

## Design Manual for Roads and Bridges



Sustainability & Environment  
Appraisal

# LA 108 Biodiversity

(formerly Volume 11, Section 3, Part 4 Ecology and Nature Conservation and IAN 130/10)

Revision 1

## Summary

This document sets out the requirements for assessing and reporting the effects of highway projects on biodiversity.

## Application by Overseeing Organisations

Any specific requirements for Overseeing Organisations alternative or supplementary to those given in this document are given in National Application Annexes to this document.

## Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Highways England team. The email address for all enquiries and feedback is: [Standards\\_Enquiries@highwaysengland.co.uk](mailto:Standards_Enquiries@highwaysengland.co.uk)

**This is a controlled document.**

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## Release notes

Version	Date	Details of amendments
1	Mar 2020	Revision 1 (March 2020) Update to references only. Revision 0 (November 2019) LA 108 replaces DMRB Volume 11, Section 3, Part 4 Ecology and Nature Conservation and IAN 130/10. This full document has been re-written to make it compliant with the new Highways England drafting rules.

## Foreword

### Publishing information

This document is published by Highways England.

This document makes provision for requirements outlined within EU Directive 2011/92/EU as amended by 2014/52/EU 2014/52/EU [Ref 7.N] (hereafter referred to as the EIA Directive).

This document supersedes DMRB Volume 11, Section 3, Part 4 [Ecology and Nature Conservation] and IAN 130/10 [Ecology and Nature Conservation: Criteria for Impact Assessment] which are withdrawn.

### Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

## Introduction

### Background

The construction, improvement and maintenance of motorways and all-purpose trunk roads can result in environmental effects on biodiversity.

This document provides a framework for assessing, mitigating and reporting the impact on biodiversity resources.

The development of this document has been specifically influenced by:

- 1) requirements outlined within the 92/43/EEC [Ref 4.N];
- 2) requirements outlined within the Birds Directive 2009/147/EC [Ref 6.N];
- 3) requirements outlined in the 2000/60/EC [Ref 5.N];
- 4) the UK relevant transposing regulations for the implementation of these Directives; and
- 5) industry practice, including in particular
  - a) CIEEM's Guidelines for Preliminary Ecological Appraisal CIEEM (Preliminaries) [Ref 12.N]; and
  - b) CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland CIEEM (Guidelines) [Ref 11.N].

### Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 15.N] apply to this document.

## Abbreviations

### Abbreviations

Abbreviation	Definition
ASSI	Area of Special Scientific Interest
BAP	Biodiversity Action Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CWS	County wildlife site
EcIA	Ecological impact assessment
EPS	European protected species
IUCN	International Union for Conservation of Nature
LNCS	Local Nature Conservation Site
LNR	Local nature reserves
LWS	Local Wildlife Site
MCZ	Marine Conservation Zone
MPA	Marine Protection Area
SAC	Special Areas of Conservation
SINC	Site of Importance for Nature Conservation
SNCI	Site of Nature Conservation Importance
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest

## Terms and definitions

### Terms

Term	Definition
Authorities likely to be concerned	Authorities or organisations (statutory or non-statutory) that have environmental responsibilities or local and regional competences (as defined by the relevant consenting regime).
Ancient trees	<p>An ancient tree is exceptionally valuable. Attributes include its:</p> <ol style="list-style-type: none"> <li>1) great age;</li> <li>2) size;</li> <li>3) condition;</li> <li>4) biodiversity value as a result of significant wood decay and the habitat created from the ageing process;</li> <li>5) cultural and heritage value.</li> </ol> <p>NOTE: Very few trees of any species become ancient.</p>
Ancient woodland	<p>Any area that's been wooded continuously since at least 1600 AD, or a date otherwise specified by the Overseeing Organisation including:</p> <ol style="list-style-type: none"> <li>1) ancient semi-natural woodland mainly made up of trees and shrubs native to the site, usually arising from natural regeneration plantations on ancient woodland sites;</li> <li>2) replanted with conifer or broad-leaved trees that retain ancient woodland features, such as undisturbed soil, ground flora and fungi;</li> <li>3) wood pastures identified as ancient;</li> <li>4) historic parkland, which is protected as a heritage asset in the relevant planning policy.</li> </ol>
Biodiversity	The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems CIEEM (Guidelines) [Ref 11.N].
Biodiversity resources	Ecological receptors that are present in the surrounding environment.
Critical phase of a species life cycle	A seasonal activity or behaviour upon which survival or reproduction depends.
Designated sites	Internationally, nationally, or locally designated sites for species and/or habitats.
Ecological feature	Habitats, species or ecosystems CIEEM (Guidelines) [Ref 11.N] which for the purposes of this document are collectively referred to as biodiversity resources.
Ecosystem services	The benefits that people derive from the natural environment CIEEM (Guidelines) [Ref 11.N].

**Terms (continued)**

<b>Term</b>	<b>Definition</b>
Element(s)	Parts of environmental factors.  NOTE: For biodiversity, these are: sites, habitats, and species.
Enhancement	Enhancement is improved management of a biodiversity resource or provision of new ecological features, resulting in a net benefit to biodiversity, which is unrelated to a negative impact or is 'over and above' that required to mitigate/compensate for an impact CIEEM (Guidelines) [Ref 11.N].
Environmental net gain	An approach to development that aims to leave the natural environment in a measurably better state DEFRA Net Gain [Ref 1.I].
Habitat	The place or type of site where an organism or population naturally occurs. Often used in the wider sense referring to major assemblages of plants and animals found together CIEEM (Guidelines) [Ref 11.N].
Priority habitats and species	Those species and habitats which are defined in CIEEM's Guidelines for Preliminary Ecological Appraisal CIEEM (Preliminaries) [Ref 12.N] as:  1) listed as a national priority for conservation (such as those listed as habitats and species of principal importance for the conservation of biodiversity); 2) listed as a local priority for conservation, for example in the relevant local Biodiversity Action Plan (BAP); 3) Red Listed using International Union for the Conservation of Nature (IUCN) criteria or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book; 4) listed as Near Threatened or Amber Listed; 5) listed as a Nationally Rare or Nationally Scarce species or listed as a Nationally Notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or 6) endemic to a country or geographic location.
Significant effect	An effect that either supports or undermines biodiversity conservation objectives for biodiversity resources or for biodiversity in general e.g. impacts on structure and function of defined sites, habitats, or species and the conservation status of habitats and species (including extent, abundance and distribution) CIEEM (Guidelines) [Ref 11.N].
Veteran trees	A tree that has decay features, such as branch death or hollowing which contribute to its biodiversity, cultural and heritage value. NOTE: All ancient trees are veteran trees, but not all veteran trees are ancient.
Zone of influence	The area(s) over which biodiversity resources can be affected by biophysical changes as a result of the proposed project and associated activities CIEEM (Guidelines) [Ref 11.N].



## 1. Scope

### Aspects covered

- 1.1 Environmental assessments shall describe impacts on biodiversity resources in accordance with the wider requirements and advice provided in:
- 1) LA 101 [Ref 14.N] Introduction to environmental assessment;
  - 2) LA 102 [Ref 19.N] Screening projects for Environmental Impact Assessment;
  - 3) LA 103 [Ref 18.N] Scoping projects for environmental assessment;
  - 4) LA 104 [Ref 8.N] Environmental assessment and monitoring.
- 1.2 Environmental assessment of effects on biodiversity resources shall report on the following elements:
- 1) sites;
  - 2) habitats;
  - 3) species.
- 1.2.1 Specific biodiversity resources should be identified and assessed within these elements.
- NOTE Biodiversity resources can be grouped, where appropriate, to support proportionate assessment and reporting.*
- 1.3 The assessment of effects on biodiversity resources shall be informed by relevant information collated on other environmental factors, notably:
- 1) LA 105 [Ref 2.N] Air quality;
  - 2) LA 111 [Ref 16.N] Noise and vibration;
  - 3) LA 113 [Ref 17.N] Road drainage and the water environment.
- 1.4 The assessment of effects on biodiversity shall be used to inform the assessment of other environmental factors, where appropriate.

### Implementation

- 1.5 This document shall be implemented forthwith on all projects involving the environmental assessment of biodiversity resources on the Overseeing Organisations' motorway and all-purpose trunk roads according to the implementation requirements of GG 101 [Ref 15.N].

### Use of GG 101

- 1.6 The requirements contained in GG 101 [Ref 15.N] shall be followed in respect of activities covered by this document.

**2. Principles and purpose**

**Assessment and consultation**

- 2.1 The assessment and reporting of the effects on biodiversity resources shall be undertaken in accordance with the principles outlined in GG 103 [Ref 13.N] and LA 104 [Ref 8.N].
- 2.1.1 Environmental assessment reports should provide a summary of the scale and nature of biodiversity changes in accordance with the advice of the relevant Overseeing Organisation, where applicable.
- NOTE 1 The reporting of the scale and nature of biodiversity changes can include environmental net gains.*
- NOTE 2 The reporting of the scale and nature of biodiversity changes can include ecosystem services assessment, natural capital assessment or biodiversity metric evaluation.*
- 2.2 Consultation with authorities likely to be concerned by the project shall be undertaken in accordance with LA 104 [Ref 8.N].
- NOTE 1 Stakeholders can often provide information on issues which can assist the design and assessment process (e.g. concerns regarding local sensitivity).*
- NOTE 2 Consultation with stakeholders can also identify opportunities for enhancement that would deliver towards local biodiversity priorities or contribute to partnership projects in the local area.*

### 3. Assessment methodology

#### Scoping

3.1 The scoping assessment shall identify and report on:

- 1) an initial understanding of baseline ecological conditions and the likely ecological constraints;
- 2) the opportunities for environmental enhancements including those that support environmental net gain, where applicable;
- 3) any mitigation measures likely to be required, following the 'mitigation hierarchy' LA 104 [Ref 8.N];
- 4) the zone of influence of the project and which important biodiversity resources could be significantly affected;
- 5) the potential for significant effects (including likely nature and scale) on biodiversity resources from the project;
- 6) further assessments, including any additional surveys, and the associated methods and related evaluation or significance criteria required to inform the Ecological Impact Assessment (EclA).

3.1.1 The scoping assessment should report on the baseline, including any desk study and walkover surveys undertaken in accordance with LD 118 [Ref 3.N].

3.1.2 The scoping assessment should make recommendations on the scope of further assessment.

**NOTE** *Further assessment includes additional surveys of sites, species or habitats with complex or extensive survey standard.*

3.2 The scoping assessment shall identify potential significant effects by answering the following questions to gain an understanding of the need to undertake further assessment:

- 1) is the project likely to impact designated sites (statutory or non statutory)?;
- 2) is the project likely to impact protected or priority habitats?;
- 3) is the project likely to impact protected or priority species?;
- 4) is the project likely to impact the function or quality of habitats?;
- 5) is the project likely to impact the conservation status of habitats and species?

3.3 Where the response to one or more of the scoping assessment questions is 'yes', further assessment shall be undertaken.

3.3.1 Where there is uncertainty or it is not possible to robustly justify a conclusion of no potential significant effects, further assessment should be undertaken.

3.3.2 Where the response to all scoping assessment questions is 'no', biodiversity should be scoped out of further assessment and the justification for scoping out reported.

**NOTE** *In some situations it can be appropriate for projects to scope out elements of the biodiversity assessment, e.g. sites can be scoped out if there are none located in the study area.*

#### Study area

3.4 The study area shall be identified and reported, based on the:

- 1) project boundary including any off-site ancillary works or areas;
- 2) construction footprint, including potential construction compounds, haul routes, borrow pits and temporary land take;
- 3) project's zone of influence on biodiversity resource.

3.4.1 The zones of influence vary and should be established for each biodiversity resource.

3.5 The study area shall incorporate all areas where significant effects could occur throughout the life of the project.

- 3.5.1 The study area and zone of influences should be reviewed and refined during the project life-cycle as the baseline information is updated and the project design develops.

### Baseline scenario

- 3.6 The biodiversity baseline of the study area shall be established and reported in the scoping and environmental assessment reports.
- 3.6.1 The ecological baseline should report in accordance with LA 104 [Ref 8.N] on:
- 1) current baseline at the time of the survey; and
  - 2) the future baseline at the time of the project proceeding.
- 3.7 The scoping and environmental assessment reports shall include the influence, on the biodiversity baseline of the study area of other development projects that have been consented or recently constructed.
- 3.8 Baseline information shall be established from a range of appropriate data sources including:
- 1) desk studies;
  - 2) ecological surveys undertaken in line with LD 118 [Ref 3.N].
- NOTE** *Appropriate desk study data sources can include local record centres, non-statutory bodies such as Wildlife Trusts, and existing planning applications.*
- 3.8.1 Collation of the biodiversity baseline should assure the age, validity, and relevance of the data available.
- NOTE** *Guidance on the age of ecological data can be found in relevant advice notes including CIEEM (2019) CIEEM (survey lifespan) [Ref 1.N].*
- 3.9 Baseline studies shall establish the relative importance of the biodiversity resources using the guidance in Table 3.9.

**Table 3.9 Biodiversity resource importance**

International or European importance	
Sites	<p>Sites including:</p> <ol style="list-style-type: none"> <li>1) European sites: <ol style="list-style-type: none"> <li>a) Sites of Community Importance (SCIs);</li> <li>b) Special Protection Areas (SPAs);</li> <li>c) potential SPAs (pSPAs);</li> <li>d) Special Areas of Conservation (SACs);</li> <li>e) Candidate or possible SACs (cSACs or pSACs);</li> <li>f) Wetlands of International Importance (Ramsar sites).</li> </ol> </li> <li>2) Biogenetic Reserves, World Heritage Sites (where recognised specifically for their biodiversity value) and Biosphere Reserves.</li> <li>3) areas which meet the published selection criteria for those sites listed above but which are not themselves designated as such.</li> </ol>
Habitats	N/A

**Table 3.9 Biodiversity resource importance** (continued)

<b>International or European importance</b>	
Species	<p>Resident, or regularly occurring, populations of species which can be considered at an international or European level where:</p> <ol style="list-style-type: none"> <li>1) the loss of these populations would adversely affect the conservation status or distribution of the species at an international or European scale; or</li> <li>2) the population forms a critical part of a wider population at this scale; or</li> <li>3) the species is at a critical phase of its life cycle at an international or European scale.</li> </ol>
<b>UK or national importance</b>	
Sites	<p>Sites including:</p> <ol style="list-style-type: none"> <li>1) Sites of Special Scientific Interest (SSSIs) or Areas of Special Scientific Interest (ASSIs);</li> <li>2) National Nature Reserves (NNRs);</li> <li>3) National Parks;</li> <li>4) Marine Protected Areas (MPAs) including Marine Conservation Zones (MCZs); or</li> <li>5) areas which meet the published selection criteria for those sites listed above but which are not themselves designated as such.</li> </ol>
Habitats	<p>Habitats including:</p> <ol style="list-style-type: none"> <li>1) areas of UK BAP priority habitats;</li> <li>2) habitats included in the relevant statutory list of priority species and habitats; and</li> <li>3) areas of irreplaceable habitats including : <ol style="list-style-type: none"> <li>a) ancient woodland;</li> <li>b) ancient or veteran trees;</li> <li>c) blanket bog;</li> <li>d) limestone pavement;</li> <li>e) sand dunes;</li> <li>f) salt marsh;</li> <li>g) lowland fen.</li> </ol> </li> <li>4) areas of habitat which meet the definition for habitats listed above but which are not themselves designated or listed as such.</li> </ol>
Species	<p>Resident, or regularly occurring, populations of species which can be considered at an international, European, UK or national level where:</p> <ol style="list-style-type: none"> <li>1) the loss of these populations would adversely affect the conservation status or distribution of the species at a UK or national scale; or</li> <li>2) the population forms a critical part of a wider population at this scale; or</li> <li>3) the species is at a critical phase of its life cycle at a UK or national scale.</li> </ol>
<b>Regional importance</b>	
Sites	Designated sites (non-statutory) including heritage coasts.
Habitats	Areas of habitats identified (including for restoration) in regional plans or strategies (where applicable).

**Table 3.9 Biodiversity resource importance** (continued)

<b>International or European importance</b>	
Species	<p>Species including:</p> <ol style="list-style-type: none"> <li>1) resident, or regularly occurring, populations of species which can be considered at an international, European, UK or national level where: <ol style="list-style-type: none"> <li>a) the loss of these populations would adversely affect the conservation status or distribution of the species at a regional scale; or</li> <li>b) the population forms a critical part of a wider regional population; or</li> <li>c) the species is at a critical phase of its life cycle;</li> </ol> </li> <li>2) Species identified in regional plans or strategies.</li> </ol>
<b>County or equivalent authority importance</b>	
Sites	<p>Wildlife / nature conservation sites designated at a county (or equivalent) level including:</p> <ol style="list-style-type: none"> <li>1) Local Wildlife Sites (LWS);</li> <li>2) Local Nature Conservation Sites (LNCS);</li> <li>3) Local Nature Reserves (LNRs);</li> <li>4) Sites of Importance for Nature Conservation (SINCs);</li> <li>5) Sites of Nature Conservation Importance (SNCIs);</li> <li>6) County Wildlife Sites (CWSs);</li> </ol>
Habitats	Areas of habitats identified in county or equivalent authority plans or strategies (where applicable).
Species	<p>Species including:</p> <ol style="list-style-type: none"> <li>1) resident, or regularly occurring, populations of species which can be considered at an international, European, UK or national level where: <ol style="list-style-type: none"> <li>a) the loss of these populations would adversely affect the conservation status or distribution of the species at a county or unitary authority scale; or</li> <li>b) the population forms a critical part of a wider county or equivalent authority area population, e.g. metapopulations; or</li> <li>c) the species is at a critical phase of its life cycle.</li> </ol> </li> <li>2) Species identified in a county or equivalent authority area plans or strategies.</li> </ol>
<b>Local importance</b>	
Sites	<p>Wildlife / nature conservation sites designated at a local level including:</p> <ol style="list-style-type: none"> <li>1) Local Wildlife Sites (LWS);</li> <li>2) Local Nature Conservation Sites (LNCS);</li> <li>3) Local Nature Reserves (LNRs);</li> <li>4) Sites of Importance for Nature Conservation (SINCs);</li> <li>5) Sites of Nature Conservation Importance (SNCIs);</li> <li>6) Sites of Local Nature Conservation Importance (SLNCIs).</li> </ol>
Habitats	Areas of habitat considered to appreciably enrich the habitat resource within the local context including features of importance for migration, dispersal, or genetic exchange.

**Table 3.9 Biodiversity resource importance** (continued)

International or European importance	
Species	Populations / communities of species considered to appreciably enrich the habitat resource within the local context including features of importance for migration, dispersal or genetic exchange.

- NOTE 1** *Geological Sites of Special Scientific Interest are assessed and reported within LA 109 [Ref 10.N].*
- NOTE 2** *Where a biodiversity resource falls into more than one category, the highest value category applies.*
- NOTE 3** *Where biodiversity resources are not designated but meet the published selection criteria or where there is uncertainty over importance of biodiversity resources this can be agreed in consultation with the relevant environmental body.*
- NOTE 4** *Critical phases of a species life-cycle can include seasonal activity or behaviour upon which survival or reproduction depends.*

### Significance criteria

- 3.10** Level of impact shall be determined by the assessment of the following characteristics:
- 1) positive or negative (e.g. adverse/beneficial);
  - 2) duration (e.g. permanent/temporary);
  - 3) reversibility (e.g. irreversible/reversible)
  - 4) extent/magnitude;
  - 5) frequency and timing.
- NOTE 1** *For the purpose of this document, 'level of impact' is used in place of 'magnitude' in LA 104 [Ref 8.N].*
- NOTE 2** *For the purpose of this document, magnitude is defined in accordance with CIEEM's Guidelines for Ecological impact Assessment for the UK and Ireland CIEEM (Guidelines) [Ref 11.N].*
- 3.11** The level of impacts on biodiversity resources shall be reported in accordance with the criteria provided in Table 3.11.

Table 3.11 Level of impact and typical descriptions

Level of impact (change)		Typical description
Major	Adverse	1) Permanent/irreversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.
	Beneficial	1) Permanent addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Moderate	Adverse	1) Temporary/reversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.
	Beneficial	1) Temporary addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Minor	Adverse	1) Permanent/irreversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
	Beneficial	1) Permanent addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.



**Table 3.11 Level of impact and typical descriptions (continued)**

Level of impact (change)		Typical description
Negligible	Adverse	1) Temporary/reversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
	Beneficial	1) Temporary addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
No change		No observable impact, either positive or negative.

- 3.11.1 Projects should conclude the level of impact on biodiversity resources in accordance with CIEEM's Guidelines for Ecological Impact Assessment for the UK and Ireland CIEEM (Guidelines) [Ref 11.N].
- 3.11.2 The level of impact should be informed by the outcomes of the modelling and assessment of other environmental factors (where relevant) including air quality LA 105 [Ref 2.N] and noise and vibration LA 111 [Ref 16.N].
- NOTE* *Damage to a resources can be wide-ranging and can include disturbance, pollution, compaction of soils or changes to the systems on which habitats, species and sites depend.*
- 3.12 The environmental assessment shall describe any likely significant effects of the project on biodiversity resources.
- 3.13 The importance of the resource (identified in Table 3.9) and level impact (identified in Table 3.11) shall be used to determine the significance of effect based on Table 3.13 and the principles of LA 104 [Ref 8.N].

Table 3.13 Significance matrix

Resource importance	Level of impact					
		No change	Negligible	Minor	Moderate	Major
	International or European importance	Neutral	Slight	Moderate or large	Large or very large	Very large
	UK or national importance	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
	Regional importance	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
	County or equivalent authority importance	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
	Local importance	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

**NOTE** *Significant effects typically comprise effects that remain within the moderate, large or very large categories once mitigation has been taken into account.*

3.13.1 Where Table 3.13 includes two significance categories, evidence should be provided to support the reporting of a single significance category.

3.13.2 Improvements from baseline conditions (beneficial effects) should be identified and reported within environmental assessments.

### **Design and mitigation**

3.14 The design and mitigation hierarchy outlined in LA 104 [Ref 8.N] shall be applied to avoid, reduce and remediate adverse effects on biodiversity resources.

3.14.1 Where a residual effect continues to be significant, the design and mitigation hierarchy outlined within LA 104 [Ref 8.N] should be re-applied to reduce effects further.

3.14.2 Measures to avoid, reduce, and remediate effects should address specific adverse effects and reflect the nature, magnitude and duration of the effect.

**NOTE** *Early and ongoing engagement between design engineers and environmental assessment professionals is an effective way of eliminating and reducing impacts on the project on biodiversity resources, thereby reducing the need for additional / subsequent design and mitigation measures.*

3.15 The development of biodiversity design and mitigation measures shall follow the principles outlined in LD 118 [Ref 3.N].

3.16 The implementation of biodiversity design and mitigation measures shall follow the principles outlined in LA 120 [Ref 9.N].

### **Environmental enhancement**

3.17 In line with LA 104 [Ref 8.N], the biodiversity assessment process shall identify enhancement opportunities as an integral part of project design for improving, reconstructing, and/or restoring the biodiversity resources.

### **Reporting of environmental assessments**

3.18 Reporting of the assessment of biodiversity resources shall be undertaken in line with the principles in LA 104 [Ref 8.N].

3.18.1 Reporting at each stage of the assessment should include information on any assumptions or limitations that the report is based on.

**NOTE** *Assumptions and limitations can include information on any gaps in data or any assumptions on mitigation. This can be particularly important when projects are at early stages in the design processes.*

3.18.2 Information from the assessment of biodiversity resources should be made available, in a suitable format, to the wider project team and considered during project development.

**NOTE** *Information to be shared can include the location of designated sites in proximity to the project and the results of ecological surveys.*

