

# Biodiversity, flora and fauna

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## 1.1 Biodiversity, Flora and Fauna

### Policy Context

#### Policy Context EU Habitats Directive [Directive 92/43/EC]

The Habitats Directive is a major European initiative that aims to contribute towards protecting biodiversity - the variety of life - through the conservation of natural habitats and wild plants and animals. Recognising that wildlife habitats are under pressure from increasing demands made on the environment, the Directive provides for the creation of a network of protected areas across the European Union to be known as 'Natura 2000' sites. This network includes Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which, on land, are already Sites of Special Scientific Interest (SSSIs).

#### Objectives, Targets and Indicators

Maintain or restore in a favourable condition designated natural habitat types and habitats of designated species listed in Annexes I and II respectively of the Directive. If a project compromising one of these habitats must proceed in spite of negative conservation impacts due to it being in the public interest, compensatory measures must be provided for. Linear structures such as rivers/streams, hedgerows, field boundaries, ponds, etc., that enable movement and migration of species should be preserved.

#### The EC Directive on the Conservation of Wild Birds 79/409/EEC 1979

The Birds Directive has created a protection scheme for all of Europe's wild birds, identifying 194 species and sub-species (listed in Annex I) among them as particularly threatened and in need of special conservation measures. There are a number of components to this scheme. Within others, Member States are required to designate Special Protection Areas (SPAs) for the 194 threatened species and all migratory bird species. SPAs are scientifically identified areas critical for the survival of the targeted species, such as wetlands. The designation of an area as a SPA gives it a high level of protection from potentially damaging developments.

#### Objectives, Targets and Indicators

Imposes duty on Member States to sustain populations of naturally occurring wild birds by sustaining areas of habitats in order to maintain populations at ecologically and scientifically sound levels.

#### The Convention on Biological Diversity, Rio de Janeiro 1992

This convention was agreed among the vast majority of the world's governments and sets out their commitments to maintaining the world's biodiversity so to achieve a more sustainable economic development. The Convention establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources.

#### Objectives, Targets and Indicators

Article 6a requires each Contracting Party to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity.

#### PPG 9 – Nature Conservation

This guidance sets out the Government's objectives for nature conservation, and the framework for safeguarding our natural heritage under domestic and international law. It also advises on the treatment of nature conservation issues in development plans.

**Objectives, Targets and Indicators**

Ensure as far as possible that nature conservation obligations in nationally and internationally designated sites are met.

Environmental assessment should occur when development is likely to have significant effects on an SSSI, or is close to an SAC/SPA or RAMSAR site.

**Draft PPS 9 – Nature Conservation**

This draft guidance, which will replace PPG9, sets out a series of key principles which need to be taken into consideration when preparing local development documents and regional spatial strategies:

Decisions should be based upon up-to-date information about the environmental characteristics of the area;

Decisions should seek to maintain, or enhance, or add to biodiversity and geological conservation interests;

A strategic approach to the conservation and enhancement of biodiversity and geology should be taken;

Developments seeking to conserve or enhance the biodiversity and geological conservation interests of the area should be encouraged;

LPA should consider whether proposed developments can be accommodated without causing harm to biodiversity and geological conservation interests;

Where development will result in unavoidable and significant adverse impacts, planning permission for it should only be granted where adequate mitigation measures are put in place; and

Development policies should promote opportunities for the incorporation of beneficial biodiversity and geological features within the design of development.

**Objectives, Targets and Indicators**

Points specific to LDDs are:

When identifying designated sites of importance for biodiversity and geodiversity on the proposals map, clear distinctions should be made between the hierarchy of international, national, regional, and locally designated sites.

Biodiversity objectives that reflect both national and local priorities, including those which have been agreed by local biodiversity partnerships, should be reflected in policies in local development documents and proposals. Local planning authorities should ensure that all policies in local development documents and proposals are consistent with those biodiversity objectives.

Other areas covered by the guidance are:

Biodiversity interest of:

International sites, SSSIs, regional and local sites

Ancient woodlands

Networks of natural habitats

Previously developed sites

Biodiversity within developments

Species protection.

**Wildlife and Countryside Act 1981 (as amended)**

The act implements the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds and Natural Habitats. The Act is concerned with the protection of wildlife and their habitat (countryside, national parks and designated protected areas).

**Objectives, Targets and Indicators**

Addresses the problem of species protection and habitat loss by setting out the protection that is afforded to wild animals and plants in Britain.

**UK Biodiversity Action Plan**

The UK BAP was published in response to the requirements of the Convention on Biological Diversity (1992).

**Objectives, Targets and Indicators**

It highlights a number of priority habitats and species with associated action plans.

**'Working with the Grain of Nature': A Biodiversity Strategy for England (2002)**

The Strategy seeks to ensure biodiversity considerations become embedded in all main sectors of public policy and sets out a programme for the next five years to make the changes necessary to conserve, enhance and work with the grain of nature and ecosystems rather than against them.

