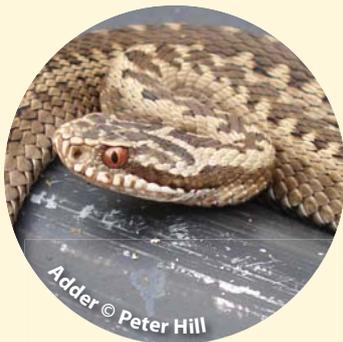




Biodiversity in Planning

A Basic Guide for Developers



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1. AN INTRODUCTION TO BIODIVERSITY AND THE PLANNING SYSTEM

1.1 What is Biodiversity and why is it relevant?

A useful definition of biodiversity is given by the UK Steering Group Report on Biodiversity, 1995: "Biodiversity (shortened from biological diversity) is all living things, from the tiny garden ant to the giant redwood tree. You will find biodiversity everywhere, in window boxes and wild woods, roadsides and rainforests, snowfields and sea shores"

As human beings we ourselves are an element of, and reliant on, the biodiversity of the planet. Plants and animals provide us with food, plants provide oxygen for us to breathe and many recreational and tourist attractions rely upon the enjoyment of our native biodiversity. It is therefore essential that we try to understand and protect our biodiversity.

The planning system is an important means by which, in relation to land use, we can attend to the biodiversity needs of the County Borough and beyond, because of the opportunities and threats posed by development. This is fully supported by planning policy and legislative requirements.

It is therefore important to address such issues as part of planning applications submitted to the Planning Authority, as failure to do so may result in an application being refused or delayed.



1.2 The Role of the Planning System

In managing development, the planning system is a key mechanism to control and reduce pressure on biodiversity, both by reducing negative impacts and securing benefits.

The planning process operates in parallel to biodiversity legislation, with both planning and legislation helping to deliver government commitments.



The importance of the legislation and commitments is reflected in the importance afforded to biodiversity in national and local planning policy.

Planning policy requires the consideration of a variety of biodiversity issues. However, in some cases it will be necessary to balance the impacts on biodiversity with the other potential benefits and negative impacts of the proposal.

1.3 Planning Policy

1.3.1 National planning policy

National planning policy emphasises the importance of integrating nature conservation or biodiversity into all planning decisions at an early stage, whilst looking for development to deliver social, environmental and economic objectives together over time (Planning Policy Wales¹ (PPW) 5.1.3-4, 5.5.1-2). There is reference to the desirability of:

- Ensuring that the UK's international obligations for site, species and habitat protection are fully met in all planning decisions (PPW 5.5.1, 5.3.8-10)
- Looking for development to realise opportunities to enhance biodiversity, to

avoid significant loss of habitats or species populations, locally or nationally, and where damage is unavoidable, to compensate for it (PPW 5.1-2, 5.5.2 also TAN 5, 5.7.3, 5.3.4)

- Forging and strengthening links between the town and country planning system and biodiversity action planning given that the planning system can help implement biodiversity action plans (PPW 5.4.2, 5.2)

Technical Advice Note 5 (TAN5): Nature Conservation (2009)² reinforces the importance of biodiversity in the planning system. It suggests that developments should contribute towards nature conservation and places great emphasis on enhancement of biodiversity rather than just protection. The TAN provides guidance on dealing with biodiversity issues in developments and planning and sets out requirements for surveys and mitigation proposals needing to be provided upfront with application submission, as these issues are material in determining applications.

1.3.2 Local planning policy

Cascading down from national policy, the Neath Port Talbot Unitary Development Plan³ (and the upcoming Local

Development Plan) has policies that refer to a presumption against adverse effects to statutorily-designated sites of nature conservation interest and states that proposals may be refused where they would lead to unacceptable damage or destruction to significant local habitats and species. In addition, policies also detail the expectation that all new development should attend to biodiversity interests and avoid unacceptable impacts through:

- the retention and conservation of important features and habitats;
- taking full account of the importance of the site in relation to adjacent biodiversity interests; avoiding loss to Local Biodiversity Action Plan⁴ priority species and habitats or where this is unavoidable, providing replacements; and
- taking full account of opportunities to restore and enhance habitats and ecosystems.

Overall, these policies stress that the biodiversity resource to be enhanced and conserved goes beyond designated areas and that conservation involves preservation, protection, sustainable management and restoration. Given the extensive protection afforded by these policies, it is clear that information about, and consideration of, biodiversity interests will be a necessary part of most planning applications. There is also a preference for such considerations to be designed-in to the development in order to aim for a net gain for biodiversity.

1.4 Supplementary Planning Guidance

The supplementary planning guidance for biodiversity⁵ provides further details and information on how biodiversity should be considered within the planning system. In addition it sets out a number of case studies on how biodiversity interests can be accommodated within certain types of development.



2. HOW DO I ANSWER THE 1APP BIODIVERSITY QUESTION?

2.1 Frequently Asked Questions

Q. If I tick yes to either of the biodiversity questions (a) and (b) will that mean that I won't be granted planning permission.

A. No. The questions are to ensure that the planning authority can consider all the appropriate issues of your planning application, in this case biodiversity.

Q. What is biodiversity?

A. Biodiversity is all living things, the plants and animals that we share our planet with and the places they live.

Q. Why do I need to consider biodiversity?

A. Many plants and animals are actually protected by law, therefore you need to be sure that any works on your site (within or outside the planning system) do not impact upon them; otherwise you could commit a criminal offence and face fines or imprisonment. Also, retaining, enhancing and creating areas for biodiversity within developments create a pleasant environment and may help you sell your development or even get support for it.

So, now you know what biodiversity is, that it won't necessarily mean that your planning permission will be refused and why you need to consider it but how do you answer the biodiversity questions on the 1app form?

2.2 What do the biodiversity questions mean?

2.2.1 Question 14. a):

14. Biodiversity and Geological Conservation

Is there a reasonable likelihood of the following being affected adversely or conserved and enhanced within the application site, or on land adjacent to or near the application site?

