas, leading to a pressure for them to be 'tidied up'. Vacant and derelict land is also under significant pressure from redevelopment. Whilst by its nature it can be perceived as a transitory habitat, due to the reduction of heavy industry and current economic climate, the overall amount of this habitat looks as if it will be reduced in North Lanarkshire, along with a number of important species that utilise them.

These sites can be an invaluable resource for local communities by providing easily accessible areas of informal green space in urban parks where a rich variety of wildlife can be appreciated, and the often robust nature of the sites can support heavier recreational usage than many wildlife sites.



Habitat Profile

'Open Mosaic Habitat on Previously Developed Land' (OMHPDL) was designated as a UKBAP priority habitat by the UK Government in 2007. For sites to be classed as OMHPDL, a number of criteria must be met. One of the key features is initial disturbance, followed by natural colonisation by plants and animals without human intervention or management. Disturbance from previous land use and remains of building material often adds to the variety of habitat types at different stages of succession found at brownfield sites. Another important characteristic of brownfield sites is a lack of topsoil, which sometimes results from sites being cleared. Other bare habitat includes artificial surfaces such as cracked concrete or rubble, which are poor at retaining water and are low in nutrients. These conditions encourage high floral diversity as fast-growing species are unable to out-compete other plants, which in turn provide many opportunities for invertebrates to exploit. Other wildlife groups like birds and mammals are often attracted by the abundance of invertebrates to feed on. Bare patches are important for warmth-loving (thermophilic) invertebrates as they provide opportunities for basking as well as for ground nesting species such as solitary bees and wasps. Additional features provided include varied drainage, ranging from freely draining gravel and rubble to impermeable substrate such as concrete, where seasonal pools can form. This variety is important for insects that have a complex life history; e.g. some species have aquatic larval and terrestrial adults. A lack of management at these sites allow many species to complete their life cycle within the same site, especially those that over-winter in plant stems or within grass tussocks.

What is characteristic of all vacant and derelict land sites is their transient nature and the fact that they are host to 'new' or successional habitats. In the UK, this trait is rare, if not unique to vacant and derelict land and can attract uncommon plants and animals, such as orchids, bees and solitary wasps. From a starting point of bare earth or rubble, if the land continues to be undeveloped, later stages of succession can emerge, including scrub and bushes and moving through to woodland. These stages are also important in hosting species such as grasshopper warblers. As well as vegetation or 'soft' habitat, vacant and derelict land can also contain old buildings, which may provide roosting habitats for bats and birds.

OMHPDL is by its nature a temporary habitat. Without management intervention OMHPDL is likely to have an average lifespan of between 15 and 20 years and may take up to 15 years to achieve its biodiversity potential. By prioritising the redevelopment of brownfield sites it would be possible to produce a redevelopment schedule whereby sites without OMHPDL or those with OMHPDL coming to the end of its natural lifespan were developed first. Where sites with OMHPDL need to be redeveloped, Integrated Habitat Network models may assist in identifying which sites are the most important as "stepping stones".

In addition to 'natural' colonisation, vacant and derelict land can also be seen as an opportunity to actively create a rich habitat for wildlife within a built-up area. There are a number of examples in North Lanarkshire of where former industrial sites are now being at least partly managed for wildlife, such as Gartcosh Local Nature Reserve, Ravenscraig former steel works, Brownsburn Community Park Local Nature Reserve, Dumbreck Marsh Local Nature Reserve, and Greenhead Moss Local Nature Reserve.



Legal Status

Vacant and derelict land has no legal protection as a habitat. In fact, reclamation of these sites is encouraged in Scottish Planning Policy (SPP), the National Planning Framework (NPF) and through the Vacant and Derelict Land Fund. Almost all new development is controlled through the planning system and overseen by the North Lanarkshire Local Plan. This aims to steer development to the most appropriate sites and in doing so avoid damaging important wildlife sites. However, because of the lack of information on brownfield sites and the general perception of them described above, the habitats and species of vacant and derelict land often fail to be protected.

