

Advice Note 14: Delivery of Biodiversity Enhancement on Local Developments



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Photo: John Carolan

SIC Advice Note: Delivery of Biodiversity Enhancement on Local Developments

This note is intended to be web based rather than printed. Web links to further information are contained within and will be regularly updated.

Who is the Advice Note for?

It is for anyone considering submitting a planning application in Shetland, to help them understand the new obligations around biodiversity and to help them ensure that their application complies with [National Planning Framework 4](#) (NPF4) requirements.

The document is primarily aimed at those undertaking smaller scale developments but will also be useful for those undertaking larger scale development or those seeking information on what they could do on their own land to support wildlife.

Introduction

The Scottish Government declared a nature crisis in December 2022 with the publication of the draft Scottish Biodiversity Strategy.

Securing positive effects for biodiversity is one of six statutory outcomes introduced by the Planning (Scotland) Act 2019. There was a shift in focus in the planning system when National Planning Framework 4 (NPF4) was adopted in 2023, so that climate and nature recovery are the primary guiding principles for all plans and decisions. Improving biodiversity is a cross-cutting theme that runs through NPF4.

The Scottish Government has produced draft [planning guidance on biodiversity](#)¹, which sets out Scottish Ministers' expectations for the implementation of NPF4 to improve biodiversity. Their document sets out core principles for development that are applicable to all development types and scale and are as follows:

- Apply the mitigation hierarchy
- Consider biodiversity from the outset
- Provide synergies and connectivity for nature
- Integrate nature to deliver multiple benefits
- Prioritise on-site enhancement before off-site delivery
- Take a place-based and inclusive approach
- Ensure long term enhancement is secured
- Additionality.

This Advice Note suggests how applicants can ensure that their planning applications comply with those core principles. Further information on those key principles is set out in sections 3.3 -3.14 of the Scottish Government Guidance.

National Planning Framework 4 Policy Requirements

NPF4 Policy 3 Biodiversity intends “to protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks”. It applies to all development, though its application varies, according to the proposed scale of development.

¹ <https://www.gov.scot/publications/scottish-government-draft-planning-guidance-biodiversity/documents/>

This Advice Note is primarily intended to guide applicants, agents and architects of local development² on their responsibilities to protect and enhance biodiversity under National Planning Framework 4 (NPF4). In particular, policy 3(c), which states:

“Proposals for local development will include appropriate measures to conserve, restore and enhance biodiversity, in accordance with national and local guidance. Measures should be proportionate to the nature and scale of development. Applications for individual householder development³, or which fall within the scope of (b), are excluded from this requirement.”

Section 3(b) referred to above relates to national or major development or development that requires an Environmental Impact Assessment, and these are outside the scope of this guidance. For development of this scale SIC recommends early engagement with Planning Officers. Development of this type should follow national guidance.

This Advice Note is in the format of Frequently Asked Questions; it includes background information that developers need to consider, information on potentially suitable biodiversity enhancements, and links to additional resources.

Pre-application advice: Shetland Islands Council welcomes and encourages discussions before a planning application is submitted. Engagement at an early stage can result in better quality applications which meet the criteria and increase the chances of a successful outcome, saving the applicant time in the long-run.

Size of development and what is required?

This Advice note relates to local development, generally relating to housing developments of less than 50 houses, developments where the total area is less than 2 ha or small scale windfarms below 20 MW. Applications for single house sites are classed as small scale development.

In Shetland for the purposes of this guidance local development has been subdivided as follows:

- Small-scale local development. Development for up to 2 houses or with an area of less 0.4 ha. Most development applications within Shetland fall into this category.
- Medium/ large scale local development. This would include any development for an area greater than 0.4 ha; or for 3, or more, houses.

Small-scale local developments at locations which don't have any designations (e.g. Special Area for Conservation (SAC), Site of Special Scientific Interest (SSSI), etc.) will not normally need an ecological assessment, unless protected / priority species or habitats may be present. When an ecological assessment is not required, the applicant can be guided by the examples of common measures described within this Advice Note and in Developing with Nature Guidance provided by NatureScot⁴. Where further ecological information is required it should be undertaken at an appropriate time of year and comply with NatureScot⁵ professional advice and CIEEM Guidance⁶.