**Objectives, Targets and Indicators**

Ensures biodiversity considerations are embedded in all main sectors of economic activity. (It is the principal means by which the government will comply with duties under section 74 of the CRoW Act).

**Regional Planning Guidance for the South East (RPG9)**

Bedfordshire and Luton have recently moved from the South East and become part of the East of England Region, but RSS14 is still a draft document and will not be published until late 2006. Bedfordshire and Luton now neighbour the South East, therefore, it is useful to understand their policies and plans to prevent cumulative impacts across the region from occurring.

**Objectives, Targets and Indicators**

Continued protection and enhancement of the Region's biodiversity.  
High quality restoration of minerals extraction.

**Luton Local Plan (Second Deposit Draft)**

The Local Plan is to guide development and the use of land. It contains policies and proposals for land use and transportation.

**Objectives, Targets and Indicators**

Not to grant planning permission for development that will not enhance or create habitats, where feasible, or is likely to adversely affect sites of nature or biodiversity interest, unless the benefits outweigh need to protect nature conservation, or proposals include create an alternative habitat (of at least equivalent value) in the locality.  
To ensure a development will not adversely impact on the ecology of the River Lee or its tributaries, banks or corridors.

**Bedfordshire and Luton BAP**

Bedfordshire and Luton Biodiversity Action Plan is the response to national biodiversity planning and shows how this commitment can be delivered locally. It identifies local priorities and caters for local distinctiveness. It also provides consensus on the conservation action required to protect and enhance our wealth of wildlife. Development and implementation of the Action Plan is being co-ordinated by the Bedfordshire and Luton Biodiversity Forum.

**Objectives, Targets and Indicators**

Objectives:  
Develop common messages relating to biodiversity action.  
Raise awareness of what individuals can do to improve biodiversity in their own environments.  
Promote understanding and enjoyment of biodiversity to all sectors of the community.

Promote biodiversity as an indicator for sustainable development.  
Provide opportunities for all sectors of the community to participate in biodiversity work.

**Targets:**  
Increase the number of people actively involved in action for biodiversity by 50% by 2010.  
Ensure that every school within the county is contacted regarding biodiversity and 25% are undertaking curriculum based activities by 2010.  
Increase the number of informal education activities relating to biodiversity within the county by 25% by 2010.  
Raise the awareness of biodiversity issues by 50% by 2010.

**Indicators:**  
Membership figures of WT/BTCV/Bedfordshire Natural History Society/RSPB/Friends of Marston Vale groups etc.  
Number of voluntary nature work local groups  
Number of School groups visiting Wildlife Education Centres/Facilities  
Number of Wildlife Watch groups in the County and members of Wildlife Watch  
Number of and attendance levels at Discovery days/events  
Number of people sending in survey information into the Biodiversity Recording and Monitoring Centre  
Number of conservation volunteer work days

### Community Plan for the Borough of Bedford 2004-2010

The production of this, the second Community Plan for the Borough of Bedford, has been co-ordinated by the Bedford Partnership Board, the Local Strategic Partnership for the Borough. The over-arching aim is *“Working Together to Improve Health and Well-Being”* and our objective is to lay the foundation stone for an improved quality of life for everyone who lives, works or visits the Borough.

#### Objectives, Targets and Indicators

Enhance and diversify the network of green spaces and access corridors.  
To work towards a natural environment with an understanding of of biodiversity, landscape and cultural value to encourage protection and enhancement for future generations.

### Regional Spatial Strategy (RSS14) of the East of England (Draft Revision)

Bedford now lies within the East of England region for planning purposes. RSS14 is based on the principles of the UK's Strategy for Sustainable Development and sets out a strategy to guide planning and development in the East of England to the year 2021. It aims to improve the quality of life and sets out proposals which will influence where people choose to work and live and how to move about the region. The final RSS14 is due to be published in late 2006.

#### Objectives, Targets and Indicators

To protect and enhance the natural environment, including its biodiversity.  
To identify biodiversity conservation and enhancement areas to deliver large-scale habitat enhancement for the benefit of wildlife and people.  
Policy ENV3 aims to ensure that internationally and nationally designated sites in the region are given the strongest level of protection.  
To protect and enrich the region's biodiversity and natural resources through conservation, restoration and re-establishment.  
To encourage the increase in woodland cover to optimise economic, social and environmental value whilst protecting the biodiversity of existing woodland and other areas of established or potential nature conservation.  
Pay particular attention to any potential air quality effects on wildlife where potentially polluting developments are expected close to sensitive habitats such as Sites of Special Scientific Interest (SSSIs).  
Policy ENV17 requires minerals planning authorities to demand high standards of restoration promoting biodiversity and restoration to nature conservation.