With its designation as a UKBAP priority habitat in 2007, Open Mosaic Habitats on Previously Developed Land (commonly referred to as brownfield sites) need to be identified and considered for their biodiversity. Recent work has identified 57 sites (715 hectares) in North Lanarkshire that potentially qualify as OMHPDL.

Many species that are found on the sites may be protected. The Great crested newt is a European Protected Species by virtue of being listed under Annex IVa to the EU Habitats and Species Directive 1992. It is protected under UK law by the Conservation (Natural Habitats &c.) Regulations, which translates the Habitats Directive into UK legislation, and also under the Wildlife and Countryside Act 1981 (as amended). It is also a UK BAP Priority Species. They are often found on these sites, where shallow ponds form. Badgers, protected by the Badger Act, have been known to form setts in bings. Other protected species that have been found in this habitat in North Lanarkshire are: Water vole, nesting birds such as Sand martins, bats, Common toad, Common frog, Palmate newt, and Smooth newt.

Several sites have been designated as Sites of Importance for Nature Conservation (SINCs).

Current Status

North Lanarkshire is currently one of the biggest contributors to vacant and derelict land in Scotland, with the sites spread across the council area, particularly in its western half. The 2013 Vacant and Derelict Land Survey recorded 1,132 ha of derelict land and 178 ha of urban vacant land within North Lanarkshire. The largest single area is at the former Ravenscraig Steel Works, which is undergoing a huge regeneration programme. As this site is developed, the amount of vacant and derelict land will be reduced, however new sites will appear according to variations in the local economy. In times of economic prosperity or during major infrastructure improvement projects, when development of brownfields is most prevalent, sites with OMHPDL provide important refugia for wildlife. At other times, when redevelopment is at a slower pace there is greater scope for wildlife to spread out from these refugia to other brownfield sites.

The importance of vacant and derelict land as a wildlife habitat is being increasingly recognised, particularly by the inclusion of OMHPDL as a UKBAP Priority Habitat. A key indicator of this is the drive to replicate some of the small-scale habitats that are found in vacant and derelict land sites within developments. Examples of this are Sustainable Urban Drainage ponds, green roofs and using native plants in landscaping schemes.

There are several projects that will offer the opportunity to reclaim vacant and derelict land as a functional area. Examples are the Glasgow and Clyde Valley Green Network Project, the North Lanarkshire Council Open Space Audit and Architecture and Design Scotland's (A+DS) Legacy 2014 programme Stalled Spaces Scotland, aimed at supporting local authorities and communities to bring derelict and vacant land back in to temporary use to benefit communities.



The amount of vacant and derelict land in North Lanarkshire looks set to decrease in the future, particularly with the redevelopment of the Ravenscraig Steel Works. However, the long term extent of the habitat depends on a number of factors such as the economic climate, the development of mechanisms to remove contamination and climate change, which will affect the species which colonise vacant and derelict land sites.

Brownfields are often threatened with development as they are viewed as being low value land that is preferable to develop over more 'green' sites including agricultural fields. The National Planning Framework (NPF) aims to bring "disused or neglected land and buildings back into productive use" (Scottish Government, 2009). Brownfield sites often have a much higher biodiversity value than neighbouring sites including agricultural land or parks. Restoration of ex-industrial sites into green space can be just as damaging to their biodiversity value as more intensive development. The majority of brownfield land can be developed with relatively low impact upon biodiversity, however it is important that sites are assessed for their ecological value so that objective decisions can be made and those of high biodiversity value can be retained.

Current Factors Affecting This Habitat

- Economic and policy pressure to redevelop sites.
- Public perception.
- Lack of information and awareness of the species and habitats that can be found in vacant and derelict land.
- Non-native species.
- Natural succession.
- Recreational pressure – although light disturbance benefits early successional habitats and can increase habitat diversity it can be a problem for birds and excessive dog-fouling can promote species-poor grassland by enriching the soil. Some sites suffer from regular arson, fly tipping, and anti-social behaviour, which can result in sites losing popularity with the communities surrounding them.
- Restoration works to buildings, including health and safety issues linked to the above.
- Contaminated land and pollution.
- Greenspace management, including landscaping and a drive for woodland planting.