- Yes, on the development site
- Yes, on land adjacent to or near the proposed development
- No

This question is asking you whether you are going to impact upon the biodiversity of your site and surrounding areas – be it adversely or in a positive manner. Protected species are those protected under law. There are a number of species protected under national and European law, such as bats and otters. If you have any of these on your site you may need to obtain a development licence to disturb them from the Welsh Government. Priority species are those species listed in the UK⁶ and Neath Port Talbot Biodiversity Action Plans⁴ (UK and NPT BAP) that have been prioritised for conservation action often due to their decline in numbers or threatened status.

b) Designated sites, important habitats or other biodiversity features:

- Yes, on the development site
- Yes, on land adjacent to or near the proposed development
- No

This question asks whether your development will impact upon sites that have been designated for nature conservation purposes like Sites of Special Scientific Interest and Nature Reserves. In addition, it asks about important habitats – the areas that plants and animals live such as woodlands and grasslands. The important habitats are those listed in the UK⁶ and NPT BAPs⁴ and the reference to other features consider wildlife corridors and stepping stones that allow wildlife to move through an area, especially urban areas.

2.3 How do I know if there are any biodiversity issues on my site?

- Q.** How do I know if I have any biodiversity on my site?
- A.** The best way to find out whether you have any biodiversity issues is to undertake surveys of your site and for this you will need to employ an ecological consultant to investigate this for you. Information on how to find an ecologist is provided in 'Ecological Survey Advice including how to choose an ecological consultant' by the Association of Local Government Ecologists/ NPTCBC⁷.
- Q.** But this could cost so how do I establish whether I need to do any survey work?
- A.** Before you submit your application seek pre-application advice from the local planning department. They may well be able to tell you whether you need to do any survey work. Or, you can refer to the Biodiversity Supplementary Planning Guidance⁵ for further information and the associated documents including the Glamorgan Biodiversity Advisory Group's Think Wildlife!⁸ This will give you an idea of the sorts of issues you may encounter on your site. Thirdly you can contact the Council's Biodiversity Unit directly to get advice.

2.4 What next?

If you need to undertake survey work for your site it must be done at the correct time of year. For example, you can't survey for animals whilst they are hibernating over winter. So, as a general rule of thumb the best times to survey most habitats and species is over the spring and summer months. Surveys undertaken at inappropriate times will not be accepted and you may incur additional costs if they have to be re-done. If your survey does show that there are biodiversity issues on the site then a mitigation scheme will be needed to show how you are going to deal with the issues whilst aiming to ensure that there is no net loss of biodiversity due to your development. Your ecological consultant will be able to help you with this.

You can easily find out if your site is close to a designated site by either contacting the planning dept or the Countryside Council for Wales.

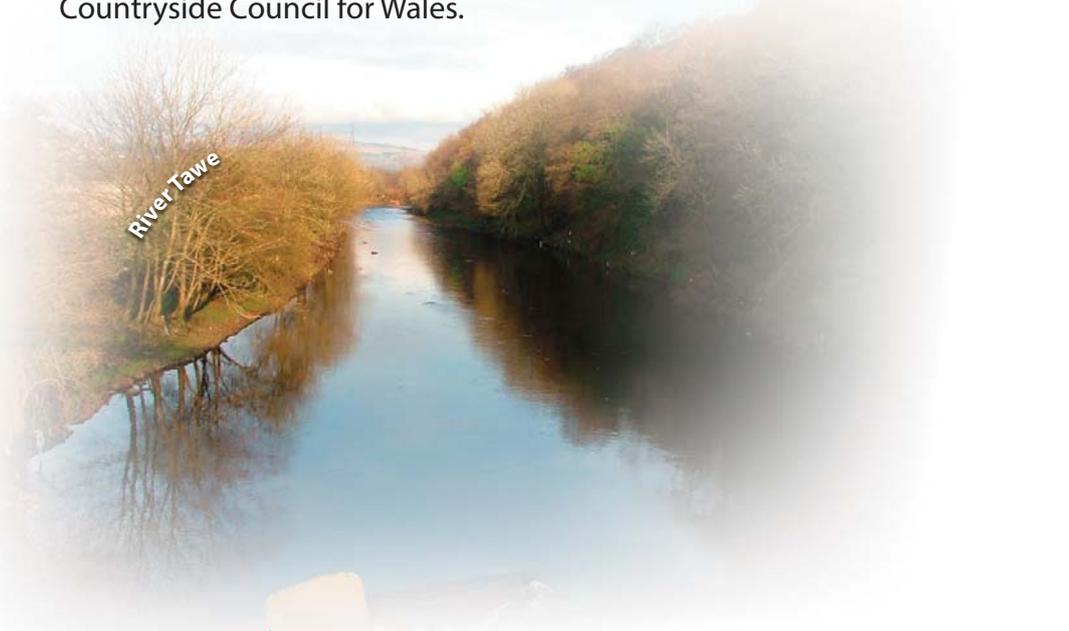
If your site is on or close to a designated site (or could be impacted by your development e.g. through air pollution) it is likely that survey and mitigation proposals will be needed to prove that your development would not adversely affect such a site.

However, it is recommended that pre-application advice from the planning department be sought as early as possible if a designated site could be impacted by the development.

2.5 Filling in the Form

2.5.1 Question 14.

- a) *Protected and Priority Species*
- No - Only tick 'no' if you are sure that there are no protected or priority species on the site or you have been advised that such species would not be expected by the planning department. Some sort of reasoning for this answer would be of benefit as part of your submission.



- Yes (on site) – tick ‘yes’ if pre-application advice or guidance suggests that it is likely that protected or priority species may be present on the site, or you have already done surveys that have positively identified such species. A survey and mitigation report will need to be submitted.
- Yes (adjacent to site) - tick ‘yes’ if pre-application advice or guidance suggests that it is likely that protected or priority species may be present close to your site, or survey work has identified such species. A survey and mitigation report will need to be submitted.

2.5.2 Question 14. b)

Designated Sites, important habitats and other biodiversity features

- No – only tick ‘no’ if your pre-application advice has suggested that there are no designated sites in the area (or within impact distance) or that there are no habitats or features of interest on the site or if additional guidance or surveys have confirmed this. Some sort of reasoning for this answer would be of benefit as part of your submission.
- Yes (on site) – tick ‘yes’ if pre-application advice, guidance or survey work suggests that it is likely that a designated site or important habitats or features may be present on the site. A survey and mitigation report will need to be submitted.
- Yes (adjacent to site) - tick ‘yes’ if pre-application advice, guidance or survey work suggests that it is likely that a designated site may be impacted by the development or that important habitats or features may be present close to your site. A survey and mitigation report will need to be submitted.

