Condition Table Woodland Broad Habitat Type

Habitat Description

Woodland is defined as vegetation dominated by trees more than 5 m high when mature, which forms a distinct, although sometimes open, canopy [areas of trees with a canopy greater than 20%]. This includes felled, young or newly planted woodland.

- There is no minimum size for areas of trees that have the definite characteristics and feel of a woodland and are managed as woodland.
- Two broad woodland types are considered here:
  - Broadleaved, mixed and yew woodland.
  - Coniferous woodland.
- It **does not** include scrub (see separate scrub condition assessment).
- In England, native woodland is defined as woodland that is composed of at least 80% native tree species including 'naturalised species'.
- It is based on the **England Woodland Biodiversity Group** condition assessment for none SSSI woodlands. See https://woodlandwildlifetoolkit.sylva.org.uk/assess for more background and detailed information.

Wood Pasture and Parkland (see notes below on how to record)

Wood pasture is a vegetation structure rather than a particular plant community. Typically, this structure consists of large, open-grown or high forest trees (often pollards) at various densities, in a matrix of grazed grassland, heathland and/or woodland floras.

This feature includes:

- Wood pasture and parkland derived from medieval forests and embankments, wooded commons, parks and pastures with trees; and where the land use has been converted to arable, forestry or amenity, but where ancient trees are still present.
- For wood pasture and parkland assessment established by PTES see https://ptes.org/campaigns/wood-pasture-parkland/wood-pasture-parkland-survey/.

Condition Assessment Criteria

1. This should be an area of trees with complete canopy cover.
2. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover.
3. A diverse age and height structure of the trees.
4. Free from damage [Bark stripping; Browse line; Damage shoot tips] (in the last five years) from stock or wild mammals with less than 20% of vegetation being browsed.
5. There should be evidence of successful (i.e. not browsed off before it gets well established) tree regeneration such as seedlings, saplings and young trees.
6. Standing and fallen dead wood of over 20 cm diameter are present including fallen large dead branches/stems and stumps.
7. Wetland habitat if they exist within the wood has little sign of drainage or channel straightening.
8. The area is protected from damage by agricultural and other adjacent operations.
9. There should be no evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction).
10. Invasive non-native plants are below 5% (see list below).
11. No signs of significant nutrient enrichment present.

12. More than 3 different native trees and 3 shrub species in an average 10 m radius.

Condition	Assessment Criteria	Score
Good	• Meets at least 10 of the criteria with only minor variation. • No more than 1 of the indicators of poor condition are present: • Stands of native trees that do not obviously originate from planting should be classified as native semi-natural woodland.	3
Moderate	• Clearly fails at least 2 of the criteria above. • OR invasive non-native plants are 5-20%. • OR where non-native species comprise more than 20% of the canopy, the woodland should be recorded as either non-native plantation or mixed woodland. • A mixed woodland is woodland with native and non-native species. (This includes woodlands established by planting and by natural regeneration.) • Trees of similar age and height structure throughout the woodland. • Little standing or fallen deadwood present.	2
Poor	The following characteristics can help to identify plantations: (note: BAP woodlands can be plantation woodlands) • Non-native trees often of a single species or the same age are the dominant component; • OR invasive non-native plants are greater than 20%. • Mixed species show a consistent planting pattern across the site. • Original planting lines, or remains of planting lines, can be seen. • Drainage features and channel straightening of watercourses.	1

Undesirable species:

- American skunk cabbage *Lysichiton americanus*
- Himalayan balsam *Impatiens glandulifera*
- Japanese knotweed *Fallopia japonica*
- Cherry Laurel *Prunus laurocerasus*
- Shallon *Gaultheria shallon*
- Snowberry *Symphoricarpos albus*
- Variegated yellow archangel *Lamiastrum galeobdolon* subsp. *argentatum*
- Rhododendron *Rhododendron ponticum*

Factsheets of these invasive non-native plant species can be found on the GB non-native species secretariat website.
http://www.nonnativespecies.org/home/index.cfm

Notes

The following information should be recorded:

- Dominant tree species.

- Regenerating tree or shrub species.
- Ground flora species – any specialist woodland plants present.
- The average age class throughout the wood – establishment (E), semi-mature (S/M), mature (M) or ancient (A).
- Whether the woodland is accessed by livestock and amount of deer pressure.
- Past management – whether any trees are coppiced or pollarded;
- Threats – damage by pests, invasion by undesirable species, overgrazing or the presence of non-native species.

Additional information relevant to data collection

Woodland - Felled woodland

The condition assessment of this habitat type needs to be based – so far as possible - on the trees that stood on the site prior to felling. It should be possible to determine what these were from the stumps, bark and leaf litter. It should then be recorded as the original woodland type, the age of the trees and note that it has been felled. Condition assessment will be harder in these situation, but should be considered good unless good ecological justification can be given preferably with accompanying photographic evidence.

If it is not possible to record the woodland type, record any tree recovery or seedlings present between the stumps. Where felling occurred a considerable time previously (4-5 year +) with no obvious replanting progressing it may be appropriate in some circumstances to classify as the predominant habitat that is now replacing the felled trees (with stumps still present), particularly when they have high biodiversity value such as heathland or grassland development. Notes of what other species are present on the site will need to be recorded, such as ground flora; felled brash predominates; heather present; grass species; scrub and tree species regenerating etc.

Woodland - Planted young trees

This is recently planted trees (often in tree tubes) within grassland. Where the tree species planted match another woodland description they should be recorded under this description (with a note to state the tree age and that recently planted). If none match then they can be recorded under this catch all category. The grassland sward species and herbs present should also be recorded and described in field notes. Particular note should be made of habitat enhancement practices, such as where native flowers and herbs are created surrounding the planting, to give a wildlife boost until full tree canopy has developed.

Woodland and forest - Wood-pasture and parkland

These are mosaic habitats valued for their trees, especially veteran and ancient trees, with a grazed grassland below. They have open grown trees, sometimes in clumps, but with space between them. They may contain patches of scrub in some circumstances. If it is clearly this habitat then it needs to be recorded under this habitat type for all the area being surveyed. But for condition it may well be preferable to condition assess and map different components separately using different sheets. Please record how this was done, along with recording area amounts for each split section. So below the tree canopy use the woodland condition table; in open grassland use the grassland condition; on mappable areas of scrub use the scrub condition etc. This is relatively complex on the different components of the mosaic, but will be useful for large areas of parkland being surveyed. To make an accurate assessment

of the biodiversity value we need to know if the grassland is made of poor or good quality species composition, is the scrub of high quality, the age of the trees and key feature etc. This is likely to involve quite extensive field notes and ecological report to capture this information accurately.

Wood pasture and parkland that has been converted to other land uses such as arable fields, forestry and amenity land but where veteran trees survive are still of high nature conservation interest. They offer great opportunities for restoration to increase biodiversity habitat and should still be recorded under this category with the potential to provide wildlife gain highlighted.

UK Biodiversity Action Plan
Priority Habitat Descriptions

Lowland Mixed Deciduous Woodland

From:
UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008.

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Lowland Mixed Deciduous Woodland

Lowland mixed deciduous woodland includes woodland growing on the full range of soil conditions, from very acidic to base-rich, and takes in most semi-natural woodland in southern and eastern England, and in parts of lowland Wales and Scotland. It thus complements the ranges of upland oak and upland ash types. It occurs largely within enclosed landscapes, usually on sites with well-defined boundaries, at relatively low altitudes, although altitude is not a defining feature. Many are ancient woods and they include the classic examples of ancient woodland studied by Rackham (1980) and Peterken (1981) in East Anglia and the East Midlands. The woods tend to be small, less than 20ha. Often there is evidence of past coppicing, particularly on moderately acid to base-rich soils; on very acid sands the type may be represented by former wood-pastures of oak and birch.

There is great variety in the species composition of the canopy layer and the ground flora, and this is reflected in the range of associated NVC and Stand Types. *Quercus robur* is generally the commoner oak (although *Quercus petraea* may be abundant locally) and may occur with virtually all combinations of other locally native tree species.

In terms of the National Vegetation Classification the bulk of this type falls into W8 (mainly sub-communities a - c in ancient or recent woods; in the lowlands W8d mostly occurs in secondary woodland) and W10 (sub-communities a to d) with lesser amounts of W16 (mainly W16a). Locally, it may form a mosaic with other types, including patches of beech woodland, small wet areas, and types more commonly found in western Britain. Rides and edges may grade into grassland and scrub types.

The canopy variations as represented by the Stand Type system include most of the field maple (2), lime (4, 5), suckering elm (10) and hornbeam (9) Stand Groups, and substantial proportions of the wych elm (1), ash (3) and oak (6) Stand Groups. More rarely, birch (12) and some alder stands (7C) may also occur. These may require separate management treatments.

There are no precise data on the total extent of lowland mixed deciduous woodland in the UK, but in the late 1980s the Nature Conservancy Council estimated the total extent of this type to be about 250,000ha. There is however no doubt that the area of this priority type on ancient woodland sites has declined in area by clearance, overgrazing and replanting with non-native species, by about 30–40% over the last 50 years.

References

Peterken, G.F. (1981) *Woodland conservation and management*. London: Chapman & Hall.

Rackham, O. (1980) *Ancient woodland*. London: Arnold.

UK Biodiversity Action Plan
Priority Habitat Descriptions

Ponds

From:
UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008.

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Ponds

Correspondence with existing habitats

- UK BAP broad habitat: Standing open waters and canals
- Phase 1: G1 Standing water
- NVC: Various aquatic, swamp and fen communities; OV28–OV35; and others
- Annex I: Includes H3170 Mediterranean temporary ponds; H3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflora*) (part); H3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoeto-Nanojuncetea* (part); H3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. (part); H3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation (part); and H3160 Natural dystrophic lakes and ponds (part)

Description

Ponds, for the purpose of UK BAP priority habitat classification, are defined as permanent and seasonal standing water bodies up to 2ha in extent, which meet one or more of the following criteria:

- Habitats of international importance: Ponds that meet criteria under Annex I of the Habitats Directive.
- Species of high conservation importance: Ponds supporting Red Data Book species, UK BAP species, species fully protected under the Wildlife and Countryside Act Schedule 5 and 8, Habitats Directive Annex II species, a Nationally Scarce wetland plant species, or three Nationally Scarce aquatic invertebrate species.
- Exceptional assemblages of key biotic groups: Ponds supporting exceptional populations or numbers of key species. Based on (i) criteria specified in guidelines for the selection of biological SSSIs (currently amphibians and dragonflies only), and (ii) exceptionally rich sites for plants or invertebrates (i.e. supporting ≥30 wetland plant species or ≥50 aquatic macroinvertebrate species).
- Ponds of high ecological quality: Ponds classified in the top PSYM category (“high”) for ecological quality (i.e. having a PSYM score ≥75%). [PSYM (the Predictive SYstem for Multimetrics) is a method for assessing the biological quality of still waters in England and Wales; plant species and / or invertebrate families are surveyed using a standard method; the PSYM model makes predictions for the site based on environmental data and using a minimally impaired pond dataset; comparison of the prediction and observed data gives a % score for ponds quality].
- Other important ponds: Individual ponds or groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context (e.g. pingos, duneslack ponds, machair ponds).

Priority habitat ponds can be readily identified by standard survey techniques such as those developed for NVC, Common Standards Monitoring, the National Pond Survey or for specific species groups. Ponds will need to be distinguished from other existing priority habitat types. The general principle to be applied is that where the standing water element is functionally a component of another priority habitat and that priority habitat definition takes account of the standing water element then it should be treated as part of that habitat. For example small waterbodies within blanket bog should be considered as part of the blanket bog priority habitat, but ponds in heathland (which are not dealt with through the heathland HAP) should be considered under the pond priority habitat. Agreement has been reached with the lake HAP group that the pond priority habitat will cover most water bodies up to 2ha while the lake priority habitat will cover most water bodies greater than 2ha. As with other potentially overlapping priority habitat types a small proportion of cases will need to be individually assessed to decide how they are best dealt with.

Ponds are widespread throughout the UK, but high-quality examples are now highly localised, especially in the lowlands. In certain areas high quality ponds form particularly significant elements of the landscape, for example Cheshire Plan marl pits, the New Forest ponds, pingos of East Anglia, mid-Wales mawn pools, the North East Wales pond landscape, the forest and moorland pools of Speyside, dune slack pools, the machair pools in the Western Isles of Scotland, and examples of Habitats Directive Annex I pond habitats across Northern Ireland.

Estimates, based on the relatively small pond data sets currently available, suggest that around 20% of the *c*400,000 ponds outside curtilage in the UK might meet one or more of the above criteria.

An inventory of ponds, including many high quality sites, has been established as part of the National Pond Monitoring Network and work is in progress to add further known sites to this database. This is publicly accessible (for non-sensitive sites/species) at www.pondnetwork.org.uk. Currently about 500 high quality sites are listed on this database. The National Pond Monitoring Network (NPMN) will provide the main mechanism for monitoring priority habitat ponds. The NPMN was established in 2002 as a partnership of organisations involved in pond monitoring led by the Environment Agency and Pond Conservation.

Condition Table Pond Habitat Type

Habitat Description

- This covers all water bodies up to 1 ha in area. Expert judgement should be used to decide if a water body between 1 and 2 ha area is assessed as a pond or as a lake.
- It includes sunny or shaded and temporary or permanent ponds at any stage of succession, from newly created ponds to ones that are completely overgrown.
- It also includes scrapes, and other temporary ponds which may be dry certain times of the year.

Condition Assessment Criteria

1. Are of good water quality, with clear water (substrate can be seen) and no obvious sign of pollution in the water body.
2. The water body should have semi natural riparian land for at least 10 m from the pond edge.
3. Non-woodland ponds should be dominated by plants, be they submerged or floating (note dominance of duckweed is a sign of eutrophication).
4. Non-woodland ponds [i.e. that have always been open] should not be shaded more than 50%
5. Many ponds will be fishless, those which naturally contain fish should not be stocked and should contain a native fish assemblage.
6. Ponds should not be artificially connected to other water bodies, e.g. ditches.
7. Pond water levels should be able to fluctuate naturally throughout the year.
8. Non-native species should be absent.
9. Less than 10% of the pond should be covered with duckweed or filamentous algae.

Condition	Assessment Criteria	Score
Good	• Meets the majority of the criteria with only minor variation. • Few of the indicators of poor condition are present.	3
Moderate	• Fails a number of the criteria above. • Where non-native species comprise more than 10% of the vegetation. • There is only moderate water quality. • There is insufficient extent of semi natural riparian land. • Water levels are subject to some control. • There are some artificial connections to other water bodies, but they are not delivering water of poor water quality or preventing water level fluctuations. • Fish have been stocked at a low density, but they are native species and there is sufficient aquatic plants and habitat heterogeneity to reduce the effects of predation. • Moderate shading of non-woodland ponds. • Submerged and floating plants are limited but still presence.	2
Poor	• Ponds in poor health. • Fails the majority of criteria. • Poor water quality present.	1

	• Extensive filamentous algae or duckweed. • Absence of semi-natural riparian land. • No natural fluctuations in water levels. • Extensive non-native species. • High density of stocked fish. • Absence of submerged and floating plants (unless naturally a shaded woodland pond). • Non-woodland ponds completely over-grown with trees and scrub.	

Undesirable species:

- Any non-native species.
- Frequently observed non-native plant species include water fern, Australian swamp stonecrop, parrot's feather, floating pennywort and Japanese knotweed and giant hogweed (on the banks).
- Frequently occurring non-native animals include signal crayfish, zebra mussels, killer and demon shrimp and carp.
- Cover of more than 10% of duckweeds or filamentous algae are signs of eutrophication.

Factsheets of these invasive non-native plant species can be found on the GB non-native species secretariat website.
http://www.nonnativespecies.org/home/index.cfm

Notes

- Make a record of key features, including water quality, undesirable and non-native species all non- natives

Additional information relevant to data collection

Aquatic Marginal Vegetation

Aquatic Marginal Vegetation is a habitat type listed within UK Habitat classification. When applying the biodiversity metric please always record as the component of the river, lake or pond Priority Habitat that it sits adjacent to. With field notes about its location, structure and species composition.

UK Biodiversity Action Plan
Priority Habitat Descriptions

Hedgerows

From:
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Hedgerows

The definition of this priority habitat has been amended from the pre-existing Habitat Action Plan for ancient and/or species-rich hedgerows (https://webarchive.nationalarchives.gov.uk/20110303150113/http://www.ukbap.org.uk/UKPlans.aspx?ID=7).

A hedgerow is defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide (Bickmore, 2002). Any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, where each UK country can define the list of woody species native to their respective country. Climbers such as honeysuckle and bramble are recognised as integral to many hedgerows, however they require other woody plants to be present to form a distinct woody boundary feature, as such they are not included in the definition of woody species. The definition is limited to boundary lines of trees or shrubs, and excludes banks or walls without woody shrubs on top of them.

Based on an analysis of Countryside Survey data, using the threshold of at least 80% cover of any UK native woody species, it is estimated that 84% of countryside hedgerows in GB would be included.

References

Bickmore, C.J. (2002) *Hedgerow survey handbook: a standard procedure for local surveys in the UK*. London, DEFRA.

Part 1b - Condition assessment of hedgerows and lines of trees

1.13 A series of eight 'attributes', representing key physical characteristics, are used for this assessment. The attributes, and the minimum criteria for achieving a 'favourable condition' in each, are set out in Table TS1-2. The attributes use similar favourable condition criteria to the 'Hedgerow Survey Handbook' and the handbook is the recommended source of reference for assessing hedgerow attributes.

TABLE TS1-2: Hedgerow attributes and criteria for meeting 'favourable condition'

Hedgerow favourable condition attributes		
Attributes and functional groupings (A, B, C & D)	**Criteria (the minimum requirements for 'favourable condition'**	**Description**
A1. Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice) A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height)
A2. Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice[4])
B1. Gap – hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook)

[4] HedgeLink (http://hedgelink.org.uk/index.php) provides a resource of management advice for hedgerows.

B2.	Gap - hedge canopy continuity	• Gaps make up <10% of total length and • No canopy gaps >5 m	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate)
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length ○ measured from outer edge of hedgerow, and is present on one side of the hedge (at least)	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate)
C2.	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (*Urtica* spp.), cleavers (*Galium aparine*) and docks (*Rumex* spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting)

1.14 Each attribute is assigned to one of four functional groups (A – D), as indicated in Table TS1-2 and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria according to the approach set out in Table TS1-3.

1.15 Hedgerow and line of trees condition assessment generates a weighting (score) ranging from 1-3, which is used within the biodiversity metric 2.0. The scores for each are set out in tables TS1-3 and TS1-4 below.

TABLE TS1-3: Hedgerow condition assessment and weighting

Condition categories for hedgerows		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-.2**	**Weighting (score)**
Good	No more than 2 failures in total and no more than 1 in any functional group.	3
Moderate	No more than 4 failures in total and fails both attributes in a maximum of one functional group e.g. fails attribute 1 & 2, 5 &7 = Moderate condition.	2
Poor	Fails a total of more than 4 attributes or both attributes in more than one functional group.	1

Condition assessment of a line of trees

1.16 Condition assessment for a line of trees is based on continuity of the canopy only, as set out in Table TS1-4.

TABLE TS1-4: Line of tree condition assessment and weighting

Condition categories for lines of trees		
Category	**Continuity of tree canopy**	**Weighting (score)**
Good	Mature trees with continuous canopy Definition: • a 'mature tree' in this context is one that is at least 1/3 expected fully mature height • gaps make up <10% of total length and there are no canopy gaps >5 m	3
Moderate	Continuous canopy Definition: • trees < 1/3 expected fully mature height • gaps make up <10% of total length and there are no canopy gaps >5 m	2
Poor	Broken canopy Definition: • gaps make up >10% and / or gaps are >5 m in length.	1

Condition Table Grassland Habitat Types

Habitat Description

- Includes both agricultural, recreational, amenity, road verges and semi-natural grassland types including Priority Habitat Grasslands on all soil types.
- Will be dominated by grassland species with very little (if any) dwarf shrub, wetland or wooded species within the sward.
- Will exist above and below the level of enclosure at all altitudes.

Condition Assessment Criteria

1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site.
2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation.
3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat.
4. Undesirable species and physical damage is below 5% cover.
5. Cover of bare ground greater than 10% (including localised areas, for example, rabbit warrens).
6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.

Condition	Assessment Criteria	Score
Good	• Species-rich Grassland of all Priority Habitat Types. Of high to moderate quality. • Wildflower and sedges above 30% excluding white clover *Trifolium repens*, creeping buttercup *Ranunculus repens* and injurious weeds. • Meets all the condition criteria with only minor variation. • None of the indicators of poor condition are present (4, 5 & 6).	3
Moderate	• Semi-improved grassland occurs on a wide range of soils and may be derived from higher quality Priority Habitat grassland habitats in poor condition. Often as they deteriorate following nutrient inputs. Typical grasses include: cock's-foot, common bent, creeping bent, crested dog's-tail, false oat-grass, meadow fescue, meadow foxtail, red fescue, sweet vernal grass, Timothy, tufted hair-grass and Yorkshire-fog. • Total cover of wildflowers and sedges less than 30%, excluding white clover, creeping buttercup and injurious weeds. • Rye-grass cover is less than 25% including amenity grasslands. • OR clearly fails at least 1 of the condition criteria. • OR The grassland type has some differences between what is described in the relevant habitat classifications and what is visible on site. It is a Lower Quality Priority Habitat, but clearly recognisable as such.	2

	• Potentially restorable to grassland Priority Habitat with improved management. • Cover of undesirable species at 5- 15%.	
Poor	• Agricultural grasslands is characterised by vegetation dominated by a few fast-growing grasses on fertile, neutral soils. It is frequently characterised by an abundance of rye-grass *Lolium* spp. (above 25% cover) and white clover *Trifolium repens*. These grasslands are typically either managed as pasture or mown regularly for silage production or in non-agricultural contexts for recreation and amenity purposes; they are often periodically re-sown and are maintained by fertiliser treatment and weed control. They may also be temporary and sown as part of the rotation of arable crops but they are only included in this broad habitat type if they are more than one year old. • Amenity and Road verge grasslands with similar species to description for agriculture grasslands. • OR Most of the condition criteria are being failed. • Cover of undesirable species above 15%, usually resulting in a dense scrub or tree cover, or high cover of exotic species.	1
	Undesirable species: • creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex otusifolius*, common ragwort *Senecio jacobea*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, cow parsley *Anthriscus sylvestris*, marsh thistle *Cirsium palustre* and marsh ragwort *Senecio aquaticus*.	
	Notes • Physical damage to the vegetation from: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	

Condition Table Heathland Habitat Types

Habitat Description

- Usually with at least 25% cover of heathers and other dwarf shrubs. Or previously heathland in a degraded state below this.
- It typically comprises heathers, gorses, fine grasses, wildflowers, mosses and lichens in a complex mosaic.
- It covers the full altitudinal range with Lowland heathlands below 250-300 m and Upland Heathland (300 – 600 m) and Montane (600 m+) above this.

Condition Assessment Criteria

1. Cover of dwarf shrubs at least 50% for dry heath or between 25% and 75% for wet heath, with at least two dwarf shrub species frequent.
2. There should be a range of age classes of heather present, with cover of young (pioneer stage) heather between 10% and 15% and cover of old (late-mature/degenerate stages) between 10% and 30%.
3. No signs of burning or cutting of 'sensitive areas'. Sensitive areas comprise: thin soils (less than 5 cm deep); steep slopes (greater than a gradient of one in two); pools, wet hollows, peat above 10 cm depth, hags and erosion gullies; areas close to watercourses (within 15 m); areas with noticeably uneven structure at a small scale (c.1 m or less, particularly very old heather stands); and severely wind-clipped vegetation (usually forming a mat less than 10 cm thick).
4. No more than 33% of heather shoots should be grazed (when assessed between February and April), or flowering heather plants are at least frequent in autumn.
5. Cover of undesirable species (injurious weeds and invasive non-native plants – see list below) should be less than 5%.
6. Cover of trees and/or scrub should be less than 15%.
7. Physical damage to the vegetation from: excessive poaching, damage from machinery use or storage, or any other damaging management or public access activities.

Condition	Assessment Criteria	Score
Good	• Meets criteria 1 & 2. • Meets at least 6 of the criteria with only minor variation from any. Heather is flowering extensively. • Only 1 minor fail of the indicators of poor condition (3,4,5,6 & 7) are present.	3
Moderate	• The Heather and Dwarf shrub cover is between 25-50% on dry heaths or between 10-50% on wet heaths. • OR meets criteria 1 but fails at least 2 or 3 of the condition criteria. • The heathland type has minor differences between what is described in the relevant habitat classifications and what is visible on site. • OR cover of undesirable species at 5-20%	2
Poor	• Meets criteria 1 but at least 4 condition criteria are being failed. • The Heather and Dwarf shrub cover is below 25% but still frequent through the area (Fragmented Heathland).	1

Part 1c - The Rivers and Streams Condition Assessment

1.17 The rivers and streams condition assessment is based on the extent and diversity of observed physical features in the river channel and riparian zone (including the physical structure of vegetation) as well as the extent and types of any human modifications. The physical state of a river reach is a useful proxy for determining overall riverine ecological quality but it needs to be attuned to the type of river under consideration.

1.18 The rivers and streams condition assessment is based on geomorphic principles that are an extension of established citizen science surveys[5]. The assessment, called the River Metric Survey, is implemented in two parts[6]. A largely desk-based reach-scale assessment indicates the current river type. A subreach scale assessment based entirely on field survey captures physical features / habitats, vegetation structural features, and human interventions to assess the condition of the river at the development site, taking into account the type of river.