Current Action

- Sites have been identified as having the potential to be Community Nature Parks and Local Nature Reserves; this information has been fed in to the Local Plan. On some of these sites, communities are already involved in improving the sites for their use, with assistance from North Lanarkshire Council.
- All Council owned SINC's have been surveyed. Sites are now surveyed where there is a threat from development, or an opportunity to take forward positive action for the biodiversity of the site.
- Greenspace Development is consulted on planning applications, council land disposals, demolitions and in relation to development briefs for council properties potentially being sold. Through this process Preliminary ecological assessments are requested for sites with any potential wildlife interest, this will then flag up any rare or protected habitats, or species and further survey requirements and recommendations.

There are now 9 Local Nature Reserves (LNRs) in North Lanarkshire, 6 of which are formal industrial sites:

- Braedale Hill Local Nature Reserve
- Brownsburn Community Park Local Nature Reserve
- Dumbreck Marsh Local Nature Reserve
- Gartcosh Local Nature Reserve
- Greenhead Moss Community Nature Park Local Nature Reserve
- Kingshill Local Nature Reserve



Proposed Objectives, Targets and Actions.

Objectives

1. Identify derelict sites of particular significance for biodiversity and outline any management needs.
2. To maintain and enhance the extent and quality of semi-natural habitat in and around post industrial sites with priority given to those holding species of local and national importance and scarcity.
3. Raise public awareness of the biodiversity value of derelict sites

Actions	Meets objective number	Action by	Target
Policy and legislation			
1.1 Ensure that any OMHPDL meeting SINC criteria is notified as a SINC and is protected through the Local Development Plan.	1	NLC	Identify all potential sites and develop a programme of surveys by 2017.
Site safeguard and management			
2.1 Ensure development proposals do not reduce the nature conservation value of existing sites. Formulate compensatory measures where such damage is unavoidable.	1, 2	NLC	Record this process and produce a report annually for discussion within the council and with biodiversity partners. Encourage improvements with a high biodiversity value such as Green roofs where development is unavoidable.
2.2 Produce management prescriptions for SINC sites.	1	NLC, Buglife	Develop management plans for Council Owned Vacant and Derelict land SINC's in partnership with Buglife by the end of 2019.
Advisory			
3.1 Include information on the potential biodiversity value of vacant and derelict land in planning guidance notes.	2	NLC	To be included by the end of 2017.
3.2 Inform landowners/managers of the ecological significance of their sites and advise accordingly, including information on suitable grant aid.	1, 2, 3	NLC, Buglife, CSGNT	One landowner approached annually from 2016.
Future research and monitoring			
4.1 Continue to survey and monitor sites, especially where BAP species are present.	1, 2	NLC	Develop a survey programme of known and new council owned sites from 2016.
4.2 Explore opportunities to survey more sites with other organisations, and individuals.	1, 2, 3	NLC, Buglife	Approach one new organisation annually.
Communication and publicity			
5.1 Encourage volunteer conservation work, and surveys on brownfield sites.	3	NLC, Buglife	Work with partners to provide opportunities for volunteers in annual survey.
5.2 Increase public awareness of the importance of, and threats to, biodiverse brownfield sites and the need for conservation action.	3	NLC, Buglife, CSGNT	Through local press releases related to high profile species. Three press releases, one leaflet and public survey 2015-2020.

Plan written by Craig Macadam, Buglife and Laura McCrorie, Senior Biodiversity Officer (2014)

Golf Course

ACTION PLAN

SCOTTISH BIODIVERSITY LIST HABITAT:

NO

UK BIODIVERSITY LIST OF PRIORITY HABITATS:

NO

Summary

Golf courses, for the purposes of this action plan, include the whole area of the land used for playing this sport. There are 15 golf courses in North Lanarkshire; every golf course consists of highly managed areas (the greens and tees), less intensively managed areas (the fairways) and non-playing areas (natural habitat or rough). The extent of each area owes much to the architect who designed the course and subsequent management, but the non-playing areas generally represent between 25% and 40% of the total area of the course. The location of the course largely determines the potential habitat opportunities of the site. The age of the course is also significant, as many of the younger courses were developed as a result of growing popularity of the sport and exhaustion of natural habitats. Many were built on heaths, grasslands, dune slacks and parkland. This presents an opportunity to maximise the potential contribution of golf courses to habitat enhancement.