2.5.3 Other

Trees and Hedges

Are there trees or hedges on the proposed development site? Yes No

And/or: Are there trees or hedges on land adjacent to the proposed development site that could influence the development or might be important as part of the local landscape character? Yes No

If Yes to either or both of the above, you will need to provide a full Tree Survey, with accompanying plan before your application can be determined. Your Local Planning Authority should make clear on its website what the survey should contain, in accordance with the current ‘BS5837: Trees in relation to construction - Recommendations.’

Although not included in the biodiversity section, the trees and hedges question is still relevant to biodiversity as these features are likely to support wildlife; plus hedges are actually an important habitat. So, if you answer yes to these questions you must answer yes to at least the second biodiversity question.

2.6 Recommendation

Don't Panic! Just seek advice if you aren't sure about the biodiversity question. Please do not tick 'no' if you are unsure, this will only delay matters. The planning authority has a duty to consider biodiversity conservation and therefore will check with the Biodiversity Unit on such issues even if you tick 'no'. If it is felt that there are biodiversity issues, surveys will then subsequently be requested delaying your application determination. So, make sure you think about biodiversity before filling in the form and seek advice.



3. BASIC BIODIVERSITY SURVEY REQUIREMENTS

Requirements for surveys will be application and site specific so this is not a comprehensive list. It would be recommended that all applicants seek pre-application advice to ensure that they undertake surveys appropriate to their development. This will not only ensure that the required information is provided for the planning department to determine the planning application but will save expense on surveys/work that is not necessary for the application.



3.1 Types of Surveys

The following can be used as a basic guide as to what sorts of surveys will be required for different types of development:

Type of Development	Survey Requirements
<ul style="list-style-type: none"> ● Conversion -Buildings and structures e.g. barns, outbuildings, houses, churches, chapels and schools. ● Demolition -Of part or whole buildings and structures. ● Extensions -Particularly those that may key into the roof. ● Roofing work- e.g. loft conversion, dormer windows or remedial timber treatment. 	<ul style="list-style-type: none"> ● Bat Survey (by licensed bat worker).* ● Barn Owl Survey (may require licensed ornithologist).* ● Nesting Birds (general) Survey.
<ul style="list-style-type: none"> ● Caves, Mines, Adits and Tunnels -Any development nearby or likely to cause disturbance. ● Quarries - Any developments affecting a quarry or where a quarry might be affected by disturbance including new quarries or extensions to existing ones. <p><i>Note: Where quarries include ponds or buildings, also refer to those sections below.</i></p>	<ul style="list-style-type: none"> ● Bat Survey (by licensed bat worker). * ● Peregrine Falcon Survey (may require licensed ornithologist) mainly quarries only. ● Nesting Birds (general) Survey.* ● Habitat Survey, mapping using phase 1 habitat survey and indicating Biodiversity Action Plan habitats.*



Type of Development	Survey Requirements
<ul style="list-style-type: none"> ● Hedgerows and scrub -Any development requiring removal of hedgerows and/or scrub. ● Trees and Woodland - Any development affecting trees or woodlands. 	<ul style="list-style-type: none"> ● Dormouse Survey (licensed worker required). Rare in NPT so check whether this is necessary. ● Bat Survey (by licensed bat worker).* ● Badger Survey.* ● Survey for Schedule 1 birds such as Goshawk, Red Kite and Honey Buzzard (may require licensed ornithologist). ● Nesting Birds (general) Survey. ● Habitat Survey, mapping using phase 1 habitat survey and indicating Biodiversity Action Plan habitats.*
<ul style="list-style-type: none"> ● Ponds, standing water and canals, including artificial water bodies, and the surrounding land - Any development affecting ponds or other bodies of standing water and the surrounding land (<500m). ● Rivers, streams and ditches -Any development affecting watercourses, either directly or indirectly. ● Wetlands including bogs, fen, marsh and swamps - Any development affecting wetlands, either directly or indirectly. 	<ul style="list-style-type: none"> ● Great Crested Newts Survey (by licensed worker). Rare in NPT so check whether this is necessary. ● Otter Survey.* ● Reptiles Survey.* ● Water Voles Survey. Rare in NPT so check whether this is necessary. ● Marsh Fritillary Butterfly Survey. ● Fen Raft Spider Survey. Rare species and limited in range so check whether this is necessary. ● Survey for Schedule 1 birds such as Cetti's Warbler or Kingfisher (may require licensed ornithologist). ● Habitat Survey, mapping using phase 1 habitat survey and indicating Biodiversity Action Plan habitats.*
<ul style="list-style-type: none"> ● Grassland -Including calcareous, neutral, marshy and acid grassland. ● Heathland ● Arable ● Coastal -Including dunes, estuaries and salt marsh. 	<ul style="list-style-type: none"> ● Otter Survey (coastal or where wetland or watercourse features present). ● Shore Dock and Fen Orchid Survey. Rare in NPT so check whether necessary. ● Schedule 8 Plants survey, such as Deptford Pink. Rare species and limited in range so check whether this is necessary.



Type of Development	Survey Requirements
	<ul style="list-style-type: none"> ● Badger Survey.* ● Marsh and High Brown Fritillary Butterfly Survey (marshy grasslands).* ● Survey for Schedule 1 birds such as Ringed plover.* ● Nesting birds (general) survey, including Lapwing.* ● Reptile Survey.* ● Habitat Survey, mapping using phase 1 habitat survey and indicating Biodiversity Action Plan habitats.*
<ul style="list-style-type: none"> ● Wind Turbines 	<ul style="list-style-type: none"> ● Vantage Point Bird Surveys - especially for raptor species (may require specialist ornithologist).* ● Breeding birds (general) survey. * ● Wintering and migration/passage bird surveys.* ● Bat Survey (by licensed bat worker). * ● Habitat Survey, mapping using phase 1 habitat survey and indicating Biodiversity Action Plan habitats.* This will inform the requirement for other specific surveys.

* = surveys most commonly required.



3.2 Survey Timings

Some surveys can only be undertaken at certain times of the year so can have implications for timetabling planning determination and development commencement. The following can be used as a general guide:



Survey for:	Type	J	F	M	A	M	J	J	A	S	O	D	D
Birds	Breeding			/	/	/	/	/					
Reptiles	Wintering	/	/								/	/	/
Great Crested Newts	Presence				/	/	/	/	/				
Badgers, Water Vole,	Presence			/	/	/	/	/					
Otter, Dormice	Presence	/	/	/	/	/	/	/	/	/	/	/	/
Bats	Roosts					/	/	/	/	/			
Marsh Fritillary Butterfly	Hibernating	/	/	/	/							/	/
Fen Raft Spider	Presence						/			/	/		
Plants	Presence						/	/	/				
High Brown Fritillary	Presence					/	/	/	/				
Butterfly	Presence							/					
Habitat Survey	Presence					/	/	/	/	/			

/ = optimal period for survey

Please note that if a survey is undertaken outside of the optimal period it may be rejected and required to be re-done during the correct season. In addition, if applications are submitted without relevant surveys and in a season where surveys are not able to be undertaken the application will be unable to be determined.

Surveys should include:

- Historical survey/species records for site.
- A summary of the status of the habitats and important species present.
- The importance of the site locally and on a wider scale.
- Identification of any areas within the site that are used by important species, and when they are used.

- The impact that the proposed development will have.
- Proposals for mitigation, as appropriate.

3.3 How to find an ecological consultant or licensed worker

All ecological surveys will be required to be undertaken by a suitably qualified ecological consultant. Certain surveys, such as bat surveys, will require a consultant with a license to survey certain species. The council is unable to recommend consultants but do have a list of consultants, including licensed workers, that do work in Neath Port Talbot. This list can be found towards the end of ecological consultant⁷ document.

- The impact that the proposed development will have.
- Proposals for mitigation, as appropriate.

3.4 EIA Developments

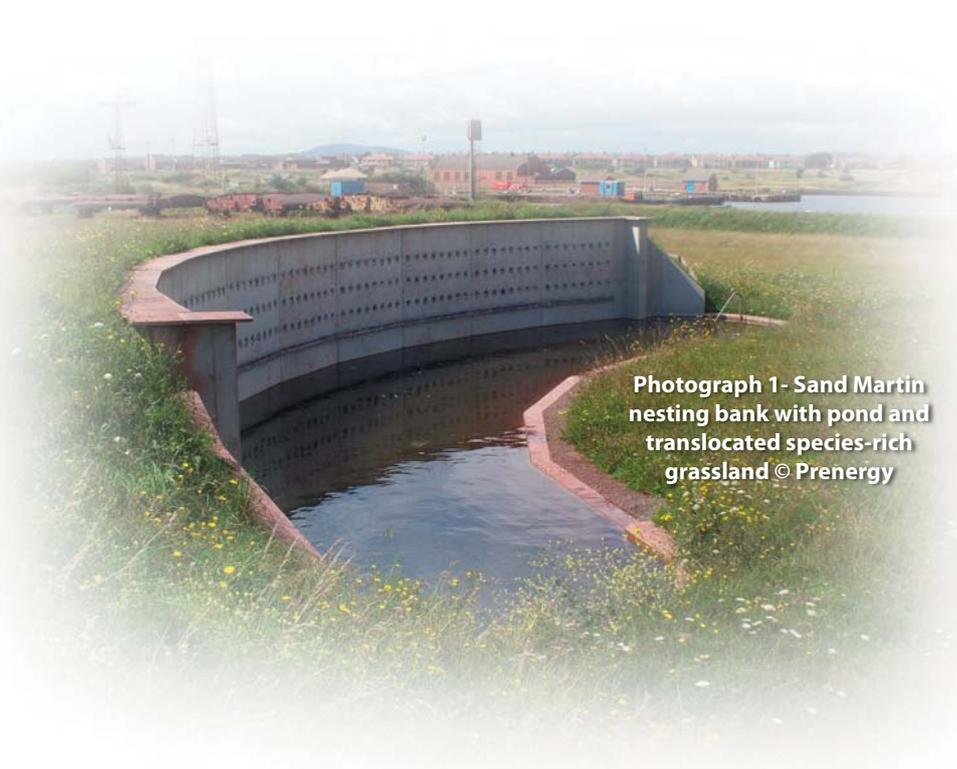
For developments that require an Environmental Impact Assessment it is recommended that a scoping opinion be sought from the Planning Department. This will advise the applicant what types and level of biodiversity survey is required for the type of development and its proposed location.

4. BIODIVERSITY MITIGATION AND COMPENSATION

The scale of mitigation or compensation required for developments impacting upon biodiversity normally relates to the scale of development and the scale of damage or impact upon the biodiversity effected (this will be highlighted by relevant survey work). Some ideas, advice and examples are provided in the following pages for large industrial developments such as large scale industry, quarries and minerals developments; large residential developments; small scale development and householder developments such as single dwelling plots and barn conversions. The consideration of biodiversity mitigation measures early in the design of a development is key. If good quality mitigation and/or compensation (if relevant) is provided early on in the planning process it is likely to speed up and potentially increase the success of the process in relation to the biodiversity aspects of the scheme.

Mitigation measures of particular relevance to certain types of development are illustrated in different colour boxes, as follows:

- Large Industrial Sites**
- Large Residential Sites**
- Small Scale and Householder Development**



Photograph 1- Sand Martin nesting bank with pond and translocated species-rich grassland © Prenergy

4.1 Retain Existing Habitats and Species In-situ

Avoidance of damage and adverse impact on habitat and species should be strived for before other mitigation and compensation is considered and this should be done as early as possible within the development design process. This may need to include consideration of designing the footprint of the development to avoid such important areas. Where this is not possible further mitigation or compensation measures may be needed to be implemented, such as relocation or creation.

Large Residential

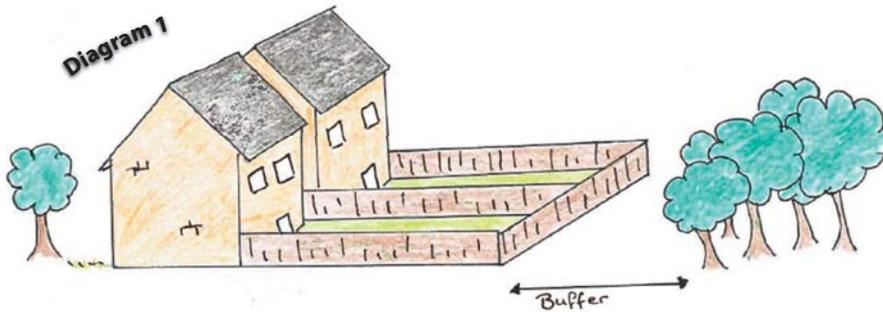
Including habitats into areas of open space or the landscaping scheme could be an option to consider. For example the residential development off Gelligron, Pontardawe includes an area of retained habitat as a mini nature reserve.