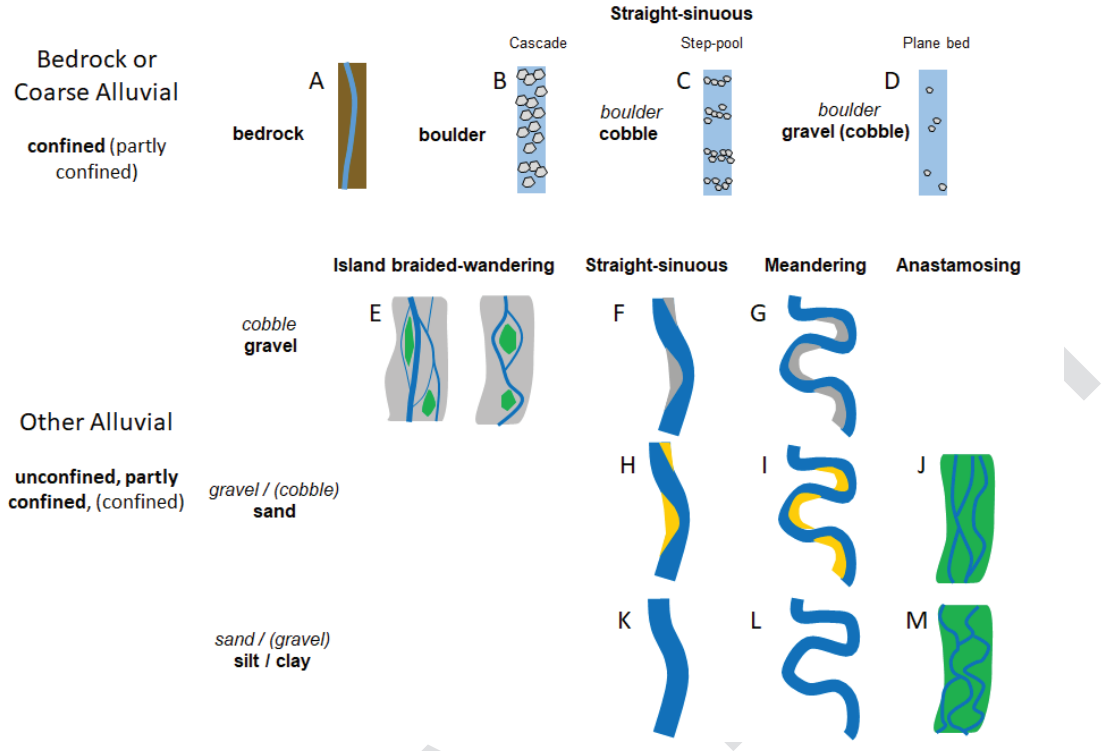
Part 1 - Reach scale desk-based assessment

1.19 The river is assigned to one of 13 river types that are likely to be encountered in England (Figure 8-2). These are a subgroup of 22 broad types of river that have been identified for Europe[7,8], including the United Kingdom[9]. The river type is determined firstly by identifying a homogenous reach that contains the proposed intervention site. This reach is identified using the latest Ordnance Survey (1:10,000 scale) maps or air photographs (e.g. Google Earth) and searching upstream and downstream from the proposed intervention site. To delimit the start and end point, a homogeneous river reach will show a reasonably consistent planform with no major tributary streams, on-line large lakes or reservoirs, as these could cause a marked change in the flow regime and sediment load.

1.20 Once the reach is determined, its gradient and 4 properties of its planform are measured to support an initial assessment of the river type. This is further refined using 4 properties of the river bed sediments observed in field surveys of sub-reaches (see below). The assignment of this indicative river type is automatically carried out within the River Metric Survey information system.

[5] See: https://modularriversurvey.org/river-metric
[6] For further information on the method please visit (https://modularriversurvey.org/river-metric).
[7] GURNELL ET AL., 2016. A multi-scale hierarchical framework for developing understanding of river behaviour to support river management. Aquatic Sciences, 78(1): 1-16.
[8] RINALDI, M., GURNELL, A.M., GONZÁLEZ DEL TÁNAGO, M., BUSSETTINI, M. & HENDRIKS, D., 2016. Classification of river morphology and hydrology to support management and restoration. Aquatic Sciences, 78(1): 17-33.
[9] ENGLAND AND GURNELL, 2016. England, J. and Gurnell, A.M. (2016) Incorporating Catchment to Reach Scale Processes into Hydromorphology Assessment in the UK. Water and Environment Journal, 30: 22–30.

FIGURE TS1-1: 13 river types found in Britain based on valley confinement, planform and bed material size (Gurnell et al., 2016, Rinaldi et al., 2016)



Part 2 - Sub-reach scale field assessment

1.21 The field element employs the Monitoring of River Phyisical habitat (MoRPh) survey[10,11], which is applied to short lengths of river. For the River Metric Survey, 5 MoRPh field surveys are conducted on contiguous lengths (modules) of river. Each MoRPh module covers a river length that is approximately twice the river width (typically 10, 20, 30 or 40 m in length). Completing 5 contiguous modules provides information for a 50 to 200 m long sub-reach. Depending on the size of the development, the sub-reach survey of 5 modules is repeated to capture at least 20% of the total river length under consideration (i.e. 1 sub-reach survey every 250 to 1000 m). The River Metric Survey captures information on sediments, vegetation, morphological and water-related features; and the extent and severity of physical modification within the channel, channel margins, banks and riparian zone (to 10 m from the bank tops).

1.22 Once each set of observations for 5 contiguous modules is entered into the River Metric Survey information system, indicators of the condition of the sub-reach are automatically provided as well as an overall condition score (Table TS1-5). The condition score is scaled to a range that is achievable by the particular river type. In addition, guidance is given on which specific geomorphic features are expected, or highly likely, to be observed in the field surveys if the river is functioning according to river type.

[10] SHUKER, L.J., GURNELL, A.M., WHARTON, G., GURNELL, D.J., ENGLAND, J., FINN LEEMING, B. & BEACH, E., 2017. MoRPh: a citizen science tool for monitoring and appraising physical habitat changes in rivers. Water and Environment Journal, 31(3): 418-424.
[11] GURNELL, A.M., ENGLAND, J., SHUKER, L., WHARTON, G. (in review). The contribution of citizen science volunteers to river monitoring and management: International and national perspectives and the example of the MoRPh survey.

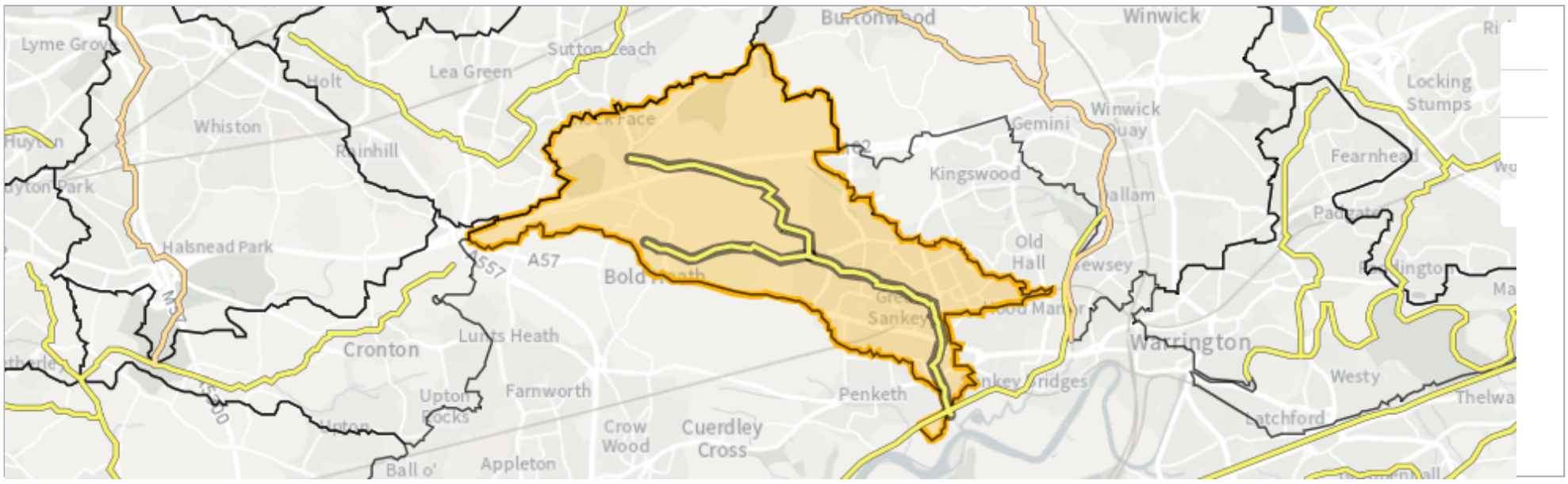
- The extent of the River Metric Survey is only required within the red line boundary of the intervention site (on-site and off-site).
- Surveyors are required to be accredited to use the River Metric Survey and be suitably qualified / experienced to identify the sources of modifications on the site and their potential solutions.
- A low risk condition assessment can be used in situations where the impact on the river reach is considered low, see below in section, Riparian Zone.

TABLE TS1-5: Condition weightings for rivers and streams

Classification	Weighting
Good	5
Fairly Good	4
Moderate	3
Fairly Poor	2
Poor	1

Search ▼

Home North West Mersey Lower Sankey Whittle Brook (Mersey Estuary)



Whittle Brook (Mersey Estuary)

Download Water Body as CSV / GeoJSON

Overall classification for 2019
Moderate

Overview

Id	GB112069060990
Type	River
Hydromorphological designation	heavily modified
NGR	SJ5717288825
Catchment area	1459.43 ha
Length	9.769 km
Surveillance Water Body	No
Catchment area	14.594 km2

Classifications

Cycle 2 classifications

Download as CSV

Classification Item	2013	2014	2015	2016	2019
Overall Water Body	Moderate	Moderate	Moderate	Moderate	Moderate
Ecological	Moderate	Moderate	Moderate	Moderate	Moderate
Chemical	Fail	Fail	Good	Good	Fail

Cycle 1 classifications Show

Upstream water bodies

Name
No data to show

Downstream water bodies

Name
MERSEY

Investigations into classification status

Download as CSV

Classification Element	Cycle	Year	Status	Outcome
Ammonia (Phys-Chem)	2	2016	Good	

Reasons for not achieving good status and reasons for

deterioration

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Reason Type	SWMI	Activity	Category	More	Classification Element
RNAG	Physical modification	Other (not in list, must add details in comments)	Local and Central Government	Details	Mitigation Measures Assessment
RNAG	Physical modification	Other (not in list, must add details in comments)	Urban and transport	Details	Mitigation Measures Assessment
RNAG	Diffuse source	Urbanisation - urban development	Urban and transport	Details	Phosphate
RNAG	Diffuse source	Poor soil management	Agriculture and rural land management	Details	Phosphate
RNAG	Diffuse source	Urbanisation - urban development	Urban and transport	Details	Invertebrates
RNAG	Physical modification	Urbanisation - urban development	Urban and transport	Details	Invertebrates
RNAG	Physical modification	Flood protection - structures	Urban and transport	Details	Invertebrates
RNAG	Diffuse source	Poor soil management	Agriculture and rural land management	Details	Invertebrates
RNAG	Diffuse source	Poor nutrient management	Agriculture and rural land management	Details	Invertebrates
RNAG	Point source	Misconnections	Domestic General Public	Details	Invertebrates
RNAG	Diffuse source	Poor nutrient management	Agriculture and rural land management	Details	Phosphate
RNAG	Point source	Misconnections	Domestic General Public	Details	Phosphate

Objectives

Download as CSV

Classification Item	Status	Year	Reasons
Overall Water Body	Good	2027	Disproportionate burdens
Ecological	Good	2027	Disproportionate burdens
Supporting elements (Surface Water)	Good	2027	Disproportionate burdens
Mitigation Measures Assessment	Good	2027	Disproportionate burdens
Biological quality elements	Good	2027	Disproportionate burdens
Macrophytes and Phytobenthos Combined	Not assessed	2015	Disproportionate burdens
Invertebrates	Good	2027	Disproportionate burdens
Hydromorphological Supporting Elements	Supports Good	2015	
Hydrological Regime	Supports Good	2015	
Physico-chemical quality elements	Good	2027	Disproportionate burdens
Ammonia (Phys-Chem)	Good	2015	
Dissolved oxygen	Good	2015	
pH	Good	2015	
Phosphate	Good	2027	Disproportionate burdens
Temperature	Good	2015	
Specific pollutants	High	2015	
Triclosan	High	2015	
Chemical	Good	2015	
Priority substances	Does not require assessment	2015	
Other Pollutants	Does not require assessment	2015	
Priority hazardous substances	Does not require assessment	2015	

Protected areas

Download as CSV

PA Name	ID	Directive	Type	More information
Dittton Brook (Halewood to Mersey Estuary) NVZ S640	S640	Nitrates Directive		
Whittle Brook NVZ S637	S637	Nitrates Directive		

PA Name	ID	Directive	Type	More information
Sankey Brook (Black Bk to Mersey) NVZ S639	S639	Nitrates Directive		

Issues preventing waters reaching good status

Issues preventing waters reaching good status and the sectors identified as contributing to them are shown in a table in the new summary page.

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Guidance

Tree Preservation Orders and trees in conservation areas

Explains the legislation governing Tree Preservation Orders and tree protection in conservation areas.

From:
Ministry of Housing, Communities & Local Government
(https://www.gov.uk/government/organisations/ministry-of-housing-communities-and-local-government)
Published:
6 March 2014

Contents

Print this page

Where plans are being prepared under the transitional arrangements set out in Annex 1 to the revised National Planning Policy Framework (https://www.gov.uk/government/publications/national-planning-policy-framework--2), the policies in the previous version of the framework published in 2012 (http://webarchive.nationalarchives.gov.uk/20180608095821/https:/www.gov.uk/government/publications/national-planning-policy-framework--2) will continue to apply, as will any previous guidance which has

been superseded since the new framework was published in July 2018. If you'd like an email alert when changes are made to planning guidance please subscribe (https://www.gov.uk/topic/planning-development/planning-officer-guidance/email-signup).

Tree Preservation Orders – general

What is a Tree Preservation Order?

A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits (http://www.legislation.gov.uk/uksi/2012/605/regulation/13/made) the:

- cutting down
- topping
- lopping
- uprooting
- wilful damage
- wilful destruction

of trees without the local planning authority's written consent. If consent is given, it can be subject to conditions which have to be followed. In the Secretary of State's view, cutting roots is also a prohibited activity and requires the authority's consent.

Paragraph: 001 Reference ID: 36-001-20140306

Revision date: 06 03 2014

What are a tree owner's responsibilities?

Owners of protected trees must not carry out, or cause or permit the carrying out of, any of the prohibited activities without the written consent of the local authority. As with owners of unprotected trees, they are responsible for maintaining their trees, with no statutory rules setting out how often or to what standard. The local planning authority cannot require maintenance work to be done to a tree just because it is protected. However, the authority can encourage good tree management, particularly when determining applications for consent under a Tree Preservation Order. This will help to maintain and enhance the amenity provided by protected trees.

Arboricultural advice from competent contractors and consultants, or the authority, will help to inform tree owners of their responsibilities and options. It is important that trees are inspected regularly and necessary maintenance carried out to make sure they remain safe and healthy.

Paragraph: 002 Reference ID: 36-002-20140306

Revision date: 06 03 2014

What are the relevant laws?

The law on Tree Preservation Orders is in Part VIII of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/part/VIII) as amended and in the Town and Country Planning (Tree Preservation) (England) Regulations 2012 (http://www.legislation.gov.uk/uksi/2012/605/contents/made) which came into force on 6 April 2012. Section 192 of the Planning Act 2008 (http://www.legislation.gov.uk/ukpga/2008/29/notes/division/6/54/14) made

further amendments to the 1990 Act which allowed for the transfer of provisions from within existing Tree Preservation Orders to regulations. Part 6 of the Localism Act 2011 amended section 210 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/2011/20/part/6) concerning time limits for proceedings in regard to non-compliance with Tree Preservation Order regulations.

Paragraph: 003 Reference ID: 36-003-20140306

Revision date: 06 03 2014

What happens to Tree Preservation Orders made before the Town and Country Planning (Tree Preservation) (England) Regulations 2012 came into force on 6 April 2012?

The Town and Country Planning (Tree Preservation)(England) Regulations 2012 (http://www.legislation.gov.uk/uksi/2012/605/contents/made) introduced a single set of procedures for all trees covered by tree preservation orders. Consequently:

- Orders made before 6 April 2012 continue to protect the trees or woodlands they cover
- the legal provisions listed in Orders made before 6 April 2012 have been automatically cancelled and replaced by the provisions in the new regulations. Only the information necessary to identify these Orders and identify the trees or woodlands they protect is retained
- there is no need for Orders made before 6 April 2012 to be remade, amended or reissued.

Paragraph: 004 Reference ID: 36-004-20140306

Revision date: 06 03 2014

Who makes Tree Preservation Orders and why?

Local planning authorities can make a Tree Preservation Order (http://www.legislation.gov.uk/uksi/2012/605/regulation/3/made) if it appears to them to be ‘expedient in the interests of amenity to make provision for the preservation of trees or woodlands in their area (http://www.legislation.gov.uk/ukpga/1990/8/section/198)‘.

Authorities can either initiate this process themselves or in response to a request made by any other party. When deciding whether an Order is appropriate, authorities are advised to take into consideration what ‘amenity’ means in practice, what to take into account when assessing amenity value, what ‘expedient’ means in practice, what trees can be protected and how they can be identified.

When granting planning permission authorities have a duty (http://www.legislation.gov.uk/ukpga/1990/8/section/197) to ensure, whenever appropriate, that planning conditions are used to provide for tree preservation and planting. Orders should be made in respect of trees where it appears necessary in connection with the grant of permission (https://www.gov.uk/guidance/use-of-planning-conditions).

Flowchart 1 shows the process for making an Order.

Paragraph: 005 Reference ID: 36-005-20140306

Revision date: 06 03 2014

Can county councils make Tree Preservation Orders?

County councils can make Tree Preservation Orders but there are restrictions (http://www.legislation.gov.uk/ukpga/1990/8/schedule/1/paragraph/13) in areas where there is both a district planning authority and a county planning authority. In these areas the county council may only make an Order:

- where necessary in connection with the grant of planning permission
- on land which is not wholly lying within the area of a single district council
- on land in which the county council holds an interest.

Paragraph: 006 Reference ID: 36-006-20140306

Revision date: 06 03 2014

What does ‘amenity’ mean in practice?

‘Amenity’ is not defined in law, so authorities need to exercise judgment when deciding whether it is within their powers to make an Order.

Orders should be used to protect selected trees and woodlands if their removal would have a significant negative impact on the local environment and its enjoyment by the public. Before authorities make or confirm an Order they should be able to show that protection would bring a reasonable degree of public benefit in the present or future.

Paragraph: 007 Reference ID: 36-007-20140306

Revision date: 06 03 2014

What might a local authority take into account when assessing amenity value?

When considering whether trees should be protected by an Order, authorities are advised to develop ways of assessing the amenity value of trees in a structured and consistent way, taking into account the following criteria:

Visibility

The extent to which the trees or woodlands can be seen by the public will inform the authority’s assessment of whether the impact on the local environment is significant. The trees, or at least part of them, should normally be visible from a public place, such as a road or footpath, or accessible by the public.

Individual, collective and wider impact

Public visibility alone will not be sufficient to warrant an Order. The authority is advised to also assess the particular importance of an individual tree, of groups of trees or of woodlands by reference to its or their characteristics including:

- size and form;
- future potential as an amenity;
- rarity, cultural or historic value;
- contribution to, and relationship with, the landscape; and
- contribution to the character or appearance of a conservation area.

Other factors

Where relevant to an assessment of the amenity value of trees or woodlands, authorities may consider taking into account other factors, such as importance to nature conservation or response to climate change. These factors alone would not warrant making an Order.

Paragraph: 008 Reference ID: 36-008-20140306

Revision date: 06 03 2014

What can help local authorities identify trees that may need protection?

An authority's tree strategy may identify localities or populations of trees as priorities for the making or reviewing of Orders. Authorities may also refer to existing registers, recording trees of particular merit, to assist in their selection of trees suitable for inclusion in an Order.

Paragraph: 009 Reference ID: 36-009-20140306

Revision date: 06 03 2014

What does 'expedient' mean in practice?

Although some trees or woodlands may merit protection on amenity grounds it may not be expedient to make them the subject of an Order. For example, it is unlikely to be necessary to make an Order in respect of trees which are under good arboricultural or silvicultural management.

It may be expedient to make an Order if the authority believes there is a risk of trees being felled, pruned or damaged in ways which would have a significant impact on the amenity of the area. But it is not necessary for there to be immediate risk for there to be a need to protect trees. In some cases the authority may believe that certain trees are at risk as a result of development pressures and may consider, where this is in the interests of amenity, that it is expedient to make an Order. Authorities can also consider other sources of risks to trees with significant amenity value. For example, changes in property ownership and intentions to fell trees are not always known in advance, so it may sometimes be appropriate to proactively make Orders as a precaution.

Paragraph: 010 Reference ID: 36-010-20140306

Revision date: 06 03 2014

What trees can be protected?

An Order can be used to protect individual trees, trees within an area, groups of trees or whole woodlands. Protected trees can be of any size or species.

Orders covering a woodland protect the trees and saplings of whatever size within the identified area, including those planted or growing naturally after the Order was made. This is because the purpose of the Order is to safeguard the woodland as a whole, which depends on regeneration or new planting.

Paragraph: 011 Reference ID: 36-011-20140306

Revision date: 06 03 2014

Can shrubs and hedges be protected by a Tree Preservation Order?

Authorities may only use an Order to protect anything that may ordinarily be termed a tree. This would not normally include shrubs, but could include, for example, trees in a hedge or an old hedge which has become a line of trees of a reasonable height. The removal of countryside hedgerows is

regulated under different legislation (https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management). See guidance on tree size in conservation areas.

Paragraph: 012 Reference ID: 36-012-20140306

Revision date: 06 03 2014

What if trees are on Forestry Commission, Crown or local authority land, in a churchyard or in, or near, an aerodrome or scheduled monument?

Special considerations apply in some of these circumstances.

Paragraph: 013 Reference ID: 36-013-20140306

Revision date: 06 03 2014

Trees and Forestry Commission, Crown or local authority land, churchyards, aerodromes and scheduled monuments

What if trees are on land owned or managed by the Forestry Commission or in which it has an interest?

Local planning authorities are encouraged to liaise with the Forestry Commission (http://www.forestry.gov.uk/england) when considering making a Tree Preservation Order on land in which the Forestry Commission has an interest. The Regulations will have no effect (http://www.legislation.gov.uk/ukpga/1990/8/section/200) in respect of anything done by, or on behalf of, the Forestry Commission on land it owns or manages (the Public Forest Estate) or in which it has an interest. This is also the case in respect of works done by or on behalf of a person under a working plan or plan of operations, approved by the Forestry Commission under:

- an existing forestry dedication covenant;
- a grant scheme or loan administered by the Forestry Commission; and/or
- If an authority identifies trees which it would have made subject to an Order but for the Forestry Commission’s interest in the land, it may ask the Commission to let it know when that interest in the land is likely to cease.

Paragraph: 014 Reference ID: 36-014-20140306

Revision date: 06 03 2014

What if trees are on Crown land?

Authorities may make Orders relating to Crown land without the consent of the appropriate Crown body (known as the ‘appropriate authority (http://www.legislation.gov.uk/ukpga/2004/5/schedule/3)’). However, when considering protecting trees on Crown land authorities are advised to discuss the matter with that body.

Paragraph: 015 Reference ID: 36-015-20140306

Revision date: 06 03 2014

What if trees are on local authority land?

Local planning authorities may make Orders in relation to land that they own.

Paragraph: 016 Reference ID: 36-016-20140306

Revision date: 06 03 2014

What if trees are in a churchyard?

Trees in churchyards may be protected by an Order. When considering protecting trees in churchyards authorities are advised to liaise with the relevant diocese.

Paragraph: 017 Reference ID: 36-017-20140306

Revision date: 06 03 2014

What if trees are on or near an aerodrome?

Authorities considering making an Order on or near civil or military aerodromes are advised to consult the owner or operator, or the Ministry of Defence.

Paragraph: 018 Reference ID: 36-018-20140306

Revision date: 06 03 2014

What if trees are within or near a scheduled monument?

Authorities are advised to consult Historic England (http://www.historicengland.org.uk/) before making Orders on trees within or close to a scheduled monument (http://www.legislation.gov.uk/ukpga/1979/46).

Paragraph: 019 Reference ID: 36-019-20140306

Revision date: 06 03 2014

Making Tree Preservation Orders

How are Tree Preservation Orders made?

If a local planning authority makes an Order, it will serve notice on people with an interest in the land, inviting representations about any of the trees covered by the Order. A copy of the Order will also be made available for public inspection. Following consideration of any objections and comments (http://www.legislation.gov.uk/uksi/2012/605/regulation/6/made) the authorities can decide whether or not to confirm the Order.

Flowchart 1 shows the process for making and confirming a Tree Preservation Order.

Paragraph: 020 Reference ID: 36-020-20140306

Revision date: 06 03 2014

Is a site visit needed?

Before making an Order a local planning authority officer should visit the site of the tree or trees in question and consider whether or not an Order is justified. Further site visits may be appropriate following emergency situations where on the initial visit the authority did not fully assess the amenity value of the trees or woodlands concerned.

Paragraph: 021 Reference ID: 36-021-20140306

Revision date: 06 03 2014

What evidence should be collected on a site visit?

Where a Tree Preservation Order may be justified, the officer should gather sufficient information to enable an accurate Order to be drawn up. The officer should record the number and species (or at least the genus) of the individual trees or groups of trees to be included in the Order and their location. A general description of genera should be sufficient for areas of trees or woodlands. It is, however, important to gather enough information to be able to accurately map their boundaries.

The officer should also record other information that may be essential or helpful in the future. This may include:

- information on any people with a legal interest in the land affected by the Order (further guidance can be found in paragraph 32 and paragraph 33;
- the present use of the land;
- the tree's or trees' importance as a wildlife habitat; and/or
- trees which are not to be included in the Order.

Paragraph: 022 Reference ID: 36-022-20140306

Revision date: 06 03 2014

Does the local planning authority have rights of entry to make a Tree Preservation Order?

Any person duly authorised in writing by the authority may enter land (http://www.legislation.gov.uk/ukpga/1990/8/section/214B) for the purpose of surveying it in connection with making or confirming an Order if there are reasonable grounds for entering for that purpose. However, the authority cannot enter Crown land (http://www.legislation.gov.uk/ukpga/1990/8/section/325A) without consent from the appropriate Crown body (http://www.legislation.gov.uk/ukpga/1990/8/section/293).

Paragraph: 023 Reference ID: 36-023-20140306

Revision date: 06 03 2014

How should the Tree Preservation Order be presented?

The Order must be set out using the standard form (http://www.legislation.gov.uk/uksi/2012/605/regulation/3/made) of Order in the Schedule to the Town and Country Planning (Tree Preservation) (England) Regulations 2012 (http://www.legislation.gov.uk/uksi/2012/605/schedule/made) (or in a form substantially to the same effect). A Word version of the standard form is available (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/82790/120405_-_2012_-_Form_of_Tree_Preservation_Order-Arial_FINAL.doc).

The Order must specify the trees or woodlands as being within 4 categories (individual, area, group and woodland). Any combination of these categories may be used in a single Order. The Order must also include, or have annexed to it, a map (http://www.legislation.gov.uk/uksi/2012/605/regulation/3/made) giving a clear indication of the position of the protected trees, groups of trees or woodlands.

Paragraph: 024 Reference ID: 36-024-20140306

Revision date: 06 03 2014

How accurate does the description and location of trees need to be in an Order?

The legislation does not require authorities to describe the trees in the Order with full scientific names or plot them on the map with pinpoint accuracy. But authorities should bear in mind that successful prosecutions for contravening Orders will be difficult where Orders do not show clearly which trees are meant to be protected.

The standard form of Order (http://www.legislation.gov.uk/uksi/2012/605/schedule/made) provides examples of how information should be recorded in a schedule. Authorities are advised to enter 'None' against any categories not used in the Order.

Paragraph: 025 Reference ID: 36-025-20140306

Revision date: 06 03 2014

When should the individual category be used?