## Baseline review

1.1.1 This section reviews baseline ecology and nature conservation designations in Bedfordshire County and Luton Borough, with particular regard to mineral extractions. Impacts on biodiversity, flora and fauna can arise from large scale habitat removal, discharges to water, noise, dust emissions and from vehicle access to and from a site. The main impacts of mineral extraction on biodiversity are:

- the impact of mineral extraction on local hydrology, which can have a dramatic effect on local flora and fauna and the landscape;
- damage to terrestrial and aquatic habitats particularly from the impact of aggregate minerals extraction (such as sand and gravel);

1.1.2 Dust is also a nuisance issue; once airborne it can travel over long distances and be deposited on property in the locality or further a field. Potential effects include covering of vegetation leaf surface thereby reducing net photosynthesis, changes in pH levels, creation of a surface film on still water bodies, an increase in suspended and dissolved material in water courses.

### Biodiversity, Flora and Fauna in Bedfordshire and Luton

1.1.3 According to English Nature, there are forty Sites of Special Scientific Interest (SSSI) in Bedfordshire and Luton designated for their wildlife and / or geological assets. 1.2% of Bedfordshire's land area is designated as SSSI and 7.1% is recognised as semi-natural habitat. These are the lowest figures for any East of England County and below the East of England average of 6.7% (SSSI) and 18.5% (semi-natural habitat). However, the condition of the SSSIs within the County is good as shown by the two tables below:

#### Bedfordshire

% Area meeting PSA target	% Area favourable	% Area unfavourable recovering	% Area unfavourable no change	% Area unfavourable declining	% Area destroyed / part destroyed
84.90%	63.96%	20.94%	9.94%	4.53%	0.63%

#### Whole of England

Area meeting PSA target	Area favourable	Area unfavourable recovering	Area unfavourable no change	Area unfavourable declining	Area destroyed / part destroyed
67.79%	44.96%	22.83%	20.51%	11.62%	0.08%

## Habitats

### Designated Conservation Sites

- 1.1.4 There are a number of designated wildlife sites in Bedfordshire and Luton consisting of five Natural Areas, seven Wildlife Priority Areas, three National and seventeen Local Nature Reserves and forty Sites of Special Scientific Interest. Nature Reserves and Sites of Special Scientific Interest are offered the highest level of protection and should be managed appropriately. There are also a number of County Wildlife Sites within the county that have no legal protection yet have been recognised for their wildlife values and derive protection from inappropriate development through Local Authority development plan policies.
- 1.1.5 There are a number of un-designated wildlife sites that form a vital component of the overall network of wildlife and habitat features within the County, such as meadows, woodland and copses, hedgerows and trees. Although these sites do not have any legal protection, their conservation is essential for preserving wildlife corridors between sites and supporting an important range of plants and animals.
- 1.1.6 According to the Local Wildlife Trust, there are twenty-four Nature Reserves identified in Bedfordshire, six of which are located in sites of former mineral workings. These comprise the Nature Reserves and SSSI's mentioned in paragraph 1.1.5 with the remainder designated, owned or managed by the Local Wildlife Trust. These sites are detailed in Table 1 (at the rear of this document).

### National Priority Habitats in Bedfordshire and Luton

- 1.1.7 The National Biodiversity Action Plan identifies a number of natural priority habitats within a classification of broad habitats which cover the whole surface of the UK.

### BAP Habitats

- 1.1.8 There are ten habitats for which Biodiversity Action Plans have been prepared in Bedfordshire and Luton, these are; wet woodlands, lowland wood pasture and parklands, ancient and/or species rich hedgerows, cereal field margins, lowland meadows, lowland dry acid grassland, lowland calcareous grassland, lowland heathland, floodplain grazing marsh and fens. In most cases mineral extraction will be restricted in these areas in order to protect rare and protected species these habitats support.

### BAP Targets in Bedfordshire and Luton

- 1.1.9 In the following paragraphs a general summary of the County's targets to increase the quality and quantity of BAP related habitats within the County is provided.

#### Woodland

- 1.1.10 By 1992 the area of woodland in the County had declined to 7000 hectares representing just seven percent of the land area. The BAP Target is to increase by 1,500 hectares, the area of woodland in the County by 2015.

#### Waterways and Wetlands

- 1.1.11 There are few rivers in Bedfordshire and Luton that have not been physically and chemically altered by man. Decline in the quality of our rivers and their habitat has contributed to the loss of otter and water vole populations in the county. The BAP Target is to maintain and improve river quality and habitat to help establish sustainable populations of otters and water voles in Bedfordshire.

#### Heathland and Acid Grassland

- 1.1.12 Two hundred years ago extensive areas of heathland and acid grassland were present along the Greensand Ridge between Leighton Buzzard and Gamlingay. All that remains now are small fragments totalling about 42 hectares of heathland and 85 hectares of acid grassland. The BAP Target is to increase the amount of heathland and acid grassland on the Greensand Ridge to 180 hectares by 2005 and to 230 hectares by 2010.

#### Urban Habitats

- 1.1.13 Wildlife rich green spaces in towns and cities are under ever increasing pressure. The BAP Target is to provide an accessible informal greenspace such as a nature reserve, community pocket park, millennium green, community woodland at a minimum of 1ha per 1000 population

#### Calcareous Grassland

- 1.1.14 Only 300 hectares of flower filled chalk downland remain in Bedfordshire and Luton. The BAP Target is to create an additional 50 hectares of flower rich chalk grassland by 2010.