Small scale

Even small plots can support important features for wildlife and these should be retained as far as possible. Most commonly, trees and hedgerows are the features found on such small sites, especially when plots have previously been part of a larger garden. Where possible these should be retained, at least around the boundaries of the site as they can be important for species such as birds and bats.

4.1.1 Buffers

Where large development is sited on greenfield land often the key habitats to consider are woodland, hedgerows and streams. Woodland should be retained and protected wherever it occurs and developments should be designed to avoid such habitat and provide a buffer from it. The buffer will protect the woodland edge habitat and root system and also ensure that future damage does not occur from adjacent properties, through removal of overhanging branches and fly tipping for example. Ideally a 10m buffer zone should be put in place from the woodland edge.



Buffer zones should also be put in place between water courses and development; thereby protecting the watercourse itself, providing potential access for any flood defence or other works, ensuring that the wildlife habitat is protected and providing some leeway in case

the watercourse changes its course or starts to erode certain sections. A 7m buffer zone is standardly required for watercourses. These buffer zones should not be included in gardens where future owners can subsequently damage and encroach. See diagram 1.

4.1.2 Connectivity

Hedgerows and large trees can be key to providing corridors and connectivity of habitat for wildlife to use to move through a development to adjacent areas. Retaining as many of these sorts of habitats could be seen as an instant mature landscaping scheme. Such habitats lend a certain maturity and greening to a site that could increase the visual appeal of a development as well as continue to provide biodiversity interest. It is particularly key to consider where such habitats form key links to habitats off-site, such as hedgerows linking woodlands, in order to ensure the most important links are designed into a development layout. See diagram 3.

4.2 Relocate Habitats and Species

4.2.1 Habitats

Some habitats such as grasslands lend themselves to be relocated to another location, preferably still on site or close-by. Some grasslands may be turfed and translocated such as the species-rich grassland close to Port Talbot docks shown in the photograph 1.



Photograph 2- Sand Martins using the newly created artificial nesting bank © Prenergy

4.2.2 Species

Large Industrial

The Sand Martins previously nesting in a sand and gravel extraction quarry at Port Talbot Docks have been successfully relocated to a custom built structure, as shown in photographs 1 & 2. The pond provided below the nesting sites provides a food source for these birds. All of these measures were provided as part of the mitigation strategy for a Biomass Plant in Port Talbot developed by Prenergy.



In Neath Port Talbot reptiles are commonly required to be translocated from a development site. This can be tricky as a suitable receptor site for these animals needs to be provided. It is often the case that areas of suitable habitat already support existing reptile populations and therefore it is unlikely that it would be appropriate to add further animals to such locations.



Therefore, receptor sites often need to be created from unsuitable habitats, such as grazed farmland with short grass. In some cases an area within the development can be retained as a receptor site and improvements made to the habitat to allow the area to provide for additional animals from the rest of the development site. Such measures could include the creation of hibernation or breeding sites (see diagram 2). The potential requirements for reptiles need to be considered early on in the design of a development as further land may be required if a suitable receptor cannot be provided on the development site itself.

Large Residential

Another species that has been relocated in recent years is the Great Crested Newt at Coed D'arcy. This species is a European Protected Species so requires a licence from the Welsh Government to permit the translocation. A set of new ponds were required to be created just off-site of the development, which link to a network of ponds, wetland features and Sustainable Urban Drainage schemes along one boundary of the site towards the adjacent Crymlyn Bog designated site.

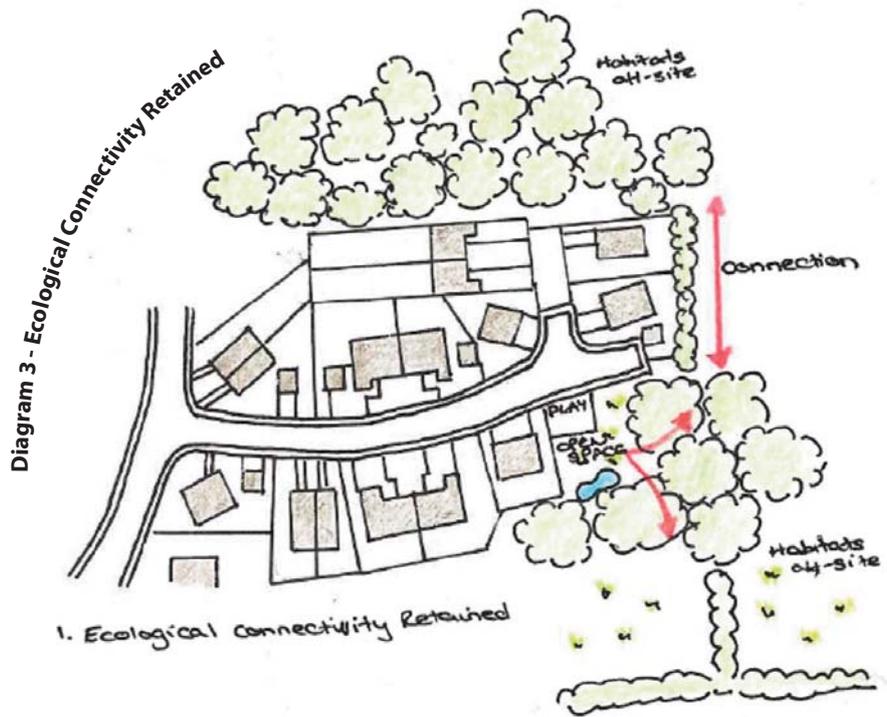
Further information on reptiles and amphibians can be found in 'Amphibians and Reptiles in South Wales' by NPTCBC/SWWARG⁹.

4.3 Create New Habitats or Enhance Existing

4.3.1 Creation

Habitats such as species-rich grasslands, woodland and ponds may be easily created and incorporated into landscaping schemes for sites. Just by planting or seeding areas with native species these sorts of habitats can be created. Even heathland and reedbed may be possible to create on or off-site using standard methodologies. However, it is difficult to replicate habitats that rely on specific hydrological and other natural conditions such as bogs, wet woodland and sand dune, so these should be avoided, wherever possible, and left in-situ.