² As defined by [The Town and Country Planning \(Hierarchy of Developments\) \(Scotland\) Regulations 2009](#)

³ Individual Householder Development relates to any development associated with an existing dwelling not benefitting from [permitted development rights](#) (e.g. a shed higher than 4m). Shetland Islands Council Planning Service can provide more information. This type of development can still incorporate measures to benefit nature and we recommend appropriate enhancements, as set out in this document, are included as part of the overall project as a matter of good practice.

⁴ [Developing with Nature Guidance \(NatureScot\)](#)

⁵ <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice>

⁶ <https://cieem.net/resource/guidelines-for-ecological-impact-assessment-ecia/>

Medium/ large scale local developments will usually require an ecological impact assessment (EcIA).

When that is required, it is recommended that the developer employs the services of an ecologist, the assessment is undertaken at an appropriate time of year and complies with NatureScot⁷ professional advice and CIEEM Guidance⁸.

What is biodiversity?

Biodiversity is the web of life. It refers to the variability among living organisms and the spaces where they live within land, marine and freshwater ecosystems. Those spaces may vary in space from, for example, window-boxes, to gardens, meadows, peatland, lochs, burns, beaches or the seas. Biodiversity includes diversity within species, between species and across ecosystems⁹.



Photos: C. Angus

Why does biodiversity need to be enhanced?

The Scottish Government states that “there is an indisputable body of evidence that biodiversity is in real trouble, both globally and in Scotland. By restoring biodiversity, our natural environment will be more diverse and resilient in responding to human threats and in adapting to climate change. Integrating nature-based solutions brings multiple benefits, benefiting people and the quality of the places in which we live and work”.

Legislation and Policy

Through the requirements of NPF4 and a number of Strategies the Scottish Government has committed to the ambition to have “restored and regenerated biodiversity” across Scotland by 2045.

Within NPF4 Policy 3 – Biodiversity, there is a requirement for all developments to contribute to the enhancement of biodiversity **proportionate** to the scale of the development and to secure lasting and ambitious outcomes for biodiversity.

How much biodiversity enhancement is ‘proportionate’?

Each development site will be different, so the scale, type and number of biodiversity enhancement measures needed will vary depending on the level of effects caused by the proposed development.

⁷ <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice>

⁸ <https://cieem.net/resource/guidelines-for-ecological-impact-assessment-ecia/>

⁹ [Scottish Biodiversity Strategy to 2045](#)

NPF4 does not specify the level of biodiversity enhancement required or give instructions on how to assess it. Currently, for each planning application, deciding whether proposed biodiversity enhancements are proportionate relies on the judgement of the Planning Service.

The approach in Scotland differs to that taken in England, where a biodiversity net gain (BNG) metric is used and a BNG requirement of 10% is set. The metric is not directly transferable to Scotland. The Scottish Government is researching an appropriate metric for Scotland and advice will be updated should assessment requirements change.

When should you consider Biodiversity?

At the start of planning and designing your development.

How Long Should the Biodiversity Enhancement Measures be maintained?

Consideration of the future costs and management needs of any proposed measures should be done at the planning stage as it is expected that the enhancements would be required for the life of the development. This may either be secured through a planning condition or legal agreement.

What are the key steps to delivering biodiversity enhancement?

In order to deliver meaningful biodiversity enhancement on site following these key steps is recommended

1. Think about biodiversity from the outset.
2. Assess the current or baseline biodiversity value of the site.
3. Apply the mitigation hierarchy to ensure that there is no net loss¹⁰ of biodiversity.
4. Select appropriate measures to deliver biodiversity enhancement as part of the development, remembering that positive management of existing habitats on site could deliver this.

How do you assess the biodiversity value of the site?

Even without an ecological assessment undertaken by a professional, the planning application should include a qualitative assessment. By doing a qualitative assessment of the site and its surroundings it is easier for the applicant to propose the most appropriate measures to enhance biodiversity on their site. This should be included with the planning application in line with recommendations from the Scottish Government¹¹.

The qualitative assessment should provide a brief description of the site and its adjacent localities, highlighting any ecological features of interest e.g. ditches or water courses or different types of vegetation such as trees, shrubs or heather. This provides the baseline from which impacts and enhancements are assessed. The qualitative assessment should include consideration of designations, protected and priority species and habitats (see later section). The inclusion of site photographs can be very useful for the planning authority in the assessment of the planning application.

¹⁰ No net loss of biodiversity means ensuring that the amount of biodiversity on site is not less at the end of the development as it was before the development started (enhancements are then needed to add extra biodiversity).