#### Farmland

- 1.1.15 Bedfordshire lost 24% of its hedgerows between 1945 and 1976. They declined a further 2% between 1976 and 1991, leaving an estimated 4,500 km of hedgerow in the country. The BAP Target is to plant 75km of new, native species rich hedgerow by 2005.

#### Regionally Important Geological/Geomorphological Sites (RIGS)

- 1.1.16 RIGS are important in Bedfordshire because they can form important nature conservation areas and are often notified as SSSI's for their national significance with regards to earth science conservation. These sites are usually former quarries or gravel pits that have all too often been utilised as waste disposal sites, lost to development or have deteriorated due to neglect.
- 1.1.17 A county wide network of RIG sites is under discussion, the aim being that these sites receive active conservation through relevant policies. This can aid in the management of mineral workings that are reaching the end of their useful life or to those that have fallen into neglect.

### Regional Summaries

- 1.1.18 Due to the range of habitats throughout Bedfordshire and Luton, the following sections contain a summary of the main ecological features within each region of the County.

#### South Bedfordshire

- 1.1.19 South Bedfordshire, in common with much of lowland Britain, has lost most of its natural wildlife habitats. Even the limited number of semi-natural habitats of wildlife importance remaining in ancient woodland, unimproved grassland, downland, marshes and wetland, and heath and common land are under pressure from agriculture, mineral extraction, urban development, public access, etc. This is leading to the fragmentation and isolation of sites and diminishing wildlife interest.
- 1.1.20 Most of the mineral deposits in South Bedfordshire lie in areas of high landscape quality or immediately adjoining them. South Bedfordshire District Council will support the County Council in protecting mineral deposits from sterilisation where they are workable and there is a demand for them, but wishes to ensure that new or recommenced working does not take place in Areas of Outstanding Natural Beauty and Areas of Great Landscape Value (see the landscape topic paper), Sites of Special Scientific Interest or other environmentally sensitive areas.
- 1.1.21 Many older mineral workings exist in the District where after-use and restoration have never been satisfactorily resolved and where the sites are now SSSIs or County Wildlife Sites (CWS). In some cases these cover large areas and are unmanaged e.g. Houghton Regis Quarry and Sundon Pits. The District Council is particularly keen to see sensitive after-uses for these sites.
- 1.1.22 English Nature has identified Natural Areas based on the distribution of wildlife, natural features, land use patterns and the human history of each area. For South Bedfordshire, Natural Area profiles have been undertaken for The Chilterns, The West Anglian Plain and The Greensand Ridge. Each profile describes and reflects the local distinctiveness of the area and helps to determine priorities and objectives for nature conservation in those areas.

### Bedford Summary

- 1.1.23 In terms of biodiversity, the main wildlife priority areas in the borough are the valley of the River Great Ouse and the ancient semi-natural woodlands in the north. The borough contains eight sites of special scientific interest and seven local nature reserves. To supplement the statutory sites, a county based tier of non-statutory county wildlife sites has also been designated. Together, these sites represent the key sites for nature conservation within the borough.
- 1.1.24 Sites of importance for nature conservation should be protected from any adverse effects as a result of development. Of particular importance are the River Great Ouse and other wildlife corridors. Opportunities should be taken to enhance existing sites of importance as well as to mitigate any harm caused to nature conservation interests.

### Luton Summary

- 1.1.25 Within the town there are many varied sites, including Dallow Downs with its wildflowers; Bradgers Hill with its foxes, deer, and ancient farming terraces; Cowslip Meadow, a unique fragment of Marshland; Leagrave Common which is the source of the River Lea and Luton's first Local Nature Reserve. This is also the site of the Wauluds Bank ancient heritage monument. There is also the rolling grassland of Galley and Warden Hills, home to many beautiful and nationally rare wildflowers.

### Mid Bedfordshire Summary

- 1.1.26 According to Mid Bedfordshire Local Plan: First Review: Deposit Draft Incorporating Proposed Modifications (PM), English Nature has developed a concept of Natural Areas to provide a framework for developing local objectives and strategies covering geological, geomorphological and biological sites. The District contains parts of three natural areas, these being the Bedfordshire Greensand, the majority of which lies within the District, Middle England and the Chilterns.
- 1.1.27 Wildlife Priority Areas, (based on the Natural Areas concept developed by English Nature, as the basis for much conservation work) in Mid Bedfordshire are as follows: (i) The Valley of the River Great Ouse; (ii) The Wetlands of the River Flit; (iii) The River Ivel and Hiz Valleys; (iv) The Heathlands of the Greensand Ridge; and (v) The Chalk Downland of South Bedfordshire.