If trees merit protection in their own right, authorities should specify them as individual trees in the Order.

Paragraph: 026 Reference ID: 36-026-20140306

Revision date: 06 03 2014

When should the group category be used?

The group category should be used to protect groups of trees where the individual category would not be appropriate and the group's overall impact and quality merits protection.

Paragraph: 027 Reference ID: 36-027-20140306

Revision date: 06 03 2014

When should the woodland category be used?

The woodland category's purpose is to safeguard a woodland as a whole. So it follows that, while some trees may lack individual merit, all trees within a woodland that merits protection are protected and made subject to the same provisions and exemptions. In addition, trees and saplings which grow naturally or are planted within the woodland area after the Order is made are also protected by the Order.

It is unlikely to be appropriate to use the woodland classification in gardens.

The woodland category should not hinder beneficial woodland management. Whether or not they make an Order, authorities can consider encouraging landowners to bring their woodlands into proper management under the grant schemes run by the Forestry Commission (http://www.forestry.gov.uk/england). If a woodland subject to an Order is not brought into such a scheme, authorities can still encourage applications to manage the trees in ways that would benefit the woodland without making a serious impact on local amenity, for example by making a single application for regularly repeated operations.

Paragraph: 028 Reference ID: 36-028-20140306

Revision date: 06 03 2014

When should the area category be used?

The area category is one way of protecting individual trees dispersed over an area. Authorities may either protect all trees within an area defined on the Order's map or only those species which it is expedient to protect in the interests of amenity.

The area category is intended for short-term protection in an emergency and may not be capable of providing appropriate long-term protection. The Order will protect only those trees standing at the time it was made, so it may over time become difficult to be certain which trees are protected. Authorities are advised to only use this category as a temporary measure until they can fully assess and reclassify the trees in the area. In addition, authorities are encouraged to resurvey existing Orders which include the area category.

Paragraph: 029 Reference ID: 36-029-20140306

Revision date: 06 03 2014

When does a Tree Preservation Order come into effect?

An Order comes into effect (http://www.legislation.gov.uk/uksi/2012/605/regulation/4/made) on the day the authority makes it. This provisional effect lasts for 6 months, unless the authority first either confirms the Order to provide long-term protection or decides not to confirm it. Further guidance can be found in paragraph 37 and paragraph 38.

Paragraph: 030 Reference ID: 36-030-20140306

Revision date: 06 03 2014

Informing people that a Tree Preservation Order has been made

How does the local planning authority inform people that a Tree Preservation Order has been made?

The local authority must (http://www.legislation.gov.uk/uksi/2012/605/regulation/5/made), as soon as practicable after making an Order and before it is confirmed, serve 'persons interested (http://www.legislation.gov.uk/uksi/2012/605/regulation/2/made) in the land affected by the Order':

- a copy of the Order (including the map); and
- a notice (a 'Regulation 5 notice') containing specified information.

The authority must also be able to prove that it has done this in one of a number of different ways (http://www.legislation.gov.uk/ukpga/1990/8/section/329). In addition, the authority must make available a copy of the Order at its offices.

Paragraph: 031 Reference ID: 36-031-20140306

Revision date: 06 03 2014

Who must the local authority inform?

The 'persons interested in the land affected by the Order' are every owner and occupier of the land on which the protected trees stand and every other person the authority knows is entitled to carry out certain works (http://www.legislation.gov.uk/uksi/2012/605/regulation/2/made) to any of those trees or in relation to the affected land.

The authority may decide to notify other people, groups, authorities and organisations (such as parish councils and the Forestry Commission). It can also consider displaying site notices.

Paragraph: 032 Reference ID: 36-032-20140306

Revision date: 06 03 2014

What must be in a Regulation 5 notice?

A Regulation 5 notice (http://www.legislation.gov.uk/uksi/2012/605/regulation/5/made) must:

- state the reasons for making the Order;
- explain that objections or representations about any of the trees, groups of trees or woodlands covered by the Order may be made to the authority in accordance with Regulation 6 (http://www.legislation.gov.uk/uksi/2012/605/regulation/6/made);
- contain a copy of Regulation 6; and
- specify a date (at least 28 days after the date of the notice) by which any objection or representation must be received by the authority.

Paragraph: 033 Reference ID: 36-033-20140306

Revision date: 06 03 2014

Commenting on newly made Tree Preservation Orders

Can people object to, or comment on, a Tree Preservation Order?

People must be given the opportunity to object to, or comment on, a new Tree Preservation Order. Before deciding whether to confirm an Order, the local authority must take into account all 'duly made (http://www.legislation.gov.uk/uksi/2012/605/regulation/6/made)' objections and representations that have not been withdrawn.

Objections and representations are duly made if:

- They are made in writing and:
  - delivered to, or could reasonably expected to be delivered to, the authority not later than the date specified in the Regulation 5 notice;
  - specify the particular trees, groups of trees or woodlands in question;
  - in the case of an objection, state the reasons for the objection;
- In a particular case, the authority is satisfied that compliance with the above requirements could not reasonably have been expected.

Paragraph: 034 Reference ID: 36-34-20140306

Revision date: 06 03 2014

How long should the local authority allow for people to make representations?

The authority should ensure that all notified parties are given at least 28 days from the date of the notice to submit their representations.

Paragraph: 035 Reference ID: 36-035-20140306

Revision date: 06 03 2014

Are the reasons for objecting restricted?

Objections to a new Tree Preservation Order can be made on any grounds.

Paragraph: 036 Reference ID: 36-036-20140306

Revision date: 06 03 2014

Confirming Tree Preservation Orders

How do local planning authorities confirm Tree Preservation Orders?

Authorities can confirm Orders (http://www.legislation.gov.uk/uksi/2012/605/regulation/7/made), either without modification or with modification, to provide long-term tree protection. They may also decide not to confirm the Order, which will stop its effect. Authorities cannot confirm an Order unless they have first considered any duly made objections or other representations.

Flowchart 1 shows the process for confirming an Order.

Authorities should bear in mind that, since they are responsible for making and confirming Orders, they are in effect both proposer and judge. They should therefore consider how best to demonstrate that they have made their decisions at this stage in an even-handed and open manner.

Paragraph: 037 Reference ID: 36-037-20140306

Revision date: 06 03 2014

Is there a time limit for confirming Orders?

Authorities can only confirm (http://www.legislation.gov.uk/uksi/2012/605/regulation/4/made) an Order within a 6 month period beginning with the date on which the Order was made. If this deadline is missed and an authority still considers protection necessary it will have to make a new Order.

Paragraph: 038 Reference ID: 36-038-20140306

Revision date: 06 03 2014

Can the authority confirm a modified Order?

The authority can decide to confirm an Order in relation to some, but not all, of the trees originally specified in the Order it made.

Paragraph: 039 Reference ID: 36-039-20140306

Revision date: 06 03 2014

What changes to an Order should not be confirmed by the authority?

The authority should not confirm an Order it has modified by adding references to trees, groups of trees or woodlands in the Schedule to the Order or the map to which the Order did not previously apply. Nor should the authority confirm an Order if it has made substantial changes to it, for example

by changing an area classification to a woodland classification. To protect additional trees or make other significant changes the authority should consider either varying the Order after it has been confirmed or making a further Order.

Paragraph: 040 Reference ID: 36-040-20140306

Revision date: 06 03 2014

How does the authority modify an Order?

It must clearly indicate modifications on the Order, for example by using distinctive type.

Paragraph: 041 Reference ID: 36-041-20140306

Revision date: 06 03 2014

How does the authority confirm an Order?

The authority must make a formal note of its final decision by endorsing (http://www.legislation.gov.uk/uksi/2012/605/regulation/7/made) the Order and recording the date. The standard form of Order (http://www.legislation.gov.uk/uksi/2012/605/schedule/made) shows what information is required.

Paragraph: 042 Reference ID: 36-042-20140306

Revision date: 06 03 2014

What does the authority do if it decides not to confirm an Order?

After deciding not to confirm an Order the authority must still record (http://www.legislation.gov.uk/uksi/2012/605/regulation/9/made) this decision on endorsing the Order. The Order's effect will stop on the date of its decision, which must be recorded on the Order. The standard form of Order (http://www.legislation.gov.uk/uksi/2012/605/schedule/made) shows what information is required.

Paragraph: 043 Reference ID: 36-043-20140306

Revision date: 06 03 2014

How should the authority inform people about its decisions?

When the authority has decided to confirm an Order it should, as soon as practicable, notify (http://www.legislation.gov.uk/uksi/2012/605/regulation/8/made) all people previously served with the made Order. They should be notified of the:

- order's confirmation;
- date it was confirmed;
- time within which an application may be made to the High Court; and
- grounds on which an application to the High Court may be made.

If the authority has confirmed the Order with modifications, then it should serve a copy (http://www.legislation.gov.uk/ukpga/1990/8/section/329) of the Order as confirmed.

If the authority has decided not to confirm an Order it should promptly notify all people previously served with the made Order and withdraw the publicly available copy.

Paragraph: 044 Reference ID: 36-044-20140306

Revision date: 06 03 2014

How can the public get access to Tree Preservation Orders?

The authority should make a copy of the Order as confirmed available for public inspection (http://www.legislation.gov.uk/uksi/2012/605/regulation/5/made) at its offices, replacing the copy of the made Order. In addition, a confirmed Order should be recorded promptly in the local land charges register as a charge on the land on which the trees are standing. It is not a charge on any other land.

Authorities should consider how best to be in a position to respond to enquiries about whether particular trees in their area are protected.

Paragraph: 045 Reference ID: 36-045-20140306

Revision date: 06 03 2014

Is there a right of appeal against made or confirmed Tree Preservation Orders?

The legislation provides no right of appeal to the Secretary of State against an authority either making or confirming an Order. There is, however, a right of appeal to the Secretary of State following an application to carry out work on trees protected by an Order that is refused, granted subject to conditions, or not determined.

Paragraph: 046 Reference ID: 36-046-20140306

Revision date: 06 03 2014

Can the validity of a Tree Preservation Order be challenged?

The validity of an Order (http://www.legislation.gov.uk/ukpga/1990/8/section/284) cannot be challenged in any legal proceedings except by way of application to the High Court on a point of law. The Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/288) and the Civil Procedure Rules 1998 (http://www.justice.gov.uk/courts/procedure-rules/civil) set out the application process.

Anyone considering challenging the validity of an Order in the High Court is advised to seek legal advice.

Paragraph: 047 Reference ID: 36-047-20140306

Revision date: 06 03 2014

Varying and revoking Tree Preservation Orders

Can local planning authorities vary or revoke Tree Preservation Orders?

Local planning authorities have powers to vary (change) or revoke (cancel) their Orders (http://www.legislation.gov.uk/ukpga/1990/8/schedule/1/paragraph/13). Authorities must use the procedures set out in the Town and Country Planning (Tree Preservation) (England) Regulations 2012 to vary (http://www.legislation.gov.uk/uksi/2012/605/regulation/10/made) or revoke (http://www.legislation.gov.uk/uksi/2012/605/regulation/11/made) any of their Orders.

Paragraph: 048 Reference ID: 36-048-20140306

Revision date: 06 03 2014

What is the decision-making process for varying or revoking a Tree Preservation Order?

Flowchart 2 shows the decision-making process for varying or revoking Orders

Paragraph: 049 Reference ID: 36-049-20140306

Revision date: 06 03 2014

Why do local authorities vary or revoke Orders?

Authorities can vary or revoke confirmed Orders to help deliver appropriate tree protection. They may decide to vary or revoke Orders because, for example:

- land has been developed;
- trees standing when the Order was made have been removed (lawfully or otherwise);
- replacement trees have been planted;
- trees, for whatever reason, no longer merit protection by an Order;
- new trees meriting protection by an Order have been planted;
- the map included in the original Order is now unreliable;
- the Order includes classifications that no longer provide appropriate or effective tree protection; or
- errors in the Order's Schedule or map have come to light.

Paragraph: 050 Reference ID: 36-050-20140306

Revision date: 06 03 2014

Why do authorities review their Orders?

Reassessing Orders helps to ensure that protection is still merited and Orders contain appropriate classifications. So authorities are advised to keep their Orders under review. For example, authorities should consider reviewing Orders protecting trees and woodlands affected by development or other change in land use since the Order was made. In addition, authorities may wish to set up a programme to review Orders that include the area classification.

Paragraph: 051 Reference ID: 36-051-20140306

Revision date: 06 03 2014

How do authorities vary Orders?

The requirements (http://www.legislation.gov.uk/uksi/2012/605/regulation/10/made) an authority must meet when varying an Order will depend on whether or not additional trees will be protected.

Paragraph: 052 Reference ID: 36-052-20140306

Revision date: 06 03 2014

How does an authority vary an Order without adding trees?

The local authority should make a formal ‘variation order’ that identifies the Order being varied, the variations made and the date the variation order is made. It must endorse the original Order with a statement that it has been varied and specifying the date on which the variation order takes effect. The standard form of Order (http://www.legislation.gov.uk/uksi/2012/605/schedule/made) includes a draft endorsement for variation.

The authority must make a copy of the variation order available for public inspection. It must also notify people interested in the land affected by the variation Order. The authority must serve a copy of the variation Order on such people along with a statement explaining the effect of the variation. The authority has discretion whether to undertake wider notification and publicity if it considers this would be appropriate.

Paragraph: 053 Reference ID: 36-053-20140306

Revision date: 06 03 2014

How does an authority vary an Order to add trees?

If an authority wants to vary an Order to add new trees, it must follow procedures additional to those for varying an Order without adding trees. These are similar to those for making and confirming a new Order. The authority decides whether or not the variation Order should be confirmed and cannot confirm it without first considering any duly made objections and representations.

Paragraph: 054 Reference ID: 36-054-20140306

Revision date: 06 03 2014

What if an authority decides not to confirm a variation order that adds trees?

Where an authority decides not to confirm a variation order that adds trees it must:

- endorse the variation Order, recording its decision not to confirm the variation order, including the date of the decision;
- notify the people who were affected by the variation order of its decision; and
- withdraw from public inspection the copy of the variation order which was made available when it was first made.

Paragraph: 055 Reference ID: 36-055-20140306

Revision date: 06 03 2014

How do authorities revoke Orders?

Where an Authority intends to revoke an Order, it can consider notifying or consulting local people and groups, authorities and organisations. It can also consider some form of publicity.

Where an authority decides to revoke an Order it must then follow the procedures (http://www.legislation.gov.uk/uksi/2012/605/regulation/11/made) set out in the Town and Country Planning (Tree Preservation) (England) Regulations 2012.

Flowchart 2 shows the process for revoking Orders.

Paragraph: 056 Reference ID: 36-056-20140306

Revision date: 06 03 2014

What if an authority wants to revoke and replace an Order?

Authorities can revoke an Order and at the same time make a new Order or new Orders to take its place. For example, an authority may wish to replace an Order containing an area classification with new Orders protecting individual trees or groups of trees. In such cases authorities should bear in mind any unfinished matters relating to the old Order. For example, an authority might have to take into account an unfulfilled condition or notice requiring a replacement tree, or an ongoing appeal.

Paragraph: 057 Reference ID: 36-057-20140306

Revision date: 06 03 2014

Making applications to carry out work on trees protected by a Tree Preservation Order

How is an application made to carry out work on trees protected by a Tree Preservation Order?

Apart from limited exceptions, permission must be sought from the local planning authority by submitting a standard application form. The form is available from the Planning Portal (https://www.planningportal.co.uk/applications) or the authority. It is important that the information on the form makes clear what the proposed work is and provides adequate information to support the case.

Flowchart 3 shows the process for applications to carry out work to protected trees.

Paragraph: 058 Reference ID: 36-058-20140306

Revision date: 06 03 2014

Is permission needed to carry out all work on trees protected by a Tree Preservation Order?

Anyone wanting to cut down, top, lop or uproot trees subject to an Order must (http://www.legislation.gov.uk/uksi/2012/605/regulation/13/made) first apply to the local planning authority (http://www.legislation.gov.uk/uksi/2012/605/regulation/16/made) for its consent unless the proposed work is exempt through an exception (http://www.legislation.gov.uk/uksi/2012/605/regulation/14/made). Where an exception applies the authority's consent to carry out works is not needed, but notice of those works may need to be given to the authority.

There are further exceptions (http://www.legislation.gov.uk/uksi/2012/605/regulation/15/made) relating to trees growing in a conservation area that are not subject to an Order.

Tree owners, their agents and contractors, statutory undertakers and other bodies should take care not to exceed an exception. Before carrying out work they believe is exempt, they may wish to obtain advice from a qualified arboriculturist and/or confirmation from the authority of what is and what is not required.

If an authority receives notice of work under any exception it may decide to inform the notifier that it considers the exemption does not apply and, if necessary, seek injunctive relief in the crown courts.

In addition, the authority's consent is not needed in certain specific circumstances (http://www.legislation.gov.uk/ukpga/1990/8/section/200) where the Regulations are deemed to have no effect. This will be the case, for instance, in respect of anything done by, or on behalf of, the Forestry Commission on land it owns or manages or in which it has an interest.

Paragraph: 059 Reference ID: 36-059-20140306

Revision date: 06 03 2014

What are the exceptions relating to trees subject to an Order?

An exception (http://www.legislation.gov.uk/uksi/2012/605/regulation/14/made) may exempt landowners or their agents from the normal requirement to seek the local planning authority's consent before carrying out work on trees subject to an Order. These exceptions include certain work:

- on dead trees and branches;
- on dangerous trees and branches;
- to comply with an Act of Parliament;
- to prevent or abate a nuisance;
- necessary to implement a planning permission;
- on fruit trees;
- by or for statutory undertakers;
- for highway operations;
- by the Environment Agency and drainage bodies; and
- for national security purposes.

Paragraph: 060 Reference ID: 36-060-20140306

Revision date: 06 03 2014

Is consent required for work on diseased and/or dying trees?

The local planning authority's consent is needed for carrying out work on diseased and/or dying trees unless some other exemption applies. One example is work urgently necessary to remove an immediate risk of serious harm. Another example is government authorities requiring the destruction of particular trees to tackle a serious plant disease (http://www.forestry.gov.uk/forestry/infd-8naduy). If they serve a notice under plant health legislation this would constitute an obligation by or under an Act of Parliament.

Paragraph: 061 Reference ID: 36-061-20140306

Revision date: 06 03 2014

What about tree work that may affect birds, bats and other wildlife?

Anyone carrying out work to a tree, even under an exception, should ensure they do not contravene laws protecting wildlife. If in doubt they are advised to seek advice from the authority or Natural England (https://www.gov.uk/government/organisations/natural-england) on how to proceed.

Paragraph: 062 Reference ID: 36-062-20140306

Revision date: 06 03 2014

Who can apply for consent under a Tree Preservation Order?

Anyone can apply for consent under an Order. The applicant will usually be the owner of the tree or trees in question or an arboricultural contractor or other person acting as the applicant's agent.

Also, a person can apply to carry out work on a neighbour's protected tree. But such an applicant is advised to first consult the tree's owner and also notify them promptly after submitting their application. The authority may ask the applicant about their legal interest in the tree and consult the tree's owner. If the authority grants consent it will be for the applicant to get any necessary permission (for access to the land, for example) from the owner, before carrying out the work.

Paragraph: 063 Reference ID: 36-063-20140306

Revision date: 06 03 2014

Can people talk to the local authority before making an application?

A potential applicant or their agent may wish to first discuss the proposal informally with the authority. The authority should consider visiting the site at this stage.

Early discussion will give the authority a chance to:

- explain whether the work proposed is exempt from the need to apply for consent or requires an application to the Forestry Commission rather than the authority;
- guide the applicant generally about Tree Preservation Order procedures and the authority's policies; and
- give advice on presenting an application.

Where there has been no pre-application discussion the applicant may, after discussion with the authority, still modify the application in writing or withdraw it and submit a new one. But authorities should never prolong this discussion to apply pressure on the applicant to agree to unwanted changes.

Paragraph: 064 Reference ID: 36-064-20140306

Revision date: 06 03 2014

How are applications made in order to be valid?

To be valid, an application for works to trees covered by a Tree Preservation Order must:

- be made to the authority on the standard application form published by the Secretary of State and available on the Planning Portal (https://www.planningportal.co.uk/) website or from the authority;
- include the information required by the form (the guidance notes for the standard form (https://ecab.planningportal.co.uk/uploads/1app/guidance/guidance_note-works_to_trees.pdf) help applicants provide the necessary information);
- be accompanied by a plan which clearly identifies the tree or trees on which work is proposed;
- be accompanied by such information as is necessary to clearly specify the work for which consent is sought;
- state the reasons for making the application; and
- be accompanied, as applicable, by appropriate evidence describing any structural damage to property or in relation to tree health or safety.

Paragraph: 065 Reference ID: 36-065-20140306

Revision date: 06 03 2014

How detailed should the plan be?

The applicant is not necessarily required to provide a formal scaled location or site plan. But the plan must identify clearly the tree or trees in question and, where appropriate, should identify main features of property affected by the application.

Paragraph: 066 Reference ID: 36-066-20140306

Revision date: 06 03 2014

How detailed should the description of proposed work be?

It is essential that an application sets out clearly what work is proposed. This will help the authority to ensure that approved work has not been exceeded and support enforcement. Applicants are advised not to submit their applications until they are in a position to present clear proposals. Authorities must not consider applications that do not meet the applicable procedural requirements (http://www.legislation.gov.uk/uksi/2012/605/regulation/16/made).

When applying for consent to remove trees, applicants should include their proposals for replacement planting. Prior discussion with the applicant should help the authority to set a mutually acceptable condition that makes clear the number, size, species and location of the replacement trees and the period within which they are to be planted.

Paragraph: 067 Reference ID: 36-067-20140306

Revision date: 06 03 2014

How much information does an applicant have to give?

Applicants must provide reasons for proposed work. They should demonstrate that the proposal is a proportionate solution to their concerns and meets the requirements of sound arboriculture. The authority may ask for more information or evidence to help determine an application, but it has no power to require information beyond that specified in the standard application form.

Paragraph: 068 Reference ID: 36-068-20140306

Revision date: 06 03 2014

What supporting information is needed for applications for works to protected trees that relate to alleged damage to property?

It is important that applications suggesting that the proposed tree work is necessary to address tree-related subsidence damage are properly supported by appropriate information. The standard application form requires evidence that demonstrates that the tree is a material cause of the problem and that other factors have been eliminated as potential influences so far as possible. The guidance notes for the standard application form (https://ecab.planningportal.co.uk/uploads/1app/guidance/guidance_note-works_to_trees.pdf) list the requirements.

Applicants should support claims that trees are damaging lighter structures and surfaces, such as garden walls, drains, paving and drives, by providing technical evidence from a relevant engineer, building/drainage surveyor or other appropriate expert.

Paragraph: 069 Reference ID: 36-069-20140306

Revision date: 06 03 2014

What about applications that may affect wildlife?

Applicants, agents and authorities must have regard to statutory obligations concerning protected species. Where there is evidence that protected species such as bats may be present and might be affected by the proposed work the applicant, their agent and the authority should have regard to the relevant legislation and guidance (https://www.gov.uk/government/policies/protecting-biodiversity-and-ecosystems-at-home-and-abroad/supporting-pages/wildlife-crime).

Paragraph: 070 Reference ID: 36-070-20140306

Revision date: 06 03 2014

What about applications for more than one operation?

Only one application is needed to carry out a number of different activities on the same tree or to carry out activities on a number of trees.

Where appropriate, authorities should encourage single applications for regularly repeated operations and phased works or programmes of work on trees under good management. In these cases the authority should satisfy itself that the proposed works are appropriate for this type of consent and that the relevant evidence supports this. The authority must ensure that applications clearly specify the proposed works and their timing or frequency.

A programme of works could describe the classes of works which will need to be carried out as routine maintenance during the specified period. A programme including tree felling should be more specific and should, where appropriate, cater for replacement tree planting.

Paragraph: 071 Reference ID: 36-071-20140306

Revision date: 06 03 2014

How can applications be submitted?

The applicant may submit (http://www.legislation.gov.uk/uksi/2012/605/regulation/16/made) the completed application form and accompanying documents to the authority by post, hand or electronic means – fax, email or online through the Planning Portal (https://www.planningportal.co.uk/info/200126/applications/59/how_to_apply/5). It is important that the applicant provides the authority with any additional required information at the same time as the form. Only one copy of each application document needs to be submitted.

Paragraph: 072 Reference ID: 36-072-20140306

Revision date: 06 03 2014

How does the local authority validate an application?

The authority should clearly mark the application with the date of receipt. Before it accepts an application the authority should check that the trees are in fact subject to an Order currently in force and verify that the application (http://www.legislation.gov.uk/uksi/2012/605/regulation/16/made) is both valid and complete (http://www.legislation.gov.uk/ukpga/1990/8/section/327A). Authorities should aim to determine validity within 3 working days from the date of receipt.

If the necessary requirements are met, the authority should validate the application. It should assess the quality of additional information submitted with an application form during the determination of the application.

Paragraph: 073 Reference ID: 36-073-20140306

Revision date: 06 03 2014

What about invalid applications?

The authority cannot validate an application that does not satisfy the necessary requirements. If it has not received all the relevant documents and information the authority should declare the application invalid, decline to determine it and inform the applicant of their decision.

If the authority decides an application is invalid the applicant may have the right of appeal.

Paragraph: 074 Reference ID: 36-074-20140306

Revision date: 06 03 2014

What about vague or ambiguous applications?

Where necessary, the authority should consider referring a vague or ambiguous application back to the applicant and ask for clarification. Any necessary minor clarification should be confirmed in writing by the applicant either in a separate letter or by modifying the original application. For significant changes that alter the nature of a proposal, for example where consent is sought for felling instead of pruning, the applicant should withdraw the original application and submit a new one.

Paragraph: 075 Reference ID: 36-075-20140306

Revision date: 06 03 2014

How does the local authority acknowledge a valid application?

The authority should acknowledge receipt in writing, confirming the date on which the complete application was received and the date after which an appeal may be made against non-determination. The authority can briefly explain whether or not it will be inviting comments on the application from local residents, authorities or groups, and whether it intends to visit the site.

Paragraph: 076 Reference ID: 36-076-20140306

Revision date: 06 03 2014

How does the local authority publicise applications?

The authority must keep a register (http://www.legislation.gov.uk/uksi/2012/605/regulation/12/made) of all applications for consent under an Order. This register must be available for inspection by the public at all reasonable hours. Authorities are encouraged to make their registers available online. Where local people might be affected by an application or where there is likely to be a good deal of public interest, the authority should consider displaying a site notice or notifying the residents, authorities or groups affected. In addition, where a neighbour submits an application, the authority should make sure the owner or occupier of the land on which the tree stands is informed and given a chance to comment.

Paragraph: 077 Reference ID: 36-077-20140306

Revision date: 06 03 2014

Can the applicant appeal if the authority does not validate their application?

The applicant has the right to appeal to the Secretary of State if an authority fails to determine an application within an 8-week period (http://www.legislation.gov.uk/uksi/2012/605/regulation/19/made).