Habitat Profile

Golf courses can provide an excellent variety of habitats for wildlife. A wildlife friendly course may harbour around 60 species that are recognised as important in local biodiversity plans. Some courses have extensive areas of “rough” ground that are managed for wildlife and include heathland, marsh, woodland, species-rich grassland, ponds, rivers and burns.

Golf course management is much more complicated than just cutting grass and affects all habitats on the site. Maintenance on a landscape basis, particularly on Scottish golf courses, encompasses some, if not all, of the following.



Trees provide definition for fairway edges or low maintenance areas in and around golf courses. In addition, they provide valuable wildlife habitats and corridors. In wet areas, willow species and Alder are often found, whereas in well-drained soils, Scots pine, Silver birch, Oak, Ash and Lime trees are often present. A mix of ages and species creates a greater variation in the genetic stock, lessening the risk of the spread of disease and the loss of trees through wind damage. A mix of trees and ages provides a range of canopy heights and provision of habitat areas. Where it's safe to do so, dead timber can be left standing, with fallen timber and branches stacked to create microhabitats, and smaller branches and leaves swept into brush piles.

Areas of rough grassland can have high biodiversity value and provide invaluable habitat corridors that help link semi-natural/natural habitats. Grassland also offers excellent water retention opportunities as well as preventing soil erosion. Management of invasive species, such as Bracken, can be an important part of management. Once Bracken is under control, areas of rough grassland may be managed to not only provide wildlife habitats, but also buffer strips of "rough" for water features, ditches and other sensitive areas. Areas of rough grassland only require annual maintenance, such as one "cut and rake" in September. This lowers maintenance costs, especially if they can also be kept free of chemical applications/drift spray and the depositing of grass cuttings, and will encourage wildflowers. If these species already exist on site, it is generally a sign of good management practice for nature. Grasslands can be made more visually interesting and diverse with the addition of native wild flower seed mixes or native wildflower plugs. Careful planting of appropriate species adds visual stimulus and can provide valuable bird, mammal and invertebrate habitats if they are adjacent to rough grassland.

Ponds and wetlands can be very aesthetically pleasing areas on golf courses in addition to being golfing hazards. However, the long-term management costs of such features are sometimes forgotten at great cost to the wildlife and the golfer. One common mistake is to introduce Common reedmace into ponds, where it can choke the pond and greatly reduce the wildlife value within a few years and is costly to remove. Management and creation of existing ponds and wetlands, encourages a wide diversity of wildlife, and provides course drainage and primary water treatment. Wetlands are important wildlife habitats. However, they need to be protected from chemical applications and drift spray so that aquatic life and wildlife remain unharmed. The Water Environment (Controlled Activities Regulations) (Scotland) Regulations 2013, the Water Environment (Diffuse Pollution) (Scotland) Regulations 2008, along with SEPA General Binding Rules are set to control

the application of pesticides, fertilisers and other turf management products and activities. Under Local Environment Risk Assessments for Pesticides (LERAP), 6m buffer zones have been set for some pesticides. However, this can be reduced when using LERAP-tested and approved jets. The homogenous cover of a plant type is usually an indicator of chemical application or spray drift. In nutrient-rich waters for example, Common duckweed and Canadian waterweed are highly invasive species. Where over-nutrication (eutrophication) occurs, algal blooms can be present.