¹¹ <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2023/11/scottish-government-draft-planning-guidance-biodiversity/documents/scottish-government-draft-planning-guidance-biodiversity/scottish-government-draft-planning-guidance-biodiversity/govscot%3Adocument/scottish-government-draft-planning-guidance-biodiversity.pdf> - section 4.17

What is the mitigation hierarchy and why should we follow it?

The mitigation hierarchy gives the order in which the impacts of development should be considered and addressed (Figure 1). NPF4 instructs that the mitigation hierarchy should be followed in relation to Biodiversity.

In its simplest form, for a new development site, the location and layout of the site should be designed to firstly, **avoid** existing biodiversity features where possible. That is the single most effective way for developments to minimise impact on biodiversity. For the remaining area within the site, the development should be designed to **minimise** negative effects on biodiversity. Then any damaged features should be **restored** (if relevant) and, finally, offset any residual impacts that remain, to ensure that the development does not lead to any net loss of biodiversity (Figure 1).

Applicants should also consider their site within the wider locality, with its surrounding habitats and species, with a view to ensuring habitat connectivity and avoiding creating isolated unsustainable habitat 'pockets'.

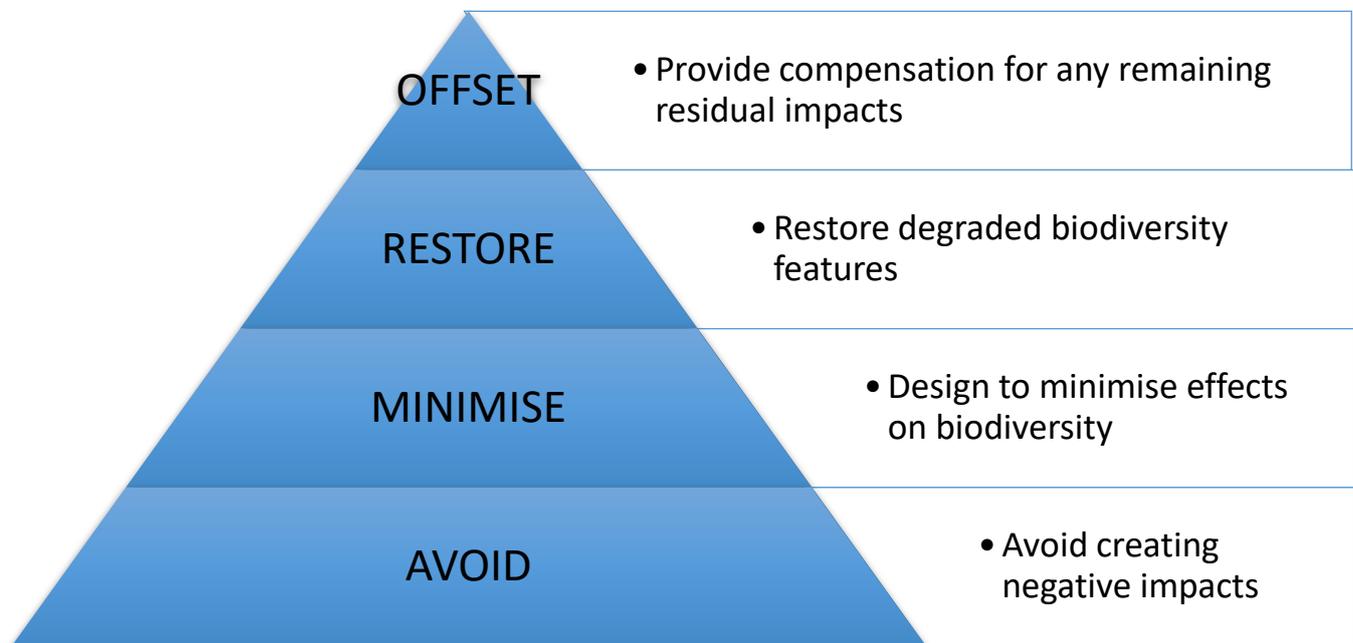


Figure 1 Mitigation hierarchy.

Applicants must provide evidence that they have considered the mitigation hierarchy with regard to biodiversity.

To demonstrate that the mitigation hierarchy has been applied, the applicant should set out step-by-step how they have considered each level in the hierarchy, starting at the bottom:

Examples of how proposals can avoid negative impacts could include: site location choice, minimising the footprint of proposed buildings, siting buildings to avoid existing features of biodiversity interest, retaining native trees or shrubs on site and suchlike;

Examples of how proposals could minimise effects on biodiversity could include: minimising areas to be paved and tarred, use of motion sensitive outdoor lighting;

Examples of restoring biodiversity features could include tree planting, re-wetting previously drained areas, removal of invasive species;

Offsetting is to compensate for any impacts which remain and will mean that after development there is 'no net loss' in biodiversity because of the development. Examples of offsetting measures will often be similar those which are then added in to enhance biodiversity. See Table 1 which lists examples of potential enhancement measures.

What about Designations, Protected Species and Priority Species / Habitats?

Applicants should find out if their proposed development is within any designated area. Protected species also need to be considered and, for example, timings of works may need to take account of breeding birds. A planning application may need an ecological assessment if any of the following apply to the proposed site:

- On or adjacent to a Site of Special Scientific Interest (SSSI), a Special Area of Conservation (SAC), a Special Protection Area (SPA) or a Ramsar site. Applicants can find boundaries and locations of these designations using interactive maps at [NatureScot data services | NatureScot](#)
- On Class 1 or 2 peatland as identified on the Carbon and Peatland 2016 Map¹² (Refer to <https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/>)
- Affecting a Local Nature Conservation Site (Refer to [Local Nature Conservation Sites Supplementary Guidance](#))
- The presence or potential presence of a species which is specially protected under legislation, for example, European Protected Species (EPS). In Shetland the otter is the most commonly encountered such species and in this case an otter survey, undertaken by a licensed professional, may be required for some applications¹³.
- The presence or potential presence of an animal, plant or habitat on the Scottish Biodiversity List (refer to [Scottish Biodiversity List | NatureScot](#)).
- Additional habitats and species information is held by Shetland Biological Records Centre, www.shetlandamenity.org/shetland-biological-records-centre

Who is Responsible for Providing Information on Biodiversity to Support a Planning Application?

It is the responsibility of the applicant to provide Shetland Islands Council with sufficient information to evaluate the ecological impacts associated with the application and how these have been addressed. The applicant should be aware that ecological matters may be picked-up during the consideration of the planning application, even if the applicant does not consider that any of the issues identified above apply.

¹² Consideration of how an application meets the requirements of NPF Policy 5 - Soils will also be required in this instance, refer to NatureScot Guidance - <https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management>. This would also apply to class 5 peatland but from a climate change consideration, however, it is unlikely that an ecological assessment of Class 5 peatland would be required.

¹³ [Standing advice for planning consultations - Otters | NatureScot](#)

While it is up to the applicant to decide when to employ the services of an ecological consultant, it is likely to be needed if any formal assessment is required. Even when a formal assessment is not required, employing an ecological consultant may be beneficial, and can ensure the planning process goes smoothly.

What is meant by biodiversity enhancement?

To enhance biodiversity, or to provide biodiversity enhancement, is to have an increased or improved biodiversity on a site after its development compared to what was there before. It should be clear in the planning application what the biodiversity enhancement(s) is/ are and how they will be sustained over the longer term. Other terms such as “securing positive effects for biodiversity” and “biodiversity net gain”, generally mean the same and can be used interchangeably.

Further information is available here - [Biodiversity Net Gain Approaches | CIEEM](#)

What enhancements are appropriate for Shetland?

Enhancements should be chosen on merit, rather than on, for example, cost. The aim should be to use enhancements that will be suitable in the long-term rather than as a short-term fix. NatureScot has produced [Developing with Nature Guidance](#), which provides comprehensive information and advice. Please note that the Guidance is for Scotland as a whole, so some of the recommendations are not appropriate in Shetland. Of the twenty-four biodiversity enhancements they suggest, their suitability in Shetland is shown in Table 1.

Which species should we plant?

Planting of native species (flowers, grasses, trees and shrubs) is usually prioritised over non-native species. Non-native species are any species introduced (deliberately or accidentally) by human activity to an area where they do not naturally occur. For some, this happened long ago and they are considered ‘naturalised’, but they are still non-native species.

Native plants are more suited to our climate and conditions, but care still needs to be taken that planting is suited to individual site conditions (e.g. soil type and depth, wetness, exposure). Where possible, plants with local provenance should be used (i.e. grown in Shetland from Shetland plants) as this increases the chances that the plants will survive, and it reduces the risk of introducing pests and diseases.

Further advice on [Planting for Pollinators](#), [Wildflower Meadows](#) and [Planting Tree, Scrub and Woodland](#) in Shetland is provided in Appendices at the end of this document.

Table 1 Biodiversity enhancement measures as set out in NatureScot's Developing with Nature Guidance and whether they are appropriate in Shetland.

Measure	Comment	Suitable in Shetland
Planting for nature		
1. Plants for Pollinators	Can provide enhancement even on the smallest sites. (See Appendix 1)	✓
2. Wildflower Meadow	Even on a small scale within a development site this has the potential to deliver significant enhancement, especially for invertebrates, but requires proper, long-term, management. (See Appendix 2).	✓
3. New and Old Growth Orchards	No orchards in Shetland and conditions not suitable.	✗
4. Trees, Scrub and Woodland	Planting of suitable species could provide a range of biodiversity enhancements. (See Appendix 3).	✓
5. Living Roofs – Green, brown & blue	If proposed, needs to be applicant-led from the outset. Difficult to retrofit or incorporate at a late stage in the development-management process. Could be designed to provide biodiversity enhancement.	✓
6. Green Wall and Green Screen	Usually needs a very sheltered site. More suited to urban locations. Consideration of future management required.	✓
7. Boundary hedge	Potentially suitable but consideration of suitable species and management needed from outset.	✓
Providing homes for nature		
8. Log and leaf piles	Potentially suitable, may provide habitat for over-wintering queen bumblebees. Materials used should be locally sourced and untreated.	✓
9. Hibernacula	Will not benefit native wildlife and has potential to benefit Invasive Non-native Species (INNS)	✗
10. Homes for bees	No solitary bees in Shetland. Habitat availability not considered limiting to solitary wasp populations.	✗
11. Homes for bugs	Populations not restricted by available habitat.	✗
12. Homes for Hedgehogs	Hedgehogs are an introduced species. Could be considered INNS as it can prey on eggs of ground nesting birds.	✗
13. Homes for small birds	Limited number of box nesting passerine species in Shetland (primarily House Sparrow and Starling). Populations not restricted by the availability of nesting habitat.	✗
14. Homes for owls	The owl species which may use these structures are not present in Shetland.	✗
15. Homes for bats	No known breeding populations in Shetland.	✗
16. Wildlife wall	Very common habitat. Not limiting biodiversity in Shetland.	✗
17. Wildlife tower	Not suitable as target species are generally not present in Shetland.	✗
18. Wildlife Friendly Lighting	Unlikely to provide enhancement on its own but could be used as part of the mitigation hierarchy to minimise impacts, e.g. motion sensitive outside lighting.	✓
Managing Wildlife with Water (see Appendix 4)		
19. Rain Garden	Careful consideration of creation, planting and management is needed.	✓
20. Wildlife Swale and Ditch	Only likely to be feasible for larger schemes. Careful consideration of creation, planting and management is needed.	✓
21. Biodiverse Sustainable Drainage Systems Ponds	Only likely to be feasible for larger schemes. Careful consideration of creation, planting and management is needed.	✓
22. Ponds for Wildlife	Careful consideration of siting, design and maintenance is needed. Size and design could vary from large, shallow wader scrapes in open areas to deeper wildlife ponds in more developed locations.	✓
23. Rivers and Burns	Should be considered if present, but very site specific. Can provide important wildlife corridors.	✓
24. Drain Escapes	Likely to be limited benefit as no native small mammals, reptiles or amphibians which this is mainly designed for.	✓

Some of the enhancement measures set out in Table 1 may overlap with mitigation or offsetting measures required as part of the mitigation hierarchy and it is important to ensure that the differences between measures required to achieve no net loss and those to deliver biodiversity enhancement are clearly identified.

It is important to remember the best way to deliver biodiversity enhancement could be to improve the condition and management of habitats already present on site. On-site habitats will be suitable for the location, and it will reduce the costs and uncertainty of trying to establish new habitats.

Local and National planning policy require SuDS for all surface water run-off from any new hard surfaces in a development¹⁴. A direct, piped sea outfall may be an acceptable replacement for SuDS drainage if agreed. There are often good opportunities to combine the requirements for SuDS drainage with opportunities for biodiversity enhancement into one planned aspect, often reducing costs and space required.

Further information is available from NatureScot - [Sustainable Drainage Systems \(SuDS\) | NatureScot](#).

Peatland

Peat is common across Shetland; it is important for the biodiversity it supports and its role in climate change due to the amount of carbon that it stores. Peat is specially protected under NPF4 and therefore if your proposed development is located on peatland it is likely to require a specific assessment¹⁵. Due to the time scales and uncertainty of peatland restoration it can be very difficult and expensive to deliver biodiversity enhancement if valuable peatland is impacted by a proposed development.