### Green Infrastructure

- 1.1.28 The Green Infrastructure (GI) is a network of green space that serves a variety of functions and contributes to the quality of the natural and built environment that is required for existing and new sustainable communities. This green space is essential to provide a liveable area for present and future residents.
- 1.1.29 In relation to biodiversity and mineral workings, the GI is essential to help protect, recreate or rehabilitate landscapes and habitats damaged or lost by previous development and to help preserve and enhance biodiversity. Effectively, this can be implemented to help reinstate former mineral workings to a good ecological value, resulting in a net gain of biodiversity Action Plan habitats, improve the availability of open space and its access to the public, whilst accommodating development.

### Protected Species

- 1.1.30 Many of the nationally important species can be found within Bedfordshire and Luton:

#### Otter and water vole

- 1.1.31 Otter and water vole are known to inhabit banks, ditches and dykes of slow-moving rivers and streams. Care should therefore be taken to avoid contamination of waterways that may provide habitats to these species which are dependent on freshwater habitats.

### Brown hare

- 1.1.32 The brown hare prefers to inhabit more open country that is not generally associated with minerals workings however they do rest within wooded and hedgerow areas that may be located on the fringe of quarry pits.

### Bats

- 1.1.33 Seven species of bat are present within the county. Bats use woodland and overhanging cliff faces as roosts and could therefore be present within mineral workings.

### Dormice

- 1.1.34 Dormice inhabit deciduous woodland with scrub, coppiced woodlands and hedgerows, they sleep in nests made of honeysuckle bark, they are unlikely to be found within any worked mineral working but could be present within disused wooded works.

### Fungi

- 1.1.35 There is one species of fungi, *Conocybe fimetaria*, found in the County that is listed in the Red Data Book. This species favours lowland acid grassland.

### Reptiles

- 1.1.36 Adder, natterjack toad and great crested newt are of note in the county. With regard to the great crested newt and natterjack toads, contamination of fresh water bodies should be avoided. Quarrying may create rocky habitat for snakes and lizards and sparsely vegetated sandy ground is ideal habitat for natterjack toads.

### Butterfly and moths

- 1.1.37 There are nine protected species of moth and butterfly in the county including the small blue which exists in the north Chilterns. It exists mainly in localised colonies on chalk downland and in quarries, both active and abandoned, where kidney vetch grows. Also of note is the light feathered rustic moth which inhabits old quarried land

### Birds

- 1.1.38 There are a total of twelve species of nationally important bird within the county. In terms of mineral workings, of note is the tree sparrow which is known to inhabit disused quarries. Five species of bird are protected under Special Areas of Conservation and a further thirteen are priorities for conservation action.

### Plants

- 1.1.39 There are four national priority plant species within the county and 24 further species of conservation concern. Of note is the rare corn cleavers which can inhabit disturbed

ground and cliffs. It should also be noted that proliferous pink suffered a major decline due to quarrying in the 1980s.

#### Fish

- 1.1.40 There is one species of fish, the Spined Loach, protected under SAP's. Care should be taken to avoid damage to its aquatic habitat. In the UK, spined loach *Cobitis taenia* appear to be restricted to just five east-flowing river systems in eastern England – the Rivers Trent, Welland, Witham, Nene and Great Ouse, with their associated waterways (JNCC 2005).

#### Invertebrates

- 1.1.41 There are 18 species of invertebrate within the county, 3 are SAP species and 15 are found in the Red Data Book. There is a possibility that any of these invertebrate species are present within mineral workings although non are specific to mineral workings.

#### Parasites

- 1.1.42 There is one species of parasite, the Dodder, listed in the Red Data Book. Care should be taken to avoid damage to its heathland habitat.

### Sources of data

- PPS 18 Mineral Extractions <http://www.nationaltrust.org.uk/main/w-pps18.pdf>
- English Nature
- UK Biodiversity Action Plan; Local BAP – Bedfordshire and Luton
- <http://www.ukbap.org.uk/lbap.aspx?id=369>
- The Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough <http://www.wildlifebcnp.org/bedsbap/pdf/grndpine.pdf>
- Bedfordshire County Council [www.bedfordshire.gov.uk/](http://www.bedfordshire.gov.uk/)
- Joint Nature Conservation Committee
- Luton's Heritage <http://www.visitbeds-luton.com/luton/heritage.htm>
- Mid Bedfordshire Local Plan: First Review: Deposit Draft Incorporating Proposed Modifications (PM)
- Bedfordshire and Luton Biodiversity Action Plan <http://www.wildlifebcnp.org.uk/bedsbap/bllbap.htm>
- Sustainability Appraisal of the Core Strategy and Rural Issues Plan <http://www.bedford.gov.uk/bedford/planning/CS%20Scoping%20Report%20final.pdf>
- South Bedfordshire Local Plan (Adopted 2004) Review [http://www.southbeds.gov.uk/Local\\_Plan/contentsfr.html](http://www.southbeds.gov.uk/Local_Plan/contentsfr.html)
- Bedfordshire Structure Plan 2011

<http://www.bedfordshire.gov.uk/BedsCC/SDsps.nsf/Web/ThePage/Bedfordshire+Structure+Plan+2011>

### Data Gaps

- No information found on protected species at mineral extraction sites.
- No “reliable source” data relating to Luton Borough.
- No information specific to Mid Bedfordshire was found.
- More recent BAP targets.