Paragraph: 078 Reference ID: 36-078-20140306

Revision date: 06 03 2014

Exceptions relating to applications to carry out work on trees subject to a Tree Preservation Order

What are the exceptions for work on dead trees and branches?

Unless work is urgently necessary because there is an immediate risk of serious harm, 5 working days prior written notice must be given to the authority before cutting down or carrying out other work on a dead tree. The authority's consent for such work is not required.

The exceptions allow removal of dead branches from a living tree without prior notice or consent.

Tree owners, their agents and authorities should consider biodiversity. Dead trees and branches can provide very valuable habitats for plants and wildlife, which may also be protected under other legislation. To conserve biodiversity it can be good practice to retain dead wood on living trees and at least the lower trunk of dead 'ancient' or 'veteran' trees unless, for example, safety reasons justify removal. Safety has priority, but safety considerations may not necessitate removal of all dead branches on living trees or the whole of a dead tree. It may be helpful to seek expert arboricultural and ecological advice.

Where a dead tree not covered by the woodland classification is removed, the landowner has a duty to plant a replacement tree (http://www.legislation.gov.uk/ukpga/1990/8/section/206).

Paragraph: 079 Reference ID: 36-079-20140306

Revision date: 06 03 2014

What is the exception for work on dangerous trees and branches?

Where a tree presents an immediate risk of serious harm and work is urgently needed to remove that risk, tree owners or their agents must give written notice to the authority as soon as practicable after that work becomes necessary. Work should only be carried out to the extent that it is necessary to remove the risk.

In deciding whether work to a tree or branch is urgently necessary because it presents an immediate risk of serious harm, the Secretary of State's view is that there must be a present serious safety risk. This need not be limited to that brought about by disease or damage to the tree. It is sufficient to find that, by virtue of the state of a tree, its size, its position and such effect as any of those factors have, the tree presents an immediate risk of serious harm that must be dealt with urgently. One consideration would be to look at what is likely to happen, such as injury to a passing pedestrian.

If the danger is not immediate the tree does not come within the meaning of the exception.

Where a tree is not covered by the woodland classification and is cut down because there is an urgent necessity to remove an immediate risk of serious harm, the landowner has a duty to plant a replacement tree of an appropriate size and species (http://www.legislation.gov.uk/ukpga/1990/8/section/206).

Paragraph: 080 Reference ID: 36-080-20140306

Revision date: 06 03 2014

What is the exception for work to comply with an Act of Parliament?

The authority's consent is not required for carrying out work on trees and woodlands subject to an Order if that work is in compliance with any obligation imposed by or under an Act of Parliament. This exception will apply, for example, where the Forestry Commission has granted a felling licence (http://www.forestry.gov.uk/forestry/infd-6dfk86) under the Forestry Act 1967.

Paragraph: 081 Reference ID: 36-081-20140306

Revision date: 06 03 2014

What is the exception for work to prevent or abate a nuisance?

The authority's consent is not required for carrying out the minimum of work on a tree protected by an Order that is necessary to prevent or abate a nuisance. Here 'nuisance' is used in its legal sense, not its general sense. The courts have held that this means the nuisance must be actionable in law – where it is causing, or there is an immediate risk of it causing, actual damage.

When deciding what is necessary to prevent or abate a nuisance, tree owners and, where applicable, their neighbours and local authorities, should consider whether steps other than tree work might be taken. For example, there may be engineering solutions for structural damage to buildings.

Paragraph: 082 Reference ID: 36-082-20140306

Revision date: 06 03 2014

Is there an exception for tree work relating to planning permission and permitted development?

The authority's consent is not required for carrying out work on trees subject to an Order so far as such work is necessary to implement a full planning permission. For example, the Order is overridden if a tree has to be removed to make way for a new building for which full planning permission has been granted. Conditions or information attached to the permission may clarify what work is exempt.

However, the authority's consent is required for work on trees subject to an Order if:

- development under a planning permission has not been commenced within the relevant time limit (ie the permission has 'expired');
- only outline planning permission has been granted; and
- it is not necessary to carry out works on protected trees in order to implement a full planning permission.

The authority's consent is also required, for example, for work on trees protected by an Order that is necessary to implement permitted development rights under the Town and Country Planning (General Permitted Development) Order 2015 (http://www.legislation.gov.uk/uksi/2015/596/contents/made).

Paragraph: 083 Reference ID: 36-083-20150415

Revision date: 15 04 2015 See previous version (http://webarchive.nationalarchives.gov.uk/20140310225838/http://planningguidance.planningportal.gov.uk/blog/guidance/tree-preservation-orders/making-applications-to-carry-out-work-on-trees-protected-by-a-tree-preservation-order/exceptions-relating-to-applications-to-carry-out-work-on-trees-subject-to-a-tree-preservation-order/)

What is the exception for work to fruit trees?

The authority's consent is not required for carrying out work on a tree subject to an Order and cultivated for the production of fruit in the course of a business or trade if the work is in the interests of that business or trade.

The authority's consent is otherwise generally required for carrying out prohibited activities to a fruit tree protected by an Order and not cultivated on a commercial basis. However, the authority's consent is not needed before pruning any tree cultivated for the production of fruit, as long as the work is carried out in accordance with good horticultural practice.

Paragraph: 084 Reference ID: 36-084-20140306

Revision date: 06 03 2014

What is the exception for work by or for statutory undertakers?

The authority's consent is not required in certain circumstances for work carried out by, or at the request of, those statutory undertakers listed in the Town and Country Planning (Tree Preservation) (England) Regulations 2012 (http://www.legislation.gov.uk/uksi/2012/605/regulation/14/made). These statutory undertakers, or contractors working at their request, are advised to liaise with local authorities prior to carrying out work to trees protected by an Order. It is expected that all vegetation control is carried out in accordance with best arboricultural practice. They should also take care to not contravene the provisions of legislation protecting plants and wildlife.

Paragraph: 085 Reference ID: 36-085-20140306

Revision date: 06 03 2014

Is there an exception for work relating to highway operations?

The authority's consent is not required for cutting down, topping, lopping or uprooting a tree protected by an Order to enable the implementation of a highway order or scheme made or confirmed by the Secretary of State for Transport under Schedule 1 of the Highways Act 1980 (http://www.legislation.gov.uk/ukpga/1980/66/schedule/1).

Paragraph: 086 Reference ID: 36-086-20140306

Revision date: 06 03 2014

What are the exceptions for work by or for the Environment Agency and drainage bodies?

The Environment Agency (https://www.gov.uk/government/organisations/environment-agency) does not need to obtain the authority's consent before cutting down, topping, lopping or uprooting trees protected by an Order to enable it to carry out its permitted development rights. Similarly, land drainage boards (http://www.legislation.gov.uk/ukpga/1991/59/contents) do not need to obtain consent before cutting down or carrying out certain works to trees protected by an Order.

Paragraph: 087 Reference ID: 36-087-20140306

Revision date: 06 03 2014

What is the exception for work relating to national security?

The authority's consent is not required for carrying out work on trees protected by an Order if that work is urgently necessary for national security purposes.

Paragraph: 088 Reference ID: 36-088-20140306

Revision date: 06 03 2014

Taking decisions on applications for consent under a Tree Preservation Order

What is the decision-making process for applications for consent under a Tree Preservation Order?

In considering an application, the local planning authority should assess the impact of the proposal on the amenity of the area and whether the proposal is justified, having regard to the reasons and additional information put forward in support of it. The authority must be clear about what work it will allow and any associated conditions. Appeals against an authority's decision to refuse consent can be made to the Secretary of State.

In certain circumstances, compensation may be payable by the local planning authority for loss or damage which results from the authority refusing consent or granting consent with conditions. However, there are strict criteria and limitations on what compensation may be payable.

Flowchart 3 shows the decision-making process for applications for consent to undertake work on protected trees.

Paragraph: 089 Reference ID: 36-089-20140306

Revision date: 06 03 2014

How does the local planning authority consider an application?

If the authority did not visit the site before the application was made then an officer should do so at this stage.

The authority should assess whether or not the proposed work is exempt from the requirement to obtain its consent.

When considering an application the authority is advised to:

- assess the amenity value of the tree or woodland and the likely impact of the proposal on the amenity of the area;
- consider, in the light of this assessment, whether or not the proposal is justified, having regard to the reasons and additional information put forward in support of it;
- consider whether any loss or damage is likely to arise if consent is refused or granted subject to conditions;
- consider whether any requirements apply in regard to protected species;
- consider other material considerations, including development plan policies where relevant; and

- ensure that appropriate expertise informs its decision.

Authorities should bear in mind that they may be liable to pay compensation for loss or damage as a result of refusing consent or granting consent subject to conditions. However, if the authority believes that some loss or damage is foreseeable, it should not grant consent automatically. It should take this factor into account alongside other key considerations, such as the amenity value of the tree and the justification for the proposed works, before reaching its final decision.

Paragraph: 090 Reference ID: 36-090-20140306

Revision date: 06 03 2014

Must there be an arboricultural need for the work?

In general terms, it follows that the higher the amenity value of the tree or woodland and the greater any negative impact of proposed works on amenity, the stronger the reasons needed before consent is granted. However, if the amenity value is lower and the impact is likely to be negligible, it may be appropriate to grant consent even if the authority believes there is no particular arboricultural need for the work.

Paragraph: 091 Reference ID: 36-091-20140306

Revision date: 06 03 2014

What about applications relating to woodland?

An authority dealing with an application relating to woodland must (http://www.legislation.gov.uk/uksi/2012/605/regulation/17/made) grant consent so far as accords with good forestry practice unless it is satisfied that the granting of consent would fail to secure the maintenance of the special character of the woodland or the woodland character of the area. The UK Forestry Standard (http://www.forestry.gov.uk/ukfs) and its supporting guidelines define the government's standards and requirements.

Paragraph: 092 Reference ID: 36-092-20140306

Revision date: 06 03 2014

What about applications relating to a conservation area?

Where an application relates to trees in a conservation area the authority must (http://www.legislation.gov.uk/ukpga/1990/9/section/72) pay special attention to the desirability of preserving or enhancing the character or appearance of that area.

Paragraph: 093 Reference ID: 36-093-20140306

Revision date: 06 03 2014

What about a local planning authority making an application to itself?

The authority is responsible for determining applications it makes to itself. It must (http://www.legislation.gov.uk/uksi/1992/1492/note/made) publicise such an application by displaying a notice on or near the site for at least 21 days. This site notice must:

- identify the trees and clearly set out the proposed work and the authority's reasons for the application;

- include an address where a copy of the application can be inspected;
- include an address to which any comments about the application should be sent; and
- give a date by which representations have to be made. This must be at least 21 days from the site notice's date of display.

Before reaching its decision the authority must take into account any representations made by the date given in the site notice; and it must give notice of its decision to all people who made representations.

Generally, the decision is to be taken by a committee or officer of the authority other than the one with responsibilities for management of the land in question.

Paragraph: 094 Reference ID: 36-094-20140306

Revision date: 06 03 2014

What can the local planning authority decide?

When determining applications for consent under an Order, the authority may (http://www.legislation.gov.uk/uksi/2012/605/regulation/17/made):

- grant consent unconditionally;
- grant consent subject to such conditions as it thinks fit;
- refuse consent.

The authority must decide the application before it, so it should not issue a decision which substantively alters the work applied for. The authority could, however, grant consent for less work than that applied for.

The authority should make absolutely clear in its decision notice what is being authorised. This is particularly important where the authority grants consent for some of the operations in an application and refuses consent for others.

Paragraph: 095 Reference ID: 36-095-20140306

Revision date: 06 03 2014

What about granting consent subject to conditions?

A condition may (http://www.legislation.gov.uk/uksi/2012/605/regulation/17/made):

- relate to the planting of replacement trees;
- require further approvals to be obtained from the person giving the consent;
- regulate the standard of the authorised work;
- allow repeated operations to be carried out (works may be carried out only once unless a condition specifies otherwise); and/or
- impose a time limit on the duration of consent other than the default 2 year period.

A condition should:

- relate to the authorised work;
- be fair and reasonable in the circumstances of each case;

- be imposed only where there is a definite need for it; and
- be worded precisely, so the applicant is left in no doubt about its interpretation and the authority is satisfied it can be enforced.

The authority is responsible for enforcing all conditions in a consent, so its decision notice should clearly state the reasons for its conditions. This is particularly important where repeated operations have been applied for. In such cases the authority should make the scope, timing and limit of the work clear.

The authority should use its power to impose conditions to ensure that tree work or planting is carried out in accordance with good arboricultural practice.

Paragraph: 096 Reference ID: 36-096-20140306

Revision date: 06 03 2014

What about conditions requiring tree replacement?

If an authority grants consent for a tree to be felled and wishes there to be a replacement tree or trees, it must make this a condition within the decision. If it does not make such a condition it cannot serve a tree replacement notice requiring replacement.

Where an authority grants consent for work in woodland that does not require a felling licence (http://www.forestry.gov.uk/forestry/infd-6dfk86) it may impose a condition to replant the land. The authority may wish to consult the Forestry Commission (http://www.forestry.gov.uk/england) on the details of such a condition.

The authority may enforce replanting by serving a tree replacement notice on the landowner.

Replacement trees planted under a condition rather than because of an obligation under section 206 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/206) are not automatically protected by the original Order. So, the authority should consider varying the Order where, for example, replacement trees are of a different species to that referred to in the Order.

Paragraph: 097 Reference ID: 36-097-20140306

Revision date: 06 03 2014

How long does consent last for?

By default, consent is valid for 2 years (http://www.legislation.gov.uk/uksi/2012/605/regulation/17/made) beginning with the date of its grant. However, the authority may decide to set a different time limit with a condition in the consent. A tree owner may use an unused and unexpired consent obtained by a former owner. If any specified time limit expires, and the tree owner wishes to carry out a prohibited activity in respect of protected tree, a further application for consent has to be made.

Paragraph: 098 Reference ID: 36-098-20140306

Revision date: 06 03 2014

What information should be provided by an authority if it refuses consent or imposes conditions?

When an authority decides to refuse consent or grant consent subject to conditions its decision notice should clearly state what the decision is and the reasons for that decision. These should specifically address each of the applicant's reasons for making the application. In addition, the authority should:

- give its reasons for each condition imposed;
- explain the applicant's right of appeal to the Secretary of State against the decision and give the contact details of the Planning Inspectorate; and
- explain the applicant's right to compensation for loss or damage as a result of the authority's decision, and how a claim should be made.

Paragraph: 099 Reference ID: 36-099-20140306 Revision date: 06 03 2014

What about advice and information to accompany the decision?

The authority may wish to attach to its decision notice advice and information (sometimes known as an 'informative') relating to the decision. For example:

- how best to plant a replacement tree
- how to carry out work in accordance with good practice
- how to protect wildlife and biodiversity
- where to get independent specialist advice

Paragraph: 100 Reference ID: 36-100-20140306

Revision date: 06 03 2014

Appealing against local authority decisions on applications

Can people appeal against decisions on applications for consent under a Tree Preservation Order?

Following an application to a local planning authority for consent to cut down or carry out work on a tree subject to an Order, an applicant can appeal to the Secretary of State. The various grounds on which an appeal may be made are set out in Regulation 19 (http://www.legislation.gov.uk/uksi/2012/605/regulation/19/made). These appeals are handled by the Planning Inspectorate on the Secretary of State's behalf.

If the local authority has not decided an application for consent within 8 weeks from the day it is received, then the applicant may appeal on grounds of non-determination.

The appellant may withdraw their appeal at any time.

The authority may issue a decision more than 8 weeks after it receives an application, but cannot decide the application once an appeal has been made and remains outstanding.

Paragraph: 101 Reference ID: 36-101-20140306

Revision date: 06 03 2014

How are appeals made?

Regulations 19-23 (http://www.legislation.gov.uk/uksi/2012/605/regulation/19/made) set out the appeal procedures. Applicants (or their agents) must make any appeal in writing by notice to the Planning Inspectorate. The Planning Inspectorate publishes the appeal form and detailed guidance (https://www.gov.uk/government/publications/tree-preservation-order-procedure-guide) on the appeal process.

Paragraph: 102 Reference ID: 36-102-20140306

Revision date: 06 03 2014

How are appeals decided?

The Planning Inspectorate deals with most appeals through a written representations appeal procedure. An Inspector makes a decision in light of the grounds of appeal and:

- the information available when the local planning authority made its original decision on the application for consent
- the authority's decision and supporting information in that decision
- any further information requested by the Inspector.

Alternatively, the appeal may be heard by an Inspector at a hearing or public local inquiry.

Whichever appeal procedure is used, the Inspector will consider:

- the amenity value of the tree or trees in question
- how that amenity value would be affected by the proposed work
- the reasons given for the application.

Paragraph: 103 Reference ID: 36-103-20140306

Revision date: 06 03 2014

What about appeal costs?

The local planning authority and the appellant normally meet their own expenses. However, both the authority and the appellant can apply for some or all of their appeal costs. In certain circumstances, third parties may be able to apply for costs. Whichever appeal procedure is used, an application can be made for an award of costs on the grounds of another party's unreasonable behaviour which causes unnecessary expense. Additionally, the Inspector may make an award of costs, in full or in part, if they judge that a party has behaved unreasonably resulting in unnecessary expense and another party has not made an application for costs. There are strict deadlines within which costs applications must be made (https://www.gov.uk/guidance/appeals).

Paragraph: 104 Reference ID: 36-104-20140306

Revision date: 06 03 2014

Must local planning authorities register appeals?

Regulation 12 (http://www.legislation.gov.uk/uksi/2012/605/regulation/12/made) requires authorities to keep a register of all appeals under Orders they have made.

Paragraph: 105 Reference ID: 36-105-20140306

Revision date: 06 03 2014

Can the appeal decision be challenged?

The validity of the Secretary of State's appeal decision can only be challenged through an application to the High Court. Further details are available in the Planning Inspectorate's appeals guidance (https://www.gov.uk/appeal-decision-about-tree-order).

Paragraph: 106 Reference ID: 36-106-20140306

Revision date: 06 03 2014

Compensating for loss or damage

What is the decision-making process regarding compensation?

Flowchart 4 shows the decision-making process regarding compensation.

Paragraph: 107 Reference ID: 36-107-20140306

Revision date: 06 03 2014

In what circumstances may a local planning authority be liable to pay compensation?

An authority is only liable to pay compensation in certain circumstances and there are strict criteria and limitations. Subject to provisions relating to forestry operations in protected woodland, an authority may be liable to pay compensation for loss or damage (http://www.legislation.gov.uk/uksi/2012/605/regulation/24/made) caused or incurred in consequence of it:

- refusing any consent under an Order;
- granting a consent subject to conditions; or
- refusing any consent, agreement or approval required under a condition

Paragraph: 108 Reference ID: 36-108-20140306

Revision date: 06 03 2014

What are the limits for making claims for compensation?

No claim can be made for loss or damage incurred before an application for consent to undertake work on a protected tree was made.

Legislation (http://www.legislation.gov.uk/uksi/2012/605/regulation/24/made) sets out circumstances in which a claim cannot be made. Subject to provisions relating to forestry operations in protected woodland, a claim for compensation must be for not less than £500 and made to the authority either:

- within 12 months of the date of the authority's decision; or
- within 12 months of the date of the Secretary of State's decision (if an appeal has been made).

Paragraph: 109 Reference ID: 20-109-20140306

Revision date: 06 03 2014

What limits the local authority's liability to pay compensation?

Legislation (http://www.legislation.gov.uk/uksi/2012/605/regulation/24/made) limits the authority's liability by setting out circumstances in which a claim cannot be made and circumstances in which compensation is not payable.

Subject to specific provisions relating to forestry operations in protected woodland, any claimant who can establish that they have suffered loss or damage as a result of an authority either refusing consent or imposing conditions in respect of protected trees is entitled to claim compensation. However the authority's liability is limited. In such cases, compensation is not payable for any:

- loss or damage which was:
  - reasonably foreseeable by that person; and
  - attributable to that person's failure to take reasonable steps to avert the loss or damage or mitigate its extent;
- loss or damage which, having regard to the application and the documents and particulars accompanying it, was not reasonably foreseeable when consent was refused or was granted subject to conditions;
- loss of development value or other diminution in the value of land; and/or
- costs incurred in making an appeal to the Secretary of State against the refusal of any consent or the grant of consent subject to conditions.

Paragraph: 110 Reference ID: 36-110-20140306

Revision date: 06 03 2014

What are the special considerations relating to compensation and forestry operations in protected woodland?

If an authority refuses consent for felling in protected woodland in the course of forestry operations:

- it shall not be required to pay compensation other than to the owner of the land
- it shall not be required to pay compensation if more than 12 months have elapsed since the date of the authority's decision, or, in the case of an appeal to the Secretary of State, the final determination of that appeal
- the amount payable is limited to any depreciation in the value of the trees attributable to deterioration in the quality of the timber in consequence of the authority's decision.

Advice may be sought from the Forestry Commission (http://www.forestry.gov.uk/england) about the relevant provisions of the Forestry Act 1967 (http://www.legislation.gov.uk/ukpga/1967/10/section/11).

The authority is liable to pay compensation for any loss or damage caused or incurred as a result of complying with a condition where:

- the authority has granted consent for felling in the course of forestry operations all or part of a woodland area to which an order applies;
- the authority imposes a replanting condition;
- the Forestry Commission decides not to make any grant or loan under section 1 of the Forestry Act 1979 (http://www.legislation.gov.uk/ukpga/1979/21/section/1) in respect of the required replanting for the reason that the condition frustrates the use of the woodland area for the growing of

timber or other forest products for commercial purposes and in accordance with the rules or practice of good forestry.

Paragraph: 111 Reference ID: 36-111-20140306

Revision date: 06 03 2014

What should the local authority consider when deciding a claim for compensation?

If a claim is made to the authority it should consider whether any loss or damage has arisen as a consequence of the decision. It should consider whether that loss or damage has arisen within the 12 months following its decision or, in the case of an appeal to the Secretary of State, the final determination of that appeal. The authority is advised to bear in mind the limitations to its liability to pay compensation covered in the answers to the previous questions. It should have regard to the reasons given for the work applied for and any reports or other supporting documents duly submitted.

Paragraph: 112 Reference ID: 36-112-20140306

Revision date: 06 03 2014

What if there is a dispute about a claim for compensation?

Authorities and claimants are encouraged to try to reach an agreement. Any question of disputed compensation must (http://www.legislation.gov.uk/uksi/2012/605/regulation/24/made) be referred to, and determined by, the Lands Chamber of the Upper Tribunal (https://www.gov.uk/appeal-upper-tribunal-lands).

Paragraph: 113 Reference ID: 36-113-20140306

Revision date: 06 03 2014

Protecting trees in conservation areas

What is the decision-making process for tree protection in conservation areas?

Flowchart 5 shows the decision-making process regarding notices for work to trees in a conservation area (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#what-is-a-conservation-area).

Paragraph: 114 Reference ID: 36-114-20140306

Revision date: 06 03 2014

What about trees in a conservation area that are already protected by a Tree Preservation Order?

Trees in a conservation area (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#what-is-a-conservation-area) that are already protected by a Tree Preservation Order are subject to the normal procedures and controls for any tree covered by such an Order.

Paragraph: 115 Reference ID: 36-115-20140306

Revision date: 06 03 2014

What about trees in a conservation area that are not protected by a Tree Preservation Order?

Trees in a conservation area (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#what-is-a-conservation-area) that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/211). These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. The work may go ahead before the end of the 6 week period if the local planning authority gives consent. This notice period gives the authority an opportunity to consider whether to make an Order on the tree.

Paragraph: 116 Reference ID: 36-116-20140306

Revision date: 06 03 2014

What about trees on Crown land within a conservation area that are not protected by a Tree Preservation Order?

The Crown must (http://www.legislation.gov.uk/ukpga/1990/8/section/211) give 6 weeks' notice for works to trees in a conservation area (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#what-is-a-conservation-area), unless an exception applies or the local planning authority has given consent.

Where work is carried out on a regular basis, the local authority and the appropriate authority of the Crown (http://www.legislation.gov.uk/ukpga/2004/5/schedule/3) should consider following the guidance at paragraph 126.

Paragraph: 117 Reference ID: 36-117-20140306

Revision date: 06 03 2014

How should the local authority deal with a section 211 notice?

The authority can deal with a section 211 notice in one of three ways. It may:

- make a Tree Preservation Order if justified in the interests of amenity, preferably within 6 weeks of the date of the notice;
- decide not to make an Order and inform the person who gave notice that the work can go ahead; or
- decide not to make an Order and allow the 6-week notice period to end, after which the proposed work may be done within 2 years of the date of the notice.

While bearing in mind the 6-week notice period, the authority should allow sufficient time for it to receive objections to the work. The authority should consider duly submitted objections when deciding whether the proposals are inappropriate and whether an Order should be made.

A section 211 notice is not, and should not be treated as, an application for consent under an Order. So the authority cannot:

- refuse consent; or
- grant consent subject to conditions.

Paragraph: 118 Reference ID: 36-118-20140306

Revision date: 06 03 2014

How does the local authority decide whether a tree in a conservation area merits a Tree Preservation Order?

The authority's main consideration should be the amenity value of the tree. In addition, authorities must (http://www.legislation.gov.uk/ukpga/1990/9/section/72) pay special attention to the desirability of preserving or enhancing the character or appearance of the conservation area.

Even if the tree's amenity value may merit an Order the authority can still decide that it would not be expedient to make one.

If an Order is made, in addition to fulfilling the usual statutory requirements, the authority should also provide a copy of the new Order to any agent who submitted the section 211 notice. It should also explain to the person who gave notice that an application for consent under the Order may be made at any time.

Paragraph: 119 Reference ID: 36-119-20140306

Revision date: 06 03 2014

What if work is done to trees in a conservation area, that are not protected by a Tree Preservation Order, without a section 211 notice being submitted?

Anyone who cuts down, uproots, tops, lops, wilfully destroys or wilfully damages a tree in a conservation area (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#what-is-a-conservation-area) (if that tree is not already protected by an Order), or causes or permits such work, without giving a section 211 notice (or otherwise contravenes section 211 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/211)) is guilty of an offence, unless an exception applies. The same penalties as those for contravening an Order apply.

Paragraph: 120 Reference ID: 36-120-20140306

Revision date: 06 03 2014

When must replacement trees be planted?

If a tree in a conservation area (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#what-is-a-conservation-area) is removed, uprooted or destroyed in contravention of section 211 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/211), the landowner has a duty (http://www.legislation.gov.uk/ukpga/1990/8/section/213) to plant another tree of an appropriate size and species at the same place as soon as he or she reasonably can. The same duty applies if a tree in a conservation area is removed because it is dead or presents an immediate risk of serious harm. The duty attaches to subsequent owners of the land.

Paragraph: 121 Reference ID: 36-121-20140306

Revision date: 06 03 2014

How does the local authority enforce the duty to plant a replacement tree?