Much of the peat areas across Shetland are classified as Blanket bog, this is a globally rare habitat that forms in areas with cool, wet and oceanic climates. It is classified as an irreplaceable habitat due to the difficulty and time taken to restore, recreate or replace if damaged. It is therefore recommended that areas of good quality blanket bog are avoided, if this is not possible it is recommended that you engage specialist advice.

Peatland and carbon rich soils are specifically referred to and protected under policy 5 of NPF4.

What about using non-native species, what is legal?

Non-native plants are used in gardens and amenity grounds. In addition to adding variety, structure and colour and looking nice, they can benefit native wildlife, but they need to be species that will survive in the conditions on the site.

The law prohibits anyone from planting most non-native species “in the wild” (areas such as road verges, hedgerows, grasslands, woodlands and river banks), or letting them spread into these areas (Refer to [Scottish Government Non-native species: code of practice](#)). Non-natives, other than those on an exception list (See [Plant exception list](#)) (which can be planted anywhere), may only be planted in areas designated as “non-wild” (such as private gardens, amenity greenspace, public parks and gardens, civic and play space).



Photo: C. Angus

¹⁴ Further information available at www.susdrain.org, www.ciria.org

¹⁵ [Advising on peatland, carbon-rich soils and priority peatland habitats in development management | NatureScot](#)

What about invasive non-native species (INNS)?

Some non-native species have the potential to become invasive and cause harm to nature. If any are found on a site prior to development they, and any contaminated soil, should ideally be removed and disposed of appropriately.



Photo: C. Angus

Many plant species on the INNS list are found in gardens in Shetland. Due to their ability to become invasive, they tend to establish quickly and grow well. It is not recommended that they are planted as part of a biodiversity enhancement, and there is the legal responsibility to not let them spread. Example species common in Shetland include Pampas Grass, Montbretia and Giant Rhubarb. The full list of INNS species is in Annex B of [Developing with Nature Guidance](#) and further information is available at [Invasive non-native species | NatureScot](#).

If an INNS is present on or next to the development site, there may be legal restrictions on how the development is undertaken, especially in how waste is treated, and you should seek specialist advice. For other INNS, eradication measures could be applied as 'restore' as part of the mitigation hierarchy.

Other Measures

There is a significant focus on climate change in NPF4 as well as biodiversity and therefore the whole life impacts of the development in terms of climate and biodiversity impact can be important. The UK Green Building Council provide information on considering the embodied ecological impacts¹⁶ while the Scottish Government have undertaken research on how you can consider the climate impacts of your development.¹⁷

Further information that can be used in conjunction with this Advice Note

[CIEEM Good Practice Requirements for Delivering Biodiversity Net Gain \(on- and Off-Site\)](#)

[CIEEM Biodiversity Net Gain in Scotland](#)

Locally, it may be useful to consult the Shetland Biological Records Centre run by Shetland Amenity Trust.

¹⁶ <https://ukgbc.org/resources/embodied-ecological-impacts-knowledge-hub/>

¹⁷ [Supporting documents - Planning and climate change guidance: research report issue 3 - gov.scot](#)

Appendix 1 - Plants for Pollinators

The use of carefully chosen plant species to support wildlife is often one of the simplest measures that can be incorporated into developments to achieve biodiversity enhancement.

This can be done on developments of any scale, from planters and containers in small gardens to extensive landscaped grounds on larger developments.



Photo: Matt Bruce



Photo: SIC

Plant choice is important, primarily so that the plants survive. Site conditions should be considered, including soil type and depth, wetness, exposure and shading (north or south facing) and plant preferences matched to site conditions.

Tip: Look and see which plants do well on similar sites and locations.

Try to plant so that there is a variety of heights and structures, from low growing plants that provide ground cover to shrubby or climbing plants, such as dog rose or honeysuckle, as this will provide more habitat for insects as well as the birds that prey on them.

Choosing a mix of plant species so that there are flowers for as long through the year as possible also helps pollinators. Seed, fruit, pollen and nectar types may also be considered.