### Trends

- 1.1.43 Several habitat types have been in decline over the past few years and these include:
- Woodland
  - River habitat
  - Heathland and acid grassland
  - Calcareous Grassland
  - Hedgerows
- 1.1.44 With increased mineral development care must be taken to ensure that impact on habitats and species is kept to a minimum and where possible enhanced.

## Implications for minerals planning and SA in Bedfordshire

### Key issues arising from the policy context:

How the minerals local plan should address biodiversity, flora and fauna

- 1.1.45 The plan should accept the importance of nature conservation objectives and the primacy of some designations and pay particular regard to designated habitats and linear habitat structures. If developments that impact upon protected species or designated sites are necessary, then compensation measures and mitigation is required. Mitigation should be pro-active through site selection, timing, and consideration of alternatives. In particular, attention should be paid to relevant Biodiversity Action Plans as well as the UK Biodiversity Action Plan, with minerals operations encouraged to adopt their own Biodiversity Action Plans. The restoration of old mineral working sites provides an opportunity to create some of the habitats prioritised in local Biodiversity/Habitat Action Plans.

### Relevant objectives for the SA

- MLDF should be aware of status and number of endangered and vulnerable species of flora and fauna in the region – and ensure that policies are not in conflict with protection and conservation of them and their habitats.

- MLDF must be aware and account for any existing conservation areas in the county and account for the maintenance and development of these as necessary.
- Targets should focus on enhancement as well as protection and activities should seek to improve nature conservation and biodiversity, and contribute to habitat creation e.g. woodland.
- Nature conservation objectives should be taken into account in all minerals planning activities which affect rural areas and in urban areas where there is wildlife of local importance.

#### **Key issues arising from the baseline review:**

- Many older mineral workings exist where after-use and restoration have never been satisfactorily resolved and where the sites are now SSSIs or County Wildlife Sites (CWS). In some cases these cover large areas and are unmanaged and any proposed end-uses for these sites will need to be sensitive to the existing biodiversity, flora and fauna.
- There are sixteen BAP habitats and twenty-four Nature Reserves, in Bedfordshire and Luton. English Nature has identified Natural Area profiles for The Chilterns, The West Anglian Plain and The Greensand Ridge.
- Opportunities should be taken to enhance existing sites of importance e.g. the valley of the River Great Ouse and the ancient semi-natural woodlands as well as to mitigate any harm caused to nature conservation interests.
- The County has a number of protected, vulnerable, endangered and rare species. The placement, expansion and emissions from mineral activities should be designed in such a way so that they avoid the habitats of such species. Certain protected species may however benefit from quarrying and mineral extraction. e.g species of reptile, moths and butterflies.
- The refurbishment of disused quarry areas can be designed to make an ideal habitat for many species.
- There are forty SSSI in Bedfordshire and Luton however the area of designated SSSI is below the average for the SE region. The quality of SSSIs in Bedfordshire is above the English average. Developments that might impact a SSSI will need to be located and managed appropriately so as to minimise any impacts.

#### **Key issues arising from the scoping consultation:**

Are these the key sustainability issues under this topic area? or are there others?

- The existing list needs clearer expression as a set of issues rather than statements of fact:
  - where should sites be located?
  - how do you manage while working?
  - how should they be restored?

- is there scope for increasing biodiversity value of existing sites?
- New mineral workings should be sited with care. Impacts on areas of biodiversity importance should be avoided wherever possible. These may be direct (by giving permission for extraction on important sites) or indirect (where extraction is permitted adjacent to or in close proximity to important areas). This should be on a sliding scale with work on and near internationally and nationally designated sites being avoided at all costs, through county wildlife sites and local nature reserves to unprotected sites of biodiversity interest. These should not be chosen if there is a less damaging alternative available. Where impacts are unavoidable, these should be minimised through mitigation measures. This should involve discussion with experienced ecologists and wildlife organisations. Compensatory habitat may also need to be provided. Consideration should be given to what is to happen once the alternative sites have been used up and pressure increases to use sites of biodiversity, whether protected or otherwise.
- Need to balance mineral resource hierarchy and nature conservation and people's quality of life
- Geodiversity is another key issue (see PPS9) – consider under soil and geology?
- Need to avoid disrupting hydrological patterns, especially on wetland sites
- Land identified for future extraction, or that owned by minerals companies but not in operational use, can be managed for nature conservation in the interim, providing valuable temporary refuges for wildlife
- Need to promote integrated/holistic landscape-scale approach to restoration rather than the usual site-by-site assessment. This can provide larger areas of given habitats, as well as allowing effective management for different uses
- Currently active sites, including those about to close, can offer the opportunity for substantial habitat creation for nature conservation. This can contribute to the Government's habitat creation targets as part of the UK Biodiversity Action Plan. In many cases, this may require reviewing current restoration plans, and seeing if habitat creation would be a viable alternative end-use. This is the subject of an England-wide project by the RSPB (leaflet supplied)
- Developments that might impact SSSI's – need to factor in consideration of any haulage routes that will be needed to service new sites or increased use of transport infrastructure.