The authority may enforce this duty (http://www.legislation.gov.uk/ukpga/1990/8/section/207) by serving a tree replacement notice. There is a right of appeal (http://www.legislation.gov.uk/ukpga/1990/8/section/208) against a tree replacement notice however the authority has powers to dispense (http://www.legislation.gov.uk/ukpga/1990/8/section/213) with the duty to plant a replacement tree. Any request for such a dispensation should be put to the authority in writing.

Paragraph: 122 Reference ID: 36-122-20140306

Revision date: 06 03 2014

Section 211 notices

What is a section 211 notice?

A section 211 notice is a notice submitted to the local planning authority by landowners or their agents. It notifies the authority of proposed work on trees in a conservation area that are not subject to a Tree Preservation Order. ‘Protecting trees in conservation areas’ gives guidance on the circumstances where a section 211 notice may be required.

Paragraph: 123 Reference ID: 36-123-20140306

Revision date: 06 03 2014

What form should a section 211 notice take?

A section 211 notice does not have to be in any particular form. It may be helpful to use the standard application form for work to trees protected by an Order (available from the Planning Portal (https://www.planningportal.co.uk/info/200126/applications/59/how_to_apply/5)) as a section 211 notice, but the authority cannot insist on this.

Paragraph: 124 Reference ID: 36-124-20140306

Revision date: 06 03 2014

What information should be in a section 211 notice?

A section 211 notice must describe the work proposed and include sufficient particulars to identify the tree or trees. Where a number of trees or operations are involved, it should make clear what work is proposed to which tree. A notice must include the date it is submitted. A plan is not mandatory but can be helpful.

Sufficient information in a section 211 notice will help the local authority to verify that the proposed work, if undertaken, has not been exceeded and support enforcement action if appropriate. People should not submit a section 211 notice until they are in a position to present clear proposals. They should consider first discussing their ideas with an arboriculturist or the authority’s tree officer.

Paragraph: 125 Reference ID: 36-125-20140306

Revision date: 06 03 2014

What about section 211 notices for more than one operation?

Only one section 211 notice is needed to carry out a number of different operations on the same tree or to carry out work on a number of trees.

To avoid the need for repeated notices over a relatively short period of time, one notice may, where appropriate, be submitted for repeated operations, phased works or programmes of work.

Paragraph: 126 Reference ID: 36-126-20140306

Revision date: 06 03 2014

What should the local authority do with a vague or ambiguous section 211 notice?

The authority is advised to refer a section 211 notice containing insufficient or unclear information back to the person who submitted it. The authority may wish to provide information to help them resubmit an appropriate notice.

Paragraph: 127 Reference ID: 36-127-20140306

Revision date: 06 03 2014

Should the local authority acknowledge receipt of a section 211 notice?

A section 211 notice should be acknowledged, although the authority should first consider whether the proposed work is exempt from the requirement to give this notice or requires a felling licence (http://www.forestry.gov.uk/forestry/infd-6dfk86). In either case it should promptly inform the person who gave the notice. Otherwise the authority should acknowledge receipt of the notice in writing.

Paragraph: 128 Reference ID: 36-128-20140306

Revision date: 06 03 2014

Does the local authority have to keep a register of section 211 notices?

The authority must (http://www.legislation.gov.uk/ukpga/1990/8/section/214) keep available for public inspection a register of all section 211 notices. Authorities are encouraged to make these registers available online. The register should include:

- the date of the section 211 notice;
- the name of the person who served it;
- the address of the land where the tree stands;
- the proposed work;
- sufficient information to identify the tree;
- the authority’s decision (if any);
- the date of the authority’s decision date (if any); and
- an index for tracing entries.

Paragraph: 129 Reference ID: 36-129-20140306

Revision date: 06 03 2014

Does the local authority have to publicise section 211 notices?

A section 211 notice does not need to be publicised. However the authority can consider publicising a section 211 notice in order to seek the views of local residents, groups or authorities, particularly where there is likely to be public interest.

Paragraph: 130 Reference ID: 36-130-20140306

Revision date: 06 03 2014

Exceptions relating to section 211 notices

Is a section 211 notice required for a tree of any size?

People are not required (http://www.legislation.gov.uk/uksi/2012/605/regulation/15/made) to submit a section 211 notice to the local planning authority for:

- the cutting down, topping or lopping or uprooting of a tree whose diameter does not exceed 75 millimetres; or
- the cutting down or uprooting of a tree, whose diameter does not exceed 100 millimetres, for the sole purpose of improving the growth of other trees (eg thinning as part of forestry operations).

In either case, the diameter of the tree is to be measured over the bark of the tree at 1.5 metres above ground level. These exemptions do not apply in circumstances where a tree has more than one stem at a point 1.5 metres above the natural ground level if any stem when measured over its bark at that point exceeds the relevant minimum.

Paragraph: 131 Reference ID: 36-131-20140306

Revision date: 06 03 2014

What other types of tree work do not require a section 211 notice?

A section 211 notice is not required where the cutting down, topping, lopping or uprooting of a tree is permissible under an exception to the requirement to apply for consent under a Tree Preservation Order. Nor is a section 211 notice required for:

- the cutting down, topping, lopping or uprooting of a tree by, or on behalf of, the authority;
- the cutting down, topping, lopping or uprooting of a tree by or on behalf of the Forestry Commission (https://www.forestry.gov.uk/england) on land in which it has an interest; or
- cutting down a tree in accordance with a felling licence (http://www.forestry.gov.uk/forestry/infd-6dfk86) or a plan of woodland operations agreed by the Forestry Commission.

Paragraph: 132 Reference ID: 36-132-20140306

Revision date: 06 03 2014

Is a section 211 notice required for work to dead or dangerous trees in conservation areas?

Unless there is an immediate risk of serious harm, anyone proposing to carry out work on a tree in a conservation area (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#what-is-a-conservation-area) on the grounds that it is dead must (http://www.legislation.gov.uk/uksi/2012/605/regulation/14/made) give the authority 5 days notice before carrying out the proposed work. Where such a tree requires urgent work to remove an immediate risk of serious harm, written notice is required as soon as practicable after the work becomes necessary.

Paragraph: 133 Reference ID: 36-133-20140306

Revision date: 06 03 2014

Is a section 211 notice needed where a planning application includes tree work in a conservation area?

An authority may treat a planning application for development in a conservation area (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#what-is-a-conservation-area) that includes specified tree work as a section 211 notice if the applicant has clearly stated that it should be considered as such. However, if work is proposed to trees other than those immediately affected by a proposed development then a separate section 211 notice should be submitted. Where an authority has granted planning permission for development in a conservation area, only tree works necessary to implement the development may be carried out. The authority may use conditions or informatives attached to the permission to clarify this requirement.

Paragraph: 134 Reference ID: 36-134-20140306

Revision date: 06 03 2014

Enforcing tree protection offences

How are offences against a Tree Preservation Order enforced?

Anyone who contravenes an Order by damaging or carrying out work on a tree protected by an Order without getting permission from the local planning authority is guilty of an offence and may be fined.

There is also a duty requiring landowners to replace a tree removed, uprooted or destroyed in contravention of an Order. This duty also applies if a tree outside woodland is removed because it is dead or presents an immediate risk of serious harm. The local planning authority may also impose a condition requiring replacement planting when granting consent under an Order for the removal of trees. The authority can enforce tree replacement by serving a ‘tree replacement notice’.

More information about tree replacement can be found at paragraph 151.

More information about investigations, injunctions and temporary stop notices can be found at paragraph 148.

Paragraph: 135 Reference ID: 36-135-20140306

Revision date: 06 03 2014

What is the decision-making process regarding offences?

Flowchart 6 shows the decision-making process regarding offences. This process applies to contraventions of Tree Preservation Orders. Unless stated, it also applies to work to trees in conservation areas that contravenes section 211 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/211).

Local planning authorities should consider publishing tree protection enforcement policies and having clear written procedures to deal with cases. These procedures may require close liaison between tree officers, enforcement officers and legal advisers.

Paragraph: 136 Reference ID: 36-136-20140306

Revision date: 06 03 2014

What are the offences and who can be guilty of committing them?

Section 210(1) (http://www.legislation.gov.uk/ukpga/1990/8/section/210) and section 202C(2) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/202C) provide that anyone who, in contravention of a Tree Preservation Order

- cuts down, uproots or wilfully destroys a tree; or
- tops, lops or wilfully damages a tree in a way that is likely to destroy it; or
- causes or permits such activities

is guilty of an offence.

Section 210(4) of the Act (http://www.legislation.gov.uk/ukpga/1990/8/section/210) sets out that it is also an offence for anyone to contravene the provisions of an Order other than those mentioned above. For example, anyone who lops a tree in contravention of an Order, but in a way that the tree is not likely to be destroyed, would be guilty of this offence.

For the purposes of the Act, a person does not have to obliterate a tree in order to 'destroy' it. It is sufficient for the tree to be rendered useless as an amenity or as something worth preserving.

Paragraph: 137 Reference ID: 36-137-20140306

Revision date: 06 03 2014

What are the penalties for committing these offences?

Section 210(2) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/210) provides that anyone found guilty of these offences is liable, if convicted in the magistrates' court, to a fine of up to £20,000. In serious cases a person may be committed for trial in the Crown Court and, if convicted, is liable to an unlimited fine. Section 210(3) (http://www.legislation.gov.uk/ukpga/1990/8/section/210) provides that, in determining the amount of fine, the court shall take into account any financial benefit which has resulted, or is likely to result, from the offence.

There is also a duty requiring landowners to replace a tree removed, uprooted or destroyed in contravention of an Order.

Anyone found guilty in the magistrates' court of an offence under section 210(4) (http://www.legislation.gov.uk/ukpga/1990/8/section/210) is liable to a fine of up to Level 4 (currently £2,500).

Paragraph: 138 Reference ID: 36-138-20140306

Revision date: 06 03 2014

Are there time limits for bringing a prosecution?

Section 210(4A) and (4B) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/2011/20/section/126) set out that, in respect of offences under section 210(4) of the Act, authorities may bring an action within 6 months beginning with the date on which evidence sufficient in the opinion of the prosecutor to justify the proceedings came to the prosecutor's knowledge. However, proceedings cannot commence more than 3 years after the date the offence was committed.

Paragraph: 139 Reference ID: 36-139-20140306

Revision date: 06 03 2014

What if unauthorised work has been attempted?

Section 210 of the Town and Country Planning Act 1990 provides a clear structure for pursuing criminal enforcement action for unauthorised work. But, where an alleged action falls short of the definition in section 210 of the Town and Country Planning Act 1990, section 1(1) of the Criminal Attempts Act 1981 (http://www.legislation.gov.uk/ukpga/1981/47) may provide an alternative route in some cases where unauthorised work has been attempted.

Paragraph: 140 Reference ID: 36-140-20140306

Revision date: 06 03 2014

What options for action do local planning authorities have?

When faced with what they believe are unauthorised works to protected trees, local authorities may:

- do nothing – but only if justified by the particular circumstances;
- negotiate with the owner to remedy the works to the satisfaction of the authority;
- consider the option of issuing an informal warning to impress on the tree owner or others suspected of unauthorised works that such work may lead to prosecution;
- seek an injunction to stop on-going works and prevent anticipated breaches; or
- consider whether the tests for commencing a prosecution are met.

Paragraph: 141 Reference ID: 36-141-20140306

Revision date: 06 03 2014

What should local authorities consider when deciding on the best option for action?

Negotiation may enable the authority to ensure that remedial works to repair, or reduce the impact of, unauthorised works to a protected tree are carried out. The authority should also take into account the legal duty to replace trees. Prosecutions cannot require remedial works to the tree but will, where appropriate, both punish offenders and deter potential offenders. The authority should consider whether there is a realistic prospect of a conviction and whether it is in the public interest to prosecute. It should also consider whether it is in the public interest to prosecute some or all of the individuals implicated in the offence.

Paragraph: 142 Reference ID: 36-142-20140306

Revision date: 06 03 2014

How can local planning authorities bring successful prosecutions?

To bring a successful prosecution the authority should have sufficient evidence to show that:

- the tree was protected by an Order at the relevant time, or was in a conservation area;
- an action which is an offence under section 210 of the Town and Country Planning Act 1990 has been carried out; and
- the defendant has carried out, caused or permitted this work.

The elements of the offence must be proved beyond reasonable doubt. It may be possible to bring a separate action for each tree cut down or damaged. Further guidance can be found at paragraph 148.

The burden of proof to show, on the balance of probabilities, that work fell within the terms of a statutory exemption is placed on the defendant.

In general, it is no defence for the defendant to claim ignorance of the existence of an Order. Nevertheless, the authority should ensure that a valid Order exists, that the tree in question was clearly protected by it and that it has carried out its statutory functions properly and complied with all procedural requirements.

Paragraph: 143 Reference ID: 36-143-20140306

Revision date: 06 03 2014

What about third parties?

It is in offence to cause or permit prohibited tree work. Furthermore, under section 44 of the Magistrates' Courts Act 1980 (http://www.legislation.gov.uk/ukpga/1980/43/section/44) any person who 'aids, abets, counsels or procures the commission by another person of a summary offence shall be guilty of the like offence'. So anyone who engages a person or company that physically carries out unauthorised work may also be subject to enforcement action.

Paragraph: 144 Reference ID: 36-144-20140306

Revision date: 06 03 2014

What if an offence is committed by a company?

Where a company contravenes an Order, section 331 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/331) provides that a director, manager or secretary or other similar officer of the company is guilty of the offence if it can be proved it was committed with their consent or connivance, or was attributable to any neglect on their part.

Paragraph: 145 Reference ID: 36-145-20140306

Revision date: 06 03 2014

Does the local authority have rights of entry where it suspects an offence?

Sections 214B (http://www.legislation.gov.uk/ukpga/1990/8/section/214B), 214C (http://www.legislation.gov.uk/ukpga/1990/8/section/214C) and 214D of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/214D) set out provisions relating to rights of entry in respect of protected trees. Authorities may authorise in writing their officers to enter land at a reasonable hour to ascertain whether an offence under section 210 or 211 has been committed if there are reasonable grounds for entering for this purpose. The authority must notify the occupier at least 24 hours' before entering a dwelling or occupied land. To enter Crown land the authority must first get consent from the relevant Crown body (http://www.legislation.gov.uk/ukpga/1990/8/section/293), which may impose conditions (https://www.gov.uk/guidance/crown-development). In urgent cases or where admission has been, or is reasonably expected to be, refused, a magistrate can issue a warrant enabling a duly authorised officer to enter land.

Anyone who wilfully obstructs an authority officer exercising these rights of entry is guilty of an offence and liable, if convicted in the Magistrates' Court, to a Level 3 fine (currently up to £1,000). See section 214D(3) of the Town and Country Planning Act 1990

(http://www.legislation.gov.uk/ukpga/1990/8/section/214D).

Paragraph: 146 Reference ID: 36-146-20140306

Revision date: 06 03 2014

Is it appropriate to publicise successful prosecutions?

Authorities should consider publicising successful prosecutions to help maximise their deterrent value.

Paragraph: 147 Reference ID: 36-147-20140306

Revision date: 06 03 2014

Investigations, injunctions and temporary stop notices

Procedures for criminal investigations by local planning authorities

The authority should first investigate whether or not an allegation that a contravention has taken place, or is about to take place, is true. The authority should consider keeping anyone who has notified the authority of a contravention informed of the outcome of the investigation.

Local authority officers conducting criminal investigations must have regard to the codes of practice (https://www.gov.uk/guidance/police-and-criminal-evidence-act-1984-pace-codes-of-practice) prepared under section 66 of the Police and Criminal Evidence Act 1984 (http://www.legislation.gov.uk/ukpga/1984/60/section/66) and any other relevant codes relating to criminal proceedings. This duty applies when an authority discharges its enforcement powers, including rights of entry, gathering samples from trees or of soil and taking statements. The authority's lawyers should be able to advise officers on how they should apply the codes in practice.

Authorities should liaise with the Forestry Commission if they believe there has been a contravention of the felling licence (http://www.forestry.gov.uk/forestry/infd-6dfk86) provisions of the Forestry Act 1967.

Where Crown land is involved, the local planning authority must secure the consent of 'the appropriate authority (http://www.legislation.gov.uk/ukpga/1990/8/section/293)' before taking any step for the purposes of enforcement.

When considering whether to prosecute, the authority should have regard to the Code for Crown Prosecutors (https://www.cps.gov.uk/publication/code-crown-prosecutors) and its own enforcement and prosecution policies.

Prosecutors should ensure that evidence at trial is restricted only to establishing the elements of the offence. For example, knowledge of the existence of the Tree Preservation Order in question is not required. Also, in some cases, accidental destruction of a protected tree is not an offence.

Paragraph: 148 Reference ID: 36-148-20140306

Revision date: 06 03 2014

Enforcement – injunctions

An injunction is a court order prohibiting a person from taking a particular action. Section 214A of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/214A) enables an authority to apply to the High Court or County Court for an injunction to restrain an actual or

apprehended offence under section 210 (contravention of a Tree Preservation Order) or section 211 (prohibited work on trees in a conservation area).

Paragraph: 149 Reference ID: 36-149-20140306

Revision date: 06 03 2014

Enforcement – temporary stop notices

Where an authority considers there has been a breach of planning control and immediate action is required to stop an activity endangering the amenity of the area, Section 171E of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/171E) enables the authority to issue a temporary stop notice. This notice can require either an activity to cease or the level of an activity to be reduced or minimised. Such notices may apply to breaches of conditions in planning permissions. Such notices may apply, for example, to breaches of planning conditions requiring physical tree protection. They do not apply to general activities that may be endangering protected trees.

Paragraph: 150 Reference ID: 36-150-20140306

Revision date: 06 03 2014

Replacing protected trees

What is the decision-making process regarding tree replacement?

Flowchart 7 shows the decision-making process regarding tree replacement. Unless stated, this process applies to trees subject to a Tree Preservation Order and to trees in a conservation area (http://www.legislation.gov.uk/ukpga/1990/8/section/213) that are not subject to an Order.

In addition to possible criminal penalties landowners have a duty, in certain circumstances, to replace trees or to replant in protected woodlands. Also, the local planning authority may impose a condition requiring replacement planting when granting consent under a Tree Preservation Order for the removal of trees.

Paragraph: 151 Reference ID: 36-151-20140306

Revision date: 06 03 2014

How can local planning authorities enforce the duties to replace protected trees and woodlands?

The authority can enforce tree replacement duties by serving a tree replacement notice.

Paragraph: 152 Reference ID: 36-152-20140306

Revision date: 06 03 2014

What are the considerations relating to the duty to replace trees protected by a Tree Preservation Order outside woodland?

Under section 206 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/206) landowners have a duty to replace a tree removed, uprooted or destroyed in contravention of the Town and Country Planning (Tree

Preservation) (England) Regulations 2012 (http://www.legislation.gov.uk/uksi/2012/605/contents/made). This duty also applies under section 206 if a tree (except a tree protected as part of a woodland) is removed, uprooted or destroyed because it is dead or presents an immediate risk of serious harm.

The duty transfers to the new owner if the land changes hands.

Replacement trees should be of an appropriate size and species and planted at the same place as soon as the owner of the land can reasonably do this.

Unlike a replacement tree planted under a condition, a replacement tree planted because of the duty under section 206 is automatically protected by the original Order. The local planning authority has powers only to enforce the duty to plant one tree to replace one other. But the authority and landowner may agree on planting, for example, one tree of a different species or two trees of a smaller species to replace one of a large species. In these circumstances the authority is advised to vary the Order to bring it formally up to date.

It may not be necessary (or practical) for the replacement tree to be planted in the exact position of the original tree. But the place should at least correspond with the original position described in the Order and shown on the map. Where the Order includes the area classification, although the position of every tree will not be shown, the authority is advised to specify replanting as near as is reasonably practical to the original tree's position.

The duty on the owner of the land is to plant a replacement tree as soon as they reasonably can. However, the authority should carefully consider the circumstances of the case (such as the number of trees involved or the time of year) when deciding what timing would be reasonable.

Section 206(2) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/206) gives the authority power to dispense with the duty to plant a replacement tree where the landowner makes an application. Any request for the authority to use this power should be made in writing.

Paragraph: 153 Reference ID: 36-153-20140306

Revision date: 06 03 2014

What are the considerations relating to the duty to replace trees protected by a Tree Preservation Order in woodland?

Section 206(3) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/206) restricts the landowner's duty to replace trees subject to the woodland classification to those removed, uprooted or destroyed in contravention of the Order. The duty is to plant the same number of trees:

- on or near the land on which the trees stood, or on such other land as may be agreed between the local planning authority and the landowner, and
- in such places as may be designated by the authority

Where the duty arises under section 206, those trees planted within the woodland specified in the Order will be automatically protected by the original Order. The authority should consider varying the Order or making a new one to protect any replacement trees planted in a location not identified in the original Order.

Paragraph: 154 Reference ID: 36-154-20140306

Revision date: 06 03 2014

When can local planning authorities serve a tree replacement notice?

Section 207 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/207) gives local planning authorities the powers to enforce an unfulfilled duty under section 206 to replace trees or woodlands by serving on the landowner a 'tree replacement notice'. The authority may also serve a tree replacement notice to enforce any unfulfilled condition of consent granted under a Tree Preservation Order, or imposed by the Secretary of State on appeal, that requires tree replacement.

However, if the local planning authority believes, in the circumstances, that replacement trees should be planted, it should first try to persuade the landowner to comply with the duty voluntarily. The authority should discuss the issue with the landowner and offer relevant advice.

Paragraph: 155 Reference ID: 36-155-20140306

Revision date: 06 03 2014

What should the local planning authority consider when deciding whether to serve a tree replacement notice?

The local planning authority's power to enforce tree replacement is discretionary. Clearly it must be satisfied that the trees were protected at the time they were removed. The authority should also be satisfied that removed trees within an area classification were present when the Tree Preservation Order was made.

The local planning authority should also consider:

- the impact on amenity of the removal of trees, and whether it would be in the interests of amenity (and, in woodlands, in accordance with the practice of good forestry) to require their replacement;
- whether it would be reasonable to serve a tree replacement notice in the circumstances of the case; and
- the possibility of a wider deterrent effect.

If the authority decides not to take formal enforcement action it should be prepared to explain its reasons to anyone who would like to see action taken.

In addition, the authority may have to decide an application by a landowner asking it to dispense with the tree replacement duty. The authority should give its decision in writing, setting out its reasons.

Paragraph: 156 Reference ID: 36-156-20140306

Revision date: 06 03 2014

What about serving a tree replacement notice relating to Crown land?

The local planning authority is not required to obtain the prior consent of 'the appropriate authority (http://www.legislation.gov.uk/ukpga/1990/8/section/293)' before serving a tree replacement notice on a Crown body. However, it is required to secure the consent (http://www.legislation.gov.uk/ukpga/1990/8/section/325A) of the appropriate authority before entering Crown land to enforce the notice.

Paragraph: 157 Reference ID: 36-157-20140306

Revision date: 06 03 2014

When and how should the local planning authority serve a tree replacement notice?

The local planning authority can only serve a tree replacement notice within 4 years from the date of the landowner's failure to replant as soon as he or she reasonably could (see section 207(2) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/207)). The notice should be served on the landowner. It may be served electronically if the landowner has provided their electronic address to the authority (see section 329(1)(cc) of the Act (http://www.legislation.gov.uk/ukpga/1990/8/section/329)).

Paragraph: 158 Reference ID: 36-158-20140306

Revision date: 06 03 2014

What should be in a tree replacement notice?

A tree replacement notice should make clear whether it relates to non-compliance with a condition or to a duty under section 206 or 213 of the Town and Country Planning Act 1990. It should explain why the authority is exercising the duty and what the landowner must do to comply with it. It should state:

- what has given rise to the duty;
- whether the notice relates to contravening an Order or a section 211 notice;
- whether the notice relates to complying with a condition of consent;
- the number, size and species of the replacement trees
- where the trees are to be planted (including a plan showing their position);
- the period at the end of which the notice is to take effect (the period specified must be a period of not less than 28 days beginning with the date of service of the notice);
- a date by when the tree replacement notice should be complied with (the authority should consider what the landowner can reasonably do);
- that the landowner can appeal against the notice (further guidance can be found at paragraph 165 and paragraph 166.

Paragraph: 159 Reference ID: 36-159-20140306

Revision date: 06 03 2014

What else can be in a tree replacement notice?

The local planning authority should consider including in the notice:

- reference to the relevant Order or conservation area
- further information about the landowner's right of appeal against the notice
- an explanation of what will happen if the landowner fails to comply with the notice
- contact details of an authority officer who can deal with queries

Paragraph: 160 Reference ID: 36-160-20140306

Revision date: 06 03 2014

What can the local planning authority do if a tree replacement notice is not complied with?

Failure to comply with a tree replacement notice is not an offence. If a tree is not planted within the period specified in the notice the authority may extend the period for compliance with the notice. Section 209 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/209) gives authorities powers to take action where a replacement tree has not been planted within the compliance period or within such extended period as the authority may allow. The authority may go on to the land, plant the tree and recover from the landowner any reasonable expenses incurred. The authority should remind the landowner of the duty before the specified period ends and make clear that it will use its powers if the notice is not complied with.

Paragraph: 161 Reference ID: 36-161-20140306

Revision date: 06 03 2014

What happens if someone obstructs enforcement action?

Under section 209(6) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/209) anyone who wilfully obstructs a person acting in the exercise of the local planning authority's power to enter land and plant replacement trees is guilty of an offence. They are liable, if convicted in the Magistrates' Court, to a Level 3 fine (currently up to £1,000).

Paragraph: 162 Reference ID: 36-162-20140306

Revision date: 06 03 2014

Can the landowner recover costs if someone else has contravened the tree protection legislation?

Section 209(2) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/209) includes a provision enabling the landowner to recover from any other person responsible for the cutting down, destruction or removal of the original tree or trees, as a civil debt, any:

- expenses incurred for the purposes of complying with a tree replacement notice; or
- sums paid to the authority for planting replacement trees themselves

Paragraph: 163 Reference ID: 36-163-20140306

Revision date: 06 03 2014

What other legislation may apply to enforcement action?

Regulation 14 of the Town and Country Planning General Regulations 1992 (http://www.legislation.gov.uk/uksi/1992/1492/regulation/14/made) applies sections 276 (http://www.legislation.gov.uk/ukpga/Geo5and1Edw8/26/49/section/276) (power to sell materials removed during work), 289 (http://www.legislation.gov.uk/ukpga/Geo5and1Edw8/26/49/section/289) (power to require occupiers to allow work to be carried out by the owner) and 294 (http://www.legislation.gov.uk/ukpga/Geo5and1Edw8/26/49/section/294) (limit on liability of agents or trustees) of the Public Health Act 1936 to tree replacement notices.

Paragraph: 164 Reference ID: 36-164-20140306

Revision date: 06 03 2014

Is there a right of appeal against a tree replacement notice?

Section 208 of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/208), as amended, sets out provisions relating to appeals to the Secretary of State against tree replacement notices. Appeals must be made to the Planning Inspectorate, which handles appeals on behalf of the Secretary of State, before the notice takes effect. See the Planning Inspectorate's detailed guidance on making an appeal and the associated form (https://www.gov.uk/government/publications/tree-replacement-notice-procedure-guide).

Paragraph: 165 Reference ID: 36-165-20140306

Revision date: 06 03 2014

Can the appeal decision be challenged?

The appellant or the authority may appeal to the High Court against the Secretary of State's decision on an appeal against a tree replacement notice (see section 289(2) of the Town and Country Planning Act 1990 (http://www.legislation.gov.uk/ukpga/1990/8/section/289)) on a point of law. Details on High Court challenges are in the Planning Inspectorate's guidance on tree replacement appeals (https://www.gov.uk/appeal-decision-about-tree-order).

Paragraph: 166 Reference ID: 36-166-20140306

Revision date: 06 03 2014

Annex A: Flowcharts

Flowchart 1: Making and confirming a Tree Preservation Order

Flowchart 1: Making and confirming a Tree Preservation Order (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777642/TPO_flowchart_1.pdf)

PDF, 122KB, 1 page

This file may not be suitable for users of assistive technology.

▶ Request an accessible format.

Paragraph: 167 Reference ID: 36-167-20140306

Revision date: 06 03 2014

Flowchart 2: Varying or revoking a Tree Preservation Order

Flowchart 2: Varying or revoking a Tree Preservation Order (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777643/TPO_flowchart_2.pdf)

PDF, 143KB, 1 page

This file may not be suitable for users of assistive technology.

▶ Request an accessible format.

Paragraph: 168 Reference ID: 36-168-20140306

Revision date: 06 03 2014

Flowchart 3: Applications to carry out work on trees protected by a Tree Preservation Order

Flowchart 3: Applications to carry out work on trees protected by a Tree Preservation Order (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777644/TPO_flowchart_3.pdf)

PDF, 127KB, 1 page

This file may not be suitable for users of assistive technology.

▶ Request an accessible format.

Paragraph: 169 Reference ID: 36-169-20140306

Revision date: 06 03 2014

Flowchart 4: Compensation

Flowchart 4: Compensation (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777645/TPO_flowchart_4.pdf)

PDF, 117KB, 1 page

This file may not be suitable for users of assistive technology.

▶ Request an accessible format.

Paragraph: 170 Reference ID: 36-170-20140306

Revision date: 06 03 2014

Flowchart 5: Notices for work to trees in a conservation area

Flowchart 5: Notices for work to trees in a conservation area (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777646/TPO_flowchart_5.pdf)

PDF, 114KB, 1 page

This file may not be suitable for users of assistive technology.

▶ Request an accessible format.

Paragraph: 171 Reference ID: 36-171-20140306

Revision date: 06 03 2014

Flowchart 6: Offences

Flowchart 6: Offences (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907736/TPO_flowchart_6.pdf)

PDF, 121KB, 1 page

This file may not be suitable for users of assistive technology.

▶ Request an accessible format.

Paragraph: 172 Reference ID: 36-172-20140306

Revision date: 06 03 2014

Flowchart 7: Tree replacement

Flowchart 7: Tree replacement (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777648/TPO_flowchart_7.pdf)

PDF, 112KB, 1 page

This file may not be suitable for users of assistive technology.

▶ Request an accessible format.

Paragraph: 173 Reference ID: 36-173-20140306

Revision date: 06 03 2014

Published 6 March 2014

Print this page

Related content

- Tree felling licence: when you need to apply (https://www.gov.uk/guidance/tree-felling-licence-when-you-need-to-apply)
- Tree felling: overview (https://www.gov.uk/guidance/tree-felling-overview)

- Report suspected illegal tree felling (https://www.gov.uk/guidance/report-suspected-illegal-tree-felling)
- Tree replacement notice appeals: procedure guide (https://www.gov.uk/government/publications/tree-replacement-notice-procedure-guide)
- Tree felling: getting permission (https://www.gov.uk/government/publications/tree-felling-getting-permission)

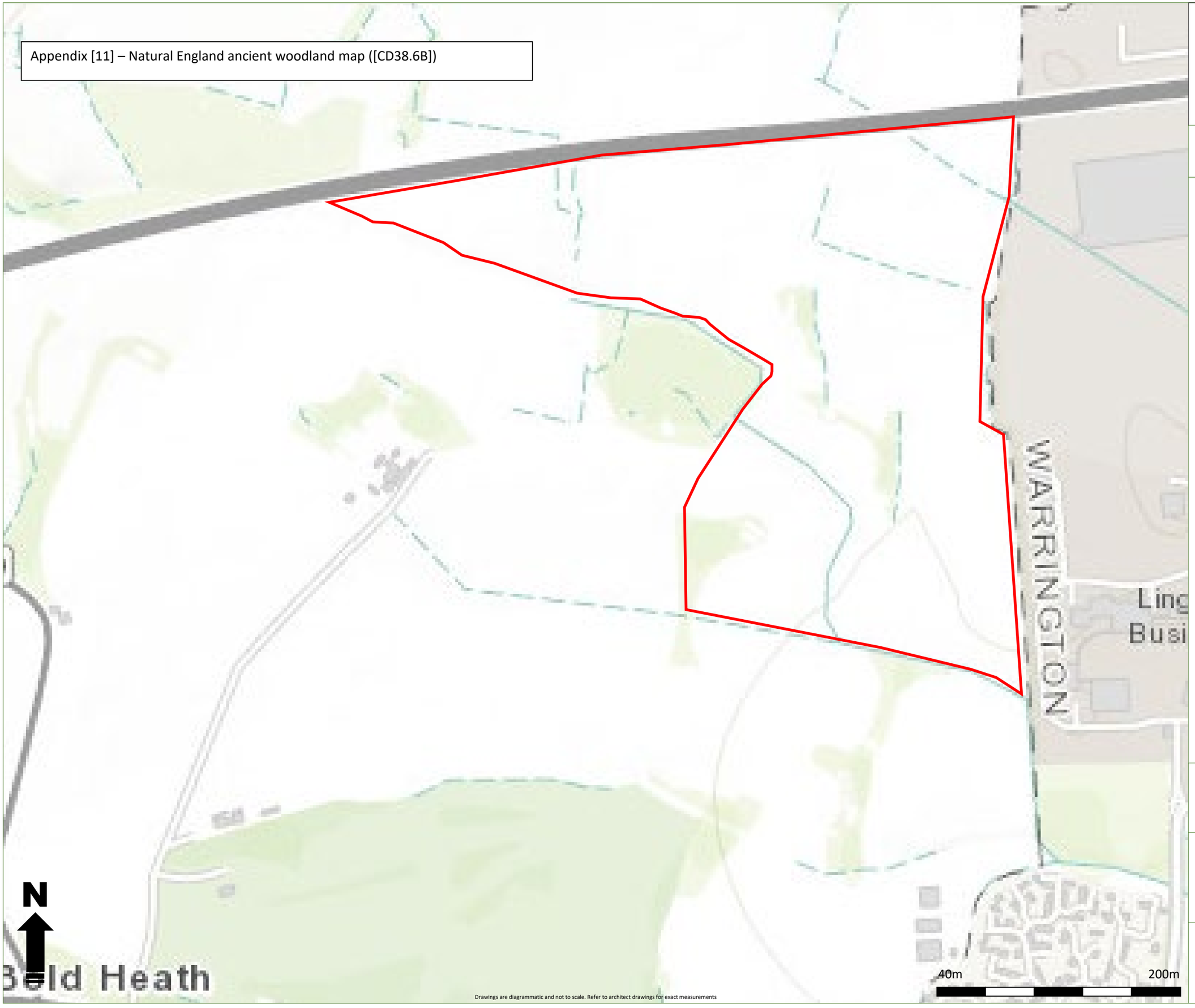
Collection

- Planning practice guidance (https://www.gov.uk/government/collections/planning-practice-guidance)

Explore the topic

- Planning system (https://www.gov.uk/housing-local-and-community/planning-system)

Appendix [11] – Natural England ancient woodland map ([CD38.6B])



Drawings are diagrammatic and not to scale. Refer to architect drawings for exact measurements

Figure 1

Ancient Woodland

Omega Zone 8. St Helens

Legend

Full Hybrid Proposals Area

Ancient Woodland

Natural England: Ancient Woodland (England)
Accessed: 29/03/21

Drawing No. 16903-01GEN_A

Revision Dates

A	B	C	D
29/03/21			

the ecology Practice

0845 602 3822
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GOV.UK

1. Home (https://www.gov.uk/)
2. Protected sites and species (https://www.gov.uk/topic/planning-development/protected-sites-species)

Guidance

Ancient woodland, ancient trees and veteran trees: protecting them from development

What planning authorities should consider for developments affecting ancient woodland, ancient trees and veteran trees.

From:
Forestry Commission (https://www.gov.uk/government/organisations/forestry-commission) and Natural England (https://www.gov.uk/government/organisations/natural-england)
Published:
13 October 2014
Last updated:
5 November 2018,

Applies to:
England

Contents

Print this page

You should use this Natural England and Forestry Commission guidance (known as ‘standing advice’) to help you decide on development proposals affecting ancient woodland, ancient trees and veteran trees.

Standing advice is a ‘material planning consideration’. This means you should take it into account when making decisions on planning applications. It replaces the need for each agency to give an individual response to planning consultations. It has the same authority as an individual response.

This guidance is also useful for decision-makers who are responsible for major infrastructure projects, such as road and rail schemes.

Natural England and the Forestry Commission will only provide bespoke advice as set out in the when to contact sections, or in exceptional circumstances.

Ancient woodland

Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. It's important for its:

- wildlife (which include rare and threatened species)
- soils
- recreational value
- cultural, historical and landscape value

It's any area that's been wooded continuously since at least 1600 AD. It includes:

- 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 - replanted with conifer or broadleaved trees that retain ancient woodland features, such as undisturbed soil, ground flora and fungi

They have equal protection in the National Planning Policy Framework (https://www.gov.uk/guidance/national-planning-policy-framework/11-conserving-and-enhancing-the-natural-environment#paragraph_118) (NPPF).

Other distinct forms of ancient woodland are:

- wood pastures identified as ancient
- historic parkland, which is protected as a heritage asset in the NPPF

Many of these do not appear on the Ancient Woodland Inventory because their low tree density did not register as woodland on historic maps.

You should give consideration to wood pasture identified as ancient in planning decisions in the same way as other ancient woodland.

'Wooded continuously' does not mean there's been a continuous tree cover across the whole site. Not all trees in the woodland have to be old. Open space, both temporary and permanent, is an important component of ancient woodlands.

Ancient and veteran trees

Ancient and veteran trees can be individual trees or groups of trees within wood pastures, historic parkland, hedgerows, orchards, parks or other areas. They are often found outside ancient woodlands. They are irreplaceable habitats with some or all of the following characteristics.

Ancient trees

An ancient tree is exceptionally valuable. Attributes can include its:

- great age
- size
- condition
- biodiversity value as a result of significant wood decay and the habitat created from the ageing process

- cultural and heritage value

Very few trees of any species become ancient.

Veteran trees

All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value.

Making decisions

When making planning decisions, you should consider:

- conserving and enhancing biodiversity
- reducing the level of impact of the proposed development on ancient woodland and ancient and veteran trees (see 'Avoid impacts, reduce impacts and compensate as a last resort')

You should make decisions on planning applications in line with paragraph 175C of the NPPF (https://www.gov.uk/government/publications/national-planning-policy-framework--2).

You should refuse planning permission if development will result in the loss or deterioration of ancient woodland, ancient trees and veteran trees unless:

- there are wholly exceptional reasons
- there's a suitable compensation strategy in place

Assess the impacts

You should use the following process to assess impacts on ancient woodland when making decisions on planning applications. The process also applies to:

- wood pastures identified as ancient
- ancient trees and veteran trees

Consult inventories

You can use the following inventories to help you decide whether a development will affect ancient woodland (including wood pastures identified as ancient) or ancient and veteran trees:

- Natural England's ancient woodland inventory - download the data (https://naturalengland-defra.opendata.arcgis.com/datasets/ancient-woodlands-england) or view it on the Magic map system (http://magic.gov.uk/MagicMap.aspx?chosenLayers=ancwoodIndex,bapdecIndex,orchardIndex,bapwoodIndex,backdropDIndex,backdropIndex,europeIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex,baseIndex&box=207763:417195:576753:592195&useDefaultbackgroundMapping=false) (zoom in to see local detail)
- ancient tree inventory (http://www.ancient-tree-hunt.org.uk/) (click on 'Tree search' and enter a postcode)

- wood pasture and parkland inventory (includes some ancient sites) (http://magic.gov.uk/MagicMap.aspx?chosenLayers=bapwoodIndex,backdropDIndex,backdropIndex,europeIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex,baseIndex&box=207763:417195:576753:592195&useDefaultbackgroundMapping=false) (zoom in to see local detail)

Ancient woodlands smaller than 2 hectares are unlikely to appear on these inventories. You should use this guidance for all ancient woodlands and ancient and veteran trees whether they're on the inventories or not. They are updated and reviewed from time to time.

You should contact Natural England if a site has evidence of ancient woodland on it and is not on the inventory.

Potential impacts

Development can affect ancient woodland, ancient and veteran trees, and the wildlife they support on the site or nearby. You can assess the potential impacts using this assessment guide (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/740503/FCNE_AWSA_AssessmentGuideFinalSept2018.pdf) to help you with planning decisions.

Direct impacts of development on ancient woodland or ancient and veteran trees include:

- damaging or destroying all or part of them (including their soils, ground flora or fungi)
- damaging roots and understorey (all the vegetation under the taller trees)
- damaging or compacting soil around the tree roots
- polluting the ground around them
- changing the water table or drainage of woodland or individual trees
- damaging archaeological features or heritage assets

Nearby development can also have an indirect impact on ancient woodland or ancient and veteran trees and the species they support. These can include:

- breaking up or destroying connections between woodlands and ancient or veteran trees
- reducing the amount of semi-natural habitats next to ancient woodland
- increasing the amount of pollution, including dust
- increasing disturbance to wildlife from additional traffic and visitors
- increasing light or air pollution
- increasing damaging activities like fly-tipping and the impact of domestic pets
- changing the landscape character of the area

Providing evidence

You and the developer should work together to make sure there's enough suitable evidence to make a decision. This may include fieldwork and historic maps.

You should include proposed mitigation and compensation measures.

You should ask developers for a tree survey and an ecological survey, where appropriate. The tree survey should be in accordance with guidance in British Standard BS 5837 'Trees in relation to demolition, design and development' (https://shop.bsigroup.com/ProductDetail/?pid=000000000030213642).

Ecological surveys should follow guidance approved by the Chartered Institute of Ecology and Environmental Management (CIEEM) (http://www.cieem.net/).

Avoid impacts, reduce ('mitigate') impacts, and compensate as a last resort

You and the developer should identify ways to avoid negative effects on ancient woodland or ancient and veteran trees. This could include selecting an alternative site for development or redesigning the scheme.

You should decide on the weight given to ancient woodland and ancient and veteran trees in planning decisions on a case-by-case basis. You should do this by taking account of the NPPF and relevant development plan policies.

If you decide to grant planning permission that results in unavoidable loss or deterioration, you should use planning conditions or obligations to make sure the developer:

- avoids damage
- mitigates against damage
- compensates for loss or damage (use as a last resort)

Ancient woodland, ancient trees and veteran trees are irreplaceable. Consequently you should not consider proposed compensation measures as part of your assessment of the merits of the development proposal.

Existing condition of ancient woodland

A woodland in poor condition can be improved with good management and development proposals should enhance the condition of existing ancient woodland, where appropriate. Where a proposal involves the loss of ancient woodland, you should not take account of the existing condition of the ancient woodland when you assess the merits of the development proposal. Its existing condition is not a reason to give permission for development.

Mitigation measures

Mitigation measures will depend on the development but could include:

- improving the condition of the woodland
- putting up screening barriers to protect woodland or ancient and veteran trees from dust and pollution
- noise or light reduction measures
- protecting ancient and veteran trees by designing open space around them
- identifying and protecting trees that could become ancient and veteran trees in the future
- rerouting footpaths
- removing invasive species
- buffer zones

Use of buffer zones

A buffer zone's purpose is to protect ancient woodland and individual ancient or veteran trees. The size and type of buffer zone should vary depending on the scale, type and impact of the development.

For ancient woodlands, you should have a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, you're likely to need a larger buffer zone. For example, the effect of air pollution from development that results in a significant increase in traffic.

A buffer zone around an ancient or veteran tree should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter.

Where possible, a buffer zone should:

- contribute to wider ecological networks
- be part of the green infrastructure of the area

It should consist of semi-natural habitats such as:

- woodland
- a mix of scrub, grassland, heathland and wetland planting

You should plant buffer zones with local and appropriate native species.

You should consider if access is appropriate and can allow access to buffer zones if the habitat is not harmed by trampling.

You should avoid including gardens in buffer zones.

You should avoid sustainable drainage schemes unless:

- they respect root protection areas
- any change to the water table does not adversely affect ancient woodland or ancient and veteran trees

Compensation measures

Compensation measures are always a last resort. These measures can only partially compensate for loss or damage.

Compensation measures should be appropriate for the site and for the scale and nature of the impacts on it. A compensation strategy could include the following package of measures:

- planting new native woodland or wood pasture
- restoring or managing other ancient woodland, including plantations on ancient woodland sites, and wood pasture
- connecting woodland and ancient and veteran trees separated by development with green bridges, tunnels or hedgerows
- long-term management plans for new woodland and ancient woodland
- managing ancient and veteran trees
- planting individual trees that could become veteran and ancient trees in future
- monitoring the ecology of the site over an agreed period

Plant new native woodland

Establishing new trees and woodland is not a direct replacement for lost or damaged trees or woodland. You can accept large-scale woodland planting as a compensation measure alongside other measures. This could be on soil that has been moved from the destroyed area of ancient woodland (‘soil translocation’). You cannot move an ancient woodland ecosystem because:

- it’s not possible to replicate the same conditions at another site
- it’s no longer an ancient woodland

New woodland creation can be effective where it links to and extends existing woodland, as long as it does not affect:

- other semi-natural habitats
- heritage features

Restore or improve ancient woodland

You can partially compensate for loss or damage of ancient woodland by improving:

- and restoring plantations on ancient woodland sites
- the management of nearby ancient woodland sites and connecting them better to semi-natural habitat
- the condition of important features of ancient woodland
- access for management purposes

You can partially compensate for loss or damage to wood pasture by restoring soils and pasture.

Management plans should follow the UK Forestry Standard (https://www.gov.uk/government/publications/the-uk-forestry-standard). You can monitor the ecology of the site, over an agreed period, to help you advise on management measures.

Compensate for the loss of ancient and veteran trees

You can partially compensate by planting:

- young trees of the same species with space around each one to develop an open crown
- new trees near to the trees they’re replacing

As a last resort, you can manage nearby ancient and veteran trees (including dead and dying trees) to help prolong their life. You should get advice from a registered tree consultant (‘arboriculturist’) before carrying out work on veteran trees by contacting:

- the Arboricultural Association (https://www.trees.org.uk/Other-Pages/Contact-Us)
- the Institute of Chartered Foresters (https://www.charteredforesters.org/contact-us/)

Leave the intact hulk of the ancient or veteran tree where it is (preferably standing) to benefit invertebrates and fungi. If that’s not possible, move it near other ancient and veteran trees or parkland in the area.

When to contact Natural England

Natural England is a statutory consultee (https://www.gov.uk/guidance/consultation-and-pre-decision-matters#Statutory-consultees) for proposals that affect any site of special scientific interest (http://designatedsites.naturalengland.org.uk/). For all other proposals that affect ancient woodland or ancient and veteran trees, you should use the guidance on this page.

Consultation service

Natural England
Electra Way
Crewe Business Park
Crewe
Cheshire
CW1 6GJ

Email consultations@naturalengland.org.uk

Telephone 0300 060 3900

When to contact the Forestry Commission

The Forestry Commission is a non-statutory consultee (https://www.gov.uk/guidance/consultation-and-pre-decision-matters#Non-statutory-consultees). You should use the guidance on this page. Contact your Forestry Commission England area office (https://www.gov.uk/government/organisations/forestry-commission/about/access-and-opening#area-offices) for individual advice that's not covered on this page.

Forestry Commission England Tree Health Team

620 Bristol Business Park
Coldharbour Lane
Bristol
BS16 1EJ

Telephone: 0300 067 4000

Further information

Policy and standards:

- Keepers of time: a statement of policy for England's ancient and native woodland (https://www.gov.uk/government/publications/keepers-of-time-a-statement-of-policy-for-englands-ancient-and-native-woodland)
- National Planning Policy Framework (https://www.gov.uk/government/publications/national-planning-policy-framework--2) - paragraphs 11 (footnote 6), 175c, 190
- The UK Forestry Standard (https://www.gov.uk/government/publications/the-uk-forestry-standard)
- BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations (http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030213642)
- BS 42020:2013 Biodiversity. Code of practice for planning and development (https://shop.bsigroup.com/ProductDetail?pid=000000000030258704)
- Managing ancient and native woodland in England (https://www.gov.uk/government/publications/managing-ancient-and-native-woodland-in-england)

Other useful information:

- Read H (2000). ‘Veteran trees: a guide to good management’ (http://publications.naturalengland.org.uk/publication/75035) Natural England
- Lonsdale D (Editor) (2013). ‘Ancient and other veteran trees: further guidance on management’ (http://ancienttreeforum.co.uk/wp-content/uploads/2015/02/ATF_book.pdf) The Tree Council
- Joint Nature Conservation Committee (2003). ‘A habitats translocation policy for Britain’ (https://webarchive.nationalarchives.gov.uk/20080718180931/http://www.jncc.gov.uk/pdf/habitats_policy.pdf)
- Corney PM and others (2008). ‘Impacts of nearby development on the ecology of ancient woodland’ (https://www.woodlandtrust.org.uk/publications/2008/10/impacts-of-nearby-development-on-ancient-woodland/) The Woodland Trust
- Ryan L (2012). ‘Impacts of nearby development on ancient woodland - addendum’ (https://www.woodlandtrust.org.uk/publications/2012/12/impacts-of-nearby-development-on-ancient-woodland-addendum/) The Woodland Trust
- Woodland Trust (2011). ‘Ancient tree guide 3 – trees and development’ (https://www.woodlandtrust.org.uk/publications/2011/12/ancient-trees-and-development/)

Published 13 October 2014
Last updated 5 November 2018 + show all updates

1. 5 November 2018
   This page has been updated to: align with the revised National Planning Policy Framework; give clearer guidance on taking account of the existing condition of ancient woodland; and give further guidance on mitigation measures, including the use of buffer zones.
2. 4 January 2018
   The advice on the appropriate size of buffer zones (under ‘Mitigation measures’) has changed. The last version suggested a 50 metre (m) zone to mitigate the effects of pollution and trampling. Following queries about the 50m zone, this text has been removed. Natural England and the Forestry Commission are reviewing the feedback they've received.
3. 27 November 2017
   Republished as part of the biennial update.
4. 29 October 2015
   Added definitions of 'wooded continuously' and 'ancient wood-pastures', and clarified the rules about soil translocation in 'plant new native woodland'.
5. 3 August 2015
   Clarified the purpose of this standing advice.
6. 29 March 2015
   Guide fully updated for publication on GOV.UK after consulting with Natural England experts.
7. 30 January 2015
   Guidance temporarily removed, pending revisions.
8. 30 January 2015
   Guidance temporarily removed due to pending revisions.
9. 13 October 2014
   First published.

Related content

- Planning applications affecting trees and woodland (https://www.gov.uk/guidance/planning-applications-affecting-trees-and-woodland)
- The UK Forestry Standard (https://www.gov.uk/government/publications/the-uk-forestry-standard)
- Keepers of time: a statement of policy for England's ancient and native woodland (https://www.gov.uk/government/publications/keepers-of-time-a-statement-of-policy-for-englands-ancient-and-native-woodland)
- How to benefit species and habitats biodiversity in your woodland (https://www.gov.uk/guidance/how-to-benefit-species-and-habitats-biodiversity-in-your-woodland)
- Managing ancient and native woodland in England (https://www.gov.uk/government/publications/managing-ancient-and-native-woodland-in-england)

Detailed guidance

- Protected sites and areas: how to review planning applications (https://www.gov.uk/guidance/protected-sites-and-areas-how-to-review-planning-applications)

Brexit

-  Check
-  Change
-  Go

Check what you need to do

(https://www.gov.uk/transition)

Explore the topic

- Protected sites and species (https://www.gov.uk/topic/planning-development/protected-sites-species)

From: Mike Roberts-URB
To: Mark Morgan
Subject: RE: Nature Conservation Strategy
Date: 06 November 2019 13:41:03

Hi Ben

My understanding is it would be 2 for 1 by area of woodland. I would stress though that requirements on site may exceed this as other aspects such as screening and landscape character would also have to be taken into account.

Regards

Mike

Mark Morgan ---06/11/2019 13:29:43---Mike,

From: Mark Morgan <mark.morgan@ecologypractice.co.uk>
To: Mike Roberts-URB <MikeRoberts-URB@sthelens.gov.uk>
Date: 06/11/2019 13:29
Subject: RE: Nature Conservation Strategy

Mike,

Could I ask – when we are looking at mitigating for removed woodland (covered by a TPO), CQL 2 specifies a 2:1 replacement of trees. Must we replacement area planted (e.g. 2ha for every 1 ha lost) or tree numbers (e.g. 300 individuals for 100 lost)? Or is there no specification here?

Many thanks.

Best wishes

Mark Morgan ACIEEM

Senior Ecologist, Ecology Practice

Northern office/DDI: 01691 600908

Mobile: 07398 243469

Southern office: 0845 602 3822

Email: mark.morgan@ecologypractice.co.uk

Website: www.ecologypractice.co.uk

[IMAGE]

Willowgate

Welsh Newton Common

Herefordshire

NP25 5RT

1 recycled glass bottle would save enough energy to power a computer for 25 minutes.

From: Mike Roberts-URB <MikeRoberts-URB@sthelens.gov.uk>
Sent: 06 November 2019 13:22
To: Mark Morgan <mark.morgan@ecologypractice.co.uk>
Subject: RE: Nature Conservation Strategy

Hi Mark

Apologise. When I enquired I was told it had just been superseded by the Local Plan Policy which no longer specified 3 for 1.

Regards

Mike

Mark Morgan ---06/11/2019 13:14:31---Hi Mike,

From: Mark Morgan <mark.morgan@ecologypractice.co.uk>
To: Mike Roberts-URB <MikeRoberts-URB@sthelens.gov.uk>
Date: 06/11/2019 13:14
Subject: RE: Nature Conservation Strategy

Hi Mike,

Thanks for this.

Could you please point me in the direction of where St Helens policy states that habitat is to be replaced at a ratio of 3:1, as you mentioned during our phone call?

I have seen that CQL 2 Tree and Woodlands require a 2:1 replacement.

Your help is much appreciated.