The location of such habitats within a development is key. They should ideally be situated so as to provide connectivity with adjacent habitats in the surrounding area (see diagram 3). They should not be isolated or surrounded entirely by the development itself (see diagram 4). The creation of new habitat areas may require specific management so a management plan for these areas is normally part and parcel of the mitigation package.



4.3.2 Management and enhancement

Where habitats already exist on site a little bit of appropriate management can go a long way to enhancing these areas for wildlife, for example woodland may need thinning, grassland may just need a change in cutting regime to avoid flowering and seeding times, ponds may just need a clear out as they could be choked with vegetation. Otherwise, creating additional features within existing habitats can aid the diversity of such areas e.g. by putting in ponds, creating glades in woodland or creation of habitat piles (log piles etc) for wildlife to use for nesting and hibernating.



4.4 Restoration

Large Industrial

An example of management of existing habitats can be found at the Selar Opencast Coal Site close to Blaengwrach in the Neath Valley, which includes an area of nature reserve owned and managed by the company (see photograph 3). The nature reserve supports a diverse array of habitats, such as hay meadow, woodland gorges, and regenerated coal spoil tips. These have been retained, managed and monitored for a number of years.

The nature reserve is largely managed through careful grazing by local farmers. The timings and rotation of the grazing is carefully scheduled around the ecological requirements of each field. Some of the fields within the nature reserve have developed over the years and now provide a useful source of seed for ongoing restoration of the working site.

Large Industrial

For minerals and quarry developments in particular, restoration schemes may be the main way that the development can deliver biodiversity mitigation and enhancement measures. Restoration plans can incorporate any number of proposals for biodiversity including significant habitat creation.

Quarry benches can form important areas for birds of prey to breed, even whilst the quarry is working, and these areas can be retained long term providing key breeding sites for some of the rarer birds in the area. Sensitive restoration blasting of the quarry walls can also create a variety of habitats through the creation of scree and benches. Quarry floors, if not needed to be completely filled, can easily be converted into wetland features.

Opencast coal sites provide almost a blank canvas for habitat creation and if designed correctly could make an improvement to the diversity of habitats in

certain areas, especially where uniform farmland was the original use. Various types of grassland can be created through appropriate seeding and with the ability of designing landform areas can be designed to dip thereby aiding the formation of wetlands; whilst the retention of some areas of spoil can add another important habitat element that can be good for invertebrates and reptiles. This sort of large scale development can provide opportunities to develop and experiment with new habitat creation and restoration techniques.

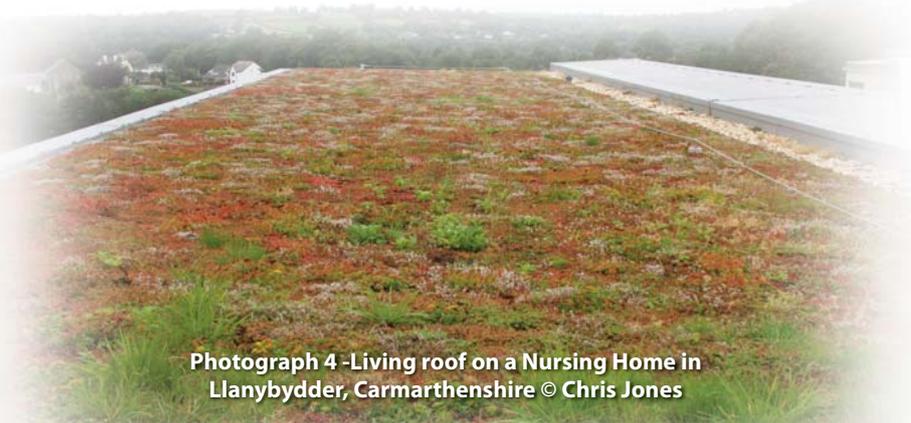
Appropriate extraction, separation and storage of soils can be key to the restoration of certain habitat types; especially where hydrological conditions reliant on clays are the essential element. Timing of placement of such soils can be critical and should be appropriately planned to ensure that storage of certain soils is not undertaken for any longer than needed. In some cases it may be appropriate to place soils directly to bed as part of a phased restoration; thereby reducing the need to store at all. This would be particularly important for soils that can be damaged by drying out; such as peaty soils.

For ideas and examples of what can be done as part of restoration schemes please visit the Minerals Products Association Website¹⁰ and Nature After Minerals Website¹¹.

4.5 Development Design

4.5.1 Roofs and Walls

The creation of habitats does not have to be traditional in location, green and brown roofs are a fantastic way to provide wildlife habitats when ground space is limited. Brown roofs in particular are great for supporting important bird and insect species that would otherwise be lost or displaced, especially on brownfield sites (see photograph 4). This sort of technique has been used all over the country partly because it has benefits for energy and water efficiency and helps meet environmental auditing standards, BREEAM and sustainability requirements. This technique has also now advanced to green or living walls where vegetation is encouraged to grow on walls of buildings.



Photograph 4 - Living roof on a Nursing Home in Llanybydder, Carmarthenshire © Chris Jones

Large Residential

In recent years developments incorporating apartment blocks have started to include 'green walls or facades' into their developments. These can vary in design and complication but in its simplest form involves encouraging climbing plants to cover a wall using a form of trellis, often metal wires. Green walls are a good option for urban developments where the development footprint provides little room for landscaping.

For more information of green/brown roofs and walls visit the Living Roofs¹² and Green Walls¹³ Website or see the English Nature 'Living roofs' leaflet¹⁴.

4.5.2 Sustainable Urban Drainage

Sustainable Urban Drainage (SuDs) is also a useful way of encouraging biodiversity into development; as part of a drainage scheme.



Photograph 5 - Wildflower Meadow

Such systems have a large number of benefits; e.g. they can treat poor water quality, manage flow rates, provide wildlife habitats and can be more visually appealing.

For more guidance on SuDs please look at the Environment Agency guidance on the Environment Agency website¹⁵ and visit the CIRIA website¹⁶.

4.5.3 Landscaping

Landscaping is often the easiest way to incorporate biodiversity into a scheme. Wildflower seeding, hedgerow and native tree planting are easy to include in a landscaping scheme. Wildflower seeding, in particular, has become popular in recent years, especially alongside roads.