#### What are the main implications of these issues for minerals and waste planning?

- Policies needed to avoid features of high biodiversity value, designated sites but also other sites of substantive wildlife value, or isolating and breaking up habitats. Where working is proposed that would damage nature conservation interests, and the need for mineral working is considered to override the nature conservation case, then suitable high quality restoration should be proposed. The implementation of the nature conservation afteruse, and its long-term management must be assured.

- During their working life (which can be >40 years), mineral sites can develop biodiversity interest in both worked and unworked areas, including the presence of protected species. Work plans should try and be flexible enough to take these colonisers into account and mitigate to minimise any negative impact. Include policy which encourages phasing and interim restoration to allow transient wildlife interest
- Policy targeting BAP species and habitats
- Restoration to an appropriate and well-designed and managed nature conservation habitat should be considered as a priority from the initial application stages of a new site. By doing so at an early stage, the benefits for biodiversity can be maximised. Such an end-use will be of considerable value to local communities - both in terms of amenity and employment.
- Before considering resuming activities on inactive workings, assess any nature conservation interest that may have developed. Consider whether working can be modified to avoid damaging this interest.
- Wherever possible, promote a suitable nature conservation afteruse for the site. This should ensure high standards of restoration and future management. This will require a comprehensive ecological management plan and funding for the site and any adjacent land that is owned. Large areas of habitat are preferable to smaller patches of very different habitat types within one site, since these will be more appealing to key species and support larger populations.
- Liaise with the statutory conservation agency and other conservation groups from a very early stage. This consultation should be maintained throughout the duration of the project.
- Consider undertaking an environmental assessment (EA) even where there is no statutory requirement to do so. The EA process can help to ensure cost effective nature conservation benefits in both site selection and project design.
- Allow sufficient time for investigation and planning, and for surveying affected habitats and species at the right time of year, e.g. for nesting or wintering birds. Investigation needs to include consideration of transport infrastructure, e.g. will new infrastructure sever existing habitats?
- Carry out ecological surveys and impact assessment objectively: follow high scientific standards, use recognised methodology and personnel qualified in the particular field.
- Research any mitigation measures that have been described for the project thoroughly and seek professional expertise as to the best approach.

What sustainability objectives do you think should be set for each of these topic areas?

- Minerals operations should lead to net increase in biodiversity
- Avoid allocation of land of high biodiversity value (in accordance with scale of priorities – European, national and local)
- Avoid indirect impacts on species or habitats of high biodiversity value
- Maximise potential biodiversity value of existing minerals sites

- Restoration to biodiversity a priority end use for mineral sites and should contribute to realising local and national biodiversity action plan targets

**Table 1 –Bedfordshire Reserves**

Reserve	Grid Reference	Size	Habitat	Flora	Fauna
ARLESEY OLD MOAT	OS sheet 153: TL 189 373	2.4ha	L-shaped moat	yellow iris, fool's water-cress, marsh marigold and water figwort	several dragonfly and damselfly species with frogs and toads
BARTON GRAVEL PIT	OS sheet 166: TL 098 299	1ha	former gravel pit has been in-filled to raise the level to that of the surrounding arable fields	ground pine, Venus's looking-glass, knotted hedge parsley, knapweed, milkwort and harebell	
BEGWARY BROOK	OS sheet 153: TL 169 564	4ha	flooded, former gravel-workings with a small lake and marshy area is next to the river Great Ouse	willow scrub, great burnet, skullcap and marsh marigold	
BLOW'S DOWNS SSSI (33ha)	OS sheet 166: TL 033 216	46ha	diverse unimproved chalk downland and scrub, together with areas of neutral grassland	kidney vetch, squinancywort, wild thyme and horseshoe vetch	Migratory birds such as ring ouzel and wheatear. Butterflies: chalkhill, small blue and marbled white
COOPER'S HILL SSSI, LNR	OS sheet 153: TL 028 376	12.5ha	The largest remaining area of lowland heath on the Lower Greensand in Bedfordshire	Oak, birch and bracken are spreading into the heath. The open heath is dominated by heather	Common lizard, solitary wasps and bees
COPLE PITS	OS sheet 153: TL 103 492	2ha	Gravel extraction in the 1930s left 11 water-filled ponds		Dragonflies and kingfishers
CUT-THROAT MEADOW	OS sheet 153: TL 040 381	1.5ha	A small piece of semi-improved grassland which displays neutral to slightly acidic characteristics. With a narrow strip of mixed woodland and a pond.	Meadow saxifrage, lady's bedstraw, field woodrush, reedmace and celery-leaved buttercup	hunting dragonflies, aquatic insects including water boatman and pond skater.
DROPSHORT MARSH SSSI	OS sheet 166: TL 007 276	2ha	Narrow strip of marshy grassland with a quaking bog,	Marsh marigold, ragged-Robin, lesser spearwort, yellow sedge and star sedge.	
FELMERSHAM GRAVEL PITS SSSI	OS sheet 153: SP 991 584	21ha	tall fen communities, open water, flower-rich grassland, scrub and broad-leaved woodland	Whorled water-milfoil and bladderwort, alders, yellow and purple loosestrife, common knapweed, fleabane, wild carrot and meadow vetchling.	Dragonflies and damselflies
FLITWICK MOOR SSSI	OS sheet 153: TL 046 354	32ha	The largest valley mire in Bedfordshire, Flitwick Moor is the sole survivor of a series of mires along the river Flit. –rich waters well up through the Lower Greensand in areas where peat extraction, which	Willow carr, reeds and sedges. Common knapweed, meadow saxifrage and locally rare species e.g. opposite-leaved golden saxifrage and marsh pennywort	