Photo: C. Angus

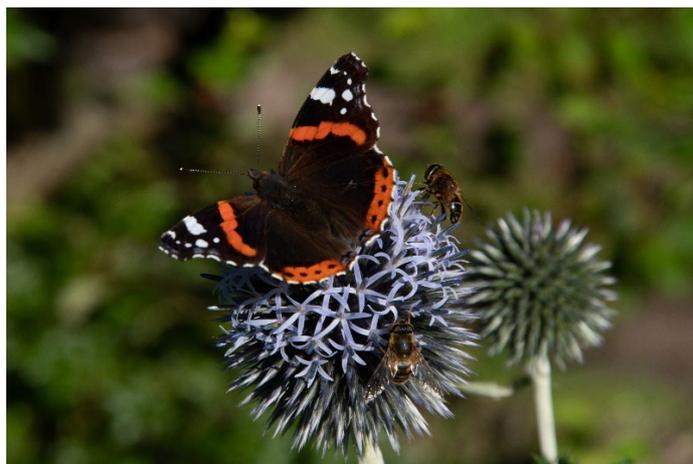


Photo: Austin Taylor



Photo: Austin Taylor

Sourcing plants: While plants with local provenance are considered best, it is difficult to acquire Shetland seed or plants for most species. As far as we are aware, the only commercially available wildflower seed in Shetland is available from Shetland Peatland Restoration Services, but this is limited and seasonal. Additional information will be added as more local sources become available.

Developers should also consider the aftercare that will be required for the planting and who will be responsible for it, both during development and after completion into the longer-term. More extensive areas may require a simple planting and management plan and information on how it will be maintained.

Further sources of information are here:

<https://shetlandcommunitywildlife.org/2020/04/29/gardening-for-bumblebees-and-butterflies/>
<https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management>
<https://www.nesbiodiversity.org.uk/get-involved-in-biodiversity/wildlife-gardening/>



Photo: C. Angus

Appendix 2 - Wildflower meadows

Wildflower meadows are essentially areas of land that are managed for their diversity of wildflowers and grasses, rather than being dominated by a small number of fast growing species. They should be thought of as long-lived and perennial habitats. 'Meadows' can be of virtually any size, including a part of a garden. They are potentially fairly easy to create and can provide significant benefits for wildlife. But they do require management.



Photos: Dave Wheeler

Developing your meadow: Although there has been some agricultural improvement across quite large areas of Shetland, this has not been as intensive as is often seen on the UK mainland. This means that, in many cases, there is a wide range of wildflowers within the existing seedbank that can be encouraged to grow with suitable management of the site. Appropriate site management is therefore recommended in order to develop this habitat and encourage the establishment of local, native plant species especially for areas of existing grassland, compared to reseeding with a commercially available generic grassland seed, and also noting that it may not always be possible to buy Shetland seeds (as highlighted in Appendix 1).

Managing and maintaining your meadow: For small scale developments, meadows would generally be managed by cutting. Cutting is usually needed on an annual basis once flowers have set seed (from late August onwards), and it is vital that any arisings (clippings) are removed, to prevent nutrient enrichment. For larger areas and where appropriate, meadows could be managed by grazing, although it must be undertaken at the right stocking level and time of year.

The meadow should be regularly inspected for non-native and invasive species that can reduce its diversity over time. Dominant grass species can also reduce wildflower diversity as it matures, though this can be managed by scarifying, cutting (including removal of cuttings) and/ or encouraging Yellow Rattle. Regular surveys can be undertaken to assess how well species have established and which species have colonised naturally over time. How the meadow is managed may need revising over time to benefit species that have naturally established, or failed to establish.

The creation of wildflower meadows is encouraged as a biodiversity enhancement measure, but it is important that a suitable, long-term management plan is in place to ensure that the benefits are realised.

Appendix 3 - Tree, Scrub and Woodland Planting in Shetland

Planting native trees in appropriate locations and with suitable management is a good biodiversity enhancement option.

A short summary is provided here, but expanded information will become available, linked to the forthcoming Shetland Tree and Woodland Strategy.

Trees take many years to establish in Shetland, so retaining and enhancing existing trees, scrub and woodland, wherever possible, will be of greatest amenity and biodiversity value. Older trees are particularly rich in biodiversity and should be protected and incorporated within a planned development where possible.

New planting can be incorporated in a variety of ways from individual trees to small copses, or more extensive shelter belts or woodlands. But a 'right tree, right place' approach should be taken, making sure that the species is suited to site conditions, that appropriate management, shelter and protection is in place. The Shetland Amenity Trust and other local commercial enterprises can provide advice. For larger plantings, consulting RSPB is recommended as they can advise if there may be potential impacts to existing biodiversity, in particular birds.

If tree planting is proposed as a biodiversity enhancement it should be supported by a plan detailing the following:

- Species selection
- Planting techniques
- Tree protection, including its subsequent removal
- Maintenance and aftercare, including thinning if needed and replacement of any trees which have died if appropriate.



Photos: Austin Taylor

Native Trees and Shrubs

Common Alder (*Alnus glutinosa*) – very hardy, tolerates wet conditions with heavy soils.

Aspen (*Populus tremula*) – tolerates exposed conditions, needs to be planted in drier, ideally non-peaty soils.

Downy Birch (*Betula pubescens*) – hardy and frost resistant, tolerant of wet and peaty soils.

Hazel (*Corylus avellana*) – grows well in sheltered conditions on lighter soils (e.g. limestone areas).

Rowan (*Sorbus aucuparia*) – tolerates exposed drier conditions but not suited to wet areas.

Grey Willow (*Salix cinerea*), **Eared Willow** (*Salix aurita*), **Creeping Willow** (*Salix repens*), **Multinervis**, grey x eared hybrid (*Salix x multinervis*) – all are hardy and can do well in exposed conditions, as well as wet, dry or peaty soils.

Juniper (*Juniperus communis* ssp. *nana*) – tolerant of exposed conditions, including salt-laden winds. Grows in wet and dry conditions as well as peaty soils.

Dog Rose (*Rosa canina*) – tolerant of exposed conditions. Soil should be moist but well-drained.

Honeysuckle (*Lonicera periclymenum*) – tolerant of tough conditions and does well on heavy soils, not tolerant of waterlogging.

While planting native species is preferred and should be prioritised non-native species, such as shrubby honeysuckle (*Lonicera nitida*) (hardy species, tolerant of tough conditions and most soil types but will not thrive on very heavy, waterlogged ground or in full shade) flowering currant (*Ribes sanguieum*) (tolerant of a wide range of conditions but avoid planting in full shade) could also be considered.

These are known to establish well in Shetland, and all produce copious flowers which are beneficial for pollinators. Some non-native trees such as whitebeam and sycamore also grow well in Shetland and can provide biodiversity benefit, however, as previously stated, using native species should be the preferred option. Although it has previously been planted and can provide some biodiversity benefits, planting fuchsia is advised against as it can be quite invasive, and its roots can compromise structures.

Depending on the area to be planted and its location, planting a mix of different species is likely to provide greater enhancement for biodiversity.

Appendix 4 – Water for Wildlife

The following are brief descriptions of some water related enhancements that are most suited to small scale local developments. These can benefit biodiversity, either on their own or in combination with other measures.

Downpipe rainwater container gardens:

These are containers connected to the downpipe and used to grow plants. The water flows through the containers and out into the usual rainwater drainage system. The soil and water level can be adapted so that the containers can be used to aquatic plants or even herbs and vegetables. They introduce plants and habitat that provide food and shelter for insects and can provide a stepping stone habitat between larger areas. These are a good option for buildings with limited space around them.

Examples of further information and a step-by-step guide can be found here:

<https://www.wwt.org.uk/discover-wetlands/gardening-for-wetlands/how-to-build-a-mini-drainpipe-wetland/>

<https://www.10kraingardens.scot/build-your-own/>

Rainwater gardens:

A rainwater garden is a shallow area of ground or dip where run-off from roofs or other hard surfaces is channelled. It is planted with wetland or aquatic plants. It makes use of rainwater/run off that would otherwise be piped underground, creating different habitat that benefits a variety of wildlife. Creates an interesting landscape feature.

Examples of further information and step-by-step guides can be found here:

https://www.susdrain.org/case-studies/pdfs/moulsecoombprimary_suds_lightcasestudy_221012.pdf

<https://www.wwt.org.uk/discover-wetlands/gardening-for-wetlands/how-to-make-a-rain-garden/>

<https://www.rhs.org.uk/garden-features/rain-gardens>

Ponds and bog gardens:

These are usually dug into the ground and lined to hold rainwater or designed to allow slow drainage creating a boggy habitat. Water is got either directly from rainfall or through connection to downpipes. They are planted with wet tolerant and aquatic plants. A pond can be any size, from sink sized upwards. Good design and maintenance will increase the diversity of habitats for wildlife. They can support frogs, provide drinking and bathing places for birds, and good habitat for insects.

There are many online resources for further information, e.g.:

<https://www.rhs.org.uk/ponds/wildlife-ponds>

<https://www.rhs.org.uk/garden-design/bog-gardens>



Photo: C. Angus



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