



John Muir Pollinator Way Report: West Dunbartonshire

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Saving the small things that run the planet

Summary

The John Muir Way, opened in 2014, stretches 134 miles through nine local authority areas including West Dunbartonshire.

This B-lines project, the first in Scotland, has identified new opportunities for grassland habitat creation, enhancement and management along the route of the John Muir Way as it passes through West Dunbartonshire as well as 1.86 miles either side of this. Through this mapping exercise a number of sites have been identified including 9 schools and nurseries; 3 hospitals and care homes; 11 places of worship and cemeteries; and 2 train stations. Additionally, 2 golf courses (51.1 ha), 12 public parks and play spaces (112 ha) and one country park (82.82 ha) were identified.

There are a number of sites within this project that have nature conservation designations, including 16 Sites of Importance for Nature Conservation (763.41 ha) and 5 Sites of Special Scientific Interest (763.41 ha). A further 1 site has previously been identified as having an Open Mosaic of Habitat on Previously Developed Land with a total of 2.19 ha.

By mapping new opportunities this will aid in the future development of projects that will provide real benefits to our declining populations of pollinating insects of bees, wasps, hoverflies and butterflies as well as other wildlife that these habitats support.

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1. Introduction

The route of the John Muir Way stretches 134 miles (215 kilometres (km)) from Helensburgh in the west to Dunbar on the east coast (Figure 1). This walking and cycling route was opened in 2014 to commemorate the 100th anniversary of John Muir's death.



Figure 1. Route of the John Muir Way from Helensburgh in the west to Dunbar on the east coast.

During its 134 miles stretch, the John Muir Way passes through nine different local authority areas and goes through and close to several towns, including Helensburgh, Balloch, Lennoxton, Kirkintilloch, Falkirk, Edinburgh and Dunbar. This walking and cycling route passes through a varied landscape with a wide range of habitats including agriculture, coastland, parkland, housing as well as sites with various conservation designations. Many of these sites are important for a range of wildlife and plant species and allow the movement and mixing of species along and out with the route.

In West Dunbartonshire, the route is about 15 miles in length and from Balloch it goes up the Kilpatrick Hills and finally down into Stirlingshire.

1.1 B-lines

Since the 1940's, Britain has lost over 97% of its species-rich grassland to agriculture, housing developments and industry. B-Lines are an imaginative solution to the problem of the loss in wildflower meadows and the subsequent decline of pollinating insects. The B-Lines are a series of 'insect pathways' along which Buglife aims to create and restore at least 150,000 hectares (ha) of wildflower-rich habitat stepping stones across the UK. They link existing wildlife areas together, creating a network that will weave across the British landscape. This will provide large areas of brand new habitat benefiting bees and butterflies as well as a host of other wildlife.

B-Lines bring a range of benefits to wildlife, people and agriculture, including helping to conserve our native pollinators and a range of other wildlife; contributing towards the 2020 Biodiversity targets; helping our wildlife respond to climate change by making it easier for them to move around; increasing the number of insect pollinators and the benefits these bring to our farming sector (pollination being an important 'ecosystem service'); bringing nature to people; and giving opportunities for everyone to play their part and help create the B-Lines network.

Making the B-lines happen will take time and will need farmers, land owners, wildlife organisations, businesses, local authorities and the general public to work together to create flower-rich grassland in the best locations.

'John Muir Pollinator Way' is the first B-lines project in Scotland. Through this study, this project has mapped opportunities for wildflower grassland creation, enhancement and management along the route of the John Muir Way as it passes through West Dunbartonshire. This B-lines map will include not only areas that are currently used as amenity grassland such as at public parks and in school grounds but also sites that have nature conservation designations and are currently managed for their important grassland habitats. By mapping these opportunities it identifies where current habitat is, how it can be better managed and where projects should focus to further benefit wildlife and communities in the future.

2. Method

Opportunities for the creation, enhancement and management of grassland meadows and other habitats important for pollinating insects and other invertebrates were mapped using an online Geographic Information System (QGIS) along the 15 miles route through Balloch into the Kilpatrick Hills as well as 1.86 mile (3km) either side of this; the village of Gartocharn is also covered in the project area. This area covers a total 5,767 ha of land.

Potential opportunities on sites with no nature conservation designations were identified based on if they held grounds for habitat creation and enhancement, these sites were then marked by a round circle and included high schools, primary schools, nurseries, hospitals, care homes, places of worship, cemeteries and train stations.

Scotland's Greenspace Map, available from Scottish Natural Heritage (SNH) provides information about the type and extent of greenspace in urban Scotland in towns and cities with a population of over 3,000. This map was compiled in 2011 from greenspace data provided by the 32 Scottish local authorities and categorises greenspace into 23 different open space types (for example, public parks, private gardens, play areas, semi-natural, community gardens and allotments). Using Scotland's Greenspace Map, public parks, play spaces and golf courses were identified and mapped on the B-lines using polygons to calculate the area of each site; further information on the location and names of public parks and play spaces was obtained from several of the local authority websites. Additional areas of amenity grassland identified on Scotland's Greenspace Map, including residential, business and transport were not mapped due to the number of sites and complexity in mapping them.

Polygons of designated country parks with information on the size of each site were also added to this opportunity map after being downloaded from the SNH website.

Sites of Special Scientific interest (SSSI) from within this project were downloaded from the SNH website and mapped using polygons so that the size of the area could be calculated for each site. Information on Local Nature Conservation Sites (LNCS) was obtained from West Dunbartonshire's website as there is no biodiversity officer within the council and the boundaries for each site were drawn onto QGIS to show location and area (Central Environmental Surveys, 2008).

In 2013, Buglife identified sites on Scotland's vacant and derelict land register with the UK Biodiversity Action Plan (UKBAP) priority habitat 'Open Mosaic of Habitat of Previously Developed Land' (OMHPDL) and the shapefile which included the polygons for these sites was uploaded onto this B-lines opportunity map (Macadam *et al.* 2013).

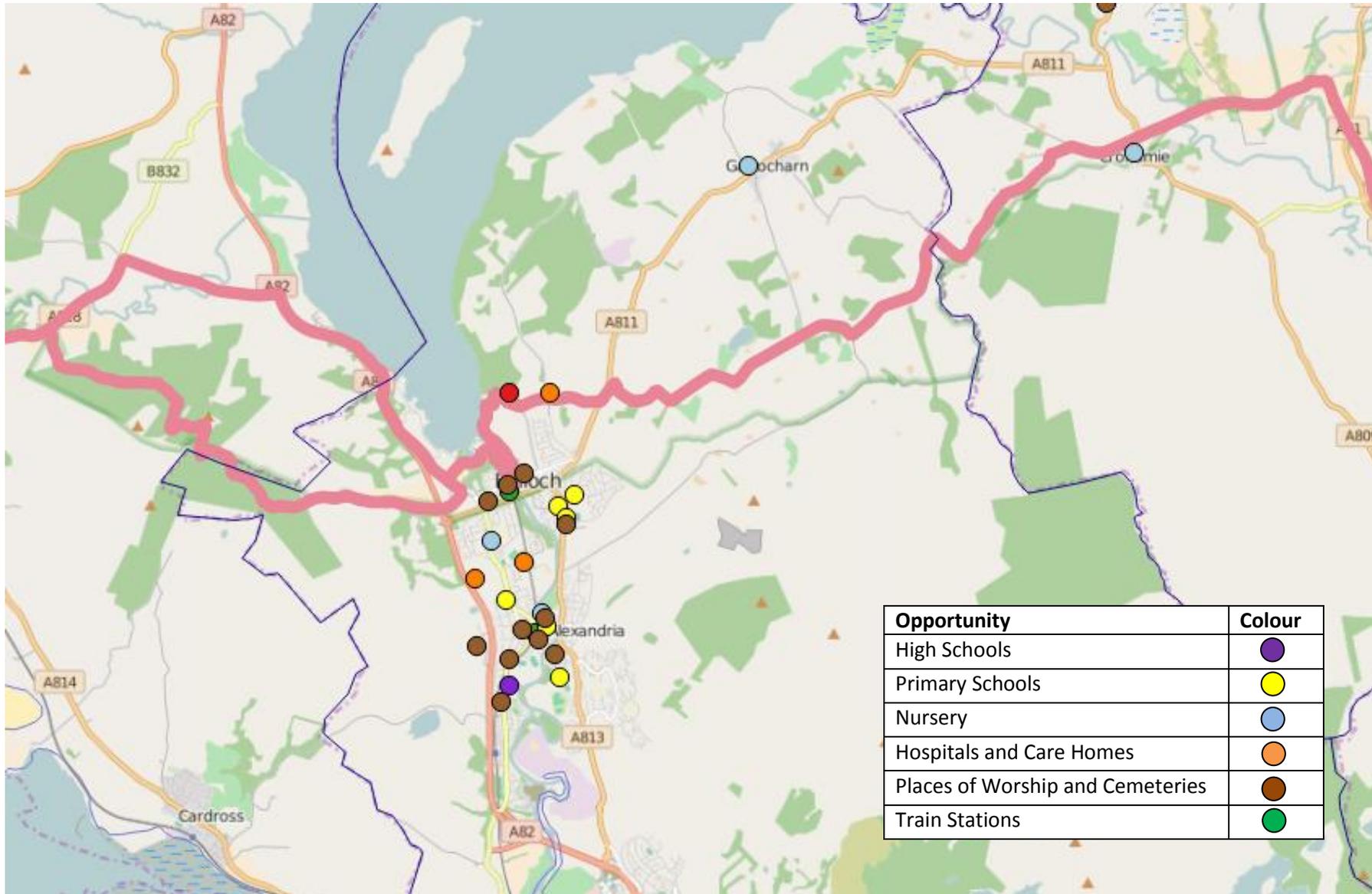
3. Results

A full list of opportunities identified can be found in Appendix 1.

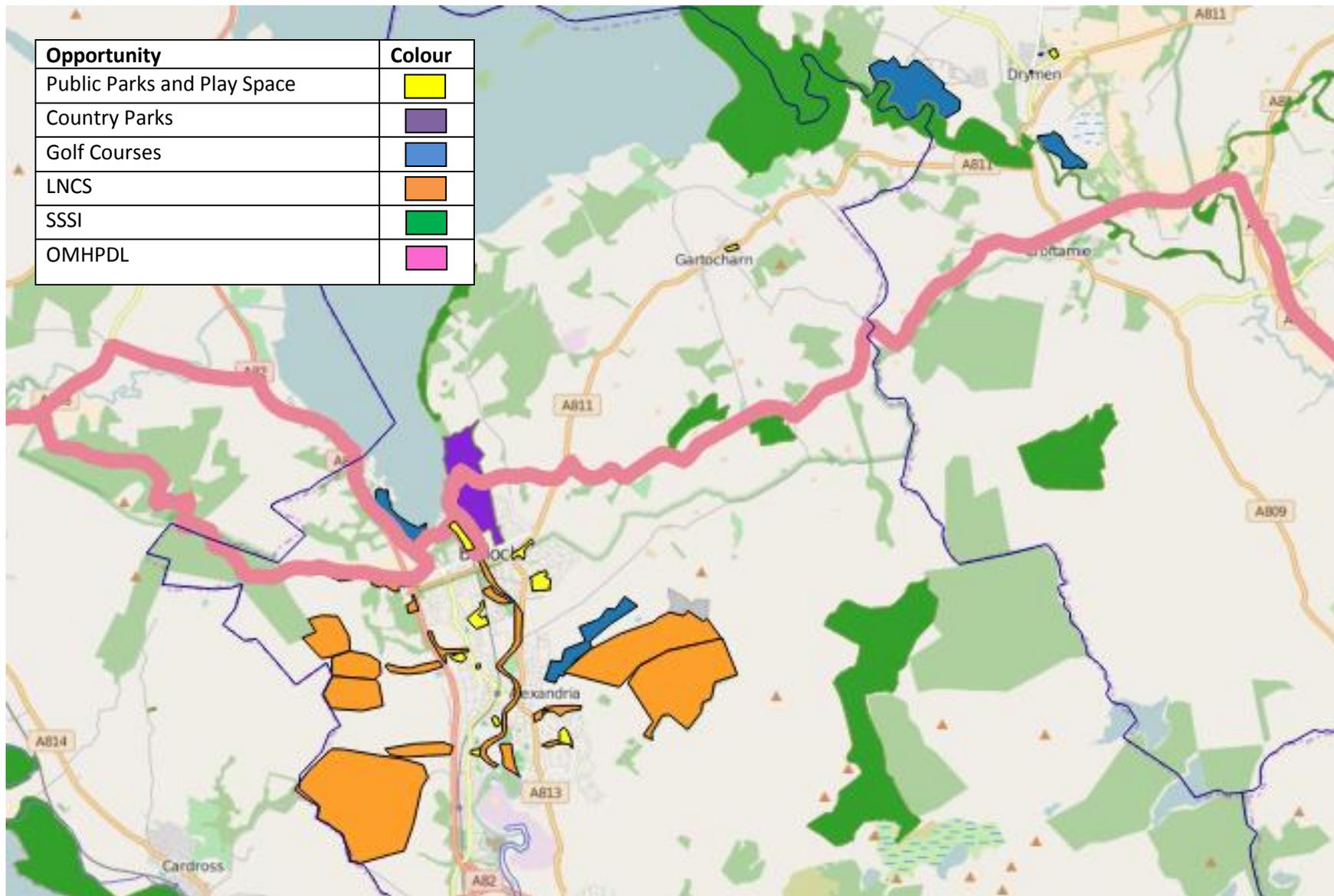
A total of 9 schools and nurseries were identified and this includes 1 high school, 6 primary schools and 2 nurseries (Table 1; Map 1); three of the primary schools have pupils who live in the 20% most deprived areas and the high school is registered with the RHS School Gardening Scheme (Appendix 1). There are at least 11 places of worship and cemeteries, 3 hospitals and care homes and 2 train stations within the project area (Table 1; Map 1). There are 2 golf courses that cover a total of 51.1 ha (Table 1; Map 2). There are at least 12 public parks and play spaces covering a total of 112 ha of ground and include a variety of habitats from woodland, ponds and amenity grassland, additionally one of the parks is designated as a Country Park and is 82.82 ha in size (Table 1; Map 2). There are 5 sites designated as SSSI (763.41 ha) and 16 LNCS (935.4 ha) (Table 1; Map 2). One site of derelict land has been classed as having an OMHPDL and is 2.19 ha in size (Table 1; Map 2).

Table 1. Total number of opportunities identified for each category within West Dunbartonshire including the size of the area for sites designated for conservation along with public parks, country parks and golf courses.

Opportunity	Total number	Total Area (ha)
High Schools	1	-
Primary Schools	6	-
Nursery	2	-
Hospitals and Care Homes	3	-
Places of Worship and Cemeteries	11	-
Train Stations	2	-
Public Park	12	112
Country Park	1	82.82
Golf Course	2	51.1
SSSI	5	763.41
LNCS	16	935.4
OMHPDL	1	2.19



Map 1. Opportunities of non-designated sites identified in West Dunbartonshire.



Map 2. Opportunities of sites designated for conservation along with public parks and golf courses identified in West Dunbartonshire.

4. Discussion

The John Muir Way is 134 miles long and has a varied landscape, passing through nine different local authority areas, various towns and cities as well as rural habitats. The 5,767 ha of land covered by this project in West Dunbartonshire has identified various opportunities for grassland habitat creation, enhancement and management within the grounds of schools and hospitals, golf courses and public parks. Each of these potential opportunities differ in the communities involved from across West Dunbartonshire and surrounding areas and the habitats present but all have the potential to significantly increase and improve habitat for pollinating insects and other wildlife across the heartland of Scotland.

4.1 Schools

A total of nine schools and nurseries were identified within this projects area and includes one high school, six primary schools and two nurseries. Most schools and nurseries have outdoor grounds that may include areas of amenity grassland as playing fields that are used by school children during breaks and during physical education (PE) lessons. Alongside these large areas of amenity ground, schools often have other outdoor areas that are may be used as a school garden or are left as areas of additional amenity grassland. It is these areas that can be enhanced for wildlife by creating biodiverse school gardens or changing the management to reduce the cutting of the area. This would not only benefit pollinating insects and other wildlife but also the school children who could help create the habitats and use them for learning and play. Wildflower meadows within the school grounds could be created with the help of the school children and parents and be managed with the help of the local authority if required.

To further benefit pollinating insects such as solitary bees, school children could be encouraged to create homes for them in wood working class. These can be installed in south facing and warm areas around the school and will create homes for wood nesting solitary bees and other invertebrates.

Only the high school identified in this survey is registered with the RHS School Gardening scheme which aims to inspire and support schools to provide children with gardening opportunities to enhance their skills, outdoor learning and boost their development.

All of the schools identified are registered as an Eco-school, many of which have various awards associated with this. Eco-Schools are an international initiative designed to encourage whole-school community action on 'Learning for Sustainability'. This environmental management tool is a learning resource and a recognised award scheme which empowers children and young people to take action towards an economically, socially and environmentally just world. The Eco-Schools programme is managed in Scotland by Keep Scotland Beautiful.

Other school initiatives that aim to get children out of the classroom and either into their local community or developing their school grounds include Polli:Nation a UK wide initiative supporting pupils from 260 schools to turn their school grounds and other areas within their local communities into pollinator friendly habitats. Unfortunately, none of the schools selected in Scotland are within this project's area although they will still be able to get involved in this initiative.

Priority Project 6 through Scotland's Biodiversity- a route map to 2020, aims to increase secondary and primary schools access to greenspace and nature for outdoor learning as part of the wider 'Learning for Sustainability' agenda. Through this, it aims to work with 100 schools that have pupils who live in the 20% most deprived areas by 2020. Of the schools identified, three primary schools have pupils who are classes as living in the 20% most deprived areas. By focusing to work with

several of these schools identified through this project will significantly increase the health and well-being of school pupils as well as people in the wider community.

There is a lot of scope for schools to get involved with enhancing their grounds for wildlife and for the pupils through the RHS School gardening scheme and Keep Scotland's Beautiful Eco-schools as well as other initiatives. It may be that further support is required to encourage more schools to actively get involved for the benefit of the school children and for declining insect pollinator populations.

4.2 Hospitals and Care Homes

Of the three hospitals and care homes identified within this project, Vale of Leven hospital is used by hundreds of patients and visitors every day. It is well documented of the health and well-being benefits for people with local and easy access to wildlife as well as the increase in recovery time of patients in hospitals and care homes.

Surrounding the hospital is large areas of amenity grassland that have very little benefits for biodiversity and people using and visiting the hospitals. Many hospitals across Scotland have designated areas for wildlife but are often limited with funding or with staff limitations. By enhancing hospital grounds for nature through the creation of grassland meadows this will not only add colour and life to the area benefiting both people and wildlife but will also allow for the moving and mixing of species and individuals across the hospital grounds and surrounding landscape. Additionally, small wildlife gardens can be created closer to the hospital within areas that are well used by patients through the use of planters, green walls and/or insect homes (Figure 2).



Figure 2. Example of a green wall that holds a variety of plants, including wildflowers. This particular green wall also has a variety of homes for insects and other bugs.

All patients can be encouraged to get involved with these creation and enhancement projects as well as the management whilst in the hospital and when they finish their treatments, especially for those that live within the local surrounding area.

Due to health and well-being benefits it is also important to provide opportunities for people in care and nursing homes and hospices to get involved in similar projects in their grounds. Care homes often have grounds that residents can walk around either on their own or with visitors. By enhancing these areas for pollinating insects it will provide colour and life to the gardens that will

make a happier and healthier place for the residents to live and enhance their experiences and quality of life.

4.3 Places of Worship and Cemeteries

There are at least eleven places of worship and cemeteries identified within this project. At least one is described as just as cemetery whilst many of the places of worship also include burial grounds.

Many cemeteries and churchyards are well known to be important habitats for a range of wildlife including bats, birds and foxes as they are often less intensively managed as other urban green spaces. A range of habitats are often found at these sites including mature and veteran trees, old walls, wildflowers, bare ground and shrubs. By creating habitat and enhancing areas already present within the grounds this will add colour and life to the churchyards and cemeteries that will not only improve health and well-being of visitors but will provide important stepping stones for wildlife through an area.

Not all the churches identified have grounds that could be enhanced or managed but they can help to inspire local communities to actively get involved with community led projects that could benefit the local area away from the church. It is important to identify which of these churches have access to an outdoor space and what habitats are currently present within these that could be enhanced or better managed for wildlife. This in itself could be a project that engages with communities across Scotland with their local place of worship.

4.4 Train Stations

There are two train stations within this project area (Balloch and Alexandria) that are used by thousands of people every day.

Often train stations, such as at Balloch, have some ground that they currently manage as gardens or amenity often with the help of a local community group. Many others have planters of varying size that are planted with seasonal garden plants. By planting wildflowers within the planters or surrounding grounds this will help reduce costs of buying seasonal garden plants and reduce maintenance time. Green walls shown in Figure 2 could be placed alongside walls that are outside to further enhance the station for pollinating insects that would also provide colour and life benefitting passengers using the stations.

4.5 Golf Courses

Of the two golf courses within this project they are on the outskirts of Balloch and are 51.1 ha in size.

Golf courses are well known to act as important areas for wildlife, especially in an urban area due to the various habitats present, such as woodland, hedgerows, rough grassland, ponds, ditches and heathland. Golf courses cover 1% of land in the United Kingdom. Generally between 40 – 60% of a golf course is out of play representing a significant land resource that can potentially be made available for wildlife protection and nature conservation. Many golf clubs are recognising that a naturalistic golf course environment which is attractive for wildlife is also generally more attractive to golfers.

Buglife's current meadow creation project 'Fife's Buzzing', a three year project funded by Heritage Lottery Fund and Fife Environment Trust, has enhanced Dunnikier golf course in Kirkcaldy for biodiversity by planting native and diverse wildflower species into areas that are not in play and around ponds. These have helped create a healthier place for wildlife and for the people using the

course as well as getting the local community and schools involved with habitat creation events through volunteer activities.

The Golf Environment (GEO) was founded to support the golfing industry, helping it to deliver and be recognized for a positive impact for the people and nature that it touches, now and in the future. They are currently developing an awards system that encourages golf courses around the world to create areas within their grounds to further benefit wildlife. Through their system, individual golf courses will be able to identify what they are currently doing that is benefitting local wildlife but also other activities that would provide further benefits. This could positively benefit not only pollinating insects with the planting of native species of wildflower within meadow areas that are local to the golf course, but also aquatic invertebrates through the enhancement of ponds and wildlife such as Longhorn beetles that require dead wood for their lifecycle with the enhancement and creation of areas of dead wood.

4.6 Public Parks and Play Spaces

Scotland's Greenspace Map, available from SNH, was used to identify and map the location of public parks and play spaces across the project area. Scotland's Greenspace Map was compiled in 2011 from greenspace data provided by the 32 Scottish local authorities and categorises greenspace into 23 different open space types (for example, public parks, private gardens, play areas, semi-natural, community gardens and allotments). As some of this information is incomplete, such as the names of the parks, information was also obtained using local authority websites and other sources.

A total of twelve public parks and play spaces were identified covering a total of 112 ha. Many of these parks are well used by local communities and visitors every day for walking, cycling, running or playing.

Most parks have large areas of amenity grassland that is cut several times over a year and has very little benefits to biodiversity because of this. Through Buglife's Get Britain Buzzing campaign, we have been transforming mown grassland in parks into colourful wildflower areas for both people and wildlife to use and enjoy. In Scotland these projects have so far occurred out with the project area of the John Muir Pollinator Way in Glasgow, Perth and currently in Fife and North Lanarkshire. For example, just over half way through the three year 'Fife's Buzzing' project, Buglife has engaged with 1,057 people in the creation and enhancement of over 5 ha of wildflower meadow at 13 parks across Fife.

Through these projects we have recognised that it is important that if changing the management at parks and/or creating wildflower areas for wildlife that local communities are consulted before hand so they can decide on the best areas within their local park and the size of the area to be created and managed. It may be that all of a park is well used over the year by dog walkers and picnickers so only small edge areas could be enhanced. It is these small areas that could encourage the creation of larger areas once the public understand the change being undertaken in their local area.

Local authorities across Scotland and the rest of the UK are facing major cutbacks and are looking at ways to reduce spending. Several are known to be looking at reducing their grass cutting regime within certain areas of amenity grassland. This is great news for pollinating insects that will be able to find forage and nesting habitat within areas that are cut less regularly but not if these aren't properly managed by being cut and left once a year. It is important that wildflower meadow areas are managed appropriately to prevent grasses becoming dominant and turning into rank grassland. Management of grasslands is site dependent and could involve grazing or cutting once a year and removing the cuttings. With a reduction in grass cutting, councils are realising that they don't have

equipment to cut and lift once a year and so hire a contractor to do this, which can be an expense they can't afford within the current climate.

Several parks identified in this project, have designated Friends of Groups that may be able to help get involved with habitat creation and management projects so as to enhance their area. Friends of groups could apply for funding to enhance their local park for biodiversity through the creation and management of grassland.

4.7 Country Parks

Of the 36 country parks across Scotland, only Balloch Castle and Country Park is located within this project and is 82.82 ha in size. This country park has a variety of important habitat, including semi-natural and ornamental woodland, open parkland, formal gardens, meadow, play parks and shoreline. Balloch Castle and Country Park has its own dedicated Countryside Ranger service that manages the park as well as engages with the local community and school children through events run all year round. Due to this parks location and the services and events available it attracts huge numbers of visitors every year.

It is important that country parks follow management plans to ensure that they remain viable for wildlife and that the habitat is managed appropriately so that both people and animals can continue to use and visit the parks in the future.

4.8 Local Nature Conservation Sites

Of the 57 LNCS in West Dunbartonshire, a total of 16 were identified in the project area and cover a total area of 935.4 ha.

LNCS are sites that have been designated as being important for nature conservation due to the habitats and wildlife that are present. For sites identified through this project a range of habitats are present, including woodland, heathland, reservoirs, ponds, ditches and grassland meadows. It is important that management plans are written for each site and that the correct regime is in place to ensure long-term survival of the site and its habitats for the future protection of wildlife. As it was very difficult to find information about individual sites it is assumed that management plans, if there are any are not accessible to the public or have yet to be completed.

4.9 Site of Special Scientific Interest

SSSI are those areas of land and water (to the seaward limits of local authority areas) that are considered to best represent our natural heritage, due to their species diversity and habitats, rocks and landforms present as well as a combinations of these features. SSSIs are protected by law and it is an offence for any person to intentionally or recklessly damage them. SSSI are designated by SNH under the Nature Conservation (Scotland) Act 2004.

There are over 1,425 SSSIs across Scotland, of which only five are within this project and this covers 763.41 ha; this includes the SSSI Endrick Mouth and Islands and Endrick Water that are shared with Stirlingshire and covers a total area of 690.32 ha.

Most SSSIs are in private ownership and SNH works closely with their owners and managers to ensure appropriate management of the sites natural features and to ensure that decision-makers, land managers, their agents and advisors, as well as local authorities and other public bodies, are aware of SSSIs when considering changes in land-use or other activities which might affect them.

Any Scottish public body proposing to carry out an operation that may affect an SSSI must notify SNH before starting. SNH provides each SSSI owner and occupier with a site management statement that

describes the interest of the site and explains the management needed to conserve its protected natural features. For those sites which are known for their grasslands it is important that these management plans are stuck to and that the meadows are appropriately managed to ensure long-term survival of the site for their biological features.

4.10 Open Mosaic Habitat on Previously Developed Land

OMHPDL is a UKBAP priority habitat as its mosaic of habitats provides homes for a number of wildlife species and allows a natural process of succession to occur which is often limited in the over-managed countryside. Derelict sites often have areas of bare ground, early successional communities, grasslands, wetland, scrub depending on how long the site has been abandoned, soil conditions and local climate.

In 2013, a report by Macadam *et al.* remotely assessed sites on Scotland's vacant and derelict land register for OMHPDL using Google Earth maps. Of the 4,118 sites on the 2011 register, 586 were selected as potentially having OMHPDL and should be ground truthed and this amounted to over 5,600 ha of land. Of this total, only one lies within this project area and is 2.19 ha in size. Most of the sites that were identified as having OMHPDL appear to have areas of bare ground and grassland on site. Ground truthing these sites would help to identify if the site has the UKBAP priority habitat OMHPDL and whether management is required to ensure long-term viability of the site.

Brownfields with OMHPDL are known to be important for wildlife due to a lack of management and low nutrients in the soil that often creates a mosaic of habitats. Many rare and scarce species have been recorded at brownfield sites, often as many that are associated with ancient woodlands. Due to natural succession, many of these sites have a limited lifespan but as sites are lost to development, new sites are added that allow succession to start again.

4.11 Other Opportunities

During the mapping of opportunities for this B-lines project, other areas were recognised as being possibilities but were not mapped due to a lack of information, the number of these sites as well as the complexity of mapping them. This includes areas of amenity grassland identified on Scotland's Greenspace Map, including amenity sites recognised as residential, business and for transport. These areas of amenity grassland include road verges through our urban areas as well as regularly mown areas of amenity that are not classified as parks or play spaces but can often be large in size. All of these areas of amenity are opportunities for creating habitat for pollinators across an urban area that will allow the moving and mixing of individuals and species across these areas with more natural areas of habitat.

As well as passing through urban areas, the John Muir Way also passes through agricultural areas which were not mapped due to a lack of information on the location and use of fields. By creating wildflower strips and planting hedges along field edges this will create habitat corridors for pollinating insects and other wildlife allowing them to pass through agricultural areas safely to other areas and this will also help with the mixing of individuals and species. Wildflower strips provides additional benefits by increasing free pollination services of crops and attracting insects such as hoverflies, soldier beetles and lacewings who's larvae feed on pests such as aphids.

5. Conclusion

The 134 mile route of the John Muir Way passes through villages and towns in nine different local authority areas. Various organisations are currently involved with a variety of different projects along and around the route of the John Muir Way. For example, this includes Sustrans who are heavily involved with the cycle path network, Inner Forth Landscape Initiative which has a range of projects for biodiversity and people in Grangemouth and Bo'ness, Edinburgh Living Landscapes that

are creating and managing grassland habitats within the City of Edinburgh as well as a number of community groups within the villages and towns will manage local community gardens for both people and wildlife.

This project has identified a number of opportunities for creating important grassland habitat within parks, golf courses, school grounds within West Dunbartonshire for pollinating insects that will allow the movement and mixing of individuals and species across Scotland. This will also benefit other wildlife, particularly other invertebrates, and plants.

In Balloch and the village Gartocharn there are a number of opportunities for creating strips of native wildflower and grassland areas alongside road verges and within the public parks and play spaces. Not only will these new habitats benefit wildlife but also local communities by getting people actively involved in projects and through the addition of colour and life to their areas that will benefit people's health and well-being.

This project has additionally highlighted a number of sites that have been designated for nature conservation that should be managed for the habitats present at their site. By being appropriately managed this will ensure long-term survival of these sites and habitats for wildlife and people to use and enjoy.

By mapping the opportunities at new identified sites and within currently managed sites through this project, this will aid in the future development of projects that will provide real benefits to our declining populations of pollinating insects of bees, wasps, hoverflies and butterflies as well as other wildlife that these habitats support.

References

Central Environmental Surveys, 2008. West Dunbartonshire local plan; Review of local Nature Conservation Sites. Available at: https://www.west-dunbarton.gov.uk/media/1128235/wdlnp_lncs_review_-_final_web_1_.pdf last accessed 17th May 2016.

Macadam, C., Bairner, S. and Cathrine, C. 2013. Open mosaic habitats on previously developed land: survey and recommendations for habitat planning and management in Scotland. Scottish Natural Heritage Commissioned Report No. 606.

Scottish Natural Heritage Greenspace Scotland Map, available at: <http://www.snh.gov.uk/planning-and-development/advice-for-planners-and-developers/greenspace-and-outdoor-access/scotlands-greenspace/dataset/> last accessed 29th March 2016.

Scottish Natural Heritage Information Service, available at <http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/> last accessed 29th March 2016.

Appendix 1

Opportunities within local communities and landscapes

High School

Vale of Leven Academy, Main Street, Alexandria, G83 0BH; RHS School Gardening registered

Primary School

Bonhill Primary School, Raglen Street, Alexandria, G83 9JA; RHS School Gardening registered

Christie Park Primary School, Middleton Street, Alexandria, G83 0DF; RHS School Gardening registered

Haldane Primary School, Miller Road, Balloch, G83 8AA; listed as school with proportion of pupils who live in 20% most deprived areas; RHS School Gardening registered

Jamestown Primary School, Main Street, Jamestown, Balloch, G83 8PN; RHS School Gardening registered

St. Kessog's Roman Catholic Primary School, Dalvait Road, Alexandria, G83 8BD; listed as school with proportion of pupils who live in 20% most deprived areas

St. Mary's Primary School, Bank Street, Alexandria, G83 0UJ; listed as school with proportion of pupils who live in 20% most deprived areas

Nursery

Carousel Nurseries, 26 Luss Road, Alexandria, G83 0RH

Ferryfield Nursery EECC, Ferry Loan, Alexandria, G83 0UW; RHS School Gardening registered

Hospitals and Care Homes

Balquhider House, 104 Heather Avenue, Alexandria, G83 0TJ

Robins House Children's Hospice, 61 Mollanbowie Road, Balloch, G83 8EL

Vale of Leven District General Hospital, Main Street, Alexandria, G83 0UA

Places of Worship and Cemeteries

After Church Street, 258 Main Street, Alexandria, G83 0NU

Alexandria Parish Church, 27 Laudervale Gardens, Balloch, Alexandria, G83 8LL

Balloch Catholic Church, 17 Balloch Road, Balloch, Alexandria, G83 8SR

Bonhill Church of Scotland, Main Street, Alexandria, G83 9HR

Cemetery, 5 Overton Road, Alexandria, G83 0LJ

Jamestown Parish Church, Arthurston oARd, Alexandria, G83 8BW

Our Lady and St. Marks Church, Ferry Loan, Alexandria, G83 0UW

Saint Martin's Church, 331 Main Street, Renton, Dumbarton, G82 4PZ

St. Kessogs Balloch, 28 Balloch Road, Balloch, Alexandria, G83 8LE

St. Mungo's Episcopal Church, 358 Main Street, Alexandria, G83 0BN

Vale of Leven Baptist Church, 688 Leven Street, Alexandria, G83 0SU

Train stations

Alexandria Station, 200 Bank Street, Alexandria, G83 0UL

Balloch Station, Balloch Road, Balloch, G83, 8SS

Golf courses

Cameron House Golf Course, Loch Lomond, G83 8RE

Vale of Leven Golf Club, Northfield Road, Alexandria, G83 9ET

Public Parks and Play Spaces

Argyll Park, 60 Argyll Street, Alexandria, G83 0QN, grid reference NS 39058 81066
Ballagan Park, Lomond Road, Balloch, G83, grid reference NS 39842 82057
Balloch Castle and Country Park, 15 Inchfad Road, Balloch, G83 8SY, grid reference NS 39042 82927
Christie Park, 5 Park Street, Alexandria, G83 0DT, grid reference NS 38788 80437
Gartocharn Playing Fields, Old Military Road, Alexandria, G83, grid reference NS 42961 86204
Milburn Park, 19 Rowantree Grove, Alexandria, G83 0SH, grid reference NS 39276 79462
Play Space with amenity grassland, 77 O'Hare, Alexandria, G83 9DR, grid reference NS 39971 79615
Play Space with amenity grassland, Mc Alister Road, Alexandria, G83 0DZ, grid reference NS 39030 80289
Public Park and Garden, 17 Talbot Rd, Balloch, G83 8AB, grid reference NS 39990 81527
Public Park and Garden, 317 Redburn, Alexandria, G83 9BY, grid reference NS 40274 79261
Public Park and Garden, Cordale Avenue, Renton, Dumbarton, G82 4QB, grid reference NS 38959 79056
Public Park and Garden, Pier Road, Balloch, G83, grid reference NS 38854 82172

Country Park

Balloch Castle Country Park, Drymen Road, Balloch, G83 8LX

Balloch Castle Country Park is located directly on the south-east shores of Loch Lomond, on the northern edge of Balloch. The park is 82.82 ha in size and has a variety of important habitat, including semi-natural and ornamental woodland, open parkland, formal gardens, meadow, play parks and shoreline.

Sites with conservation designations

Local Nature Conservation Site

A82 Road Verge, site size 2.3 ha, grid reference NS 38130 81287

A heterogeneous mixture of plantation and recent natural regeneration woodland with a range of tree species including the non-native and invasive Rhododendron. Due to low botanical species diversity at this site and Rhododendron there is low potential for rare invertebrates and birds.

Alexandria Wood 1, site size 5 ha, grid reference NS 38516 80566

Broadleaved woodland with several old trees and remnants of oak-birch woodland. Has been planted with sycamore and invaded by Rhododendron. Moderate botanical diversity and potential for invertebrates.

Alexandria Wood 2, site size 6 ha, grid reference NS 38182 80300

Mature broadleaved woodland with remnants of an oak-birch woodland along the edges of the burn valley. The rest of the site has been planted with beech which is now mature and naturalising. Some old standard and coppice oaks are present within the woodland. Grazing at this site has reduced botanical diversity, but a moderately good structure for woodland breeding birds and invertebrates still remains.

Blairvault Burn and Pappert Muir, site size 138 ha, grid reference NS 41500 80500

Both sites are known to provide an important wildlife corridor to other moorland sites nearby. A variety of UKBAP priority habitats are present within this large site including blanket bog, fen and upland calcareous grassland. The habitats are mainly semi-natural, although subject to heavy impacts from grazing and trampling, especially towards the west. Due to the types of habitats present it is assumed that species diversity is moderate to high at the site.

Bonhill Muir and Pappert Hill, site size 200 ha, grid reference NS 42000 80000

The site is largely an area of failed conifer plantation, but now a valuable suite of moorland habitats. The most valuable habitat type is wet heath, plus areas of dry heath and blanket bog, which are also good or in a recovering condition. There are small but important fragments of UKBAP priority habitats present, including upland heath, blanket bog.

Carman Muir, site size 190 ha, grid reference NS 37500 78500

This diverse area of open moorland is grazed by cattle and sheep and has a range of habitats that are typical to western Scotland. Wide areas of wet heath cover the gradual slopes, dissected by acid flushes feeding small burns. Locally in small hollows patches of blanket bog occur. Steeper slopes are better drained and support dry heath, but these areas are preferentially grazed and often converted to acid grassland, or invaded by bracken. Grazing of wetter areas has created rush-pasture, particularly where contiguous with adjoining enclosed pastures. Small woodlands of oak and birch, with many small but mature trees, and stands of gorse scrub occupy the steep slopes along burns. The woodlands often continue through the enclosed areas and provide a network for wildlife to move between habitats. Carman Reservoir as well as three ponds is within the site with associated marginal swamp vegetation and poor-fens with a few tall herbs. The entire site is open rough pasturage for sheep and cattle, and the heathlands are burnt in small patches to rejuvenate the grazing value. The site is well managed and supports an intricate pattern of moorland habitats including the UKBAP priority habitats upland heathland, fen, blanket bog and rush-pasture as well as a variety of birds and Green hairstreak butterflies.

Dillipchip Grassland, site size 6.1 ha, grid reference NS 39416 79033

This site is adjacent the River Leven and is derelict land. Due to natural succession a range of habitats are present including ruderal vegetation, rank grassland and poor fen and the UKBAP priority habitat wet woodland in the form of willow scrub. Dillipchip Grasslands acts as an important stepping stone of semi-natural habitats for the movement of wildlife and links and augments the habitats of Cordale point and woods to the north in an area of housing, warehouses and playing fields.

Fishers Wood and Boathouse Wood, site size 4 ha, grid reference NS 39451 81233

An area of broadleaved woodland with old oak trees, scrub, open areas of rough grassland. Much of wood is birch and sycamore regeneration with an impoverished ground flora.

Mullour, site size unknown although lies within Overtoun Muir, grid reference NS 37400 80300

Mullour is a small area of heath and mire within Overtoun Muir (see above). This site is moderately grazed by sheep and also periodically burnt. Within the site are the UKBAP priority habitat blanket bog and heath. Within the site are typical marginal upland habitats including a small burn with woodland along it. It has been identified as having a reduced botanical diversity, but the habitats are fundamentally intact providing suitable architectural structure for familiar moorland birds and invertebrates.

Nobleston Estate Wood, site size 2 ha, grid reference NS 40073 79139

Although small and isolated this is good quality woodland with some large oak trees and botanically diverse ground flora and bryophytes. The UKBAP priority habitats upland oakwood and upland mixed ashwood are present within this woodland which has a good structure for breeding birds and invertebrates.

Overtoun and Bromley Muir, site size c. 200 ha, grid reference NS 37113 80041 (Overtoun) and NS 36805 80834 (Bromley)

These two sites are composed of moorland habitat which has a long history of grazing and burning. This site is an important wildlife corridor with the UKBAP priority habitats upland heath, fen and

blanket bog; acid grassland, bog and rush pastures are also present. Although botanically impoverished by long grazing and burning these communities still provide the structural habitat for breeding and passage birds, and invertebrates. Green hairstreak butterflies (*Callophrys rubi*) have been recorded at both Bromley Muir and Overtoun Muir NS367803. Additionally, these slopes of the sites are well linked to Alexandria Woods 1 and 2 described above.

Pappert Wood and Bonhill Quarry, site size 7 ha, grid reference NS 40500 79600

This woodland is botanically diverse with the UKBAP priority habitats upland oakwood and upland mixed ashwood. Due to the diverse ground flora, bryophytes and structure of the woodland it is thought to be good for breeding birds and invertebrates.

Poachy Glen, site size 6 ha, grid reference NS 38139 79130

The deciduous woodland present at this glen has a moderately botanically diverse ground flora with a good structure for breeding birds and invertebrates. The UKBAP priority habitats upland oakwood and upland mixed ashwood are present.

River Leven Corridor, site size 59 ha and c. 12km in length, grid reference NS 39247 79201

Central landscape feature of the Vale of Leven channelling and supporting wildlife throughout the urban areas, and linking with the marginal upland habitats around. The River is a UKBAP priority habitat and presumed important for invertebrates.

Stonemollan Road Wood, site size 10 ha, grid reference NS 38000 81500

A broadleaved woodland with the UKBAP priority habitat upland oakwood with some old oaks. Within this woodland there has been planting of Beech which has now matured and naturalising as well as been invaded by Sycamore. Shading by Beech has reduced botanical diversity, but there is a moderately good structure for woodland breeding birds and invertebrates.

Stonemollan Muir, Balloch, site size c. 100 ha, grid reference NS 36877 81770

A large site with open moorland to the west of Stonemollan Road Wood. Valleys flow down the slopes of Stonemollan Muir, some of which have scrub and trees.

Site of Special Scientific Interest

Blairbeich Bog, SNH site code 225, size 19.12 ha, grid reference NS 435835

Blairbeich Bog is located two miles to the south of the village of Gartocharn, within the Loch Lomond and The Trossachs National Park. It is a remnant of the extensive lowland raised mire system which formerly covered large areas of central Scotland. This mire system was the most extensive of its type in Great Britain and has now been reduced to isolated remnants. Habitats of this type are nationally rare and declining.

Notified Natural Features:

Biological: Bog: raised bog

Boturich Woodlands, SNH site code 248, size 30.68 ha, grid reference NS 386853

Boturich Woodlands is an ancient woodland that is located on the southern shore of Loch Lomond, approximately two miles north of Balloch. It has remained relatively undisturbed and is notable for its rich shrub layer and excellent woodland structure. It is one of the best examples of wet woodland and upland mixed ash woodland in west Dunbartonshire.

Notified Natural Features:

Biological: Woodlands: wet woodland, upland mixed ash woodland.

Caldarvan Loch, SNH site code 292, size 23.29 ha, grid reference NS 423837

Caldarvan Loch SSSI is located 3.3 km to the east of Loch Lomond and Balloch. It is the best example of a eutrophic loch in West Dunbartonshire.

Notified Natural Features:

Biological: Freshwater habitats: eutrophic loch

Endrick Mouth and Islands, SNH site code 610, size 471.13 ha, grid reference: Creinch NS 394887, Torrinch NS 401893, Inchcailloch NS 409902, Clairinsh NS 413899, Aber Isle NS 419888, Endrick Mouth NS 440885; site is shared with Stirlingshire

The Endrick Mouth and Islands SSSI is located at the south-eastern corner of Loch Lomond. The seven compartments that make up the site include the mainland on both north and south of the Endrick Water and the following five islands; Aber Isle, Clairinsh, Inchcailloch, Torrinch and Creinch. The natural features of the site include river geomorphology and the habitats of upland oak woodlands, flood-plain fen, hydromorphological mire range and open water.

Notified Natural Features:

Geological : Geomorphology: fluvial geomorphology of Scotland

Biological : Woodland: upland oak woodland

Fens: hydromorphological mire range

Birds: breeding bird assemblage

Birds: non-breeding: Greenland white-fronted goose (*Anser albifrons flavirostris*), Greylag goose (*Anser anser*).

Vascular plants: vascular plant assemblage

Non-vascular plants: bryophyte assemblage

Invertebrates: beetle assemblage

Endrick Water, SNH site code 1693, size 219.19 ha, grid reference NS 661862 to NS 447884; site is shared with Stirlingshire

The Endrick Water SSSI originates 4 km east of Fintry in the Gargunnoch Hills. From here the SSSI extends west for 36 km to meet the Endrick Mouth and Islands SSSI around 1.5 km east of Loch Lomond. The lower reaches of the Endrick Water provide an exceptional example of the fluvial geomorphology of Scotland. The river is the largest flowing into Loch Lomond and it is both nationally and internationally-important for its population of lamprey.

Notified Natural Features:

Geological : Geomorphology: fluvial geomorphology of Scotland

Biological : Freshwater and estuarine fish: Brook lamprey (*Lampetra planeri*), River lamprey (*Lampetra fluviatilis*)

Vascular plants: Scottish dock (*Rumex aquaticus*)

Sites with Open Mosaic Habitat on Previously Developed Land

Lennox Foundry, Lennox Street, Alexandria, SVDL site code 8410332, grid reference NS 39184 80599

This site of derelict land with buildings is 2.19 ha in size and is owned by the local authority.

Although there are areas of late successional vegetation there is also scrub, bare ground and grassland within the site.

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