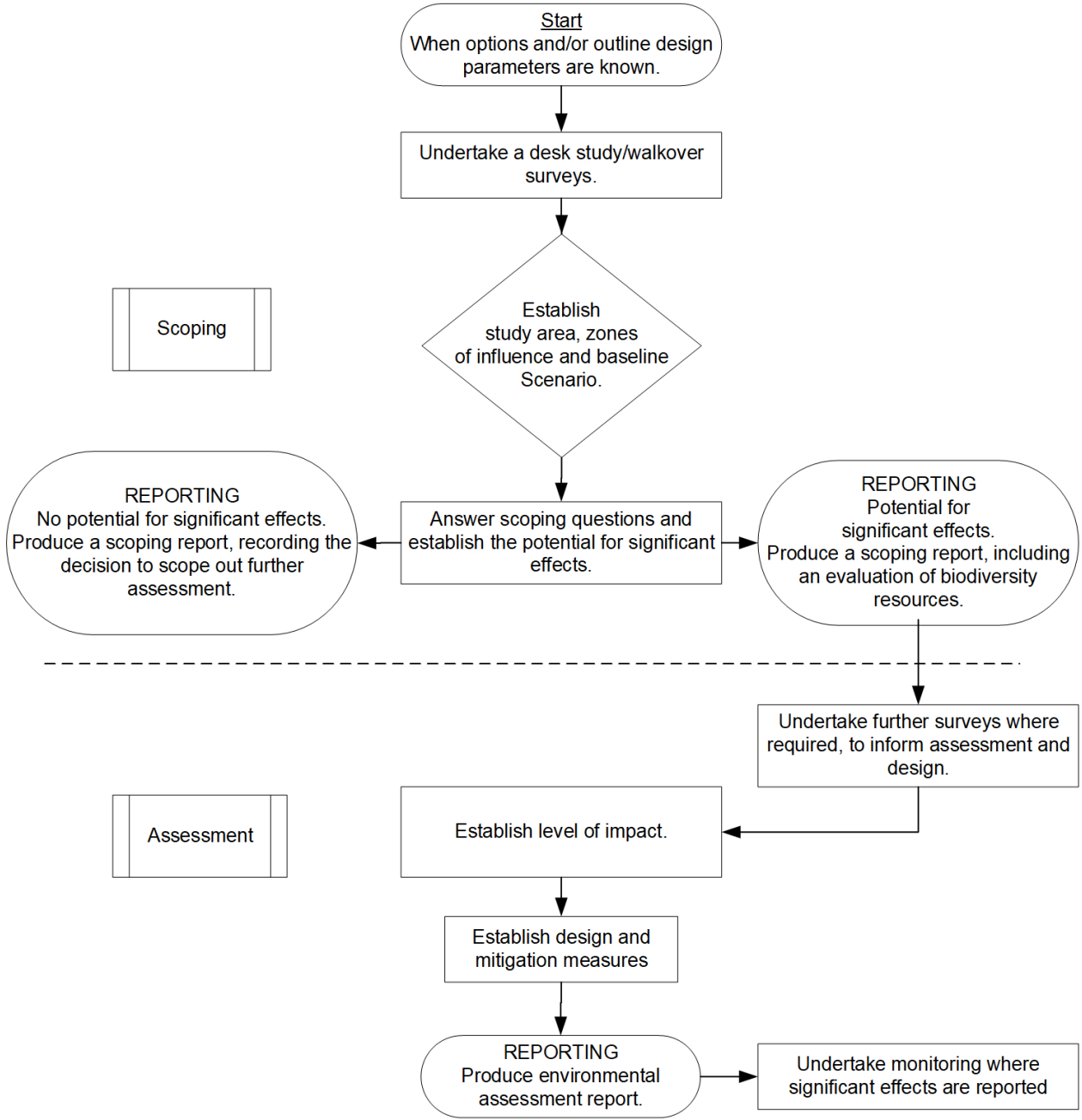
3.18.3 The sensitivity of biodiversity resources information should be identified in the reporting and sharing of biodiversity assessments.

**NOTE** *Some species data can have restrictions on publication due to data sensitivity and the potential for unlawful activity associated with the disclosure of location data.*

### **Assessment and reporting process**

3.19 The design and assessment shall follow the process illustrated in Figure 3.19.

Figure 3.19 Biodiversity assessment process



## **4. Monitoring**

4.1 Where monitoring is required in line with LA 104 [Ref 8.N], this shall be agreed with the Overseeing Organisation.

4.1.1 Where monitoring is required, the following information should be included:

- 1) monitoring methodology;
- 2) mechanisms for implementation;
- 3) criteria for determining success/failure;
- 4) frequency and duration of monitoring; and
- 5) frequency of reporting.

## 5. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	CIEEM 2019. CIEEM (survey lifespan), 'Advice note on the lifespan of ecological reports and surveys'
Ref 2.N	Highways England. LA 105, 'Air Quality'
Ref 3.N	Highways England. LD 118, 'Biodiversity design'
Ref 4.N	92/43/EEC, 'Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.'
Ref 5.N	2000/60/EC, 'Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy'
Ref 6.N	2009/147/EC, 'Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds'
Ref 7.N	2014/52/EU, 'Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment'
Ref 8.N	Highways England. LA 104, 'Environmental assessment and monitoring'
Ref 9.N	Highways England. LA 120, 'Environmental management plans'
Ref 10.N	Highways England. LA 109, 'Geology and soils'
Ref 11.N	Chartered Institute of Ecology and Environmental Management, Winchester. CIEEM. CIEEM (Guidelines), 'Guidelines for ecological impact assessment in the UK and Ireland. Terrestrial, freshwater, coastal and marine'
Ref 12.N	CIEEM. Chartered Institute of Ecology and Environmental Management. CIEEM (Preliminaries), 'Guidelines for preliminary ecological appraisal'
Ref 13.N	Highways England. GG 103, 'Introduction and general requirements for sustainable development and design'
Ref 14.N	Highways England. LA 101, 'Introduction to environmental assessment'
Ref 15.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'
Ref 16.N	Highways England. LA 111, 'Noise and vibration'
Ref 17.N	Highways England. LA 113, 'Road drainage and the water environment'
Ref 18.N	Highways England. LA 103, 'Scoping projects for environmental assessment'
Ref 19.N	Highways England. LA 102, 'Screening projects for Environmental Impact Assessment'

**6. Informative references**

The following documents are informative references for this document and provide supporting information.