Best wishes

Mark Morgan ACIEEM

Senior Ecologist, Ecology Practice

Northern office/DDI: 01691 600908

Mobile: 07398 243469

Southern office: 0845 602 3822

Email: mark.morgan@ecologypractice.co.uk

Website: www.ecologypractice.co.uk

[IMAGE]

Willowgate

Welsh Newton Common

Herefordshire

NP25 5RT

1 recycled glass bottle would save enough energy to power a computer for 25 minutes.

From: Mike Roberts-URB <MikeRoberts-URB@sthelens.gov.uk>
Sent: 05 November 2019 11:36
To: Mark Morgan <mark.morgan@ecologypractice.co.uk>
Subject: Nature Conservation Strategy

Hi Mark

Local Plan Policies can be found on link:-

https://www.sthelens.gov.uk/planning-building-control/planning-policy/local-plan/

Policy PLC06 Biodiversity and LPC10 Trees and Woodlands are of key relevance.

The Nature Conservation Strategy has as yet not gone out for public consultation so I can't share it as yet. My colleagues advice is that at this stage any mitigation proposed must be in line with government guidance and so there must be clearly demonstrable Biodiversity gain. In relation to the site being within the Bold Forest Park as well as in proximity to the medieval deer park this should therefore result in significant new planting and protection / retention of protected woodlands.

We would also not necessarily support removal of ponds, particularly if associated with other habitat such as protected woodland, as option such as the if enhancement of the pond habitats is a relatively easy process. Therefore the principles of a mitigation hierarchy must be considered and be demonstrated as part of the process.

Mitigation will also need to look at impacts on farmland habitat and loss of farmland breeding birds. and mammals e.g skylark and brown hare.

There are also key policies within the Bold Forest Park Area Action Plan relating to enhancement and protection of landscape (including heritage landscapes) and biodiversity that would also be relevant for this site.

There is also an area of designation for development within the Local Plan and if development remains in this area the impacts on these habitats would be limited. I therefore would not support developments that are not in line with our Local Plan or the Bold Forest Park Area Action Plan.

Regards

Mike Roberts

Countryside Development and Woodlands Officer

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email are those of the author and may not necessarily reflect those of the Authority. No contractual arrangement is intended to arise from this communication."[attachment "image001.png" deleted by Mike Roberts-URB/urbreg/STHMBC]

hedgerows and 2.27 units for rivers/streams. The Council argued that the contribution should be the estimated sum of £1,375,000. This would provide a larger number of biodiversity units to secure a 10% biodiversity net gain overall.

42. The Council drew attention to the 2019 Environment Bill which refers to a 10% net gain in biodiversity after development compared to the level of biodiversity prior to development taking place. Whilst the Environment Bill is a material consideration, it is not yet law. I attach greater weight to the adopted Plan:MK Policy NE3, which does not set out any specific level of biodiversity net gain. Moreover, any such gain is to be achieved '*wherever possible*'. The contribution proposed by the appellant would deliver offsetting biodiversity units equivalent to the net loss of units on site. Within that total there would be a 33% increase in the extent of Lowland Meadow, in line with local Biodiversity Action Plan targets.

43. In the absence of a local plan requirement to deliver a 10% uplift, I consider that the contribution sought by the Council is not necessary to make the development acceptable in planning terms. I therefore conclude that the appellant's figure of £1,200,000 is to be preferred.

Conclusions on biodiversity

44. Assessments have been made of the presence/absence of protected species within the site. Where such species have been found to be present, or may be present at the time development commences, appropriate mitigation measures have been identified which could be secured by conditions. The proposal would not therefore have a negative impact on protected species and in this regard would accord with Policy NE2.

45. Policy NE2 promotes the preservation of priority habitats and/or re-creation in line with Policy NE3. The proposal has used the DEFRA metric to demonstrate losses/gains in biodiversity (including habitats), as required by Policy NE3. Mitigation, compensation and enhancement measures have been identified and would be secured through the s106 Agreement and planning conditions. The proposed compensatory measures seek to meet the objectives of local Biodiversity Action Plan targets, through increased extent of Lowland Meadow. My overall assessment is that the proposal would maintain and protect biodiversity and would accord with Policy NE3.

46. The proposal would not result in harm to any designated nature conservation sites or loss of any irreplaceable habitats. Subject to the proposed measures, it would not result in significant harm to biodiversity and would accord with the Framework.

Transport

47. The application was supported by a transport assessment, supplementary technical assessments and a framework travel plan. Travel plans for individual phases of the development would be secured by a condition and the s106 Agreement includes a contribution for travel plan monitoring. Details of secure, covered cycle parking for each phase or plot would be submitted for the approval of the Council.

Appendix [15] – Email comms. Fish survey findings ([CD38.6B])

From: Andrew Arnott <andrew.arnott@ecologypractice.co.uk>
Sent: 18 August 2020 14:17
To: Colin Graham <colin.graham@millerdevelopments.co.uk>; Tom Napier-Munn <T.Napier-Munn@apemltd.co.uk>; Darren Burroughs <d.burroughs@apemltd.co.uk>
Subject: RE: 169-03 Omega Zone 8 - fish rescue preparations

Hi Colin

The survey of all ponds was complete and they found c. 50 sticklebacks and 1 eel.

The sticklebacks are not a concern.

The eel is a protected fish (eel regulations 2009). We are waiting for a reply from EA as to where to put it. It means that site clearance can go ahead without constraint; we have to be present when draining down each pond to collect any other eels that may be present to move them, to the location being decided by the EA at the moment – ordinarily they will provide the answer before the end of the month.

The presence of eel is a clear indication that the drainage furniture used for any development within the Whittle Brook catchment must be Eel Regulation compliant, including that associated with Unit 1 – something we have not yet touched on, similar to that attached, although I just need to check with Tom we use the latest guidance.

Best wishes

Andrew Arnott
Principal, Ecology Practice

NORTH 01691 600906
SOUTH 0845 602 3822
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WEBSITE: www.ecologypractice.co.uk

the ecology Practice

WILLOWGATE
WELSH NEWTON COMMON
HEREFORDSHIRE
NP25 5RT

Appendix [16] – Fungi Survey Report ([CD38.6B)

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Ecological Assessments

Fungi Survey - December 2020

Environmental Statements (Biodiversity)

Species Surveys

Phase I Habitat Survey

National Vegetation Classification

Omega Zone 8

St Helens, WA5 3UG

Planning Guidance

Habitat Regulation Assessment

Protected Species Licensing

42020 CEMP: Biodiversity

BREEAM LE01 - 05

Consultant Report on behalf of:

the omega opportunity

REPORT STATUS

Issue/revision	Issue 1: DRAFT TO CLIENT	Issue 2: FINAL	Issue 3: AMENDED FINAL
Project No.	169-03		
Report Ref.	16903-FUNGI_A		
Date	25TH March 2021		
Prepared by	Mark Morgan BSc MCIEEM		
Signature			
Reviewed by	AA / Client		
Signature			

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FIGURES

TABLES

1 INTRODUCTION

1.1 BACKGROUND

1.1.1. The following report has been prepared on behalf of Omega Warrington Ltd and provides the results of a fungi survey undertaken at Omega Zone 8, St Helens ('The Site').

1.1.2. The Local Planning Authority, Woodland Officer has noted important fungi communities may exist in the woodland to be felled. This report aims to identify locations and host trees/wood which can be rescued in advance of future felling.

1.2 LOCATION

1.2.1 The Site forms part of the Omega business estate located west of Warrington, falling just within St Helens Borough. It is immediately south of the M62, west of Junction 8, and immediately west of the Warrington District County boundary and Lingley Mere.

1.3 PROPOSALS

1.3.1 This is a hybrid application for full and outline planning permission:

Hybrid Planning Application

i. Full Planning Permission for the erection of a B8 warehouse, with ancillary offices, associated parking, infrastructure, and landscaping; and

ii. Outline Planning Permission for Manufacturing (B2) and Logistics (B8) development with ancillary offices and associated car parking, landscaping and infrastructure (detailed matters of appearance; layout and scale are reserved for subsequent approval)

1.4 SITE DESCRIPTION

1.4.1 The Site (~75.5 ha) is dominated by arable land with woodland belts, a network of ponds and ditches improved grassland and scrub habitat present. A brook runs through the centre of the Site from the northwest and adjoins to the southern boundary. Off-site woodland is present to the south and west of the Site and a woodland belt forms the eastern boundary.

Figure 1

Location

Omega Zone 8, St Helens

Legend

Full Hybrid Proposals Area

Construction footprint

Drawings are diagrammatic and not to scale. Refer to architect drawings for exact measurements

the omega opportunity

Drawing No.: 16903-01FUNGI_A

Revision Dates

A	B	C	D
26/03/2021			

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2 METHODOLOGY

2.1 SURVEY AIM

2.1.1 To identify, record and map standing or fallen deadwood containing fungi species of interest suitable for retention within the retained woodlands onsite.

2.2 METHODS

2.2.1 A walkover of all woodland areas to be lost was completed, all likely trees/deadwood that provided host to fungi communities were identified.

2.2.2 Deadwood was noted for its suitability for fungi, with locations recorded. A minimum of ten[1] items were then marked for retention across the detailed dare. Trees or features were marked with suitable paint so they can be located later.

[1] Ten is an arbitrary figure – extended by Mycologist where particular suitability exists and there is reason to retain more than 10 features.

3 RESULTS

3.1 SURVEY RESULTS 2020

3.1.1 The results of the 2020 Fungi survey are shown in Table 1, and the location of the trees identified to be retained are shown in Figure 2.

Table 1: Trees to be retained and their associated fungi species.

Tree numbers	Tree species	Fungi species	Comments
R1	Beech	*Stereum hirsutum*	Living, standing tree
		Honey fungus (*Armillaria Spp*.)	
R2	Beech	Angel's Bonnet *(Mycena arcangeliana)*	Living, fallen tree
		Candlesnuff fungus *(Xylaria hypoxylon)*	
		Polypore	
R3	Crack willow	*Chondrostereum purpureum*	Dying, fallen tree. High suitability with important branch
		Corticoid fungi	
		Resupinatus trichotu	
R4	Alder	*Schizopora paradoxa*	Dead, standing tree
R5	Alder	*Schizopora paradoxa*	Dead, standing tree. High suitability
		Inonotus radiatus	
R6	Oak	*Ganoderma australe*	Dead, fallen tree
R7	Beech	Corticoid fungi	Dead, laying down tree. High suitability: three species of Corticoid
		Ganoderma australe	
R8	Birch	*Piptoporus betulinus*	Dead, fallen tree
		Ascocoryne	
		Stereum hirsutum	
R9	Lime	Corticoid fungi	Dead, fallen tree
R10	Sycamore	N/A	No fungi but dead tree and should be retained for species diversity
R11	Crack willow	Jew ear (*Auricularia auricula-judae*)	Large fallen branch. High suitability
		Corticoid fungi	
		Honey fungus (*Armillaria Spp*.)	
R12	Willow	Blushing Bracket (*Daedaleopsis confragosa*)	Dead, standing tree

Figure 2

Retained Trees

Omega Zone 8, St Helens

Drawings are diagrammatic and not to scale. Refer to architect drawings for exact measurements

Legend

- Full Hybrid Proposals Area
- Construction footprint
- Retained tree

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Drawing No.: 16903-02FUNGI_A

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NP25 5RT

Appendix [17] – Metric 9.4ha woodland net gain ([CD38.6B])

D-2 Off Site Habitat Creation

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

Post development/ post intervention habitats																		
						Ecological connectivity			Strategic significance			Temporal multiplier		Difficulty multipliers		Spatial risk multiplier		
Proposed habitat	Area ha	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier	Difficulty of creation	Difficulty of creation multiplier	Spatial risk category	Spatial risk multiplier	Habitat units delivered
Woodland and forest - Lowland mixed deciduous woodlar	9.4	High	6	Good	3	Medium	Moderately connected habitat	1.1	Within area formally identified in local strategy	High strategic significance	1.15	32+	0.320	High	0.33	Compensation inside LPA or NCA, or deemed to be sufficiently local, to site of biodiversity loss	1	22.59
Totals	#REF!																Total Units	22.59
	#REF!																	

Natural England Joint Publication JP029

The Biodiversity Metric 2.0

auditing and accounting for biodiversity

USER GUIDE

Beta Version

First published 29th July 2019

NATURAL ENGLAND

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Natural England evidence can be downloaded from our **Access to Evidence Catalogue**. For more information about Natural England and our work see **Gov.UK**. For any queries contact the Natural England Enquiry Service on 0300 060 3900 or e-mail **enquiries@naturalengland.org.uk** .

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A – Natural England, B – Imperial College, University of London, C – Environment Agency, D – Department for Environment, Food and Rural Affairs

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Case Study 7-1: Cartographer Studios Ltd. (Lucy Shuker) & Environment Agency (Neale Hider).
Case Study 7-2: Environment Agency (Dave Webb)

Contents

Foreword

Biodiversity is the variety of life on earth, it includes all living things and the places in which they live. It is vital for our health, well-being and economy. But biodiversity is declining, both in the UK and internationally. Species are becoming extinct and the habitats needed for wildlife to live and thrive are under increased pressure from development and land management practices. However, we know that development and land management are not incompatible with nature. Both can and do provide spaces for wildlife to thrive in. The challenge is to understand how to design developments and manage land in such a way that supports biodiversity.

Biodiversity metric 2.0 provides developers, planners, land managers and others with a tool to help limit damage to nature in the first place and to help it thrive. The metric uses habitat features as a proxy measure for capturing the value and importance of nature. It uses a simple calculation that takes into account the importance of these features for nature: their size, ecological condition, location and proximity to nearby 'connecting' features. The metric enables assessments to be made of the present and forecast future biodiversity value of a site. This can be applied to an individual field or an entire river catchment.

The biodiversity metric 2.0 enables developers and land managers to better understand and quantify the current value of a place for nature and how proposed changes to that site, either from development or land management practice, will impact on that value. In short, it provides a way of calculating biodiversity gains and losses. The metric enables developers and land managers to see how they might be able to design a site or implement a land management change in a way that increases its value to nature over time.

The biodiversity metric 2.0 is the successor to the biodiversity metric published by Defra in 2012 and commonly referred to as the 'Defra biodiversity metric'. Biodiversity metric 2.0 builds upon that original metric. Co-developed with the help of industry, environmental NGOs, planners and land managers biodiversity metric 2.0 represents a significant advance in our ability to account for and measure biodiversity losses and gains. This new metric can be used in all terrestrial development and land management scenarios. It can measure the value of habitats ranging in scale from individual street trees and green roofs through to very important priority habitats. The biodiversity metric 2.0 includes all terrestrial habitats including linear habitats (hedgerows, lines of trees, rivers and streams) whose biodiversity value is calculated separately to the main metric calculation. Biodiversity metric 2.0 is being published as a beta test version to gather wider feedback.

Chapter 1 of this user guide sets out the importance and value of using a metric to measure and account for impacts upon biodiversity. Chapter 2 goes onto to set out how biodiversity metric 2.0 has been developed and the underpinning calculations that sit at its heart. Chapter 3 describes how the information and data needed to run the metric calculations can be gathered.

In order to simplify the whole process of calculating biodiversity losses and gains a separate Calculation Tool has been developed. It is designed solely for use with the biodiversity

metric 2.0. Chapter 4 contains detailed guidance on how to use this tool. Shorter, summary user guidance for the tool is also available.

Chapters 5 – 8 provide detailed information about the approach and calculations that inform the biodiversity metric 2.0, including those for the supplementary linear metrics. Chapter 9 provides an introduction to work that is currently underway to extend the biodiversity metric to include inter-tidal habitats. These habitats will be included in an update scheduled for late 2019.

The biodiversity metric 2.0 is designed to provide developers, planners and land managers with a robust yet simple way to account for the value of nature and better understand how development and land management change will impact on its' value over time. It is being initially released as a beta version because we are seeking feedback on its real world application, whether that be the calculation tool or documentation, in order that improvements can be made and bugs fixed. Also, further enhancements such as coastal and intertidal habitat module should be added by the end of 2019. Please provide feedback via the biodiversity metric 2.0 survey

1: Introduction

The rationale for using a metric

1.1. Biodiversity is the term that is used to describe the variety of all life on earth. It includes all species of animals and plants – and everything else that is alive on our planet. Habitats are the places in which species live. These species and their habitats contribute to the ecosystems services that provide substantial benefits to people and the economy. For example, woodlands and saltmarsh can help prevent flooding whilst parks and greenspaces make our towns and cities healthier and more attractive places in which to live and work. However, biodiversity is under threat, globally and at home. Habitats are being damaged or disappearing and species are declining. This is not just bad news for nature but also for our own health and well-being and that of future generations. Biodiversity and healthy habitats are vital for a well-functioning planet but their value is often not taken into account in decision-making.

1.2. In this user guide we introduce and explain how to use the **biodiversity metric 2.0**. This metric provides a way to measure biodiversity and the impact that developments or land management practices may have upon it. Biodiversity metric 2.0 can help developers, ecologists, planners, communities, land managers and many others take biodiversity into account. The metric provides a way to measure biodiversity loss and gain in a consistent and robust way. It can also predict the likely effectiveness of creating new or enhancing existing habitats. Used in combination with appropriate professional advice the metric can help to reduce biodiversity losses and increase gains resulting from development or land management.

Introducing the biodiversity metric 2.0

1.3. Biodiversity metric 2.0 is an updated version of the original Defra biodiversity metric[1]. This version builds upon the knowledge and experience gained across a variety of different sectors since the original Defra biodiversity metric was first launched as part of Defra's biodiversity offsetting pilots.

1.4. Biodiversity metric 2.0 balances robustness with simplicity. The metric uses habitat as a proxy for wider biodiversity with different habitat types scored according to their relative biodiversity value. This value is then adjusted depending on the condition and location of the habitat, to calculate '**biodiversity units**' for that specific project or development. Biodiversity metric 2.0 incorporates similar but separate calculations for habitats that require a different method of measurement such as hedgerows, lines of trees, rivers and streams and street trees.

1.5. The metric can be used to measure both on-site and off-site biodiversity changes for a project or development. The metric also accounts within it for some of the risks associated whenever new habitat is created or existing habitat is enhanced. In calculation terms, the change in biodiversity units is determined by subtracting the number of **pre-intervention** biodiversity units (i.e. those originally existing on-site and off-site) from the number of **post-intervention** units (i.e. those projected to be provided). It is important to note that achieving gains in biodiversity from the

[1] DEFRA. 2012. Biodiversity offsetting pilots. Technical paper: the metric for the biodiversity offsetting pilot in England. Defra. March 2012. https://www.gov.uk/government/collections/biodiversity-offsetting (Accessed 20-06-2019)

calculation does not necessarily mean a development meets any wider requirements of planning policy or law relating to nature conservation or biodiversity.

1.6. All biodiversity unit calculations come with some 'health warnings'. The outputs of the metric are not absolute values but provide a proxy for the relative biodiversity worth of a site pre- and post-intervention. The quality and reliability of outputs will depend on the quality of the inputs. This user guide provides advice on how to use the biodiversity unit approach and where and when it is appropriate for use. The metric is not a substitute for expert ecological advice. The metric does not override or undermine any existing planning policy or legislation, including the mitigation hierarchy (see section 1.11 below), which should always be considered as the metric is applied.

1.7. Biodiversity metric 2.0 does not include species explicitly. Instead, biodiversity metric 2.0 uses broad habitat categories as a proxy for the biodiversity 'value' of the species communities that make up different habitats. The metric does not change existing levels of species protection and the processes linked to protection regimes are outside the scope of the metric.

1.8. To simplify and streamline the calculation process, the biodiversity metric 2.0 comes with a free tool to calculate biodiversity units. A shortened user guide for the calculation tool is also available.

The mitigation hierarchy and the metric

1.9. Planning policy[2][3] supports the application of the **mitigation hierarchy** (see Figure 1-1). When using the metric application of the mitigation hierarchy might mean looking to retain habitats in situ or avoiding habitat damage. In the metric biodiversity gains are easier to achieve where habitat impacts are avoided due to the way that habitat creation or enhancement risks are accounted for.

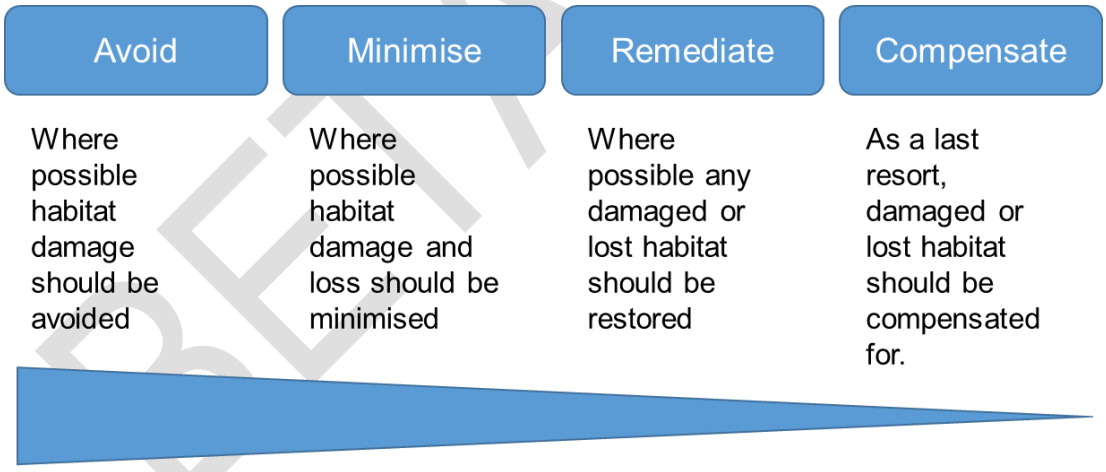


FIGURE 1-1: The Mitigation Hierarchy[4]

[2] Planning policy explained: https://www.gov.uk/guidance/national-planning-policy-framework
[3] NPPF implementation explained https://www.gov.uk/guidance/natural-environment
[4] Source: adapted from DEFRA, 2018, Net Gain Consultation Proposals. Defra, December 2018. https://consult.defra.gov.uk/land-use/net-gain/supporting_documents/netgainconsultationdocument.pdf (Accessed 20-06-2019)

2: How to use biodiversity metric 2.0

Who is this guidance for?

2.1. This guidance is for anyone planning to use the biodiversity metric 2.0 and anyone who wants to understand the outputs of the metric. This includes developers who have commissioned a biodiversity assessment using the metric, communities wanting to understand the impacts of a local development, and planning authority decision-makers interpreting metric outputs included in a planning application or land owners wishing to provide biodiversity units from their sites to others.

2.2. This guidance therefore starts by explaining the basic principles and rules underpinning the metric.

Why use this metric?

2.3. Using this metric will help you to take better account of biodiversity in designing plans and making land management decisions. It will allow you to demonstrate biodiversity net gains or losses in a robust and consistent manner. Different plan and project proposals for a site can be compared using the same metric, allowing more objective assessments of alternative approaches to be made. The metric can be used option assessment through to detailed design stages.

When can biodiversity metric 2.0 be used?

2.4. Biodiversity metric 2.0 is designed to quantify biodiversity to inform and improve planning, design, land management and decision-making. It can be used to both:

- assess or audit **the biodiversity unit value** of an area of land and
- to **calculate the losses and gains** in biodiversity unit value from changes or actions which affect biodiversity, such as a building houses or changing the conservation management of a land holding.

BOX 2-1: Biodiversity metric 2.0 can be used both as an auditing tool to quantify the biodiversity value of a place or to measure changes in biodiversity resulting from human activities

Biodiversity metric 2.0:
a versatile tool to audit the biodiversity value of land

to measure the biodiversity benefits of land management

to understand how temporary works impact biodiversity and

to calculate how much compensation is needed when natural or semi-natural habitats are permanently lost

How the biodiversity metric 2.0 works

What the metric measures

2.5. Biodiversity metric 2.0 uses **habitat**, the places in which species live**,** as a proxy to describe biodiversity. These habitats are converted into measurable '**biodiversity units**'. These biodiversity units are the 'currency' of the metric.

2.6. Biodiversity units are calculated using the **size** of a parcel of habitat and its **quality**. The metric uses **habitat area** as its core measurement, except for linear habitats where habitat length is used (see supplementary modules section 2.8). To assess the quality of a habitat the metric scores habitats of different types, such as woodland or grassland, according to their relative biodiversity value. Habitats that are scarce or declining typically score highly relative to habitats that are more common and widespread. The metric also takes account of the condition of a habitat. The metric accounts for the location of the habitat relative to other similar habitats to measure its connectedness in the landscape. Being 'better' and 'more joined-up' are important facets of habitats that can contribute to halting and reversing biodiversity declines[5]. Last, the metric also accounts for whether or not the habitat is sited in an area identified locally, typically in a relevant policy of plan, as being of significance for nature.

2.7. Where new habitat is created or existing habitat is enhanced the difficulty and associated risks of doing so are taken into account by the metric. If habitat is created to compensate for losses elsewhere, then the metric also takes account of its proximity to the impact site. The metric incentivises delivery that is on or close to the impact site.

Supplementary modules of the metric

2.8. Biodiversity metric 2.0 includes additional supplementary modules for habitats that are not well described by their area. These are linear habitats, for which habitat length is often a more meaningful measure of their extent than area.

2.9. There are two broad categories of linear habitats :

- hedgerows and lines of trees
- rivers and streams

2.10. These supplementary modules of the metric are calculated differently and have their own discrete biodiversity unit types. It is an important rule of the metric that the biodiversity units calculated through the core habitat area-based metric and each of the linear units are unique and cannot be summed or converted. When reporting biodiversity gains or losses with the metric, the different biodiversity unit types must be reported separately and not summed to give an overall biodiversity unit value. For example, a scheme should report a gain of 3 area-based units, a loss of 1 hedgerow unit and a loss of 1 river unit rather than an overall total gain of 1 unit. The separate

[5] LAWTON J.H., BROTHERTON P.N.M., BROWN V.K., ELPHICK C., FITTER A.H., FORSHAW J., HADDOW R.W., HILBORNE S., LEAFE R.N., MACE G.M., SOUTHGATE M.P., SUTHERLAND W.J., TEW T.E., VARLEY J. & WYNEE G.R. 2010. Making Space for Nature: a review of England's wildlife sites and ecological network. Report to Defra

Calculation Tool provides an easy and simple to use way of undertaking both area and/or linear biodiversity unit calculations.

How area habitat biodiversity units are calculated

2.11. To measure the biodiversity value of habitats it is first necessary to define the site boundaries and then divide it into appropriate parcels as needed. Parcels are simply distinct portions of each habitat type present. The habitat type and size of these parcels, and the condition of the habitat it contains, should then be recorded. The metric uses standard methodologies for categorising habitats so this can be done alongside routine ecological surveying. The biodiversity unit value of each habitat parcel is then calculated. To determine the unit value of a habitat parcel we assess its 'quality'. The assessment of quality comprises four components.