Heaths are characterised by nutrient poor, acid soils principally consisting of plants of the Heath family. Heather or Ling is usually one of the most prominent species, although Blaeberry is often found on upland heaths. On lowland heaths, Heather, Bell heather and Cross-leaved heath combine with Gorse and grasses to provide a varied habitat. This habitat may be home to game birds including Grey partridge, as well as numerous other species such as small mammals, moths, grasshoppers, crickets, invertebrates such as dragonflies and reptiles such as the Common lizard. Changes in golf course management can rapidly benefit heathland in terms of quality, health and species diversity. The slow growth of heathland species enables general maintenance costs to be kept low in comparison to woodland and grasslands. Many different management options can be used in order to regenerate heather. The options for golf courses are dependent on a number of localised factors and include restricted burning, seeding, turfing and scarification.

Current Status

There are currently 15 golf courses in North Lanarkshire (one is split into two courses). The exact sizes are unknown, but they can range from 35ha to 80ha and typically cover 50-60ha. Therefore, courses in North Lanarkshire cover approximately 800-960 hectares. This presents a significant potential for conservation as at least half of this area is non-managed.

Legal Status

Several of these golf courses have varying degrees of protection through SINC (Site of Importance for Nature Conservation) designation which cover parts of eight golf courses and border on to five.

Current Factors Affecting This Habitat

- Poor spraying practices and lack of buffer zones causes loss of aquatic animals and plant life.
- Poor management of rough grassland resulting in loss of native grasses and wildflower populations, leading to dominance by invasive species.
- Poor selection and mixing of trees on golf courses can lead to a high loss of existing and newly planted trees, and a loss of habitat and wildlife corridors.
- Inappropriate management including use of fertiliser, pesticides, over-watering, excessive traffic on foot and by golf trolley, tree invasion, burning and lack of control of invasive species.
- Habitat fragmentation or destruction through creation of new fairways in sensitive areas.
- Poor tree management can cause damage by strimmers, stakes, etc.
- Damage to trees by golfers due to poor choice of location for tree planting.
- Planting of trees in areas with an existing importance for wildlife, which can reduce the wildlife value and ground vegetation assemblage as the habitat changes to one dominated by woodland.
- Nutrient and pesticide run-off into ponds.
- Canalisation or culverting of burns will make them less wildlife friendly, as will cutting the burn margins short right to the water's edge.
- Sandpits provide potential nest sites for Sand martins, so sand excavation from open faces during the summer needs to be avoided to prevent nest loss.
- In some cases habitats that are not under active conservation management such as wetlands may scrub over and transition to woodland as they dry out.

Current Action

- Free site visits to golf facilities followed by a detailed biodiversity action plan with recommendations by the Scottish Golf and Environment Group (SGEG).
- Greenspace Development provide advice on managing golf courses for biodiversity and completing funding applications to take forward actions for biodiversity.



Proposed Objectives, Targets and Actions

Objectives

1. Promote appropriate environmental management for habitats and species on golf courses.
2. Promote awareness of the habitat, its public value and conservation issues.

Action	Meets objective number	Action by	Target
Policy and legislation			
1.1 Survey potential golf course SINC sites and designate where appropriate	1, 2	NLC	Potential golf course SINC sites identified and surveyed by 2020
Site safe guard and management			
2.1 Promote Golf Environment Organisation certified programme	1	SGEG, NLC	2 golf courses approached annually from 2015
2.2 Develop biodiversity projects on council owned golf courses to enhance the habitat on site.	1, 2	NLC, SGEG	2 projects completed by 2020
2.3 Encourage sympathetic development of golf courses	1	NLC	Comment on planning applications where appropriate
Communications and publicity			
3.1 Ensure greenkeepers are aware of the benefit of managing for biodiversity.	1	NLC, SGEG	Meet with greenkeepers to discuss at 5 sites by 2020
3.2 Promote biodiversity training for greenkeepers.	1	NLC, SGEG	Invite greenkeepers on species ID and habitat management training.
3.3 Encourage clubs to raise awareness of the value of biodiversity on golf courses to its members, visitors, staff and local residents.	1, 2	SGEG, NLC	Assist in the development of interpretation, potentially utilising score cards at 5 sites by 2020.

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