Ref 1.I	Department for Environment Food & Rural Affairs. DEFRA Net Gain, 'Net gain. Consultation proposals.'
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Sustainability & Environment  
Appraisal

## LA 108

# England National Application Annex to LA 108 Biodiversity

(formerly Volume 11, Section 3, Part 4 Ecology and Nature Conservation and IAN 130/10)

Revision 0

### Summary

This National Application Annex sets out Highways England's specific requirements for assessing and reporting the effects of highway projects on biodiversity.

### Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Highways England team. The email address for all enquiries and feedback is: [Standards\\_Enquiries@highwaysengland.co.uk](mailto:Standards_Enquiries@highwaysengland.co.uk)

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## Release notes

Version	Date	Details of amendments
0	Nov 2019	Highways England National Application Annex to LA 108 Biodiversity

## **Foreword**

### **Publishing information**

This document is published by Highways England.

This document supersedes DMRB Volume 11, Section 3, Part 4 [Ecology and Nature Conservation] and IAN 130/10 [Ecology and Nature Conservation: Criteria for Impact Assessment] which are withdrawn.

### **Contractual and legal considerations**

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

## **Introduction**

### **Background**

This National Application Annex sets out the Highways England specific requirements relating to the use of biodiversity metrics to support the reporting of the scale and nature of biodiversity changes.

### **Assumptions made in the preparation of this document**

The assumptions made in GG 101 [Ref 2.N] apply to this document.

**E/1. Reporting the scale and nature of biodiversity changes**

- E/1.1 Environmental assessment reports shall provide a summary of the scale and nature of biodiversity changes.
- E/1.1.1 Natural England's Biodiversity Metric 2.0 JP029 [Ref 1.N] may be adopted to provide a summary of the scale and nature of biodiversity changes which are to be reported in environmental assessment reports.
- NOTE *Biodiversity Metric 2.0 JP029 [Ref 1.N] can be used to supplement the reporting of significance of environmental effects, by providing a way of calculating biodiversity gains and losses.*

**E/2. Normative references**

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	Natural England. JP029, 'Biodiversity Metric 2.0'
Ref 2.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'



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## LA 108

# Northern Ireland National Application Annex to LA 108 Biodiversity

(formerly Volume 11, Section 3, Part 4 Ecology and Nature Conservation and IAN 130/10)

Revision 0

### Summary

There are no specific requirements for Department for Infrastructure, Northern Ireland supplementary or alternative to those given in LA 108.

### Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated team in the Department for Infrastructure, Northern Ireland. The email address for all enquiries and feedback is: [dcu@infrastructure-ni.gov.uk](mailto:dcu@infrastructure-ni.gov.uk)

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## Release notes

Version	Date	Details of amendments
0	Nov 2019	Department for Infrastructure Northern Ireland National Application Annex to LA 108.

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## LA 108

# Scotland National Application Annex to LA 108 Biodiversity

(formerly Volume 11, Section 3, Part 4 Ecology and Nature Conservation and IAN 130/10)

Revision 0

### Summary

There are no specific requirements for Transport Scotland supplementary or alternative to those given in LA 108.

### Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Transport Scotland team. The email address for all enquiries and feedback is: [TSSStandardsBranch@transport.gov.scot](mailto:TSSStandardsBranch@transport.gov.scot)

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## Release notes

Version	Date	Details of amendments
0	Nov 2019	Transport Scotland National Application Annex to LA 108.



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## LA 108

# Wales National Application Annex to LA 108 Biodiversity

(formerly Volume 11, Section 3, Part 4 Ecology and Nature Conservation and IAN 130/10)

Revision 0

### Summary

There are no specific requirements for Welsh Government supplementary or alternative to those given in LA 108.

### Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Welsh Government team. The email address for all enquiries and feedback is: [Standards\\_Feedback\\_and\\_Enquiries@gov.wales](mailto:Standards_Feedback_and_Enquiries@gov.wales)

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## Release notes

Version	Date	Details of amendments
0	Nov 2019	Welsh Government National Application Annex to LA 108.

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