

4. Developing with Biodiversity

Mitigate

4.25 Mitigation of negative impacts should be achieved by good quality design informed at the earliest possible stage by sound ecological data and assessment of environmental impacts. The objective of minimising negative impacts should inform the whole design and construction process, from choosing a site to post-construction maintenance. Mitigation measures need to respond to the sensitivities of a specific site. However, measures to consider include:

Minimise Disturbance & Damage

- Minimise disturbance to species (particularly legally protected species and UKBAP, Scottish List and LBAP species) by avoiding key areas where they are present. It may be necessary to erect barriers between the main development site and the areas occupied or used by the species in question to ensure no direct disturbance. In the case of legally protected species more stringent safeguards may be required; disturbing activity is likely to require a license and advice should be sought from NatureScot;
- Translocation cannot be viewed as mitigation for the loss of irreplaceable habitats such as ancient woodland;
- Areas of habitat to be retained should be fenced off prior to and throughout construction work to avoid any direct damage;
- Impacts from pollution (dust, noise, light, polluted runoff, etc.) should be minimised through careful design and the implementation of suitable pollution prevention measures during construction;
- Construction activity should, as far as possible, be scheduled to avoid sensitive times of year (e.g. the bird breeding season);
- The use of bright lighting on site during the hours of darkness should be minimised, due to its potential to disturb bats and other night foraging creatures;

- Unavoidable flood defence work or alteration of watercourses should be undertaken sensitively, creating stepped banks to provide varied habitats. Culverting should be avoided;
- Provision of nest boxes and bat boxes or bat/swift 'bricks' can help to mitigate against loss of nesting/roost sites;
- Soil disturbance and compaction should be minimised. Careful soil management is particularly important when working with peat soils;
- Where valuable habitat has to be removed, careful storage and re-use of the topsoil on site can preserve the seedbank and allow similar species to re-establish. This may also reduce disposal costs;
- It may be necessary to implement a biosecurity plan detailing measures to be taken to prevent the spread of invasive non-native species (e.g. exclusion zones around invasive plants, washing of plant and equipment);
- It may be necessary to detail mitigation measures, along with any other good construction practice to be adopted, in a Construction Environmental Management Plan (CEMP).

Create Stepping Stones, Wildlife Corridors and Habitat Networks

- Development can often fragment habitats within or around a site. These fragmented habitats may become too small and isolated to support healthy wildlife populations or to withstand pressures such as damage from recreational use. This fragmentation and isolation should be mitigated by:
 - Retention of buffer zones around fragments of habitat;
 - Creation of habitat 'stepping stones' (close enough together to allow species to travel from one area of habitat to the next);
 - Creation of wildlife corridors to link habitat fragments.

Ideally stepping stones should be large areas of high quality habitat but even individual trees, groups of trees, patches of grassland, green roofs, or long-grass verges will help.

A wildlife corridor is a linear feature which species can move easily and safely along to travel between larger areas of habitat (e.g. hedgerows, watercourses, long-grass verges, planting strips, tree lines or shelterbelts).

Training and Supervision

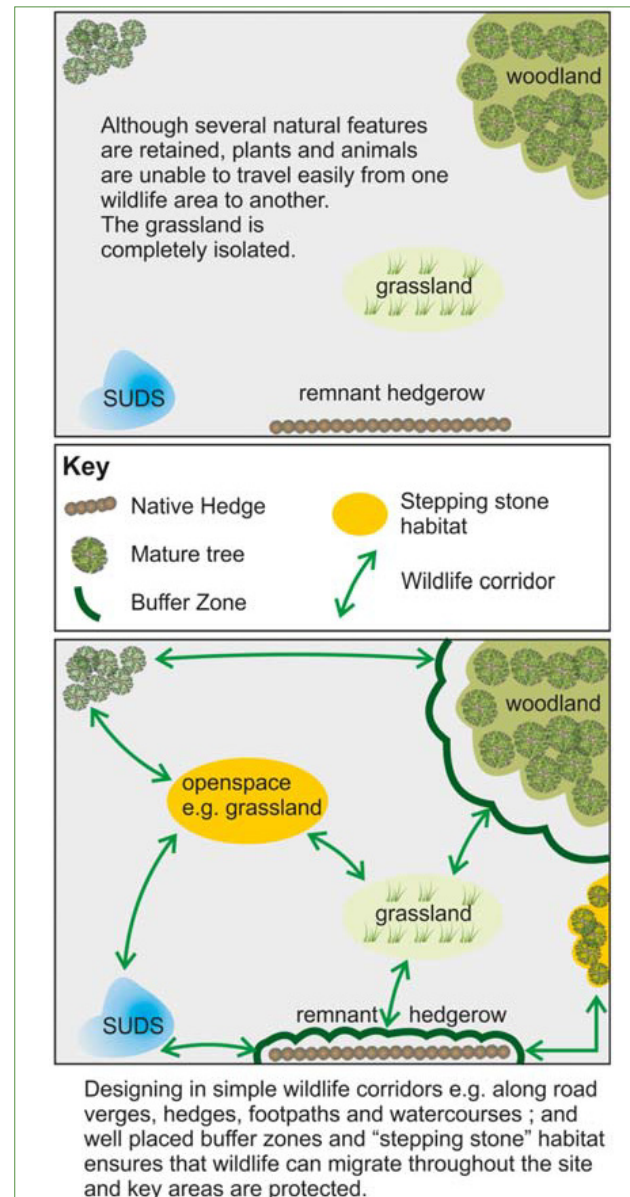
- All site personnel should be briefed by an ecologist on the biodiversity issues on site and the measures in place to safeguard important habitats and species. This will reduce the potential for accidental disturbance or damage;
- For more sensitive sites (e.g. those with legally protected species) an Ecological Clerk of Works should be appointed to ensure that the necessary mitigation is carried out.

4. Developing with Biodiversity

Example 5

4.26 Wildlife Corridors, Buffers and Stepping Stones

A development without wildlife corridors, buffers or 'stepping stones'.



A development with wildlife corridors, buffers or 'stepping stones'.

4. Developing with Biodiversity

Compensate

4.27 Where negative impacts on biodiversity cannot be adequately mitigated, compensation will be required. Where possible compensation should be provided onsite. However, offsite options might be considered where the development site does not offer adequate scope for onsite compensation. The loss of some habitats, e.g. ancient woodland, cannot be adequately compensated for. Compensation options to consider include:

Habitat Creation

- New habitat may be created to compensate for habitat that is lost or reduced in value. Where compensatory habitat is provided it must be of an equal or greater size, and to a similar, if not better, quality. Ideally this should be provided within the development site. However, if this is impossible, it may take place outwith but near the site with suitable wildlife corridors/stepping stones linking the compensation area to any remaining habitat within the development site. In certain circumstances habitat creation within or near to a site is not feasible. In such cases a contribution to biodiversity conservation or habitat creation in the wider area may be considered instead;
- Where key species are to be displaced into a newly created habitat, this should be done well in advance of disturbance to the existing habitat. Newly created habitat will take time to establish. Translocation is generally difficult and should only be attempted as a last resort.

Habitat Enhancement

- Enhancement of a nearby area of habitat rather than creation of new habitat may also be an option for compensation. This is likely to require enhancement of a larger area than that lost. This option will not be acceptable in cases where it is critical that the overall area of habitat in the locality is not reduced.

Biodiversity Features

- Provision of features such as bird boxes, bat boxes and bat 'bricks' (of an appropriate design and in the right location) may help to compensate for habitat loss.

Contributions towards Local Biodiversity Conservation

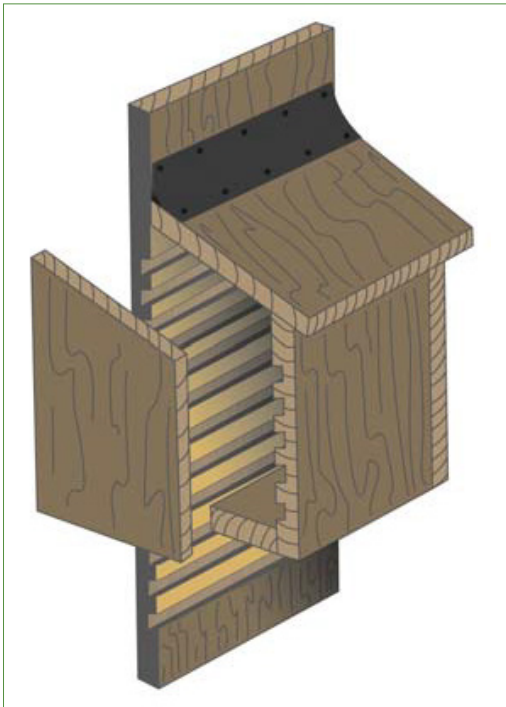
- In certain circumstances compensation may take the form of a sum of money to assist with enhancement and management of nearby sites of ecological importance. This may be particularly important where development will lead to increased pressure on these sites;
- Compensation may take the form of a sum of money to assist with biodiversity conservation within the local Falkirk Council area. The Local Biodiversity Action Plan may be used to help identify the priorities for local conservation action.

Note : in some instances the negative impacts of a proposed development on biodiversity will be unacceptable and in such cases planning permission will not be granted for the development regardless of the compensation offered.

4. Developing with Biodiversity

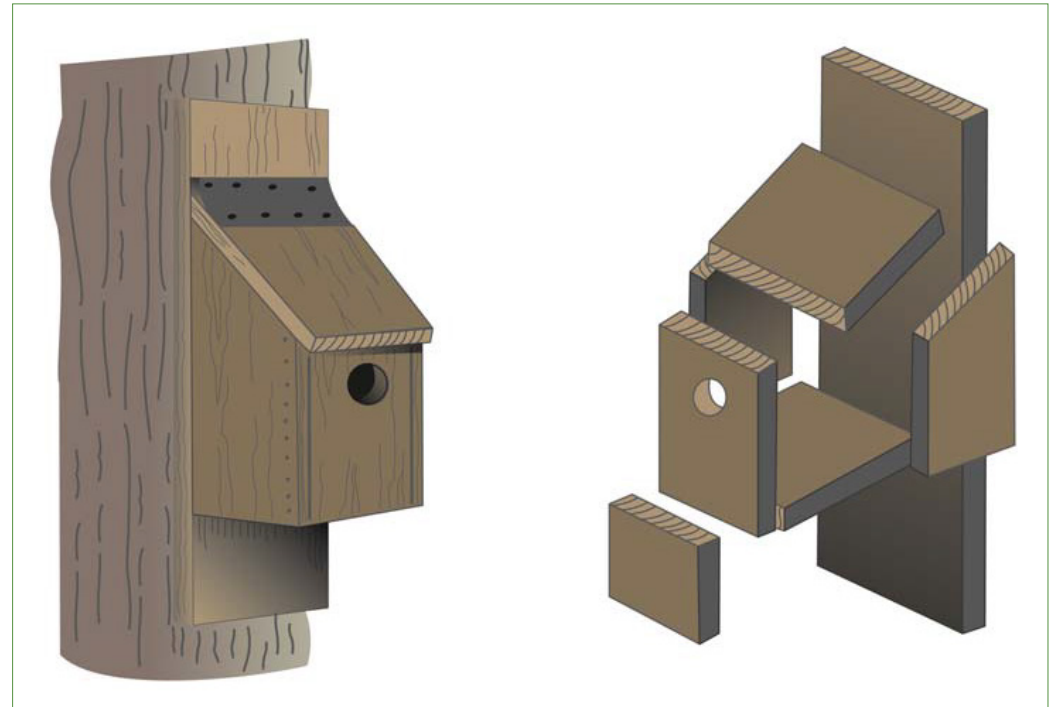
Example 6

4.28 Provision of suitably designed bird or bat boxes may help to compensate for loss of other potential nesting/roosting (e.g. areas of trees or scrub)



Bat Box

Two designs are shown here but advice should be sought on the most appropriate design for a specific location.



Bird Box

4. Developing with Biodiversity

Manage/Maintain

4.29 Where ecological features are retained or created appropriate ongoing management and maintenance must be put in place. The size and nature of the development and the ecological features on site will determine the scale of management provision required. In some cases providing for future management will require implementation of specific management regimes; in others it will simply require a suitable initial design.

Some developments will require a Biodiversity Management Plan for all or part of the site to ensure appropriate ongoing management of the features of importance for biodiversity.

Ongoing monitoring is important to ensure that the required protection or enhancement of biodiversity is taking place successfully and check whether additional protection measures are required to meet legislative requirements or planning conditions. Periodic monitoring may be a condition of planning consent.

Management plans should cover at least the 10 years following completion of a development and ideally plan for longer term management and maintenance.

It is worth noting that natural areas are often less expensive to maintain than more intensively managed areas. Options for leaving areas of grass uncut, reducing or eliminating the need for pesticide use, and reducing the use of horticultural varieties that may require regular pruning should be considered.

A Biodiversity Management Plan is likely to include the following areas of action:

- Ensuring new habitats or plants have established successfully;
- Management of retained or created habitat (e.g. annual cutting of meadows);
- Periodic maintenance of features such as bird or bat boxes;
- Control of invasive non-native species (if necessary);
- Provision and maintenance of access and interpretation (where appropriate).

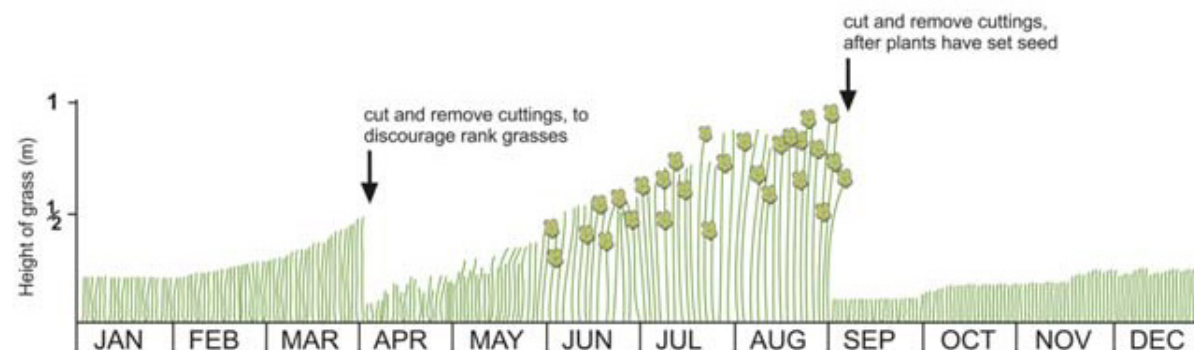
Example 7 : Management of Grassland Areas for Biodiversity

4.30 Management of Grassland Areas for Biodiversity

Areas of long grass can be of considerable benefit to biodiversity. Long grass could, for example, be retained on verges, as swathes within areas of short grass, or as larger meadow areas.

Ideally areas of long grass should be cut periodically to prevent rank grass swamping wildflower species. The grass cuttings must be removed to prevent the build up of nutrients in the soil.

The timing of cutting is important. Below is a guide to cutting times, although the species present will dictate ideal cutting times for a site.



5. Biodiversity Checklists

Biodiversity Checklists

- 5.1 The following checklists offer a quick guide to the main likely biodiversity requirements and opportunities for different development types. The issues listed are not exhaustive and other considerations may arise following discussion with relevant Council officers and other organisations.

Checklists are provided for each of the following development types:

Householder/Minor Proposals:

- Householder proposals - alterations, extensions etc.;
- Listed building consents;
- Change of use;
- Developments of less than 10 houses and less than 0.5ha.

Significant New Developments:

- Developments of 10 or more houses or over 0.5 ha;
- Other major built development (over approx. 1000 sq m floorspace or 1 ha).

Mineral Workings & Landfill Sites

Wind Turbines and Wind Farms

Road & Rail Facilities

The above development types are indicative only, to give a guide to the most appropriate checklist to use. If in doubt early discussion with Council Officers is recommended.

5. Biodiversity Checklists

Biodiversity Checklist - Householder or Minor Proposals

5.2 Undertake an initial site audit to help identify whether there are any issues that require further investigation (see Appendix 1).

Further investigation is only likely to be required if the proposal involves the following:		If So:		Then
Roofing/Roofing Works (on an existing roof)	→	Check for the presence of bat roosts and breeding bird sites.	→	If present do not disturb bats, bat roosts (even if not in use) or nesting birds. Refer to Nature Scot standing advice and guidance or consult Falkirk Council.
Demolition	→	Check for the presence of bat roosts and breeding bird sites.	→	If present do not disturb bats, bat roosts (even if not in use) or nesting birds. Refer to Nature Scot standing advice and guidance or consult Falkirk Council.
A Barn Conversion	→	Check for the presence of barn owls, other breeding birds and bat roosts.	→	If Barn Owls are present consult Falkirk Council to determine appropriate mitigation (e.g. provision of nest boxes). Do not disturb bats, bat roosts (even if not in use) or nesting birds. Refer to Nature Scot standing advice and guidance or consult Falkirk Council.
Impact on a Designated Site (see Appendix 5)	→	Check status of the site and the likely impact of the development.	→	Consult Council Officers to determine whether development might be considered. There is a presumption against development which adversely affects designated sites. Identify suitable protection, enhancement, mitigation & compensation.
Damage to or loss of key habitat features such as:		Check for the presence of barn owls, other breeding birds and bat roosts.		
Watercourses	→	Survey for water voles & otters. Fish and invertebrate surveys may be needed.	→	If legally protected species or habitats are found Refer to Nature Scot standing advice and guidance or consult Falkirk Council. Do not disturb nesting birds. Aim to retain and protect ecological features as far as possible. Mitigate to minimise impacts on species and habitats. If loss of habitat is unavoidable, replacement habitat should be provided (e.g. bird or bat boxes, tree planting, wetland creation etc.)
Ponds	→	Survey for great crested newts (if the habitat is suitable).		
Trees/Woodland	→	Check for bats, nesting birds and badgers.		
LBAP Priority Habitats (see Appendix 4)	→	Assess impact of development on the feature		
LBAP Priority Species (see Appendix 4)	→	Assess impact of development on priority species.		
Invasive Non-Native Species	→	Check for invasive non-native species.	→	Prevent the spread of invasive non-native species.

Additional enhancement to benefit biodiversity is encouraged. The level and type of biodiversity enhancements expected will be proportionate to the scale and environmental impact of the proposed development.

Where areas of ecological importance are being retained or created appropriate management should be put in place.

5. Biodiversity Checklists

Biodiversity Checklist - Significant New Development

5.3 A suitably qualified ecologist should undertake an initial site audit (see Appendix 1) to help identify areas/issues that require further investigation. Early discussions with Falkirk Council are vital to agree biodiversity issues and opportunities and to identify further data needs.

Feature Present		If So:		Then
Suitable Habitat for Legally Protected Species or Legally Protected Habitats	→	Survey to determine the presence/absence and status of protected species and habitats. Prevent damage or disturbance. Refer to Nature Scot standing advice and guidance or consult Falkirk Council.	→	If the species/habitats present do not preclude all development, assess impacts on species/habitat and design to meet legislative requirements and enhance associated habitats. A license may be required for work impacting on a legally protected species or habitat.
Designated Sites	→	Identify designated sites on or near the development site. Assess the likely impact of the development on each designated site. Note, a site may be affected even if outwith the development area.	→	Consult the council (or Nature Scot standing advice and guidance for statutory designations) to determine whether development may be considered. There is a presumption against development that will adversely impact on a designated site. Identify suitable protection, enhancement, mitigation and compensation. An Appropriate Assessment will be required for developments likely to affect qualifying features of an SPA or SAC.
Buildings	→	Check for the presence of barn owls, other breeding birds and bat roosts.	→	If Barn Owls are present consult Falkirk Council to determine appropriate mitigation (e.g. provision of nest boxes). Do not disturb bats, bat roosts (even if not in use) or nesting birds. Refer to Nature Scot standing advice and guidance or consult Falkirk Council.
Habitat suitable for LBAP species, LBAP habitats or other ecologically valuable features	→	Survey to determine status of habitat or species. Assess impact of development and identify mitigation.	→	Protect LBAP species and habitats wherever possible. Retain ecological features of value where possible. Mitigate to minimise impacts on species and habitats. If loss of habitat is unavoidable, replacement habitat should be provided.
Wildlife Corridors, Stepping Stones or Habitat Networks	→	Assess impact of development in terms of habitat fragmentation and the loss of wildlife corridors/stepping stones. Assess potential to improve habitat connectivity/networks.	→	Protect wildlife corridors, stepping stones and habitat networks wherever possible. Provide buffer zones around key habitat. Design layouts should identify wildlife corridors and stepping stones. Take opportunities to reinforce and augment existing habitat networks.
Invasive Non-Native Species	→	Survey for invasive non-native species.	→	Prevent spread of invasive non-native species. Produce a biosecurity plan if necessary.

Additional enhancement to benefit biodiversity is encouraged. The level and type of biodiversity enhancements expected will be proportionate to the scale and environmental impact of the proposed development.

Where areas of ecological importance are being retained or created appropriate management should be put in place.

REMEMBER !

Biodiversity Objectives

Protect
Enhance
Mitigate
Compensate
Manage

Biodiversity Steps

1. Consultation & Scoping
2. Survey & Assessment
3. Design to meet Biodiversity Objectives
4. Onsite Implementation
5. Management

5. Biodiversity Checklists

Biodiversity Checklist - Mineral Workings and Landfill Sites

- 5.4 A suitably qualified ecologist should undertake an initial site audit (see Appendix 1) to help identify whether the site is appropriate for the proposed development and any areas/issues that require further investigation. Early discussions with Falkirk Council are vital to agree biodiversity issues and opportunities and to identify further data needs.

Feature Present		If So:		Then
Suitable Habitat for Legally Protected Species or Legally Protected Habitats	→	Survey to determine the presence/absence and status of protected species and habitats. Prevent damage or disturbance. Refer to Nature Scot standing advice and guidance or consult Falkirk Council.	→	If the species/habitats present do not preclude all development, assess impacts on species/habitat and ensure legislative requirements are met. A license may be required for work impacting on a legally protected species or habitat. Restoration plans should aim to reinstate habitats associated with protected species.
Designated Sites	→	Identify designated sites on or near the development site. Assess the likely impact of the development on each designated site. Note, a site may be affected even if outwith the development area.	→	Consult the council (or https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents for statutory designations) to determine whether development may be considered. There is a presumption against development that will adversely impact on a designated site. Identify suitable protection, enhancement, mitigation and compensation. An Appropriate Assessment will be required for developments likely to affect qualifying features of an SPA or SAC.
Peat	→	Identify peat deposits and survey to establish the condition of the peat habitat.	→	Consult the Council and SEPA to determine whether potential impacts on peat would be acceptable.
Habitat suitable for LBAP species, LBAP habitats or other ecologically valuable features	→	Survey to determine status of habitat or species. Assess impact of development and identify mitigation.	→	Protect LBAP species and habitats wherever possible. Retain ecological features of value where possible. Mitigate to minimise impacts on species and habitats. If loss of habitat is unavoidable, it may be necessary to provide replacement habitat nearby. Reinstate and enhance habitat during restoration.
Wildlife Corridors, Stepping Stones or Habitat Networks	→	Assess impact of development in terms of habitat fragmentation and the loss of wildlife corridors/stepping stones. Assess potential to improve habitat connectivity/networks.	→	Where possible provide alternative corridors, stepping stones and habitat networks to allow species safe movement around/across the site while operational. Restoration plans should aim to reinstate and improve wildlife corridors, stepping stones and habitat networks.
Invasive Non-Native Species	→	Survey for invasive non-native species.	→	Prevent spread of invasive non-native species. Produce a biosecurity plan if necessary.

REMEMBER !

Biodiversity Objectives

Protect
Enhance
Mitigate
Compensate
Manage

Biodiversity Steps

1. Consultation & Scoping
2. Survey & Assessment
3. Design to meet Biodiversity Objectives
4. Onsite Implementation
5. Management

5. Biodiversity Checklists

Biodiversity Checklist - Wind Turbines and Windfarms

5.5 A suitably qualified ecologist should undertake an initial site audit (see Appendix 1) to help identify whether the site is appropriate for the proposed development and any areas/issues that require further investigation. Early discussions with Falkirk Council are vital to agree biodiversity issues and opportunities and to identify further data needs.

Feature Present		If So:		Then
Suitable Habitat for Legally Protected Species or Legally Protected Habitats	→	Survey to determine the presence/absence and status of protected species and habitats. Prevent damage or disturbance. Refer to Nature Scot standing advice and guidance or consult Falkirk Council.	→	If the species/habitats present do not preclude all development, assess impacts on species/habitat and ensure legislative requirements are met. A license may be required for work impacting on a legally protected species or habitat.
Designated Sites	→	Identify designated sites on or near the development site. Assess the likely impact of the development on each designated site. Note, a site may be affected even if outwith the development area.	→	Consult the council (or https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents for statutory designations) to determine whether development may be considered. There is a presumption against development that will adversely impact on a designated site. Identify suitable protection, enhancement, mitigation and compensation. An Appropriate Assessment will be required for developments likely to affect qualifying features of an SPA or SAC.
Birds (see Appendix 6)	→	Follow national guidance on bird surveys for wind turbine applications.	→	Assess impacts on birds and consider protection, mitigation and compensation. Consult https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents re. protected species.
Bean Geese (see Appendix 6)	→	Seek advice regarding required surveys.	→	Consult https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents . An Appropriate Assessment may be necessary.
Bats	→	Undertake bat roost and activity surveys.	→	If present refer to Nature Scot standing advice and guidance or consult Falkirk Council. Consider protection, mitigation & compensation.
Habitat suitable for LBAP species, LBAP habitats or other ecologically valuable features	→	Survey to determine status of habitat or species. Assess impact of development (construction & implementation phases).	→	Protect LBAP species and habitats wherever possible. Retain ecological features of value where possible. Mitigate to minimise impacts on species and habitats. If loss of habitat is unavoidable, replacement habitat should be provided. Reinstate and enhance habitat post construction.
Wildlife Corridors, Stepping Stones or Habitat Networks	→	Assess impact of development in terms of habitat fragmentation and the loss of wildlife corridors/stepping stones. Assess potential to improve habitat connectivity/networks.	→	Protect wildlife corridors, stepping stones and habitat networks wherever possible. Provide buffer zones around key habitat. Design layouts should identify wildlife corridors and stepping stones. Take opportunities to reinforce and augment existing habitat networks.
Invasive Non-Native Species	→	Survey for invasive non-native species.	→	Prevent spread of invasive non-native species. A biosecurity plan may be necessary.

5. Biodiversity Checklists

Biodiversity Checklist - Road and Rail Developments

5.6 A suitably qualified ecologist should undertake an initial site audit (see Appendix 1) to help identify whether the site is appropriate for the proposed development and any areas/issues that require further investigation. Early discussions with Falkirk Council are vital to agree biodiversity issues and opportunities and to identify further data needs.

Feature Present		If So:		Then
Suitable Habitat for Legally Protected Species or Legally Protected Habitats	→	Survey to determine the presence/absence and status of protected species and habitats. Prevent damage or disturbance. Refer to Nature Scot standing advice and guidance or consult Falkirk Council.	→	If the species/habitats present do not preclude all development, assess impacts on species/habitat and ensure legislative requirements are met. A license may be required for work impacting on a legally protected species or habitat.
Designated Sites	→	Identify designated sites on or near the development site. Assess the likely impact of the development on each designated site. Note, a site may be affected even if outwith the development area.	→	Consult the council ((or https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents for statutory designations) to determine whether development may be considered. There is a presumption against development that will adversely impact on a designated site. Identify suitable protection, enhancement, mitigation and compensation. An Appropriate Assessment will be required for developments likely to affect qualifying features of an SPA or SAC.
Buildings, Bridges and Tunnels	→	Check for bat roosts, breeding birds, and signs of other protected species (e.g. otter, water vole, badger) using paths through tunnels or under bridges.	→	Do not disturb protected species or their roosts/resting places. Refer to Nature Scot standing advice and guidance or consult Falkirk Council. Avoid and mitigate against impacts on species (e.g. provide runways under bridges where the banks are to be disturbed).
Habitat suitable for LBAP species, LBAP habitats or other ecologically valuable features	→	Survey to determine status of habitat or species. Assess impact of development and identify mitigation.	→	Protect LBAP species and habitats wherever possible. Retain ecological features of value where possible. Mitigate to minimise impacts on species and habitats. If loss of habitat is unavoidable, it may be necessary to provide replacement habitat nearby.
Wildlife Corridors, Stepping Stones or Habitat Networks	→	Assess impact of development in terms of habitat fragmentation and the loss of wildlife corridors/stepping stones. Assess potential to improve habitat connectivity/networks.	→	Minimise loss of wildlife corridors. Where development cuts across a wildlife corridor consider the need for an underpass/animal tunnel and/or warning signs to provide wildlife crossing points. Design the road/rail corridor to maximize its value as a wildlife corridor and reinforce/ augment existing habitat networks.
Invasive Non-Native Species	→	Survey for invasive non-native species.	→	Prevent spread of invasive non-native species. Produce a biosecurity plan if necessary.

REMEMBER !

Biodiversity Objectives

Protect
Enhance
Mitigate
Compensate
Manage

Biodiversity Steps

1. Consultation & Scoping
2. Survey & Assessment
3. Design to meet Biodiversity Objectives
4. Onsite Implementation
5. Management

Appendix 1 - Initial Site Audit

- 6.1 An initial audit of the biodiversity constraints and opportunities at a site should be undertaken at the earliest opportunity. This will give an indication of any additional biodiversity data that will be required as well as highlighting features such as designated sites, ecologically important habitats and species, and habitat networks that should be considered throughout the planning and design process.

Discussion with relevant Council Officers will also help to identify survey needs, constraints and opportunities.

The checklist on the page opposite gives an indication of the features which an initial site audit should consider and the likely next steps.

Protected Species

If legally protected species are identified by surveys refer to the Nature Scot standing advice and guidance or consult Falkirk Council regarding legal constraints, additional data requirements, potential mitigation requirements and licensing arrangements.

The checklist on the page opposite should be used as a guide only. Every site and every development is different. Some areas and developments will require little or no further ecological investigation while others may require significant survey work and ecological assessment. If in doubt about the survey and assessment effort that will be required please seek advice as soon as possible.

Appendix 1 - Initial Site Audit

6.2

	Tick if Yes	If Yes then you may need to:
Does the site include all or part of a statutorily designated site: e.g. SPA, SAC, SSSI?		Consult NatureScot or Falkirk Council for further advice.
Could the development impact on a statutorily designated site outwith the development area?		Consult NatureScot or Falkirk Council for further advice.
Is the site on or near a non-statutory designated site: i.e. a SINC, Wildlife Site or geodiversity site?		Consult Falkirk Council to determine under what circumstances, if any, development might be acceptable and the ecological data required.
Does all or part of the site form a Wildlife Corridor or 'Stepping Stone' or form part of a Habitat Network?		Assess the potential ecological impact of the development on wildlife corridors and habitat networks.
Does the site include any of the following habitats?		
Mature Trees (Individuals or small stands)		Survey for: Bat Roosts, Breeding Birds See Trees and Development SG10 for further advice on trees. Include this feature in an Ecological Impact Assessment. Check the Ancient Tree Inventory where veteran trees are identified on site. SG10 link: https://www.falkirk.gov.uk/services/planning-building/planning-policy/supplementary-guidance/docs/ldp2/SG10%20Trees%20and%20Development.pdf?v=202011041217
Woodland		Survey for: Bat Roosts, Badgers, Breeding Birds, pine marten and LBAP species associated with Woodland Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment. See SG10 Trees and Development for further advice on trees. SG10 link: https://www.falkirk.gov.uk/services/planning-building/planning-policy/supplementary-guidance/docs/ldp2/SG10%20Trees%20and%20Development.pdf?v=202011041217
Hedges		Survey for: Breeding Birds and other LBAP species associated with Hedgerows Determine whether the hedge is native, species-rich. Include this feature in an Ecological Impact Assessment.
Rivers, Streams or Wet Ditches		Survey for: Otters, Water Voles and other LBAP species associated with Watercourses Determine the presence of protected fish such as salmon or eels. Undertake a phase II habitat survey. Include this feature in an Ecological Impact Assessment.
Ponds, Pools or Lochs		Survey for: Great Crested Newts, Water Vole, and other LBAP species associated with this Habitat Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment.
Wetland or Bog		Survey for: LBAP species associated with Wetlands or Bogs Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment. Assess impacts on peat soils (if present).
Long/Rough Grassland (Unimproved, semi-improved, or species-rich)		Survey for: LBAP species associated with Grassland Check for: Breeding Birds Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment.
Bings/Spoil Tips/Rock Faces		Assess the potential ecological value of the site (this can vary greatly for this type of habitat). Survey for: Helleborine Orchids (on suitable bings) and other LBAP species associated with the Habitat Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment.
Brownfield Habitat (Open mosaic habitat on previously developed land)		Assess the potential ecological value of the site (this can vary greatly across brownfield sites). For sites of potential high ecological value: Survey for: Invertebrates Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment.
Heath (Heather)		Survey for: LBAP species associated with Heather/Heath Check for: Breeding Birds Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment. Assess impacts on peat soils (if present).
Buildings/Barns		Survey for: Bat Roosts, Barn Owls, other Nesting Birds and other LBAP species associated with Buildings. Include these species in an Ecological Impact Assessment.
Scrub		Survey for: LBAP species associated with Scrub, Breeding birds Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment.
Coastal Sand, Mudflat, Lagoons or Saltmarsh		Survey for: LBAP species associated with the Habitat Undertake a Phase II Habitat Survey. Include this feature in an Ecological Impact Assessment.
Invasive Non-Native Species		Survey for: The presence and extent of Invasive Non-Native Species.

Appendix 2 - Legally Protected Species and Habitats

6.3

European Protected Species likely to occur within the Falkirk Area	Habitat most likely to be found in
Bats	Roosts: Buildings, Tunnels, Bridges, Trees
Great Crested Newts	Ponds/pools and terrestrial habitat within 1km of breeding ponds (grassland, woodland, rubble piles etc)
Otter	Rivers and larger streams

Other Legally Protected Species likely to occur within the Falkirk Area	Habitat likely to be found in
Adder	Heath or Bog
Atlantic Salmon	Rivers
Badger	Woodland and Scrub but forages across Grassland and other Habitats
Barn Owl	Nests: Barns and similar structures. Feeds: Over open Grassland and Farmland
Common Tern	Mudflats, Saltmarsh, Openwater
Kingfisher	Rivers and Larger Streams
Red Squirrel	Woodland/Parkland (Particularly Conifer Woodland)
Short-Eared Owl	Estuary, Saltmarsh, Heath, Bog, Fen
Slow Worm	Heath, Grassland, Scrub
Water Vole	Streams and Lochs (and very occasionally in Wet Grasslands)

Habitats which may be protected by designation as an SAC and which occur in the Falkirk Area
Active Blanket Bog
Raised Bog
Estuaries
Saline Lagoons
Inter-Tidal Mudflats

Appendix 3 - Invasive Non-Native Species and Pathogens

6.4

Invasive non-native species known or likely to occur in the Falkirk Area (as at 2013)	Habitat in which they usually occur
Bullhead	Rivers and Canals (present in Union Canal)
Canadian Pondweed	Ponds, Pools, Lochs
Chalara fraxinea (Ash dieback fungus)	Ash Trees
Giant Hogweed	Wasteground, Roadsides, Pasture, often by Lowland Watercourses
Himalayan Balsam	Damp, semi-shaded places. Often by Watercourses
Japanese Knotweed	Most terrestrial Habitats, especially Urban areas, Waste ground, Riverbanks
Minnow	Streams and Pools/Ponds
New Zealand Flatworm	Shady Wooded areas and Gardens
New Zealand Pygmyweed	Ponds/Pools
North American Mink	Widespread but focused around Aquatic Habitats
North American Skunk Cabbage	Wetlands and beside Watercourses
Parrot's Feather	Standing Water, Wetlands and slow moving Watercourses
Rainbow Trout	Rivers and Lochs/Pools
Rhododendron Ponticum	Woodland, Heath, Parkland and Gardens
Ruffe	Rivers and Canals
Sea Buckthorn	Coastal Areas and landscaping schemes
Water Fern	Standing Water and slow flowing Watercourses
Zebra Mussel	Freshwater: Slow Rivers, Canals, Lochs

Note : Other invasive non-native species and pathogens are likely to spread into this area over time. Therefore up to date advice should be sought when considering biosecurity issues.

Appendix 4 - Local Biodiversity Action Plan (LBAP) Habitats and Species

6.5 The local biodiversity action plan (LBAP) process has identified a list of priority habitats and species which are of particular national and/or local ecological value and a priority for conservation action locally. This local list includes most species and habitats which are identified as national priorities on the UKBAP list or as priorities for action on the Scottish Biodiversity list and which occur in the Falkirk area.

The full list of UKBAP priority species and Scottish Biodiversity List species is available at www.jncc.defra.gov.uk and www.biodiversityscotland.gov.uk respectively

LBAP Priority Habitats
Estuary
Mudflats
Saline Lagoons
Saltmarsh
Arable
Boundary Features
Lowland, Dry Acidic Grassland
Neutral Grassland
Heath
Lowland Raised and Intermediate Bog
Canals
Fen, Marsh and Swamp
Rivers and Streams
Standing Open Water
Open Mosaic Habitat on previously Developed Land (including Bings)
Gardens
Urban Greenspace
Urban Wildlife Corridors
Broadleaved and Mixed Woodland
Wood Pasture and Parkland

LBAP Priority Species	
Mammals	
Common Name	Scientific Name
Badger	<i>Meles meles</i>
Brown Hare	<i>Lepus europaeus</i>
Brown Long-eared Bat	<i>Plecotus auritus</i>
European Otter	<i>Lutra lutra</i>
Hedgehog	<i>Erinaceus europaeus</i>
Pine Marten	<i>Martes martes</i>
Soprano Pipistrelle Bat	<i>Pipistrellus pygmaeus</i>
Water Vole	<i>Arvicola terrestris</i>

LBAP Priority Species	
Amphibians, Reptiles and Fish	
Common Name	Scientific Name
Common Frog	<i>Rana temporaria</i>
Common Toad	<i>Bufo bufo</i>
Great Crested Newt	<i>Triturus cristatus</i>
Palmate Newt	<i>Triturus helveticus</i>
Smooth Newt	<i>Triturus vulgaris</i>
Adder	<i>Vipera berus</i>
Common Lizard	<i>Lacerta vivipara</i>
Slow Worm	<i>Anguis fragilis</i>
Atlantic Salmon	<i>Salmo salar</i>
Brook Lamprey	<i>Lampetra planeri</i>
European Eel	<i>Anguilla anguilla</i>
River Lamprey	<i>Lampetra fluviatilis</i>
Sea/Brown Trout	<i>Salmo trutta fario</i>
Sparling (Smelt)	<i>Osmerus eperlanus</i>
Twaite Shad	<i>Alosa fallax</i>

LBAP Priority Species	
Ferns and Lower Plants	
Common Name	Scientific Name
Hay Scented Buckler Fern	<i>Dryopteris aemula</i>
A Liverwort	<i>Plagiochilia spinulosa</i>
Moonwort	<i>Botrychium lunaria</i>
Pillwort	<i>Pilularia globulifera</i>
A Liverwort	<i>Lepidozia pearsonii</i>

LBAP Priority Species	
Invertebrates	
Common Name	Scientific Name
Small Pearl-Bordered Fritillary	<i>Boloria selene</i>
Green Hairstreak Butterfly	<i>Callophrys rubi</i>
Large Heath Butterfly	<i>Coenonympha tullia</i>
A Mud Snail	<i>Omphiscola glabra</i>
Common Blue Butterfly	<i>Polyommatus icarus</i>
Swordgrass Moth	<i>Xylota exsoleta</i>

LBAP Priority Species	
Flowering Plants	
Common Name	Scientific Name
Annual Knawel	<i>Scleranthus annuus</i>
Bennett's Pondweed	<i>Potamogeton x Bennetti</i>
Bluebell	<i>Hyacinthoides non-scripta</i>
Dune Helleborine	<i>Epipactis leptochila dunensis</i>
Field Scabious	<i>Knautia arvensis</i>
Grass of Parnassus	<i>Parnassia palustris</i>
Greater Butterfly Orchid	<i>Platanthera chlorantha</i>
Harebell	<i>GCampanula Rotundifolia</i>
Ivy-Leaved Water Crowfoot	<i>Ranunculus hederaceus</i>
Lesser Butterfly Orchid	<i>Platanthera bifolia</i>
Ox-eye Daisy	<i>Chrysanthemum leucanthemum</i>
Purple Ramping Fumitory	<i>Fumaria purpurea</i>
Ragged Robin	<i>Lychnis flos-cuculi</i>
Round-Leaved Sundew	<i>Drosera rotundifolia</i>
Smooth Cats-Ear	<i>Hypochaeris glabra</i>
Tufted Loosestrife	<i>Naumburgia thyrsiflora</i>
Whorled Caraway	<i>Carum verticillatum</i>
Wych Elm	<i>Ulmus glabra</i>
Young's Helleborine	<i>Epipactis youngiana</i>

Appendix 4 - Local Biodiversity Action Plan (LBAP) Habitats and Species

LBAP Priority Species	
Birds	
Common Name	Scientific Name
Barn Owl	Tyto alba
Bean Goose	Anser fabilis
Black Grouse	Tetrao tetrix
Black-Tailed Godwit	Limosa limosa
Bullfinch	Pyrrhula pyrrhula
Common Tern	Sterna hirundo
Cuckoo	Cuculus canorus
Curlew	Numenius arquata
Dipper	Cinclus cinclus
Dunlin	Calidris alpine
Golden Plover	Pluvialis apricaria
Grasshopper Warbler	Locustella naevia
Great Crested Grebe	Lychnis flos-cuculi
Green Woodpecker	Picus viridis
Grey Partridge	Perdix perdix
Greylag Goose	Anser anser
Hen Harrier	Circus cyaneus
House Sparrow	Passer domesticus
Kestrel	Falco tinnuculus
Kingfisher	Alcedo atthis
Knot	Calidris canutus
Lapwing	Vanellus vanellus
Lesser Redpoll	Carduelis flammea
Linnet	Carduelis cannabina
Merlin	Falco columbarius
Pink-Footed Goose	Anser brachyrhynchus
Pintail	Anas acuta
Red-Breasted Merganser	Mergus serrator
Redshank	Tringa tetanus
Reed Bunting	Emberiza schoeniculus
Sand Martin	Riparia riparia
Sedge Warbler	Acrocephalus schoenobaenus
Shelduck	Tadorna tadorna
Short-Eared Owl	Asio flammeus
Skylark	Alauda arvensis
Snipe	Gallinago gallinago

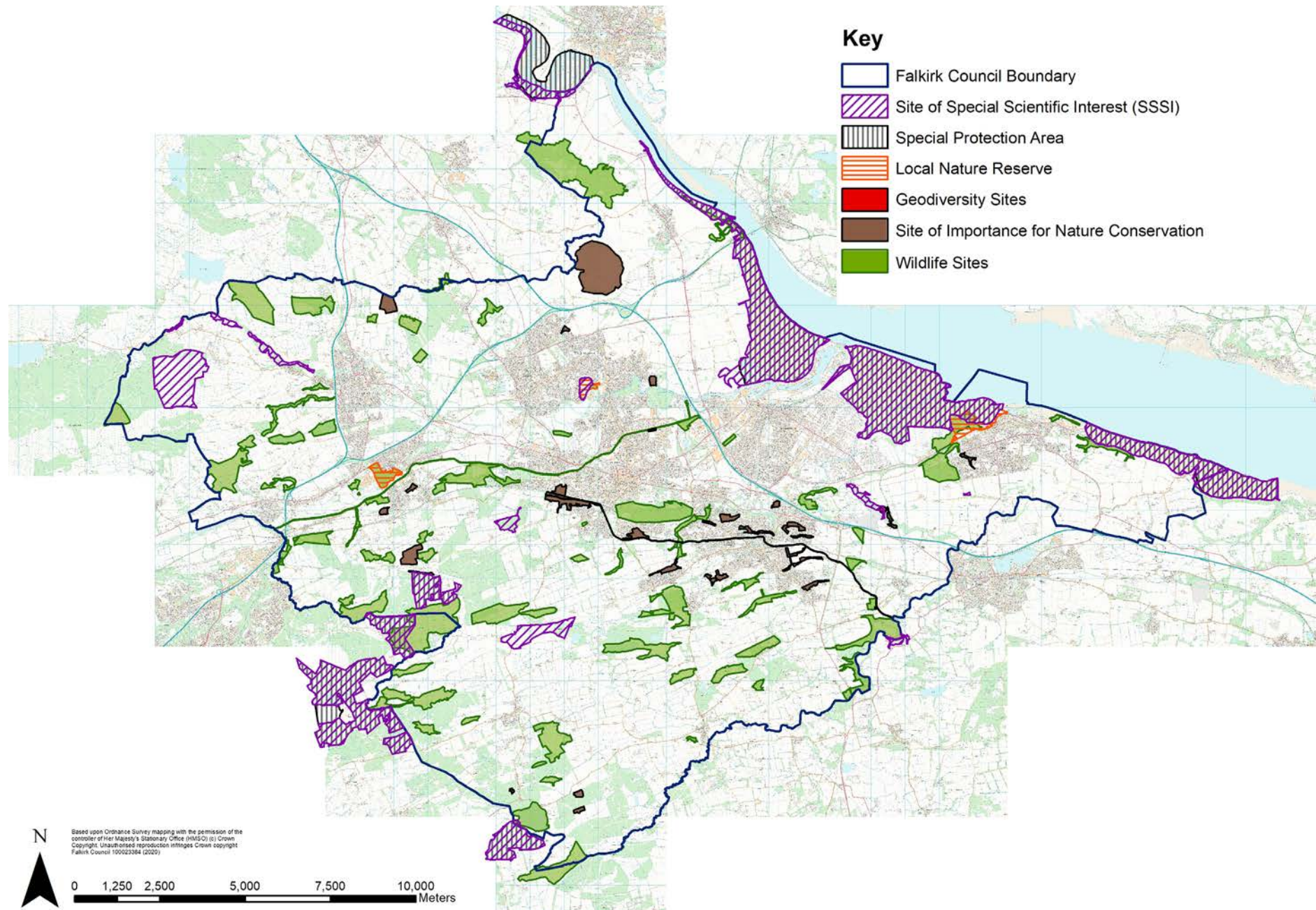
LBAP Priority Species	
Birds	
Common Name	Scientific Name
Song Thrush	Turdus philomelos
Spotted Flycatcher	Muscicapa striata
Starling	Sturnus vulgaris
Swallow	Hirundo rustica
Swift	Apus apus
Teal	Anas cracca
Tree Pipit	Anthus Trivialis
Tree Sparrow	Passer montanus
Twite	Carduelis flavirostris
Water Rail	Rallus aquaticus
Wood Warbler	Phylloscopus sibilatrix
Woodcock	Scolopax rusticola
Yellowhammer	Emberiza citrinella

Note : This list is subject to periodic review.

The most up to date list will be published in the current Falkirk Area Biodiversity Action Plan.

Appendix 5 - Designated Sites Map

6.6



Appendix 6 - Further Information

6.7 The following sources provide further information, often with particular reference to development.

General Guidance	Websites	Publications
Biodiversity & Development	www.biodiversityinplanning.org/ www.nature.scot (NatureScot website)	Biodiversity by Design : A guide for Sustainable Communities, TCPA, 2004 Falkirk Area Biodiversity Action Plan, Falkirk Council
Biodiversity & Development	https://www.iema.net/policy/natural-environment/principles-and-guidance	
Legislation and Designated Sites	Websites	Publications
Legislation & Statutory Protection	www.nature.scot (protected species & protected areas sections)	Planning Permission and Wildlife: What you need to Know, NatureScot, 2011 Scotland's Wildlife: The Law and You, NatureScot, 2009
Locally Designated Sites	www.falkirk.gov.uk	Local Nature Conservation Sites: Biodiversity & Geodiversity SG08, Falkirk Council
Species	Websites	Publications
Bats	www.bats.org.uk - Buildings, Bats and Development section www.nature.scot	Bat Mitigation Guidelines, English Nature, 2004 Bats and Onshore Wind Turbines, Natural England, 2012 Bats and Single Large Wind Turbines: joint agencies interim guidance, Natural England, 2009
Badgers	www.nature.scot www.scottishbadgers.org.uk	Badgers and Development, NatureScot, 2002
Water Voles, Otters and other Aquatic Mammals	www.nature.scot	Wolverine Conservation Handbook 3rd Edition, WildCRU, 2011
Birds	www.nature.scot	Windfarm Impacts on Birds - a series of information notes available at www.nature.scot
Bean Geese	www.sites.google.com/view/scotlands-bean-geese	
Trees	www.woodlandtrust.org.uk	Trees and Development Supplementary Guidance (2nd edition), Falkirk Council, 2014 The Ancient Tree Inventory www.woodlandtrust.org.uk
Invertebrates	www.buglife.org.uk	
Amphibians, Fish & Reptiles (including Great Crested Newts)	www.nature.scot www.froglife.org	The Great Crested Newt Conservation Handbook, Froglife, 2001
Non-Native Invasive Species & Biosecurity	www.nonnativespecies.org www.nature.scot	Invasive Species Management for Infrastructure Managers and the Construction Industry, CIRIA, 2008