Large Industrial

The Harbourway Road scheme in Port Talbot has incorporated a great deal of wildflower seeding aiming to encourage bumblebees and butterflies. Similar seed mixes have been used in the Baglan Energy Park close to the Council offices at the Quays (see photograph 5).

Further information on wildflower seeding is available in the 'Bees and Development' leaflet¹⁷.

Wildlife-friendly species of plants can easily be incorporated into the more ornamental requirements of a scheme; there are a great number of varieties that provide shelter or a food source for wildlife. For further information lists of wildlife-friendly plants can be found on the Plant for Wildlife¹⁸ and Plant Press¹⁹ websites. Also, see the 'Go Wild in your Garden' leaflet²⁰ for further ideas.

Small scale

It is easy to add or create small scale features that will support wildlife within a landscaping scheme or garden. These can range from planting wildlife-friendly plants or trees, to creating a small pond or a habitat pile.

Generally speaking these sorts of features have to be placed relatively high up out of reach of predators such as cats and, especially in relation to bats, away from lighting.



Photograph 7 – Bat bricks built into a property © John Haddow & Anney Youngman/BCT

provide a nesting area. Further info on providing nesting sites for barn owls can be found on the Barn Owl Trust website²². Specifically in relation to barn conversions download the Barn Owl Trust leaflet²³.

Other species of bird, such as Swallow, House Martin and House Sparrow, require specific designs of artificial nests. These are just as easily sourced and incorporated into building schemes as standard boxes.



Photograph 6 – Bat bricks in gable end © John Haddow & Anney Youngman/BCT

Large Residential

In residential buildings placement in the gable ends of properties seems popular. For further information on bat bricks and other bat mitigation visit the Bat Conservation Trust Roost Website²¹. In addition bats can also be accommodated by providing access into a roof void through gaps behind fascias for example. However, please note that if bats have been discovered on the site, specific mitigation measures may be required. Please refer to the section on Protected Species Mitigation.

Some standard specifications for artificial nests include:
For developments in urban or sub-urban locations:

4.5.4 Homes for Wildlife

Buildings themselves can be designed to provide shelter for species such as birds and bats. Bird or bat boxes can be placed on buildings or on trees within the development. For more permanent features, bat or bird bricks can actually be built into the building construction itself (see photographs 6 & 7).

- House Sparrow Terrace - Wooden (or woodcrete) nest box with 3 sub-divisions to support 3 nesting pairs. To be placed under the eaves of buildings. Entrance holes: 32mm diameter. Dimensions: H310 x W370 x D185mm.
- Swift Nest - Wide box with small slit shaped entrance hole. Must be placed under or close to roofs, at least 5m from the ground. Dimensions: H150 x W340 x D150mm.

For developments in the countryside or involving farm buildings:

- Swallow Nests - Cup-shaped nests to be placed inside outbuildings with guaranteed flight path. 3 should be placed high up, preferably on beams, at least 1m apart. Dimensions: H110 x W250 x D140mm.

Small scale

Larger birds such as Barn Owl require more specific accommodation, which is often most relevant for conversions and developments in the countryside, particularly barn conversions. Barn owl boxes and ledges can be incorporated or an area of roof void segregated to



Barn Owl © Chris Knights/Ardea.com

- **House Martin Nest (Double)** - Pair of cup-shaped nest with smaller opening near top, to be placed under the eaves of buildings, at least 2m from the ground. Dimensions: H110 x W460 x D140mm. NB Can create mess.
- **Swift Nest** - Wide box with small slit shaped entrance hole. Must be placed under or close to roofs, at least 5m from the ground. Dimensions: H150 x W340 x D150mm.

In addition to providing homes for wildlife within a building design it is just as important to avoid the use of materials, such as chemical treatment of timbers that can also be detrimental to wildlife such as bats.

There are a number of alternatives that are now 'wildlife friendly' and these should be used wherever possible. Please see the Natural England Leaflet on 'Bat Friendly timber products'²⁴.

4.6 Compensation (Off-site Projects)

Where mitigation measures cannot address all of the impacts on biodiversity, it may be necessary to compensate for any losses or damage on site with off-site works or financial contributions. Where it is impossible to accommodate the needs of biodiversity within a site it may be possible to provide some sort of benefit for biodiversity on other land within the applicant's control.

Alternatively, as a last resort, financial contributions towards a biodiversity project to be run by the Council or other local biodiversity organisation could be considered. This could be to support existing projects, or purchasing and managing (or creating if necessary) a suitable area of habitat, etc. However, these options are always considered a last resort and all other options to mitigate or compensate on the development site should be ruled out first.

Large Industrial

Some examples of off-site projects have included the management of adjacent habitat areas to maintain and enhance the biodiversity for the long-term for a sub-station in Margam and the the improvement of an off-site habitat to maintain a significant reptile population for the Harbourway road scheme.

Large Residential

In addition, projects have included the creation of ponds, to allow the translocation of Great Crested Newts, and the creation of new badger setts at Coed D'arcy; and the construction of a new building on adjacent land to accommodate bats in Pontardawe.

These sorts of schemes are often addressed by S106 agreements. For further information about such agreements please contact the Planning Department.

4.7 Timing

Biodiversity is often season specific. Certain species appear or are most active only during certain times of the year. Therefore, not only do surveys have to be undertaken at certain times but so do some mitigation works. Appropriately scheduling these sorts of works is key to the avoidance of delays. Some key timing constraints are shown in the following table:



Survey for:	Type	J	F	M	A	M	J	J	A	S	O	N	D
Badgers	Sett creation	/	/	/	/	/	/	/	/	/	/	/	/
	Sett closure (under licence)								/	/	/	/	
Birds	Vegetation clearance	/	/						/	/	/	/	/
Reptiles	Capture and translocation				/	/	-	-	/	/			
	Vegetation clearance	/	/	/								/	/
Great Crested Newts	Newt trapping -pond & land (under licence)			/	/	/	/						
	Newt trapping - land (under licence)			/	/	/	/	-	-	-	-		
	Planting and translocation	/	/	-	-					-	/	/	/
	Wildflower Meadow Cutting (hay-cut)				/					/			
	Holt creation	/	/	/	/	/	/	/	/	/	/	/	/
	Roost creation (separate to existing)	/	/	/	/	/	/	/	/	/	/	/	/
	Works to maternity roosts (under licence)	/		/	/					/	/	/	/
	Works to hibernation roosts (under licence)					/	/	/	/	/	/		

/= optimal time for works. - = sub-optimal time for works.