			continued until the mid 1960's, was carried out.		
GLEBE MEADOWS	OS sheet 153: TL 189 376	2ha	riverside meadows along the River Hiz	Knapweed, cuckooflower and birds-foot-trefoil. Pollarded willows line the riverbank	Kingfisher and water vole. Evidence of otters. Wren and Blue-tit
HOO BIT	OS sheet 166: TL 117 290	4ha	A mixture of chalk grassland, scrub and secondary woodland.	Wild thyme, eyebright and yellow-wort, common-spotted orchids and fly orchids. A diverse scrub with hawthorn, hazel and field maple under a canopy of beech.	Bats
KING'S WOOD NNR and SSSI	OS sheet 165: SP 932 298	104ha	The largest area of ancient deciduous woodland (15 <sup>th</sup> century).	Sessile oak and birch grow over bracken and heather. Pedunculate oak, ash, maple and hazel grow with stands of hornbeam and small-leaved lime.	Butterflies: white admiral and purple emperor
OLD WARDEN TUNNEL	OS sheet 153: TL 114 446	2ha	The reserve is the baulk (land above the tunnel) and the cutting.	Spiny rest harrow, oxeye daisy and wild thyme.	Roosting site for birds and home to bats.
PAVENHAM OSIER BEDS	OS sheet 153: SP 990 551	1.3ha	Floodplain	Osier beds, willows and common reed.	
PEGSDON HILLS SSSI – 25ha	OS Sheet 166: TL 120 295	75ha	A remnant of chalk downland rich in grassland flora with several plants now rare in Bedfordshire.	Rock-rose, horseshoe vetch, clustered bellflower, cornsalad, poppies and Venus's looking-glass.	Butterflies: chalkhill blue, brown argus and dingy skipper. Glow worms
RAMMAMERE HEATH SSSI	OS Sheet 165: SP 923 305	13ha	Lowland heath	heather and bilberry (a county rarity)	Adders
SALLOWSPRINGS	OS sheet 166: TL 006 186	1.3 ha	Previously 'improved' grassland	Black knapweed, pignut and sorrel. Thick hedge boundary with holly and standard oaks. Dog's mercury and yellow archangel	
SEWELL CUTTING	OS sheet 165 and 166: SP 997 227	3.2 ha	Railway line closed in 1962. The chalk cutting developed into a chalk grassland.	Kidney vetch, milkwort and small scabious.	Butterflies: Marbled white, small and chalkhill
SHARNBROOK SUMMIT	OS sheet 153: SP 963 626	8.5 ha	Tunnel top, over part of the railway line.	Dyer's greenweed, wild liquorice and dropwort flower above the dominant tor-grass.	Nesting and roosting sites for birds and small mammals.
THE RIDDY	OS Sheet 153: TL165 487	7.3 ha	Flood meadows bordered by the River Ivel.	Cuckooflower, celery-leaved buttercup, water plantain and arrowhead.	Lapwing, fieldfare and redwing, terns and sparrowhawks
TOTTERNHOE KNOLLS SSSI,	OS Sheet 165: SP 979 220	13.7 ha	Chalk grassland, mound overgrown with scrub and the bailey, a large rectangular field surrounded by the original ditches.	Several types of orchid e.g. common spotted, fragrant and common twayblade. Adder's-tongue fern, horseshoe vetch and carline thistle.	Butterflies: Duke of Burgundy and green hairstreak.

WARREN VILLAS	OS sheet 153: TL 182 472	6.5 ha	A long thin lake occupying about two-thirds of the reserve, formed due to gravel extraction restoration in 1989.	Common tern, tufted duck and great crested grebe. Artificial otter holt constructed
WYMINGTON MEADOW	OS sheet 153: SP 959 632	2ha	A triangular meadow between two railway lines, the reserve is an old, permanent pasture on a calcareous, clay soil.	Green-winged orchids
Source: The Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough				