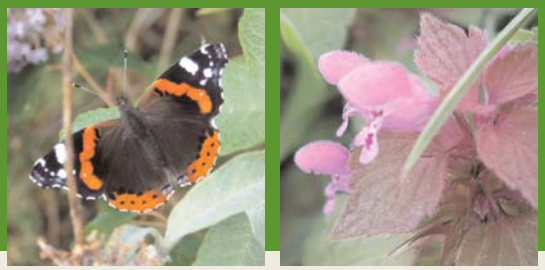
Biodiversity and Development

Supplementary Planning Guidance Note



Falkirk Council
Development Services

Foreword

Welcome to this supplementary planning guidance note on Biodiversity and Development. It is one of a suite of such guides promoting development quality in the built environment and taking forward the Council's commitment to sustainable development as set out in the Development Plan.

Falkirk Council is committed to conserving and enhancing our locally and nationally important biodiversity. Development of all kinds can put pressure on our natural environment. However, development and biodiversity conservation can work together. With good planning and design we can achieve quality developments that protect, maintain and enhance our valuable local biodiversity. This guidance note is intended to assist developers in meeting Falkirk Council's biodiversity objectives.

The Council commends the advice set out in this guide.

February 2007

Content

1.1 What is biodiversity and why conserve it?

Biodiversity simply means all living things. All plants, animals and habitats contribute to the planet's biodiversity (variety of life). Every living thing, whether rare or common, plays a vital part in the whole interconnected web of life.

Biodiversity is at the heart of our aim of a more sustainable future. A healthy and diverse natural environment is vital to our economic, social and spiritual well being, now and in the future.

The last 100 years have seen considerable declines in the numbers and health of many of our wild plants, animals and habitats. Human activity is placing ever-increasing demands on our natural resources. We have a shared responsibility to conserve and enhance our local biodiversity for the good of current and future generations.

The Falkirk Council area is rich in biodiversity, which provides environmental services and makes a direct contribution to the quality of life.

1.2 Biodiversity and development.

Development of all kinds can put pressure on our natural environment both directly and indirectly. However, development and biodiversity conservation can work together. By adhering to relevant legislation, national and local planning policies and guidance, biodiversity action plans and other biodiversity guidance, early on in the planning process, developers can achieve quality developments that meet biodiversity objectives.

1.3 Who is the guidance for/what does the guidance include?

This guidance note is intended to assist developers in making a planning application which will meet the Council's biodiversity objectives (see section 2.3).

It includes an introduction to key legislation, policy and guidance, an outline of the Council's Biodiversity Objectives relating to biodiversity and development, details of how biodiversity conservation should be incorporated into development, and checklists for different development types.

1.4 How strictly will the guidance be applied?

Various species, habitats and sites are given statutory protection and the Council has a duty to uphold this legislation via the planning process. Other nationally and locally important ecological features are highlighted in Council policy and strategies: these features must be fully considered within planning applications, and their protection and enhancement will be expected wherever possible. More general biodiversity enhancement will be encouraged wherever appropriate.

2.1 Development Plan Context

The policies summarised below set out Falkirk Council's agenda for protecting the network of sites and features of ecological importance within the area. The finalised Falkirk Council Local Plan actions the production of this supplementary planning guidance on biodiversity, to guide developers on requirements and best practice. These policies are available in full at www.falkirk.gov.uk.

Falkirk Council Structure Plan 2007

POLICY ENV.3 NATURE CONSERVATION:
The protection and promotion of nature conservation interests will be an important consideration in assessing all development proposals. Accordingly:

1. Any development likely to have a significant effect on a designated or potential European Site under the Habitats or Birds Directives (Special Areas of Conservation and Special Protection Areas) or on a Ramsar or Site of Special Scientific Interest (see Schedule Env.3), must be subject to an appropriate assessment of the implications for the sites conservation objectives. The development will only be permitted where the appropriate assessment demonstrates that:
   a) it will not adversely affect the integrity of the site, or;
   b) there are no alternative solutions and there are imperative reasons of overriding national public interest.

2. Sites of local or regional importance, including Wildlife Sites and Sites of Importance for Nature Conservation, will be defined in Local Plans. The designation of Sites will be based on Scottish Wildlife Trust criteria. Development likely to have an adverse impact on any such site or feature will not be granted planning permission unless it can be clearly demonstrated that there are reasons which outweigh the need to safeguard the site or feature. Until such areas are defined in Local Plans, identified or potential sites will be afforded the same protection.

3. Local Plans will identify opportunities for enhancing the natural heritage including new habitat creation, the identification of 'wildlife corridors' and measures to ensure the protection of priority local habitats and species as identified in the Falkirk Local Biodiversity Action Plan.

4. The aims and objectives of the Falkirk Local Biodiversity Action Plan and any associated Species Action Plans and Habitat Action Plans will be a material consideration in assessing any development proposal likely to impact on local priority species and habitats.

Falkirk Council Local plan Finalised Draft, April 2007

EQ24 ECOLOGICAL SITES AND FEATURES :

(1) Development likely to have a significant effect on Natura 2000 sites (including Special Protection Areas, Special Areas of Conservation, and Ramsar Sites) will be subject to an appropriate assessment. Where an assessment is unable to conclude that a development will not adversely affect the integrity of the site, development will only be permitted where there are no alternative solutions; and there are imperative reasons of overriding public interest, including those of a social or economic nature. These can be of a social or economic nature except where the site has been designated for a European priority habitat or species. Consent can only be issued in such cases where the reasons for overriding public interest relate to human health, public safety, beneficial consequences of primary importance for the environment or other reasons subject to the opinion of the European Commission (via Scottish Ministers).

(2) Development affecting Sites of Special Scientific interest will not be permitted unless it can be demonstrated that the overall objectives of the designation and the overall integrity of the designated area would not be compromised, or any adverse effects are clearly outweighed by social or economic benefits of national importance.

(3) Development affecting Wildlife Sites, Sites of Importance for Nature Conservation, Local Nature Reserves, wildlife corridors and other nature conservation sites of regional or local importance will not be permitted unless it can be demonstrated that the overall integrity of the site will not be compromised, or any adverse effects are clearly outweighed by social or economic benefits of substantial local importance.

(4) Development likely to have an adverse affect on species which are protected under the Wildlife and Countryside Act 1981, as amended, the Habitats and Birds Directives, or the Protection of Badgers Act 1992, will not be permitted.

(5) Where development is to be approved which could adversely affect any site of significant nature conservation value, the Council will require mitigating measures to conserve and secure future management of the site's natural heritage interest. Where habitat loss is unavoidable, the creation of replacement habitat to compensate for any losses will be required.

(6) The Council, in partnership with landowners and other relevant interests, will seek the preparation and implementation of management plans for sites of nature conservation interest.

EQ25 BIODIVERSITY :

The Council will promote the biodiversity of the Council area and ensure that the aims and objectives of the Falkirk Area Biodiversity Action Plan are promoted through the planning process.
Accordingly:

Developments which would have an adverse effect on the national and local priority habitats and species identified in the Falkirk Area Biodiversity Action Plan will not be permitted unless it can be demonstrated that there are overriding national or local circumstances;

The safeguarding, enhancement and extension of the broad and key habitats and the species of conservation concern identified in 'The Biodiversity of Falkirk' will be given particular attention in the consideration of development proposals;

Development proposals should incorporate measures to promote, enhance and add to biodiversity, through overall site planning, and infrastructure, landscape and building design, having reference to the Supplementary Planning Guidance note on 'Biodiversity and Development'; and

Priority will be given to securing appropriate access to and interpretation of areas of local nature conservation interest. The designation of Local Nature Reserves, in consultation with communities, local wildlife groups and statutory bodies will be pursued.

In addition the following policies cover specific features of ecological interest:

EQ26 TREES, WOODLAND AND HEDGEROWS:
recognises the ecological, landscape, economic and recreational importance of trees, woodland and hedgerows and protects and encourages the enhancement of these features accordingly.
EQ27 WATERCOURSES: recognises the importance of watercourses within the Council area in terms of their landscape, ecological, recreational and land drainage functions, and protects and encourages the enhancement of these features accordingly.
EQ28 THE COASTAL ZONE:
promotes an integrated approach to the management of the coastal zone and safeguarding of the undeveloped coast.

2.2 Protection through Legislation, Planning Policy and Guidance

The tables below give a brief overview of the main legislation, policy and guidance relating to biodiversity and development. This underpins the Council's approach to the protection and enhancement of biodiversity within the planning process.

	Statutory protection	Examples of Classification/ Protected Feature
Sites	Site designations reflecting international and national importance.	Special Protection Area Special Area of Conservation Site of Special Scientific Interest (see Appendix 4)
Habitats	Protection of internationally or nationally important habitats.	e.g. Raised bog Saline lagoon (See Appendix 2 for full list)
Plants & Animals	Protection of specific internationally and nationally important species Protection of nesting birds	e.g. Great crested newt Badger (See Appendix 2 for full list)

	Non-statutory protection	Classification examples
Sites	Locally designated sites	Sites of Importance for Nature Conservation (SINCs) Wildlife Sites (See Appendix 4)
Habitats	LBAP[1] and UKBAP[2] Habitats	UK and Local Priority Habitats (See Appendix 3)
Plants & Animals	LBAP[1] and UKBAP[2] Species	UK and Local Priority Species (See Appendix 3)

[1] LBAP:- Local Biodiversity Action Plan
[2] UKBAP:- UK Biodiversity Action Plan

Protection through Legislation, Planning Policy and Guidance

Relevant Council Policies	Implications for development	Key Legislation and guidance
ENV3, EQ24	Protects sites against potentially damaging operations. Strong presumption against damaging development.	■ Habitats directive ■ Species Directive ■ Habitats Regulations and Circular 6/95 (amended 2000) ■ Wildlife & Countryside Act 1981 (as amended) ■ Nature Conservation (Scotland) Act 2004 ■ NPPG14 ■ PAN 51: Planning and Environmental Protection ■ PAN 60: Planning for Natural Heritage ■ Protection of Badgers Act 1992
ENV3, EQ24	Avoid damage to or disturbance of habitats.	
ENV3, EQ24	Avoid or (in certain rare circumstances and where the relevant licenses are obtained) mitigate against adverse impacts on legally protected species. Avoid disturbance of nesting birds.	

Relevant Council Policies	Implications for development	Key Legislation and guidance
ENV3, EQ24, EQ25 EQ26, EQ27, EQ28	Presumption against development. Where, in exceptional cases, development is permitted mitigation of negative ecological impacts, biodiversity enhancements and compensation may be required.	
ENV3, EQ24, EQ25 EQ26, EQ27, EQ28	Habitats to be protected and enhanced wherever possible.	■ Local Biodiversity Action Plan ■ Scottish Biodiversity Strategy
ENV3, EQ24, EQ25 EQ26, EQ27, EQ28	Species to be protected and enhanced wherever possible.	■ Local Biodiversity Action Plan ■ Scottish Biodiversity Strategy

National and Local Biodiversity Strategies

The Scottish Parliament is committed to playing a full part in fulfiling the UK Government's obligations under the Convention on Biological Diversity, through implementation of the Scottish Biodiversity Strategy. The main aim of this strategy is to conserve biodiversity for the health, enjoyment and well being of the people of Scotland now and in the future. Included within this strategy is an objective to "restore and enhance biodiversity in all our urban, rural and marine environments through better planning, design and practice".

The Falkirk Area Biodiversity Action Plan aims to protect and enhance the biodiversity of the Falkirk Council area, through focused local action. The habitats and species listed within this plan as local priorities will be given special consideration when assessing planning applications.

Nature Conservation (Scotland) Act 2004

Part 1 of The Nature Conservation (Scotland) Act 2004 places a duty on all public bodies and office workers to further the conservation of biodiversity. This duty applies to both Falkirk Council, in determining planning applications, and to any public bodies undertaking development activity.

2.3 Key biodiversity objectives

The Council will assess planning applications with a view to ensuring that they comply with the following overall aim and take full account of the key biodiversity themes listed below.

Overall aim:

To ensure that species, habitats and sites that are particularly vulnerable or of high ecological importance nationally or locally are protected and that our wider biodiversity is maintained and where possible enhanced.

Key Themes:

Protect
Protect existing species, habitats and ecologically important sites before, during and after development activity takes place.

Enhance
Wherever possible, opportunities to improve the ecological value of all or part of the development site should be pursued. In addition to providing biodiversity gain, such enhancement can often contribute towards a high quality, aesthetically pleasing development.

Mitigate
Negative impacts on biodiversity as a result of development should be minimised through appropriate mitigation.

Compensate
Where development is permitted and negative impacts on key biodiversity features cannot be avoided, compensatory biodiversity enhancements will be required.

Manage/Maintain
Designs should be developed with a view to ensuring the long-term quality of environmental features. Development and implementation of appropriate management plans and/or maintenance regimes will be necessary in some cases.

2.4 Incorporating biodiversity into development

With a few simple steps, developers can ensure that they comply with biodiversity legislation, meet the Council's requirements for biodiversity conservation, and achieve best practice. An overview of these key steps and how they fit into the planning process is given below followed by a graphical representation.

(The specific requirements will differ for different development types: see the Checklists in 3.1 for more detail).

Step 1.
Consultation and Scoping

An Initial Site Audit should be undertaken to determine the possible ecological issues at a potential development site. A proforma for this initial audit is available in Appendix 1. In the case of a site with a range of established environmental features/habitats/species this audit is best undertaken by a qualified ecologist or a landscape architect with suitable ecological experience. The initial audit will assist in the selection of an appropriate development site, highlight the potential biodiversity issues and opportunities at a site, and identify where further survey data will be required.

Early discussions with the Council and other relevant organisations (see Appendix 6) should also be used to identify the environmental data that will be required with a planning application.

A considerable amount of environmental data already exists, particularly relating to designated sites and some legally protected species. Early consultation with relevant statutory and non-statutory organisations will ensure that, where available, historic data for a development site is obtained. The absence of existing environmental data for a site does not mean that there are no features of ecological significance. An initial site audit will indicate what further survey data is required.

The site audit should be included with any outline planning application.

Example 1: Initial Site Audit

An initial site audit should be undertaken to determine the possible ecological issues at a site.

Initial Site Audit Proforma

	Tick if Yes	If Yes then:	Done
Does the site include all or part of a statutorily designated site: e.g. SPA, SAC, SSSI?	☐	Consult Scottish Natural Heritage and Falkirk Council for more information.	☐
Is there a statutorily designated site e.g. SPA, SAC, SSSI nearby that may be impacted by the development?	☐	Consult Scottish Natural Heritage and Falkirk Council for more information.	☐
Does the site include all or part of, or impact on a nearby, non statutory designated site: i.e. a SINC or a Wildlife 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' linking two or more other areas of ecological value.	☐	Assess ecological impact of development on the site and adjacent areas of habitat, and identify possible mitigation.	☐
Does the site include any of the following habitats?			
Mature trees (individuals or small stands)	✓	Survey for: Bats* LBAP Species# Check for : Tree Preservation Orders and Conservation Area designation Undertake :Tree survey (species,location, ground spread, age, height)	☐
Woodland	☐	Survey for: Bats, Red squirrels, Badgers* LBAP Species# Undertake: Phase II habitat survey Ecological Impact Assessment	☐
Hedges	☐	Survey : To determine if the hedge is of particular ecological value (i.e. species-rich). LBAP Species#	☐
Rivers, streams or wet ditches	✓	Survey for: Otters, Water voles, Salmon* LBAP Species# Undertake: Ecological Impact Assessment	☐
Ponds, pools or lochs	☐	Survey for: Great crested newts, Water voles,* LBAP Species# Undertake: Ecological Impact Assessment	☐
Wetland or bog	✓	Survey for: LBAP Species# Undertake: Phase II habitat survey, Ecological Impact Assessment	☐
Long/rough grassland	✓	Survey for: LBAP Species# Undertake: Phase II habitat survey, Ecological Impact Assessment	☐
Bings/spoil tips/rock faces	☐	Survey for: Young's helleborine (on wooded bings), LBAP Species# Undertake: Phase II habitat survey on vegetated areas Ecological Impact Assessment	☐
Brownfield	☐	Survey for: Invertebrates	☐
Heath (heather)	☐	Survey for: LBAP Species# Undertake: Phase II habitat survey, Ecological Impact Assessment	☐
Buildings/barns	☐	Survey for: Bats*, Barn owls, nesting birds, LBAP Species#	☐
Scrub	✓	Survey for: LBAP Species# Undertake: Phase II habitat survey, Ecological Impact Assessment	☐
Coastal sand, mudflat, lagoons or saltmarsh	☐	Survey for: LBAP Species# Undertake: Phase II habitat survey, Ecological Impact Assessment	☐

* If protected species are identified through surveys consult SNH and Falkirk Council on the additional data, protection and mitigation required.

\# Survey for the LBAP species associated with the habitat in question.

Step 2.
Detailed Surveys and Impact Assessment

Where the initial site audit indicates that the site does or could support species, habitats or features of biodiversity interest, specific, targeted surveys should be carried out.

As an absolute minimum, sufficient data should always be obtained to determine the presence or absence of legally protected and LBAP Priority species and habitats (see Appendices 2 & 3) and, if present, to indicate their distribution and population size/area. However, additional survey data may be necessary to inform mitigation, enhancement, compensation and management works on site, and will be a requirement for certain development types or sites. These additional data needs will be highlighted by the initial site audit and/or by early discussions with the Council and other relevant bodies.

Optimum survey seasons vary for different species and habitats. Further information is available outlining optimum survey times and methodologies for different species/habitats (see Appendix 5). Advice should be sought to ensure that surveys take place at the appropriate time. In some cases more than one survey will be required to provide sufficient data on a species/habitat. Given these time constraints survey requirements for a development should be determined at the earliest possible stage to avoid delays later in the planning process.

The potential ecological impacts associated with a proposed development can be predicted once sufficient baseline data has been collected. An ecological impact assessment should address the following questions:

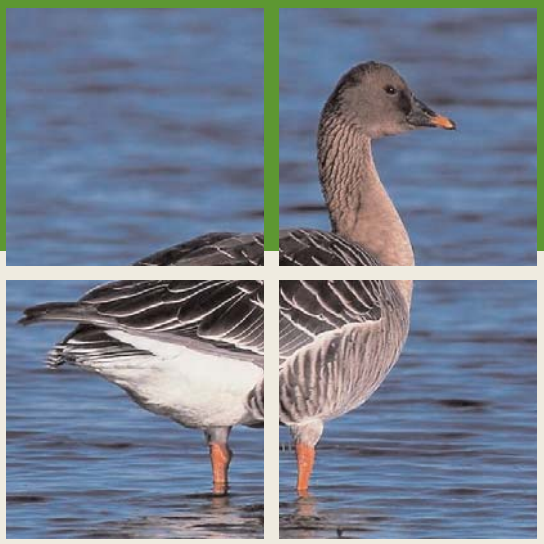
- Is the impact positive or negative?
- Is the impact direct or indirect?
- Is the impact permanent?
  If not how long will it last?
- What will be the scale of the impact?
- Is the impact cumulative or not?

Developments where there is clearly going to be little or no environmental impact may not need to produce an ecological assessment, however, other developments will. Discussions with the Council should determine where an ecological assessment will be required.
(Also see section 3.1: Biodiversity Checklists)

Certain major developments will require a formal Environmental Impact Assessment (EIA) under the Environmental Impacts Assessment (Scotland) Regulations 1999. The contents of such an EIA are stipulated by the regulations.

Developments which are deemed, by the competent authority, to have a 'significant effect' on the qualifying species or habitat of a Special Protection Area or Special Area of Conservation will require a formal 'Appropriate Assessment'.

The ecological surveys/baseline data and impact assessment should be included with any outline planning application.



Step 3.
Design of Development to Incorporate Biodiversity Objectives

The process of audit, survey and impact assessment should identify a range of biodiversity constraints and opportunities for a development. Having identified these constraints and opportunities, they should be factored into any masterplan or initial designs. Even where few features of ecological value have been identified on site, the developer should still explore opportunities to enhance the value of the site for wildlife.

Biodiversity objectives should be drawn up which are relevant and achievable within the development framework, meet legislative requirements and address the Council's biodiversity aims as set out in section 2.3. These objectives should be included in any outline planning application.

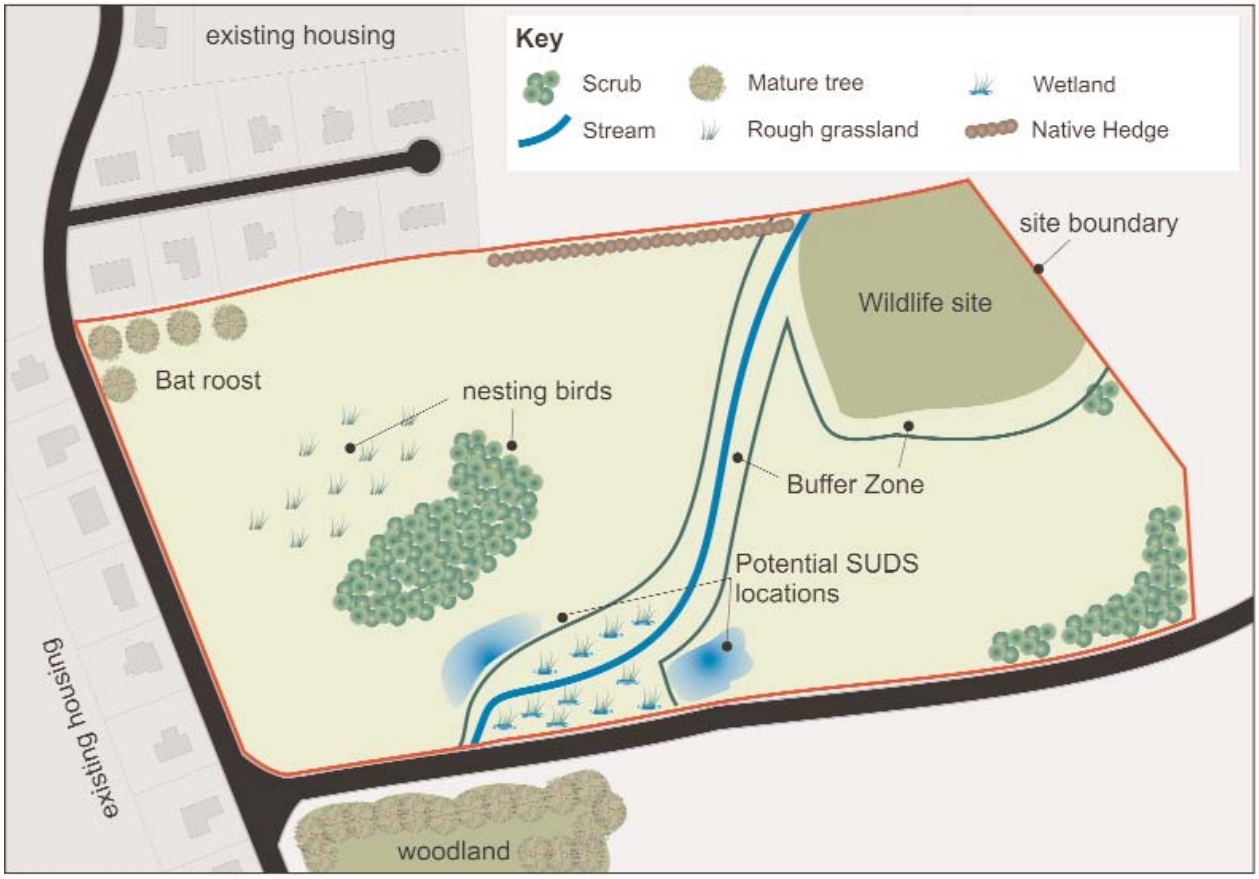
On submitting a detailed planning application more detailed designs and methodologies will be required, demonstrating how the proposed biodiversity objectives are to be fulfiled on site. At this stage planning conditions may be used to secure implementation of the necessary actions to ensure that the agreed biodiversity objectives are achieved.

Developers may wish to consult the Council prior to making an application to ensure that the proposed biodiversity objectives will adequately meet the Council's biodiversity aims (see section 2.3).

Note: Where no outline planning application is being submitted all environmental data, biodiversity objectives and detailed methodologies will need to be included within the detailed application.

Example 2: Biodiversity Objectives

Identify biodiversity constraints and opportunities.



Set biodiversity objectives

- Ensure no disturbance of the bat roost.
- Time works to ensure no disturbance to nesting birds.
- Retain mature trees and hedge.
- Protect and enhance the biodiversity value of the watercourse and wetland by creating a suitably managed 10m buffer zone either side of it. This will also create an important wildlife corridor between the Wildlife Site and the nearby woodland.
- Protect and enhance the Wildlife Site with an undeveloped buffer zone around it. Provide access to this site at a level which is compatible with its conservation needs.
- Minimise the impact of construction work on retained biodiversity features, excluding activity from sensitive biodiversity areas.
- Compensate for loss of the long grass area and associated species by creating new areas of long grassland in openspaces and along road verges, with suitable grassland management.
- Compensate for loss of central scrub area by enlarging scrub habitats on the site boundary.
- Design and locate the SUDs ponds to maximise their value for wildlife and complement existing wetland habitats.
- Use native species in landscaping wherever possible, to benefit biodiversity. e.g. enhance existing areas of trees, hedge and scrub on the site boundary with additional native planting.
- Secure appropriate long-term management of all biodiversity and landscaped areas, including the Wildlife Site.

Step 4.
Protection, Enhancement, Mitigation, Compensation

In designing a development that fulfils agreed biodiversity objectives and demonstrates good practice in biodiversity conservation, there is a hierarchy of themes that should be addressed. These are, in order of priority:

- Protect features of nature conservation value
- Enhance or create features of nature conservation value
- Mitigate for impacts to features of nature conservation value
- Compensate for the loss of features of nature conservation value

The design of all developments should aim to incorporate features of existing ecological value on or adjacent to the site. Designs should also aim to enhance existing features of ecological value. Where it is impossible to avoid all impacts to a feature of ecological value and these impacts can be lessened by a change in the development design or operations, mitigation should be considered. Justification of why impacts cannot be avoided through alternative designs should be provided. Evidence that appropriate consideration has been given to potential mitigation of negative impacts will be required. Where there is no viable alternative to the loss or damage of a feature of ecological value, compensation will be required. Compensation for habitat loss should aim to replace 'like for like' or better (see section 2.5 for more detail). Planning gain and planning conditions may be used to secure compensation for biodiversity losses.

It is essential that the detailed design and methodologies adopted to fulfil the agreed biodiversity objectives are put into practice on site. Where a development is permitted on the basis that the proposed mitigation would make the overall impact on biodiversity acceptable, that mitigation will be a condition of planning consent and must be carried out. In addition a developer may be asked to appoint an Ecological Clerk of Works to oversee certain areas of work. Training of site staff may also be required to ensure adequate awareness of on-site biodiversity issues. In certain circumstances ongoing monitoring of key biodiversity features may be required to ensure continued adherence to relevant legislation, policy and planning conditions.

Figure 1 : Hierarchy of themes to be addressed

1. PROTECTION
Protect features of
nature conservation value

2. ENHANCEMENT
Enhance or create features
of nature conservation value

3. MITIGATION
Mitigate against negative impacts

4. COMPENSATION
Compensate for
unavoidable negative impacts

Step 5.
Management, Monitoring and Aftercare

Ongoing management and maintenance of areas of biodiversity value to be retained, enhanced or created is essential. Only with appropriate management will these areas reach and maintain their full potential for wildlife and people. Management and maintenance may be secured through the production of a Biodiversity Management Plan for all or part of the development site. This plan would be required as part of a detailed planning application. In some cases it may be acceptable for the biodiversity management to be incorporated into a Landscape Plan. A trained ecologist should be used to ensure that the plan contains appropriate prescriptions and adequate monitoring mechanisms. Sufficient funds must be put in place to implement the proposed management for the lifetime of the management plan. The management plan and/or landscape plan must be provided before or with the detailed planning application.

The production of environmental surveys, impact assessments, biodiversity objectives, detailed methodologies for biodiversity conservation and biodiversity management plans should be carried out by a suitably qualified ecologist.

As a guide, a 'suitably qualified ecologist' will :

- **have a relevant biological or environmental qualification**
- **have several years relevant experience**
- **have the necessary survey and assessment skills and knowledge of relevant legislation**
- **have good references from similar jobs.**

They may also have membership of a professional body such as IEEM or be a Chartered Environmentalist (CENV).

Incorporating Biodiversity into Development - Steps 1-5

	Scoping	Outline Planning	Detailed Planning	Development	Aftercare
Development process	Land identification Design team selection Feasibility studies Assess data needs Initial consultations	Identify opportunities and constraints Produce Masterplan Outline planning application Complete land purchase	Detailed design and planning application Tender works Tender review	Award contract Construction works Completion of development	Ongoing monitoring, management and maintenance of site by management company
Biodiversity Step	**1. Consultation & Scoping**	**2. Detailed surveys & impact assessment**	**3. Design of development to incorporate biodiversity objectives**	**4. Protection, Enhancement, Mitigation, Compensation**	**5. Management, monitoring & aftercare**
Mechanisms /requirements	Appoint Ecologist Do an initial site audit to identify: ■ biodiversity issues and opportunities ■ data requirements. Early discussions to identify biodiversity issues/ opportunities and data requirements. Source any relevant historical data	Undertake: ■ protected species surveys ■ other surveys as necessary ■ Ecological Impact Assessment (or Environmental Impact Assessment if legally required) ■ Consultation with relevant bodies	Ensure all designs (including landscape and SUDs designs) take full account of biodiversity, at least meeting legislative, and policy requirements and where possible going beyond this. Undertake: ■ Ongoing consultation with the Council to ensure sufficient data is provided with detailed plans ■ Consultation with other relevant bodies. ■ an Ecological Impact Assessment on detailed design (including any proposed mitigation) and proposed construction methods, where necessary. Produce an appropriate management plan if it has been deemed necessary.	Undertake: ■ communication of environmental conditions and obligations to all relevant site staff ■ Ongoing monitoring to ensure continued adherence to wildlife legislation and planning conditions ■ Engage an ecological clerk of works to oversee environmental protection and enhancement on site.	Implement ■ A management plan to ensure appropriate long-term management of important ecological features ■ Financial provision for future maintenance of the site ■ Ongoing monitoring of ecological features to ensure successful establishment, protection and management

2.5 Issues and opportunities for biodiversity

This section highlights some of the key biodiversity issues and opportunities that should be considered when planning a development. It also provides guidance on the type of biodiversity protection, enhancement, mitigation, compensation and management measures that will be looked for in a good planning application.

(Clearly the issues and opportunities will differ for different development types. For more guidance on the likely considerations for different development types see section 3.1)

Protect

Protection of biodiversity must meet legislative and policy requirements. In addition developers should aim to protect all species and habitats of local importance (i.e. LBAP priority species and habitats – see Appendix 3). Protection issues to be considered include:

Statutory responsibilities

- Ensure legally protected species, habitats and sites are not harmed (in line with legislation).
- Consult with relevant agencies and where necessary obtain licenses for work affecting legally protected species, habitats or sites.
- Ignorance is not a defence; it is the developers/contractors duty to ensure work will not impact upon legally protected features.

Precautionary Principle

- Where the ecological importance of a feature is unknown the precautionary principle should be applied. I.e. do not damage or disturb something until you are confident that it is not of high ecological importance.

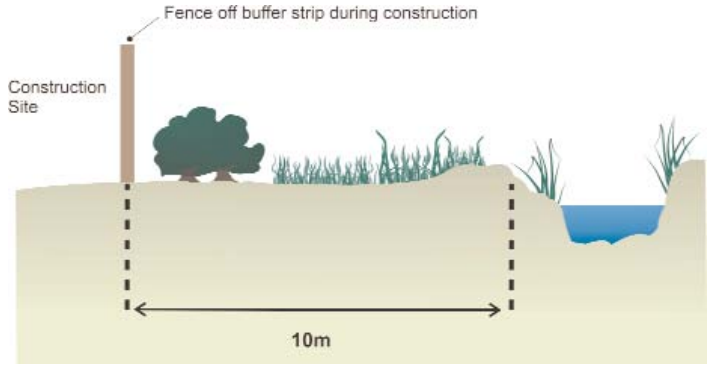
Other features of ecological importance

- Protect locally designated sites of ecological importance from damage. There is a presumption against development of locally designated sites. Even where, in extreme cases, development is granted, protection of key elements of the site is likely to be a condition of consent. As such, activity on site should not commence until it is clear whether permission has been granted and which features are to be protected.
- Protect species and habitats of local importance (i.e. those identified within the Local Biodiversity Action Plan (LBAP) - (see Appendix 3)
- As far as possible existing ecological features should be retained and incorporated into the site design and layout. Existing habitats, species, and wildlife corridors should be the starting point for a design that meets biodiversity objectives.

Protection measures

- On site protection measures could include: fencing off key areas of habitat to avoid direct damage, timing operations to avoid disturbance at key times, preventing pollution, creating buffer zones around ecological features and excluding construction activity from these areas, and ensuring site personnel are aware of the protection requirements and mechanisms on site. (see 'Mitigate' section on page 21 for more detail).

Example 3: Leave a buffer strip of at least 10m beside a watercourse to help protect species like water voles



Enhance

Enhancement can involve improving or enlarging existing habitats or creating new habitat. Similarly it could aim to reinforce an existing species population or encourage new wildlife to the site. Enhancement works should be viewed as an opportunity to improve the site for the benefit of both wildlife and people. Well implemented and maintained biodiversity enhancements can provide attractive and healthy spaces for people, adding value to a development. Enhancement works to be considered include:

Enhancing existing habitat

- Improve or enlarge existing areas of natural habitat. An ecologist should be used to advise on the detail of how this should be done.
- Leave nature to take its own course. Rather than planting up areas, in some cases it is better to leave them to colonise naturally. Where planting is undertaken native species should be used. Use the species already present as a guide to which plants to use. In special cases (e.g. additional planting adjacent to an ancient woodland) local provenance plant stock should be used.
- Non-native, invasive species such as Japanese Knotweed should be controlled and disposed of appropriately. It is an offence under The Wildlife and Countryside Act 1981 (as amended) 'to plant or otherwise encourage' the growth of certain plants. This could include cutting the plants or roots and disturbing surrounding soil if not correctly managed.
- Creating buffer zones around existing habitats (e.g. a strip at least 10m wide either side of a watercourse) can help protect and enhance that habitat, making it more valuable to wildlife. Incorporating habitats into larger areas of openspace can increase their attractiveness to wildlife.
- Where watercourses have been canalised or culverted, there may be opportunities to restore them to a more natural form with meanders, stepped sides and wetlands that flood at times of high flow.
- Linking existing and new habitat areas with 'wildlife corridors' or 'stepping stones' will significantly increase their value for biodiversity. (See 'Mitigate' section)

Creating new habitat

- New habitats should be appropriate to the area. Look at the habitats already present on or near the site and aim to complement these. The wildlife already present gives an indication of the sort of habitats and species that will thrive. An ecologist should be used to advise on the detail of how this should be done.
- Where possible, habitat creation should be guided by the Integrated Habitat Network Study (to be produced in 2007-2008).
- Design SUDs ponds or treatment beds to create wetland habitats of benefit to biodiversity and consider the incorporation of grassed swales within the development. (see SEPA Ponds, pools and lochans handbook). Where possible create drainage ditches rather than underground pipes.
- It may be possible to design and manage areas of public openspace to benefit wildlife. e.g. sow native grass and wildflower mixes in areas where short amenity grassland is not required.
- Where openspace is limited, green roofs may be used to provide additional habitat for wildlife.
- Restoration plans for mineral workings and waste facilities offer an ideal opportunity for large scale habitat creation and should be carefully designed to optimise the benefit to biodiversity.
- Ideally, habitat creation (whether as mitigation, compensation or enhancement) should be undertaken prior to development.

Landscaping for biodiversity

- Where possible native species should be used in planting schemes, these generally offer greater wildlife benefits than non-native species. However, horticultural varieties and structural planting can offer wildlife benefits if they are selected to provide food and shelter for birds and other wildlife, for as long a season as possible.
- Boundaries and verges often offer opportunities to landscape for biodiversity. Native hedges should be used in preference to fences or non-native hedges. Long grass can be left along verges to provide wildlife corridors.

Attracting wildlife

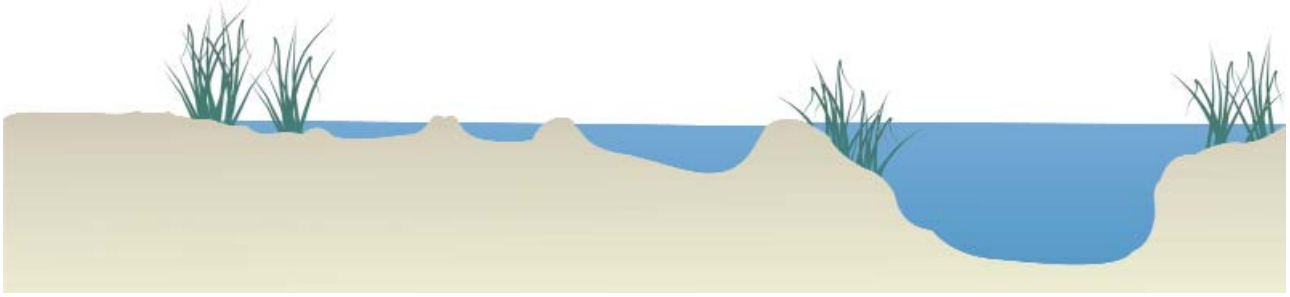
- Use a show home garden or borders to encourage wildlife gardening (e.g planting nectar-rich flowers, creating a hedge, providing a garden pond, and avoiding peat based composts).
- Where appropriate (and particularly where other suitable habitat has been lost) provide bird and bat boxes, and incorporate bat and swift 'bricks' into buildings.

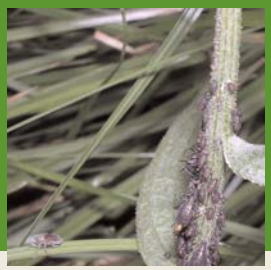
Spaces for people

- Consider providing public access to natural areas, where this will not generate undue disturbance or damage to the species or habitats present. Interpretation facilities such as information boards at areas of ecological interest will help to ensure that enhancements benefit local people as well as wildlife and encourage sympathetic use of the area.

Example 4: Design SUDS ponds to maximise their biodiversity values

Create a pond complex, with seasonal and semi-seasonal ponds seperated from permanent ponds in the summer.





Mitigate

Mitigation of negative impacts should be achieved by good quality design influenced 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 identifying an appropriate development site to implementing site maintenance after construction. Mitigation measures that should be considered include:

Minimising disturbance & damage

- Minimise disturbance to species (particularly legally protected species and LBAP or UK BAP priority species - see Appendices 2 and 3) 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 will be required: any disturbing activity will require a license and advice should be sought from Scottish Natural Heritage (SNH).
- Translocation of species tends to be difficult and is often unsuccessful. It should only be considered as a last resort.
- Areas of habitat to be retained should be fenced off during construction work to avoid any direct damage.
- Impacts from pollution (dust, noise, polluted runoff, etc.) should be minimised through careful design and the implementation of suitable precautions during construction. (e.g. polluted runoff should be caught and treated before it enters a watercourse)
- Construction activity should, as far as possible, be timed to avoid sensitive times of year (e.g. the bird breeding season March - August). 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.
- Mitigate against ongoing future impacts, such as increased disturbance at a site, by screening wildlife areas from footpaths and directing lighting away from wildlife areas.

Creating replacement habitat

- Mitigation of habitat loss by creation of similar habitat, which species can move into, requires creation of a large total area and high quality habitat. Where key species are to be displaced into the new habitat, this should be created well in advance of disturbance to the existing habitat. Newly created habitat will take considerable time to establish thus reducing its biodiversity value in the short to medium term. Translocation is often unsuccessful and should only be attempted as a last resort.
- Where valuable habitat has to be removed, careful storage and re-use of the topsoil on site should allow similar species to establish. This may also reduce disposal costs. Where creation of replacement habitats cannot be done using a seed source from on site (e.g. saved within the topsoil), seed could be obtained from a similar, local site.
- Provision of nest boxes and bat boxes or bat/swift 'bricks' can sometimes help to mitigate against loss of nesting/roost sites, although choosing the correct design is crucial to success.

Creating 'stepping stones' and 'wildlife corridors'

- 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 (at least 10m wide)
  - Creation of habitat 'stepping stones' (large enough and close enough together to allow species to travel from one area of habitat to the next)
  - Creation of wildlife corridors to link habitat fragments.

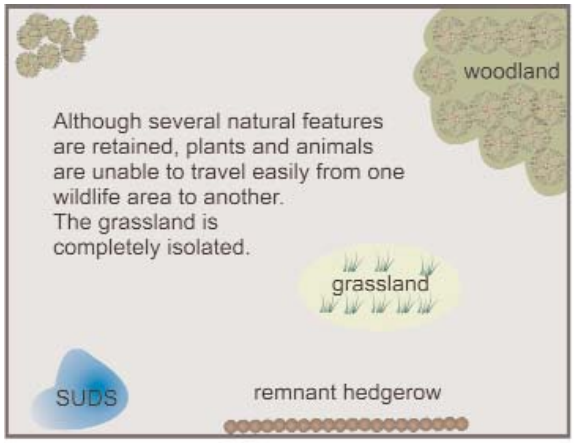
Ideally stepping stones should be large areas of high quality habitat but even individual trees, groups of trees, patches of grassland, green roofs, or long-grass verges will help. A wildlife corridor is a linear feature which species can move easily and safely along to travel between larger areas of habitat (e.g. hedgerows, watercourses, long-grass verges, planting strips, tree lines or shelterbelts).

Education & Awareness

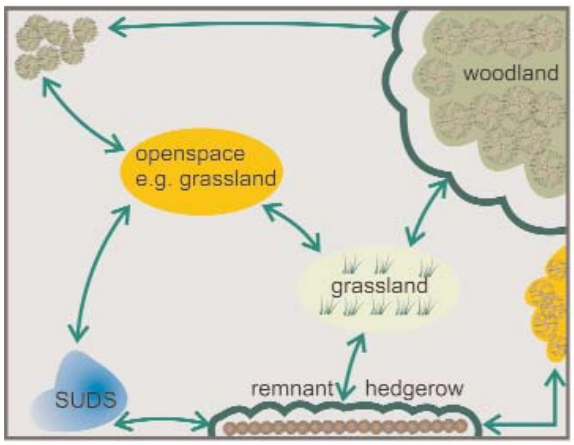
- All site personnel should be briefed by an ecologist on the biodiversity issues on site and the measures in place to safeguard important habitats and species, to reduce the potential for accidental disturbance or damage.

Example 5 : Wildlife corridors, buffers and stepping stones

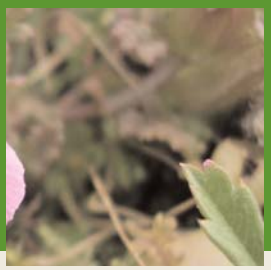
A development without wildlife corridors, buffers or 'stepping stones'.



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



Designing in simple wildlife corridors e.g. along road verges, hedges, footpaths and watercourses ; and well placed buffer zones and "stepping stone" habitat ensures that wildlife can migrate throughout the site and key areas are protected.



Compensate

Where negative impacts on biodiversity cannot be avoided, compensation will be required. Where possible compensation should be provided on site. However, off site options might be considered where the development site does not offer scope for on site compensation. Compensation for habitat loss is often difficult and not always possible. Compensation options to be considered include:

Habitat creation

- New habitat may be created to compensate for habitat lost to development. Where compensatory habitat is to be provided it is likely that a larger area than that lost will be required; created 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 the site but nearby, and ideally with suitable wildlife corridors/stepping stones linking the compensation area to the development site.

Habitat enhancement

- Enhancement of a nearby area of habitat rather than creation of new habitat may also be an option for compensation, although again this will 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' may help to compensate for habitat loss, where an appropriate design is used.

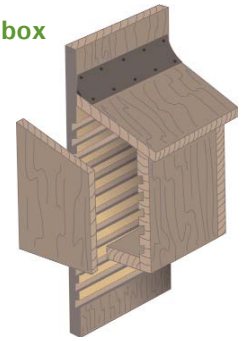
Contributions towards local biodiversity conservation

- In certain circumstances compensation may take the form of a sum of money to assist with management of nearby sites of ecological importance. This may be particularly important where development will lead to increased pressure on that site. Such compensation may be secured through planning gain.
- Compensation may take the form of a sum of money to assist with biodiversity conservation within the local area. The Local Biodiversity Action Plan may be used to help identify the priorities for conservation action locally.

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.

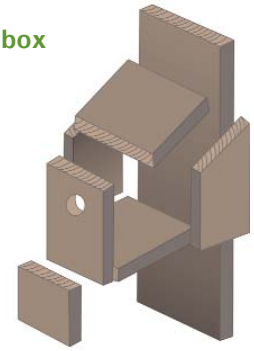
Example 6 : Provision of suitably designed bird or bat boxes may help to compensate for loss of other potential nesting/roosting areas (e.g. areas of trees or scrub)

Bat box



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

Bird box



Manage/ Maintain

Where ecological features are retained or created within the development site, 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 be required to produce a Biodiversity Management Plan for all or part of the development site to ensure appropriate ongoing management of the features of importance for biodiversity. In other cases biodiversity management can be included within a Landscape Plan. Discussion with Council officers will indicate what is required on a case by case basis.

Ongoing monitoring is important to ensure that the required protection or enhancement of biodiversity is taking place successfully and that further protection measures are not required to (as a minimum) meet legislative requirements. Periodic monitoring may be a condition of planning consent.

Management plans should cover at least the 5 years following completion of a development and ideally plan for longer term management/ maintenance.

It is worth noting that natural areas are often less expensive to maintain than more modified areas (e.g. manicured grass verges or formal flower beds/shrubberies). 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.

Example 7: 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.

3.1 Biodiversity checklists

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:**
  Housing developments of 10 or more houses or over 0.5ha
  Other developments of over 1000 sq.m floorspace or over 1ha

- **Mineral workings & waste developments**

- **Wind farm developments**

- **Road & rail facilities**

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

Householder/Minor proposals

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:	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 vacant) or nesting birds. Consult SNH.
Demolition	Check for the presence of bat roosts and breeding bird sites	If present do not disturb bats, bat roosts (even if vacant) or nesting birds. Consult SNH.
A barn conversion	Check for the presence of barn owls, other breeding birds and bat roosts.	If Barn Owls are present consult Biodiversity Officer to determine appropriate mitigation (e.g. nest boxes). Do not disturb bats, bat roosts (even if vacant) or nesting birds. Consult SNH.
Impact on a designated site (see Appendix 4)	Check status of the site and the likely impact of the development Note: designated sites may be affected even if they are outwith the development area.	Consult the Council (for non-statutory designations) or SNH (for statutory designations) to determine whether development might be considered. There is a presumption against development in these cases.
Damage to or loss of key habitat features such as:		
Watercourses	Survey for water voles & otters	If legally protected species or habitats are found consult SNH. Protection, mitigation and compensation may be required.
Ponds	Survey for great crested newts and water voles.	
Trees/woodland	Check for bat roosts, nesting birds and badgers.	If present do not disturb nesting birds, bats, bats roosts or badger setts. Consult SNH.
LBAP priority habitats (see Appendix 3)	Assess impact of development on priority habitats.	Aim to retain 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.)
LBAP priority species (see Appendix 3)	Assess impact of development on priority species.	

Additional enhancement to benefit biodiversity is encouraged but it is recognised that the level of enhancement that can be 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** may be requested.

Significant New Development

Significant New Development

An ecologist or suitably experienced landscape architect 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, opportunities and data needs.

Where there are ecological issues an ecologist should be appointed for the duration of the development process.

Undertake surveys to determine the presence or absence of legally protected species and habitats, the presence and status of LBAP priority species and habitats, and any other features of ecological interest. Habitat surveys should be to Phase II level. (The site audit will help identify survey needs).

Produce an **Ecological Impact Assessment** (or alternatively an Environmental Impact Assessment if required by law), including assessment of the likely impact of the proposed development after suitable mitigation.

Set **Biodiversity Objectives** for the development outlining how biodiversity is to be protected and enhanced. Falkirk Council can be consulted to determine whether these objectives are acceptable.

Enhancement to benefit biodiversity is strongly encouraged. This should be guided by the biodiversity features and opportunities present at a site and proportionate to the scale and environmental impact of the proposed development (see page 19). Landscaping should be designed to optimise its value for biodiversity.

Where the loss of habitat or species populations is unavoidable **compensation** will be required (see page 23).

A **Biodiversity Management Plan** must be produced and implemented for any development where areas of ecological value are being retained or created. In some cases, to be agreed with Council officers, it will be acceptable for this to be included within a Landscape Plan.

Ongoing monitoring of key species, habitats or biodiversity features may be necessary. Discussions with Falkirk Council will highlight where this is the case.

Feature present	If so:	Then:
Legally protected species or habitat	Prevent damage or disturbance. Consult SNH.	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 licence may be required for work impacting on a legally protected species.
Impact on a designated site	Check site status and likely impact of the development.* (see note below)	Consult the Council (non-statutory designations) or SNH (statutory designations) to determine whether development may be considered. There is a presumption against development in these cases.
Buildings	Check for the presence of bat roosts and breeding birds. Check for barn owls.	If present do not disturb bats or nesting birds. Consult SNH. If Barn Owls are present then consult the Biodiversity Officer to determine appropriate mitigation (e.g. provision of nest boxes).
LBAP species and habitats and 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	Assess impact of development in terms of habitat fragmentation and the loss of wildlife corridors/ stepping stones.	Protect habitats and wildlife corridors/stepping stones wherever possible. Provide buffer zones around key habitat. Design layouts should identify wildlife corridors and stepping stones.

* Note : designated sites may be affected even if outwith development area.

Mineral Workings & Waste Development

An ecologist or suitably qualified landscape architect should undertake an **initial site audit** (see Appendix 1) to help identify whether the site is appropriate for the development and areas/issues that require further investigation.

Early discussions with Falkirk Council are vital to agree biodiversity issues, opportunities and data needs.

Where there are ecological issues an ecologist should be appointed for the duration of the development process.

Undertake surveys to determine the presence or absence of legally protected species and habitats, the presence and status of LBAP priority species and habitats, and any other features of ecological interest. Habitat surveys should be to Phase II level. (Use site audit to identify survey needs).

Produce an **Ecological Impact Assessment** (or Environmental Impact Assessment if required by law), including assessment of the likely impact of the proposed development after suitable mitigation and longer term impacts after restoration.

Set **Biodiversity Objectives** outlining how biodiversity is to be protected and enhanced. Falkirk Council can be consulted to determine whether these objectives are acceptable.

Biodiversity Management Plan

Where species/habitats are to be retained on site or created nearby to compensate for habitat loss, a management plan should be provided detailing how these features are to be managed.

Restoration Plan

Mineral and waste developments often offer opportunities for large scale habitat creation at the restoration stage. A detailed restoration plan must be submitted with the planning application. Restoration schemes should have clear biodiversity objectives and should focus on creating LBAP priority habitats appropriate to the site's location. Bare ground and rock habitats can be a positive feature of restored mineral workings. Guidance on appropriate habitat creation can be sought from the Council's Biodiversity Officer. The restoration plan must include a detailed management programme and provision for its implementation.

Ongoing monitoring of key species, habitats or biodiversity features may be necessary both while the site is in use and following restoration. Discussions with Falkirk Council will highlight where this is the case.

Feature present	If so:	Then:
Legally protected species or habitat	Prevent damage or disturbance. Consult SNH.	If the species/habitats present do not preclude all development, assess impacts on species/habitat and ensure legislative requirements are met. Restoration plans should aim to reinstate and enhance habitats associated with protected species.
Impact on a designated site	Check site status and likely impact of the development.* (see note below)	Consult the Council (for non-statutory designations) or SNH (for statutory designations) to determine whether development might be considered. There is a presumption against development in these cases.
Peat	Survey to establish the condition of the peat habitat.	Consult the Council to determine if peat working will be acceptable. SPP4: Working of peat is only acceptable in areas of significantly degraded peatland of low conservation value.
LBAP species and habitats and 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. If loss of habitat is unavoidable, it may be necessary to provide replacement habitat nearby. Reinstate and enhance habitats during restoration.
Wildlife corridors & stepping stones	Assess impact of development in terms of habitat fragmentation and the loss of wildlife corridors/ stepping stones.	Where possible provide alternative corridors/stepping stones to allow species safe movement around/across the site while operational. Restoration plans should aim to reinstate and improve wildlife corridors and stepping stones within the site.

* Note : designated sites may be affected even if outwith development area.

Windfarm Development

An ecologist or suitably qualified landscape architect should undertake an **initial site audit** (see Appendix 1) to help identify whether the site is appropriate for the development and highlight issues for further investigation.

Early discussions with Falkirk Council are vital to agree biodiversity issues, opportunities and data needs.

Where there are ecological issues an ecologist should be appointed for the duration of the development process.

Undertake surveys to determine the presence or absence of legally protected species and habitats, the presence and status of LBAP priority species and habitats, and any other features of ecological interest. Habitat surveys should be to Phase II level. (The site audit will help identify survey needs). Windfarm proposals are likely to require considerable bird data. Consultation with RSPB, SNH and Falkirk Council will help to identify bird survey requirements.

Produce an **Ecological Impact Assessment** (or alternatively an Environmental Impact Assessment if required by law), including assessment of the likely impact of the proposed development after suitable mitigation.

Set **Biodiversity Objectives** for the development outlining how biodiversity is to be protected and enhanced. Falkirk Council can be consulted to determine whether these objectives are acceptable.

Enhancement to benefit biodiversity is strongly encouraged. This should be guided by the biodiversity features and opportunities present at a site and proportionate to the scale and environmental impact of the proposed development (see page 17). In certain circumstances there may be opportunities for considerable habitat creation or enhancement beneath turbines.

Where the loss or disturbance of ecologically valuable habitat or species populations is unavoidable **compensation** will be required (see page 21). Loss of habitat on windfarm sites should be minimal and compensation should be provided on site wherever possible.

A **Biodiversity Management Plan** must be produced where areas of ecological value are being retained or created.

Ongoing monitoring of key species, habitats or biodiversity features may be necessary both during and after the construction phase. Discussions with Falkirk Council will highlight where this is the case.

Feature present	If so:	Then:
Legally protected species or habitat	Prevent damage or disturbance. Consult SNH.	If the species /habitats present do not preclude all development, assess impacts on species/habitat and ensure operations will meet legislative requirements.
Impact on a designated site	Check site status and likely impact of the development.* (see note below)	Consult the Council (for non-statutory designations) or SNH (for statutory designations) to determine whether development might be considered. There is a presumption against development in these cases.
Birds	Assess the impact of the development on bird species, in particular protected species.	Impacts on birds must be minimised. In some instances the impact on certain species may be considered unacceptable.
Bean Geese	Assess if there could be an impact on the Bean Goose flock.	If there is likely to be an impact, an appropriate assessment will be required. Consult Council and SNH.
Bats	Assess likely impact on bats.	Where there is an impact on bats mitigation may be required.
LBAP species and habitats and other ecologically valuable features	Determine status of habitat or species through survey. Assess impact of the development (both construction and operation phases) and identify appropriate mitigation.	Protect LBAP species and habitats where possible. Retain ecological features of value where possible. Mitigate to minimise impacts on species and habitats. If loss of LBAP habitat is unavoidable replacement habitat should be provided. Minimise impacts of construction activity, including temporary and permanent infrastructure.
Wildlife corridors & stepping stones	Assess impact of development in terms of habitat fragmentation and the loss of wildlife corridors/ stepping stones.	Avoid fragmentation of ecologically important habitats and wildlife corridors/stepping stones wherever possible. Where corridors are lost provide alternative wildlife corridors within the site.

* Note : designated sites may be affected even if outwith development area.

Road and Rail Development

An ecologist or suitably qualified landscape architect should undertake an **initial site audit** (see Appendix 1) to help identify whether the site is appropriate for the development and areas/issues that require further investigation.

Early discussions with Falkirk Council are vital to agree biodiversity issues, opportunities and data needs.

Where there are ecological issues an ecologist should be appointed for the duration of the development process.

Undertake surveys to determine the presence or absence of legally protected species and habitats, the presence and status of LBAP priority species and habitats, and any other features of ecological interest. Habitat surveys should be to Phase II level. (The site audit will help identify survey needs).

Produce an **Ecological Impact Assessment** (or alternatively an Environmental Impact Assessment if required by law), including assessment of the likely impact of the proposed development after suitable mitigation.

Set **Biodiversity Objectives** for the development outlining how biodiversity is to be protected and enhanced. Falkirk Council can be consulted to determine whether these objectives are acceptable.

Enhancement to benefit biodiversity is strongly encouraged. This should be guided by the biodiversity features and opportunities present at a site and proportionate to the scale and environmental impact of the proposed development (see page 19). Verges/embankments offer an opportunity for habitat creation (e.g. species-rich grassland).

Where the loss or disturbance of ecologically valuable habitat or species populations is unavoidable **compensation** will be required (see page 23).

A **Biodiversity Management Plan** must be produced where areas of ecological value are being retained or created. Management of verges/embankments should, wherever possible, be designed and undertaken in a manner which protects and enhances biodiversity.

Ongoing monitoring of key species, habitats or biodiversity features may be necessary. Discussions with Falkirk Council will highlight where this is the case.

Feature present	If so:	Then:
Legally protected species or habitat	Prevent damage or disturbance. Consult SNH.	If the species /habitats present do not preclude all development, assess impacts on species/habitat and ensure operations will meet legislative requirements.
Impact on a designated site	Check site status and likely impact of the development.* (see note below)	Consult the Council (for non-statutory designations) or SNH (for statutory designations) to determine whether development might be considered. There is a presumption against development in these cases.
Buildings, bridges & tunnels	Check for: bat roosts, breeding bird sites, and signs of 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. Consult SNH. Avoid and mitigate against impacts on species (e.g. provide runways under bridges where the banks are to be disturbed).
LBAP species and habitats and 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 wherever possible. Mitigate to minimise impacts on species and habitats. If habitat loss is unavoidable, it may be necessary to provide replacement habitat nearby.
Wildlife corridors & stepping stones	Assess impact of development in terms of habitat fragmentation and the loss of wildlife corridors/ stepping stones.	Minimise loss of wildlife corridors. Where development cuts across a wildlife corridor, investigate whether there is a need for underpasses and/or warning signs to provide safe crossing-points for species. Design the road/rail corridor to maximise its value as a new wildlife corridor.

* Note : designated sites may be affected even if outwith development area.

Appendix 1 – Initial Site Audit

This checklist should be completed at the earliest opportunity and will give an indication of the ecological data that will be required for a development site, as well as highlighting the important designations, habitats and species to be considered during the design and planning process.

Note : In some cases further survey requirements may be identified following consultations with Council staff.

	Tick if Yes	If Yes then:	Done
Does the site include all or part of a statutorily designated site: e.g. SPA, SAC, SSSI?	☐	Consult Scottish Natural Heritage and Falkirk Council for more information.	☐
Is there a statutorily designated site e.g. SPA, SAC, SSSI nearby that may be impacted by the development?	☐	Consult Scottish Natural Heritage and Falkirk Council for more information.	☐
Does the site include all or part of, or impact on a nearby, non-statutory designated site: i.e. a SINC or a Wildlife 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' linking two or more other areas of ecological value.	☐	Assess ecological impact of development on the site and adjacent areas of habitat, and identify possible mitigation.	☐
Does the site include any of the following habitats?			
Mature trees (individuals or small stands)	☐	**Survey for:** Bats* LBAP Species# **Check for :** Tree Preservation Orders and Conservation Area designation **Undertake :** Tree survey (species,location, ground spread, age, height)	☐
Woodland	☐	**Survey for:** Bats, Red squirrels, Badgers* LBAP Species# **Undertake:** Phase II habitat survey Ecological Impact Assessment	☐
Hedges	☐	**Survey :** To determine if the hedge is of particular ecological value (i.e. species-rich). LBAP Species#	☐
Rivers, streams or wet ditches	☐	**Survey for:** Otters, Water voles, Salmon* LBAP Species# **Undertake:** Ecological Impact Assessment	☐
Ponds, pools or lochs	☐	**Survey for:** Great crested newts, Water voles * LBAP Species# **Undertake:** Ecological Impact Assessment	☐
Wetland or bog	☐	**Survey for:** LBAP Species# **Undertake:** Phase II habitat survey, Ecological Impact Assessment	☐
Long/rough grassland	☐	**Survey for:** LBAP Species# **Undertake:** Phase II habitat survey, Ecological Impact Assessment	☐
Bings/spoil tips/rock faces	☐	**Survey for:** Young's helleborine (on wooded bings), LBAP Species# **Undertake:** Phase II habitat survey on vegetated areas Ecological Impact Assessment	☐
Brownfield	☐	**Survey for:** Invertebrates	☐
Heath (heather)	☐	**Survey for:** LBAP Species# **Undertake:** Phase II habitat survey, Ecological Impact Assessment	☐
Buildings/barns	☐	**Survey for:** Bats*, Barn owls, nesting birds, LBAP Species#	☐
Scrub	☐	**Survey for:** LBAP Species# **Undertake:** Phase II habitat survey, Ecological Impact Assessment	☐
Coastal sand, mudflat, lagoons or saltmarsh	☐	**Survey for:** LBAP Species# **Undertake:** Phase II habitat survey, Ecological Impact Assessment	☐

* If protected species are identified through surveys consult SNH and Falkirk Council on the additional data, protection and mitigation required.

\# Survey for the LBAP species associated with the habitat in question.

Appendix 2 – Legally protected species and habitats likely to occur within the Falkirk area

European Protected Species likely to occur within the Falkirk area	Habitat most likely to be found in
Bats	Roosts : Buildings, trees, bridges/tunnels etc.
Great Crested Newts	Still water. Other habitat within 1km of breeding ponds (grassland, woodland, etc.)
Otter	Rivers and larger streams

Other legally protected species likely to occur within the Falkirk area	Habitat most likely to be found in
Red Squirrel	Woodland/Parkland (particularly conifer woodland)
Badger	Woodland but also forages in grassland areas
Water Vole	Streams, wet ditches, canals and lochs
Barn Owl	Nests: Barns. Feeds over open grassland/farmland
Common Tern	Mudflats, saltmarsh, openwater
Short-eared Owl	Estuary, saltmarsh, heath, bog, fen
Kingfisher	Riverbanks
Adder	Heath or bog
Slow Worm	Heath, grassland, scrub
Atlantic Salmon	Rivers
Young's Helleborine	Bings with some woodland cover

Habitats which may be protected by designation as an SAC (and which occur within the Falkirk area)
Active blanket bog
Raised bog
Estuaries
Saline lagoons
Inter-tidal Mudflats

Appendix 3 – LBAP and UKBAP species and habitats

The Local Biodiversity Action Plan process has identified 20 priority habitats and 112 priority species which are of particular national and/or local ecological value and as such should be conserved locally.

This local list includes all the species and habitats that are identified as national priorities by the UK Biodiversity Action Plans and occur within the Falkirk area.

The full list of the UK Biodiversity Action Plan habitats and species is available at www.ukbap.org.uk

Habitats
Estuary
Mudflats
Saline lagoon
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
Bings
Gardens
Urban greenspace
Urban wildlife corridors
Broadleaved and mixed woodland
Wood pasture and parkland

Mammals
Badger
Brown hare
Brown long-eared bat
European otter
Hedgehog
Pipistrelle bats
Water vole

Amphibians, Reptiles & Fish
Adder
Atlantic salmon
Brook lamprey
Common frog
Common toad
Great crested newt
Palmate newt
River lamprey
Sea/Brown trout
Smooth newt
Sparling
Twaite shad

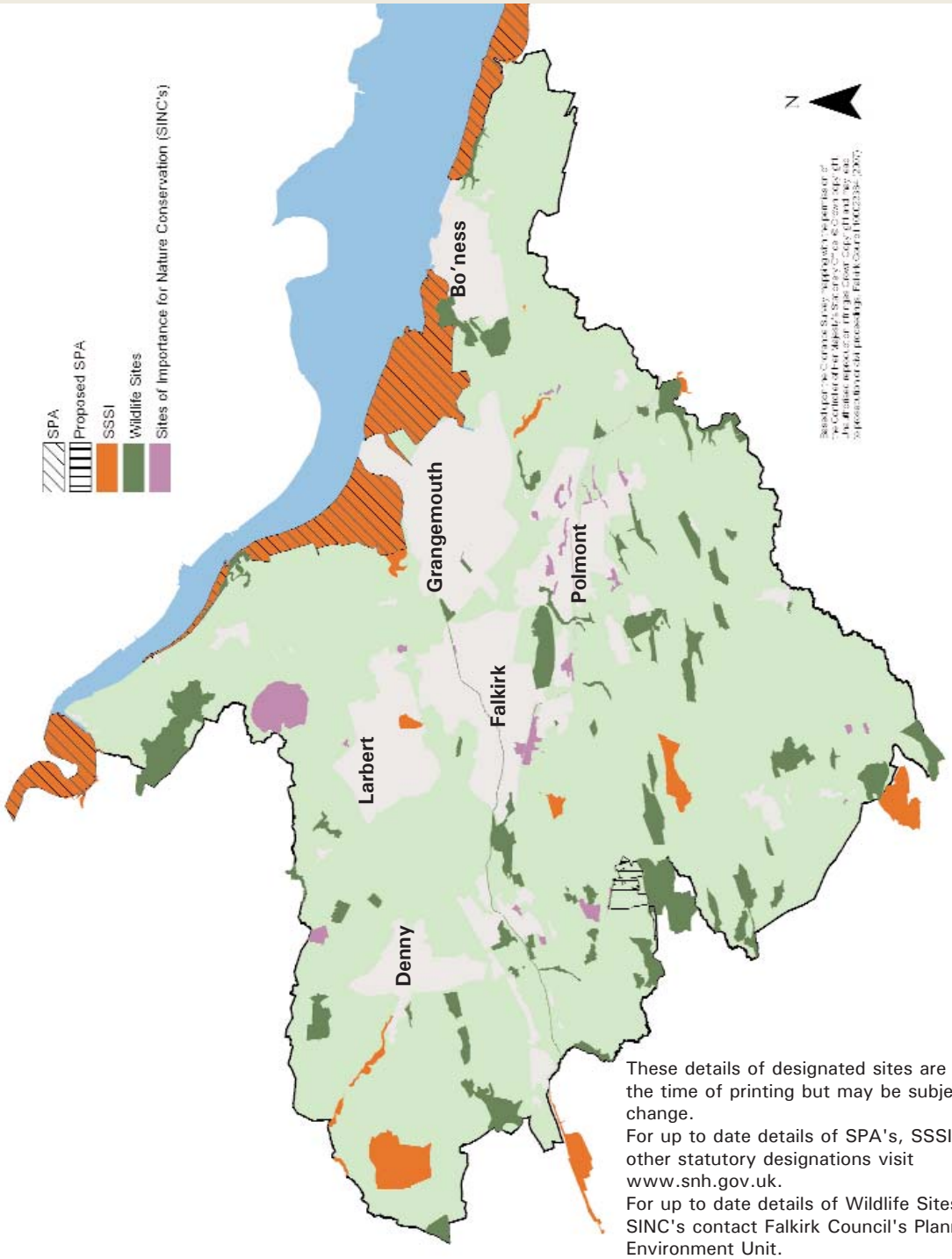
Birds
Barn owl
Bean goose
Black grouse
Black-tailed godwit
Bullfinch
Common tern
Curlew
Dipper
Dunlin
Golden plover
Great crested grebe
Green woodpecker
Grey partridge
Greylag goose
Hen harrier
Kestrel
Kingfisher
Knot
Lapwing
Linnet
Merlin
Pink-footed goose
Pintail
Red-breasted merganser
Lesser Redpoll
Redshank
Reed bunting
Sand martin
Sedge warbler
Shelduck
Short-eared owl
Skylark
Snipe
Song thrush
Spotted flycatcher
Swallow
Swift
Teal
Tree pipit
Tree sparrow
Twite
Water rail
Wood warbler
Woodcock
Yellowhammer

Invertebrates
Acanthocnema nigrimana (a fly)
Aepus marinus (a ground beetle)
Ameletus inopinatus (a mayfly)
Beris clavipes (a soldier fly)
Boloria selene (small pearl-bordered fritillary)
Brachygluta helferi (a beetle)
Brachyopa insensilis (a fly)
Brachysomus echinatus (a weevil)
Callophrys rubi (green hairstreak butterfly)
Chrysolina oricalcia (a beetle)
Coenonympha tullia (large heath butterfly)
Deleaster dichrous (a beetle)
Dyscia fagaria (grey scalloped bar moth)
Enicmus fungicola (a mould beetle)
Enicocerus exsculptus (a beetle)
Mycetobia pallipes (a fly)
Neolimnophila carteri (a fly)
Omphiscola glabra (a freshwater snail)
Parhelophilus consimilis (a hoverfly)
Phyllodrepoidea crenata (a beetle)
Polyommatus icarus (common blue butterfly)
Scaphisoma boleti (a beetle)
Sphaerophoria loewi (a hoverfly)
Symballophthalmus dissimilis (a fly)
Systenus pallipes (a fly)
Xylena exsoleta (swordgrass moth)

Flowering Plants
Bennett's pondweed
Bluebell
Dune helleborine
Field scabious
Grass of Parnassus
Greater butterfly orchid
Harebell
Ivy-leaved water crowfoot
Ox-eye daisy
Purple ramping-fumitory
Ragged robin
Round-leaved sundew
Smooth cat's-ear
Tufted loosestrife
Whorled caraway
Wych Elm
Young's helleborine

Ferns and lower plants
Hay scented buckler fern
Lepidozia pearsonii (a Liverwort)
Moonwort
Pillwort
Plagiochila spinulosa (a Liverwort)

Appendix 4– Statutory and non-statutory designated sites



These details of designated sites are correct at the time of printing but may be subject to change.
For up to date details of SPA's, SSSI's and other statutory designations visit www.snh.gov.uk.
For up to date details of Wildlife Sites and SINC's contact Falkirk Council's Planning and Environment Unit.

Appendix 5– Further Information

Species and habitats:

Information sheets are available on the following subjects:

- Bats
- Badgers
- Water voles, otters and other aquatic mammals
- Birds (including swifts & barn owls)
- Bean Geese
- Plants
- Invertebrates
- Amphibians, fish & reptiles (including Great Crested Newts)
- Invasive species
- Woodland
- Grassland
- Urban greenspace / brownfield sites
- Buildings
- Freshwater
- Hedges / boundary features
- Surveying for biodiversity on development sites (Accepted timings, methodologies etc.)
- Biodiversity Management Plans

Information sheets are available at www.falkirk.gov.uk or from the Falkirk Council Planning and Environment Unit.

Designated sites:

Further information on statutory designated sites (SPAs, SACs, and SSSIs) is available from **Scottish Natural Heritage**

Further information on locally designated sites (Wildlife Sites and SINCs) is available from the **Falkirk Council Planning and Environment Unit**. It is intended that supplementary planning guidance relating specifically to locally designated sites will be produced in due course.

Legislation and guidance:

Further detail on legislation and guidance relating to biodiversity conservation is available at:

www.snh.gov.uk
(legally protected sites and species and the role of SNH)
www.hmso.gov.uk
(copies of legislation relating to species and habitat protection)
www.scotland.gov.uk
(wildlife legislation, planning guidance – NPPGs, PANs etc)
www.rtpi.org.uk
(Royal Town Planning Institute publications including: "Planning for Biodiversity" available to download)
www.forestry.gov.uk/scotland
(Forestry Act 1967 (amended), felling licences etc.)

Further Reading:

Anon, 2000, 'Ponds, pools and lochans', SEPA

Anon, 2004, 'Biodiversity by Design : A Guide for Sustainable Communities', TCPA

Anon, 1999, 'Bats and People', SNH

Anon, 1998, 'Wildlife, The Law and you', SNH

Anon, 2001, 'Badgers and Development', SNH

T. Langton et al, 2001, 'Great Crested Newt Conservation Handbook', Froglife

R.Strachan and T. Moorhouse, 2006, 'Water Vole Conservation Handbook', WildCru

D. Tuldesley & Associates, 2005, 'Environment Assessment Handbook: Guidance on the EIA process', SNH

Appendix 6: Useful contacts

Falkirk Council
Development Management Unit
Development Services
Falkirk Council
Abbotsford House
David's Loan
Falkirk FK2 7YZ
Tel: 01324 504950

Falkirk Area Biodiversity Officer
Planning and Environment Unit
Development Services
Falkirk Council
Abbotsford House
David's Loan
Falkirk
FK2 7YZ
planenv@falkirk.gov.uk
Tel: 01324 504950
www.falkirk.gov.uk

Bean Goose Action Group
c/o Scottish Natural Heritage
The Beta Centre
Innovation Park
Stirling University
Stirling
FK9 4NF
Tel: 01786 450362
www.snh.gov.uk

Central Scotland Forest Trust
Hillhouseridge
Shottskirk Road
Shotts
Lanarkshire
ML7 4JS
Tel: 01501 822015
www.csft.co.uk

Farming and Wildlife Advisory Group
Algo Business Centre
Glenearn Road
Perth
PH2 0NJ
Tel: 01738 450500
E-mail : scotland@fwag.org.uk
www.fwag.org.uk

Forestry Commission Scotland
Central Scotland Conservancy
Bothwell House
Hamilton Business Park
Caird Park
Hamilton
ML3 0QA
Tel: 01698 368530
www.forestry.gov.uk/scotland

Jupiter Wildflower Nursery
Wood Street
Grangemouth
FK3 8LH
Tel: 01324 486475
E-mail : n.mcintyre@btcv.org.uk

Royal Society for the Protection of Birds
Dunedin House
25 Ravelston Terrace
Edinburgh
EH4 3TP
Tel: 0131 3116500
www.rspb.org.uk

Scottish Environment Protection Agency
Bremner House
The Castle Business Park
Stirling
FK9 4TF
Tel: 01786 452595
www.sepa.org.uk

Scottish Natural Heritage
The Beta Centre
Innovation Park
Stirling University
Stirling
FK9 4NF
Tel: 01786 450362
www.snh.gov.uk

Scottish Wildlife Trust
Cramond House
Cramond Glebe Road
Edinburgh
FH4 6NS
Tel: 0131 312 7765
www.swt.org.uk

هذه الوثيقة متاحة عند الطلب
في اللغات الأخرى في المجتمع.

ਇਹ ਪਰਚਾ ਸਮਾਜ ਦੀਆਂ ਹੋਰ
ਭਾਸ਼ਾਵਾਂ ਵਿਚ ਪੁੱਛਣ ਤੇ ਮਿਲਦਾ ਹੈ।

此文件設有其他
語文，請向有關
方面索取。

یہ دستاویز دوسری کمیونٹی زبانوں میں مطالبے پر دستیاب ہے۔

If you would like a copy in community languages, braille, large print or audio tape call Development Services, Falkirk Council on 01324 504715.

Printed by Falkirk Printworks, Units 6 and 7 Castle Place, Bankside Industrial Estate, Falkirk FK2 7XB. 01324 501490
Printed on Evolve Business 100gsm (TCF - Totally Chlorine Free) stock.
Fibre source = 100% recycled fibre pre and post-consumer waste.
Supplied by Robert Horne Group.

Designed by Planning & Environment Unit, Development Services, Falkirk Council

Falkirk Council
Development Services