Please note that the above table is only a guide to the general timing constraints commonly encountered. For works involving protected species that require a licence more specific timings may be put in place for the specific development. Further advice should be sought from the licensing body in this respect e.g. the Countryside Council for Wales or Welsh Government. Also, depending upon the species seeded, wildflower meadow cutting timings may vary.

4.8 Monitoring

Monitoring by an ecologist during work and after completion, to ensure mitigation / enhancement has been successfully implemented, is key. This will allow changes to management techniques to ensure that the desired habitat and species populations are developed and maintained as intended.

4.9 Protected Species Mitigation

Where a protected species has been discovered on site, suitable mitigation will need to be provided for any development to proceed. Mitigation for European protected species such as Bats, Otter and Great Crested Newts will need to be undertaken under licence from the Welsh Government with advice from the Countryside Council for Wales. Discussion with CCW early in the planning stage of any development

likely to impact upon such species is recommended, to establish what would be required in relation to mitigation. In certain cases mitigation may prove to be more difficult or costly to accommodate if not considered early enough.

Examples of mitigation for European protected species have included the creation of ponds and translocation of Great Crested Newts at Coed D'arcy; the provision of a 'Bat House' for Bats in Pontardawe and Coed D'arcy; maintaining bat foraging paths and reducing light spill in Ystalyfera. Bats are commonly the species most encountered by developments in Neath Port Talbot. Great Crested Newts and Dormice are uncommon in Neath Port Talbot so are not usually encountered. Impacts upon Otters are normally avoided through the application of the buffer zone mentioned in previous pages. For further ideas and advice on Bat mitigation please visit the Bat Conservation Trust Roost Website²⁴.

Small scale

Bats are often the most commonly encountered protected species in smaller and householder developments. Examples of mitigation for bats have included the provision of bat boxes, bat bricks, providing continued access to the roof void.

Similarly for protected species listed under the Wildlife and Countryside Act or Protection of Badgers Act, mitigation may require a licence from CCW so should also be discussed early.

For a full list of protected species visit our Biodiversity and the Law webpages²⁵.

4.10 Protected Site Mitigation

Impacts upon designated sites should be avoided at all costs. It would be a rare situation for a development to be permitted to proceed if significant impacts upon such sites are predicted. In certain circumstances developments may be acceptable where mitigation measures satisfactorily minimise impacts; for example pollution prevention measures.

For designated sites of national and international importance, advice will need to be sought

from the Countryside Council for Wales as early as possible in the planning of the development. Again, it may be the case that if the requirements of such sites are not considered early in the design process it may be very difficult and costly to incorporate them later on.

Suitable mitigation will be highly dependent upon the important features of the particular site in question, hence why advice should be sought.

For European and Internationally designated sites an assessment may be required to be undertaken under the Conservation of Habitat and Species Regulations 2010 in relation to potential effects of the development upon such sites. A great deal of information may be required to be provided to aid the Authority in this assessment.



5. FURTHER INFORMATION AND REFERENCES

1. Planning Policy Wales, Ed. 4, February 2011 – Welsh Government
www.wales.gov.uk/topics/planning/policy/ppw
2. Technical Advice Note 5: Nature Conservation and Planning, 2009 – Welsh Government
www.wales.gov.uk/topics/planning/policy/tans/tan5
3. Neath Port Talbot Unitary Development Plan – NPTCBC
www.npt.gov.uk/ldp
4. Neath Port Talbot Local Biodiversity Action Plan
www.npt.gov.uk/biodiversity (downloads)
5. Biodiversity Supplementary Planning Guidance – NPTCBC
www.npt.gov.uk/biodiversity (downloads)
6. UK Biodiversity Action Plan
www.ukbap.org.uk
7. Ecological Survey Advice including how to choose an ecological consultant (Wildlife and Development Sites) – Association of Local Government Ecologists/ NPTCBC
www.npt.gov.uk/biodiversity (downloads)
8. Think Wildlife! – Glamorgan Biodiversity Advisory Group
www.npt.gov.uk/biodiversity (downloads)
9. Amphibians and Reptiles in South Wales – NPTCBC/SWWARG
www.npt.gov.uk/biodiversity (downloads)
10. Minerals Products Association Website
www.mineralproducts.org
11. Nature After Minerals Website
www.afterminerals.com
12. Living Roofs Website
www.livingroofs.org
13. Green Walls Website
www.green-walls.co.uk
14. Natural England Living Roofs Leaflet
www.npt.gov.uk/biodiversity (downloads)
15. Environment Agency Wales Website- SuDs
www.environmentagency.gov.uk/business/sectors/37026.aspx
16. CIRIA Website -SuDs
www.ciria.org.uk/suds
17. Bees and Development Guidance – NPTCBC
www.npt.gov.uk/biodiversity (downloads)
18. Plant for Wildlife Website
www.plantforwildlife.ccw.gov.uk
19. Plant Press Website
www.plantpress.com/wildlife
20. Go Wild in your Garden Leaflet – NPTCBC
www.npt.gov.uk/biodiversity (downloads)
21. Bat Conservation Trust- Roost Website
<http://roost.bats.org.uk>
22. Barn Owl Trust Website
www.barnowltrust.org.uk
23. Barn Owl Trust – Barn Conversions Leaflet No. 22
www.npt.gov.uk/biodiversity (downloads)
24. Natural England Bat roosts and timber treatment products. Technical Information Note.
www.npt.gov.uk/biodiversity (downloads)
25. Neath Port Talbot Biodiversity and the Law Website
www.npt.gov.uk/biodiversity (biodiversity and the law)

Links are available to all of these references via the webpage version of this booklet.

6. CONTACTS

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Web: www.npt.gov.uk/biodiversity

Neath Port Talbot CBC Planning Department

Tel: 01639 686868

Web: www.npt.gov.uk/planning

Countryside Council for Wales

Tel: 01792 326450

E-mail: enquiries@ccw.gov.uk

Web: www.ccw.gov.uk

Welsh Government – European Protected Species Licensing

Tel: 0300 062 2253

E-mail: natureconservation@wales.gsi.gov.uk

Web: www.wales.gov.uk

Welsh Government – Planning Division

Tel: 0300 0603300

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