Appendix 6 - Further Information

Habitats	Websites	Publications
Woodland	www.forestry.gov.scot	The Woodland Trust's 'Planners' Manual for Ancient Woodland and Veteran Trees': www.woodlandtrust.org.uk/publications/2019/07/planners-manual-for-ancient-woodland-and-veteran-trees-scotland/ Residential Developments and Trees: www.woodlandtrust.org.uk/media/1688/residential-developments-and-trees.pdf Emergency Tree Plan: www.woodlandtrust.org.uk/publications/2020/01/emergency-tree-plan/
Fresh Water	www.sepa.org.uk	Ponds, Pools and Lochans, SEPA, 2000
Hedges/Boundary Features	www.hedgelink.org.uk	
Open Mosaic Habitat on previously developed land (brownfields)	www.buglife.org.uk	Planning for Brownfield Biodiversity: a best practice guide, Buglife, 2009
Soils	www.sepa.org.uk/land/soil.aspx www.nature.scot (soils & development section)	Scottish Soil Framework, Scottish Government, 2009
Green Roofs	www.greenroofguide.co.uk	BUILDING GREENER: Guidance on the use of green roofs, green walls and complementary features on buildings, CIRIA, 2007. Creating Green Roofs for Invertebrates, Buglife
Integrated Habitat Networks	www.nature.scot (Habitat networks and spatial ecology section) http://www.centalscotlandgreennetwork.org/	An Essential Guide to Habitat Networks, NatureScot, 2011
Surveys and Ecological Assessment	Websites	Publications
Survey Times	www.biodiversityinplanning.org/	
Ecological Information and Assessment		BS42020 Biodiversity - Code of Practice for Planning and Development, British Standards Institution, 2013
Wetland Survey and Assessment	www.sniffer.org.uk	A functional wetland typology for Scotland: https://www.sniffer.org.uk/wfd95-a-functional-wetland-typology-for-scotland
Environmental Impact Assessment	www.scotland.gov.uk www.nature.scot	Code of Practice for Planning and Development, British Standards Institution, 2013
Appropriate Assessment	www.nature.scot	Natura Sites and the Habitats Regulations - How to consider proposals affecting SACs and SPAs in Scotland", NatureScot, 2011

Appendix 6 - Further Information

Construction Good Practice	Websites	Habitats
Construction Site Good Practice	www.ciria.org	Working with Wildlife Site Guide, CIRIA, 2005
Landscaping		Scotland's Native Trees and Shrubs: A designer's guide to their selection, procurement & use in road landscape., Scottish Executive
Specific Development Types	Websites	Publications
Road Schemes		Biodiversity Impact: Biodiversity and Environmental Impact Assessment: A good practice guide for road schemes, H. Byron, 2000 Cost Effective Landscape: Learning from Nature. Landscape design and management policy., The Scottish Office, 1998
Mining		Biodiversity and Opencast Coal Mining: A good practice guide, RSPB
Landfill Sites		Wildlife Management & Habitat Creation on Landfill Sites.,Ecoscope, 2000
Wind Turbines/Windfarms	www.nature.scot (Recommended bird survey methods to inform impact assessment of onshore wind farms)	

Appendix 7 - Useful Contacts

Development Management Unit

Development Services
Falkirk Council
Abbotsford House
David's Loan
Falkirk FK2 7YZ
Telephone: 01324 504748
Email: dc@falkirk.gov.uk

Falkirk Area Biodiversity Officer

Development Services
Falkirk Council
Abbotsford House
David's Loan
Falkirk FK2 7YZ
Telephone: 01324 504863
Email: planenv@falkirk.gov.uk

Bean Goose Action Group

c/o NatureScot
<http://sites.google.com/view/scotlands-bean-geese>

Buglife

Balallan House
24 Allan Park
Stirling
FK8 2QG
Tel: 01786 447504
E-mail: scotland@buglife.org.uk
www.buglife.org.uk

Central Scotland Green Network Trust

Hillhouseridge
Shottskirk Road
Shotts
Lanarkshire
ML7 4JS
Tel: 01501 822015
www.csgnt.org.uk/

Falkirk Invasive Species Forum

c/o Falkirk Biodiversity Officer (details as above)

CIRIA

Classic House
174-180 Old Street London
EC1V 9BP
Tel: 020 7549 3300
E-mail: enquiries@ciria.org www.ciria.org

Scottish Forestry

Silvan House
231 Corstorphine Road
Edinburgh
EH12 7AT
Tel: 0131 370 5250
Email: scottish.forestry@forestry.gov.scot

Royal Society for the Protection of Birds (RSPB)

South and West Scotland Regional Office
10 Park Quadrant
Glasgow
G3 6BS
Tel: 0141 331 0993
E-mail: glasgow@rspb.org.uk www.rspb.org.uk

Scottish Environment Protection Agency (SEPA)

Strathallan House
Castle Business Park
Stirling
FK9 4TZ
Tel: 01786 457700
Fax: 01786 446855
www.sepa.org.uk

NatureScot

Forth Region
Silvan House
3rd Floor East
231 Corstorphine Road
Edinburgh
EH12 7AT
Tel: 0131 316 2600
E-mail: ENQUIRIES@Nature.scot
www.nature.scot

Woodland Trust Scotland

Woodland Trust Scotland
South Inch Business Centre
Shore Road,
Perth
PH2 8BW
Tel: 01738 635544
E-mail: scottishcampaigns@woodlandtrust.org.uk

6.9 Appropriate Assessment

Appropriate assessment is required when a plan or project affecting a Natura site is not connected with management of the site for nature conservation, and is likely to have a significant effect on the site (either alone or in combination with other plans or projects). An appropriate assessment considers the potential impacts on the qualifying interests and conservation objectives of the Natura site. It must be based on, and supported by, robust scientific evidence. A competent authority must not authorise a plan or project unless, by means of the appropriate assessment, they can ascertain that it will not adversely affect the integrity of a Natura site.

Biodiversity - the variety of life, including

All plants, animals, habitats and ecosystems.

Brown Roofs

Also known as wildlife roofs, these are green roofs which are specifically designed for wildlife and either replicate the habitat for a single or limited number of species or create a range of habitats to maximise the array of species which may inhabit the roof.

Ecosystem

An ecosystem is a community of living organisms (plants, animals and microbes) in conjunction with the non-living components of their environment (things like air, water and soil), interacting and functioning as a system. Ecosystems often provide us with vital services such as carbon sequestration or flood alleviation.

Ecological Impact Assessment

An assessment of the ecological impacts that may occur as a result of a proposed project, including the likelihood, size and significance of the impact. The assessment usually considers measures that could be put in place to remove or reduce certain of these environmental impacts.

Environmental Impact Assessment

Environmental Impact Assessment (EIA) is a means of drawing together, in a systematic way, an assessment of the likely significant environmental effects arising from a proposed development. Developments falling within a description in Schedule 1 to the 2011 EIA Regulations always require EIA. Development of a type listed in Schedule 2 to the 2011 EIA Regulations will require EIA if it is likely to have a significant effect on the environment, by virtue of factors such as its size, nature or location.

FABAP

The Falkirk Area Biodiversity Action Plan (FABAP) is the LBAP which covers the Falkirk local authority area.

Green Roofs

Green roofs are vegetated layers that sit on top of the conventional waterproofed roof surfaces of a building. Whilst green roofs come in many different forms and types, usually a distinction is made between extensive, intensive and biodiverse or wildlife roofs.

Habitat Network

A habitat network is a network made up of areas of habitat which are either physically connected or functionally connected, so they form a single area in which particular species can move around and survive. Functionally connected habitats, while not physically connected, are located such that species can move from one to the other. A habitat network may consist of just one habitat (e.g. woodland) or may include a whole range of habitats (e.g. grassland, wetland and woodland).

LBAP

The Local Biodiversity Action Plan (LBAP) is a process which identifies local priorities for conservation action and works to focus conservation activity on these priorities.

Scottish Biodiversity List

The Scottish Biodiversity List is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland.

UKBAP

The UK Biodiversity Action Plan sets out biodiversity targets and actions for the UK, aimed at achieving its international obligations to halt biodiversity loss. Many biodiversity actions and targets are now devolved and Scotland's response to the international obligation is detailed in the Scottish Biodiversity Strategy: 2020 Challenge.