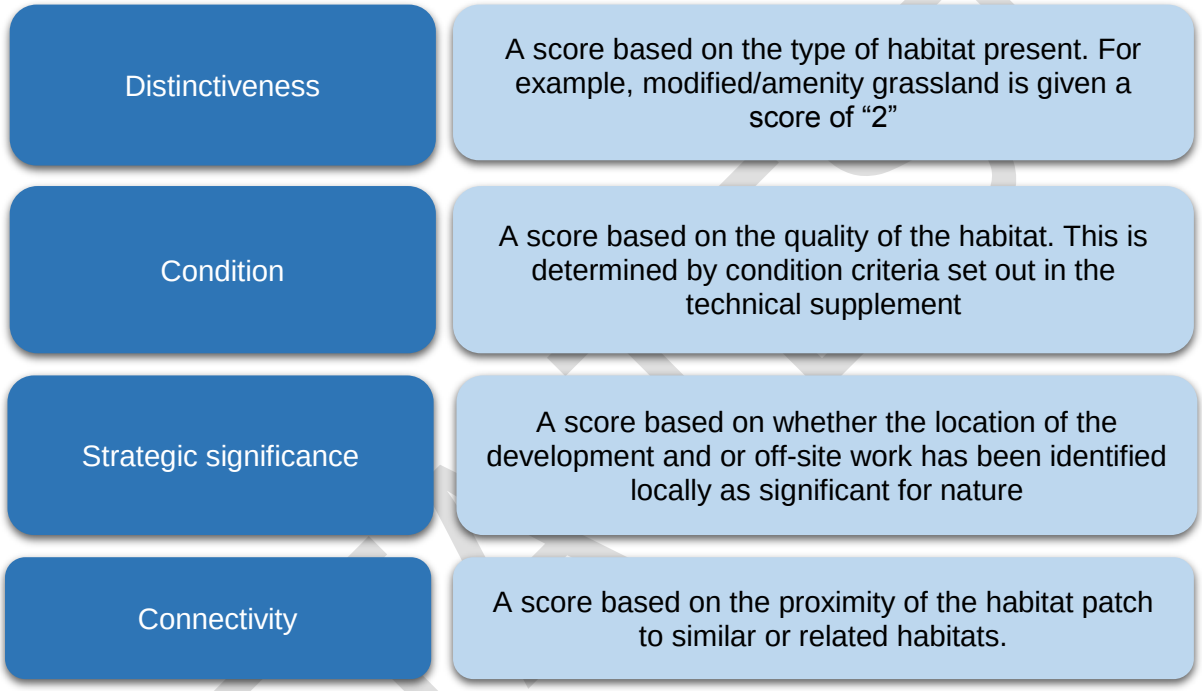


FIGURE 2-1: Quality components in biodiversity metric 2.0

2.12. The metric operates by applying a score to each of these elements. It then multiplies the size of each habitat parcel using with each of these 'quality' scores (see BOX 2-2) to produce a number that represents the **biodiversity unit** value of each habitat parcel.

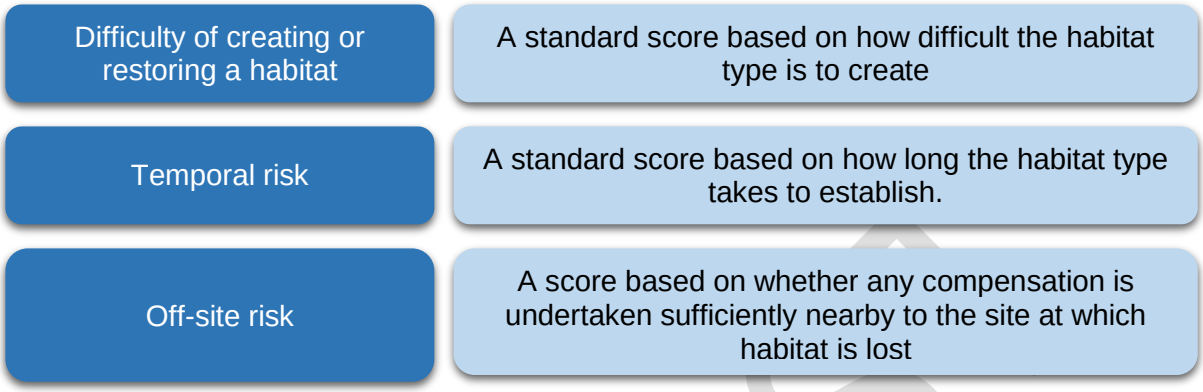
2.13. The next update to the metric and calculation tool will come with a tool for calculating connectivity. There will also be a simplified approach for calculating connectivity for smaller sites. In the meantime in the absence of any local data to the contrary, the metric (and the calculation tool) should be populated with 'medium' score for high and very high distinctiveness habitats and low score for all other habitats.

2.14. The initial calculation represents the '**baseline**' or '**pre-intervention'** value in biodiversity units.

2.15. The calculation is then repeated for the post-intervention (either development or land management change) scenario. This calculation should include any measures to retain existing habitats and create or enhance habitats to generate additional biodiversity units. This gives the user a '**post-intervention'** biodiversity unit score. At

this point, because the metric is measuring predicted changes rather than existing habitats, additional factors to account for the risk associated with creating, restoring or enhancing habitats are also considered. Figure 2-2 sets out the three risks incorporated into the metric.

FIGURE 2-2: Risk components of biodiversity metric 2.0



2.16. The predicted value of the habitats in biodiversity units 'post-intervention' is then deducted from the 'baseline' pre-intervention unit score to give a net change unit value. If your project has explicit biodiversity unit requirements the metric can be used to calculate the numbers of units your design is predicted to deliver. The design can be revised to improve the number of biodiversity units obtained.

2.17. The metric can be used to measure off-site compensation where this is required. The processes for measuring on-site and off-site changes and compensation are very similar. The biodiversity unit value of the off-site habitats are calculated for the 'pre-intervention' and 'post-intervention' stages. The 'pre-intervention' units are then subtracted from the 'post-intervention' units to work out how many biodiversity units will result from that habitat change.

2.18. The example in BOX 2-2 illustrates the general approach used to calculate the biodiversity unit value for habitats described above. A more detailed explanation of this process is given in chapter 5.

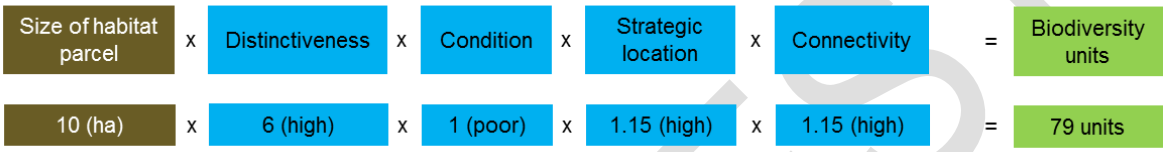
BOX 2-2: Calculating the biodiversity unit value of a habitat

How we calculate biodiversity value for habitats is illustrated in the scenario below:

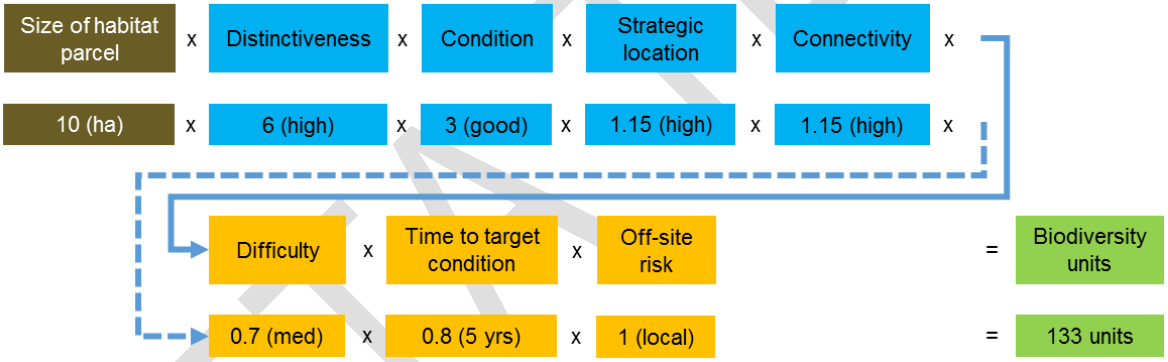
- The pre-intervention calculation that establishes the baseline biodiversity unit value of a habitat. In essence, that multiplies the size of a habitat parcel by its 'quality' scores, and
- The post-intervention calculation that gives you the biodiversity unit value of a habitat after it has been changed. This calculation also takes account of the difficulty and time it takes to create the new habitat.

How these calculations are used in an example scenario is illustrated in BOX 2-3. *N.B. In this example the 'high' connectivity score has been derived from local data.*

PRE-intervention biodiversity calculation (the baseline)

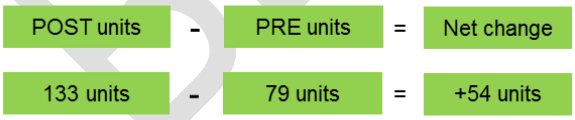


POST-intervention biodiversity calculation (for newly created habitat)



Calculation of gains or losses

The net effect of an intervention (or a series of interventions) on biodiversity is calculated as follows:



BOX 2-3: Practical application

To calculate the change in biodiversity unit value resulting from a development (or other intervention) you first survey and then divide the site up into distinct parcels of each habitat type. Using this information you can calculate the baseline (or pre-intervention) 'biodiversity unit' value of each habitat parcel using the free calculation tool provided for use with biodiversity metric 2.0. The output of the tool gives you the biodiversity unit value of the habitats on the site before the development.

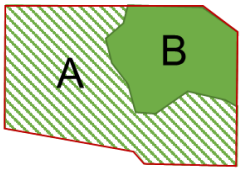
Next, using your design plans for the development you calculate the biodiversity unit value for the habitats that are expected to be retained after the works finish, plus the values for any enhanced or newly created habitats.

The change in biodiversity is worked out by subtracting the site's baseline biodiversity unit value from the sum of post-intervention values for retained, created and enhanced parcels of the same habitat type. This is then combined with any offsite gains or losses to give a final biodiversity unit value from which net gain or loss for the scheme can be assessed. This is illustrated in the graphic below.

Development site

Pre-intervention 'baseline'

The site survey identifies two habitat types: A and B.



Biodiversity units of habitat

75 units

60 units

Sub-totals

135 units

Post-intervention

The development footprint will destroy about two-thirds of the habitat on site.

LOSSES of habitats A and B

50 units

20 units

70 units

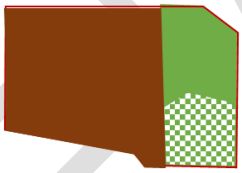
The remaining area of habitat B is retained

RETAINED habitat

40 units

40 units

The remaining habitat A is enhanced, for example, by improving its condition, which uplifts its unit value



ENHANCED habitat

25 units plus uplift of 25 units (total = 50 units)

50 units

(retained + enhanced) – baseline = change in biodiversity

(40 + 50) – 135 = - 45 units

45 units of off-site compensation is required to avoid a biodiversity loss, or the design could be revisited to reduce losses

Key process steps

2.19. The key steps you need to follow to make practical use of the metric are outlined in Figure 2-1.

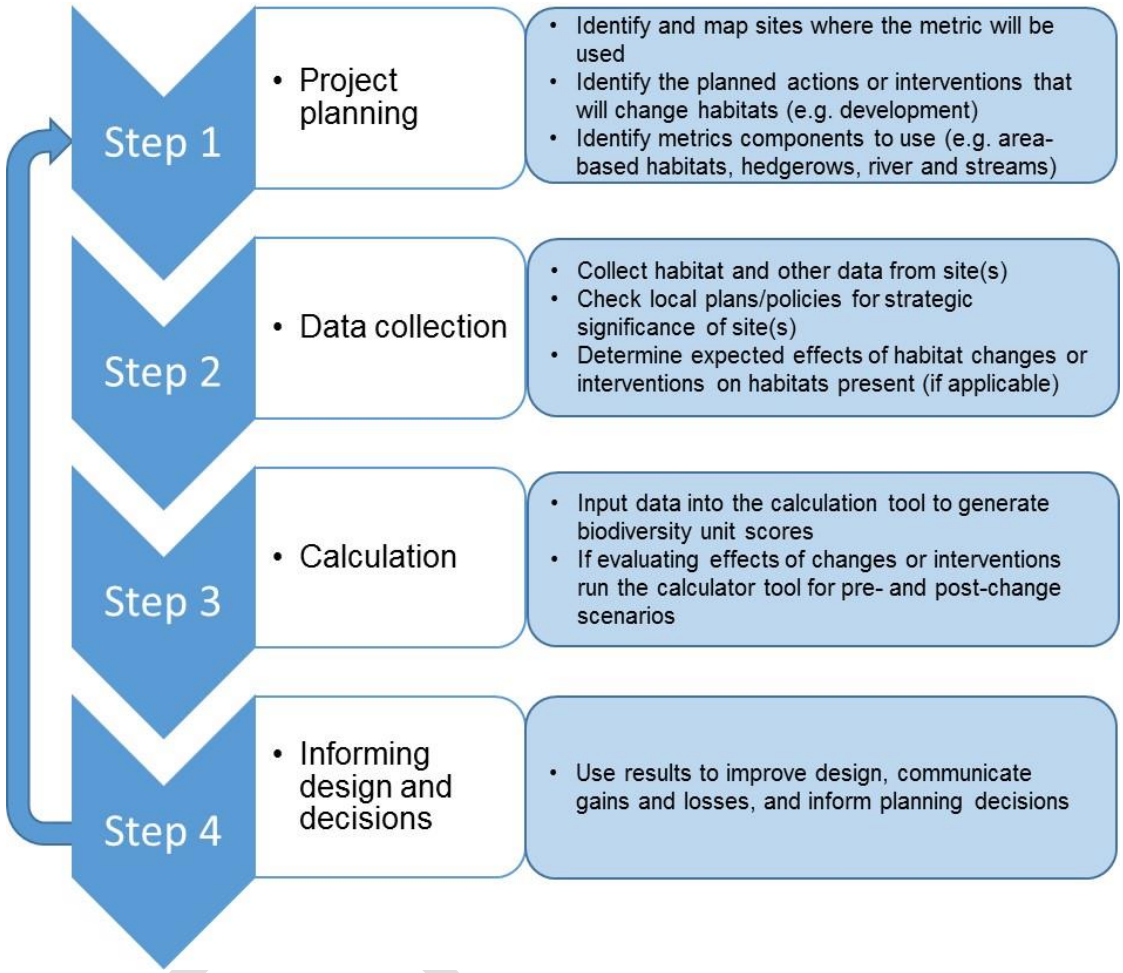


FIGURE 2-1: The 4 key steps to using biodiversity 2.0

Principles and rules for using the metric

2.20. The metric is a tool that can be used to help inform plans and decisions. Used properly, it incentivises actions that are expected to benefit biodiversity and discourages actions that harm biodiversity. It is important, however, to be aware of its limitations and to follow some important principles.

2.21. The metric uses habitat categories as a proxy for biodiversity. Although this is rational, it is an oversimplification of the real world. Furthermore, while the scoring of habitats is informed by ecological reasoning and the available evidence, the outputs of biodiversity unit calculations are not scientifically precise or absolute values. The generated biodiversity unit scores are proxies for the relative biodiversity worth for the state of a place.

2.22. The metric and its outputs should therefore be interpreted, alongside ecological expertise and common sense, as an element of the evidence that informs plans and

decisions. The metric is not a total solution to biodiversity decisions. The metric, for example, helps you work out how much new or restored habitat is needed to compensate for a loss of habitat, but it does not tell you the appropriate composition of plant species to use.

2.23. Users wanting to apply the metric properly should conduct their assessments with regard to a set of **key principles and rules** for its use. These are set out below:

- **Principle 1: The metric does not change the protection afforded to biodiversity.** Existing levels of protection afforded to protected species and to habitats are not changed by use of this or any other metric. Statutory obligations will still need to be satisfied.

- **Principle 2: Biodiversity metric calculations can inform decision-making where application of the mitigation hierarchy and good practice principles[6] conclude that compensation for habitat losses is justified.**

- **Principle 3: The metric's biodiversity units are only a proxy for biodiversity.** While it is underpinned by ecological evidence the metric is only a proxy for biodiversity and to be of practical use has been kept deliberately simple. The numerical values generated by the metric represent relative, not absolute, values.

- **Principle 4: The metric focuses on widespread species and typical habitats.** Area based habitats are considered a suitable proxy for widespread species found in typical examples of different habitat types.
    - Protected and locally important species needs are not considered through the metric,
    - Impacts on protected (e.g. SSSIs) and irreplaceable habitats are not adequately measured by this metric, and will likely require separate consideration.

- **Principle 5: The metric design aims to encourage enhancement, not transformation, of the natural environment.** Where possible, habitat created to compensate for loss of a natural or semi-natural habitat should be of the same broad type (e.g. new woodland to replace lost woodland) unless there is a good ecological reason to do otherwise (e.g. to restore a heathland habitat that was converted to woodland for timber in the past).

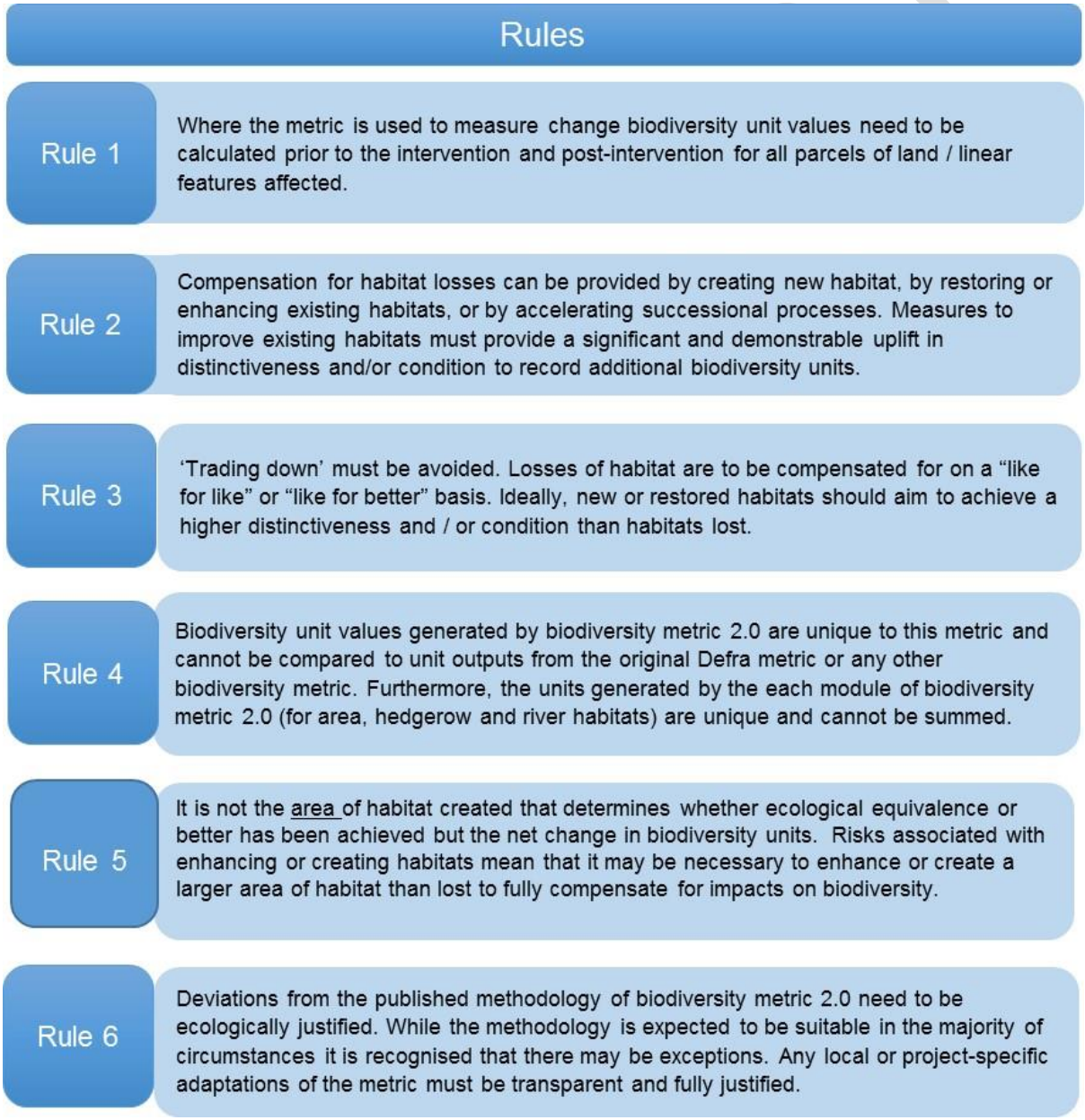
- **Principle 6: The metric is designed to inform decisions**. Decisions and management interventions need to take account of available expert ecological advice and not just the biodiversity unit outputs of the metric.

- **Principle 7: Compensation habitats should seek, where practical, to be local to the impact.** They should aim to replicate the characteristics of the habitats that have been lost, taking account of the structure and species composition that give habitats their local distinctiveness. Where possible

[6] CIEEM, CIRIA, IEMA. 2016 Biodiversity Net Gain – Good Practice Principles for Development. https://www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf

compensation habitats should contribute to England's ecological network by creating more, bigger, better and joined areas for biodiversity

- **Principle 8: The metric does not enforce a mandatory minimum 1:1 habitat size ratio for losses and compensation.** A difference can occur because of a difference in quality between the site impacted and the compensation provided. For example, if a habitat of low distinctiveness is impacted and is compensated for by the creation of habitat of high distinctiveness, the area needed to compensate for losses can potentially be less than the area impacted. Consideration should be given to whether reducing the size of compensation is an appropriate outcome.



3: Data Collection & Fieldwork

Introduction

3.1. This section sets out how to collect the data required for the biodiversity metric 2.0 calculation. This includes information that can be collected through 'desktop surveys' (i.e. remotely) and information that requires site visits or surveys. The section focusses on the data required for the core (area) calculation of biodiversity metric 2.0. Section 8 details the data needed to undertake the supplementary (linear) calculations.

3.2. To complete biodiversity metric 2.0 the following data needs to be obtained for existing and proposed habitats:

- Habitat types present (including sealed surfaces and man-made land cover);
- Area of each parcel of habitat of a particular type (hectares);
- Condition of each parcel of habitat (High, Medium, Low).
- Connectivity (high, medium and low) – *N.B. in the beta version of the biodiversity metric 2.0 these scores should be set at 'low' for low and moderate distinctiveness habitats and 'medium' for high or very high distinctiveness habitats in the absence of local data.*
- Strategic significance

Data Collection Approach

3.3. The best approach to take for data collection will depend on wider survey and data requirements for the development and the site being affected. However, the steps below set out some useful stages to consider.

Step 1: Pre site-visit background checks

a. Online data searches (such as using MAGIC) can help to identify any relevant Habitat Inventory data and SSSI boundary information. This can help to identify whether highly distinctive habitat is likely to be present or whether the site is within a SSSI or other statutory designation and whether there are known to be irreplaceable habitats on site. Designated sites and irreplaceable habitat impacts need to be addressed separately in accordance with existing mechanisms. The biodiversity metric 2.0 is not designed for use determining compensation for impacts on such sites and habitats.

b. Searching for species records (such as those held within the NBN Atlas) can give an indication of how biodiversity rich the site and its surroundings might be. This will help determine any constraints or aspects of the site's biodiversity that may need more detailed consideration outside of the scope of biodiversity net gain. Local Environmental Record Centres (LERCs) can also be good sources of biodiversity information.

c. It is also advisable to check that recent maps or aerial images of the habitats on the site are consistent with those from recent years. They can highlight if any potential baseline degradation (i.e. the removal of habitat before development to reduce net gain costs) has occurred.

Step 2: Initial walkover on the site

a. A walkover will give an impression on how the site might be split up and surveyed most effectively. During the walkover consider different land uses across the site and identify any hot spots of biodiversity with higher quality features (i.e. areas with Priority Habitats or Species) that may need more survey time and consideration.
b. The site should be divided into habitat parcels (contiguous areas of habitats with the same type and condition) as appropriate. Site mapping will usually be the most straightforward way of doing this.

Step 3: Identifying habitat types present on site

a. This is best completed through the use of UK Habitat Classification System[7] (see Box 3-1). This means that habitats are recorded as types that will be widely recognised and that can be put directly into the biodiversity metric 2.0 calculation tool. If a Phase 1 habitat survey is undertaken the results can be translated into UK Habitat Classification System types (see Box 3-1 below). A translation table between Phase 1 and UKHab types is also contained within the calculation tool provided for biodiversity metric 2.0.
b. Habitat type identification might require a separate survey visit, or might be achievable on the site walkover, depending on the habitats present. For example, a site comprising hardstanding and amenity grassland might not require a detailed habitat survey, but a site with different grassland types and a rich mosaic of habitats would be likely to.

BOX 3-1: The UK Habitat Classification ("UKHab")

Biodiversity metric 2.0 is based on the UK Habitat Classification system, a free-to-use (open access), unified and comprehensive approach to classifying habitats that is fully compatible with other major existing classifications. It is designed to be suitable for digital or manual use in habitat metrics, impact assessment and sharing data between organisations.

The UK Habitat Classification system was chosen for use in the metric as it translates easily into Priority Habitat types and Habitats Directive Annex 1 types; does have scope to incorporate assessments of condition, origin or management regime; and is much easier to use in electronic mapping systems because of its architecture.

Minor adjustments to the habitat list within the UK Habitat Classification system have been made within the metric. The adjustments include the addition of habitats (all based on a EUNIS code or Annex 1 habitat type) that cut across a number of Priority Habitat types and so work better in the metric as a separate category. Some habitats have been omitted from the list because they are better recorded in the metric as the actual habitat type as represented on the site (e.g. a railway corridor is better split into its individual grassland & scrub types).

If your project uses Phase 1 habitat typologies the biodiversity metric 2.0 calculation tool can convert between Phase 1 and UKHab classifications. A conversion table can be found via the 'Technical Data' button in the calculation tool.

[7] UK Habitat Classification: http://ecountability.co.uk/ukhabworkinggroup-ukhab/ (Accessed 20/06/2019)

Step 4: Recording size (ha) and mapping the habitat polygon/ parcel.

a. The size of each habitat parcel should be recorded in hectares (with the exception of the habitats covered by the supplementary modules – see Chapter 8). Whilst there is no firm minimum or maximum size of recorded parcels, it is recommended that a proportionate approach is taken to avoid the recording of habitat types that cover a total area of less than one square meter (0.0001 ha), or recording extremely large areas that are likely to vary in their condition, as one habitat parcel.
b. Mapping is not always required, but is usually helpful to visualise the inputs and to help decision-makers to make sense of the habitats included in metric calculations. Where practical, it is advisable to use digital mapping as this will typically allow more accurate recording of boundaries and make the process of revising maps easier. If you record reference numbers for each habitat parcel, it can be helpful for reviewers to label any habitat map with these references.

Step 5: Recording condition scores to describe the quality of the habitat present.

a. Habitat condition is divided into one of 3 categories: High, Medium and Low in the metric. These 3 main categories will be used but the metric and calculation tool does allow for half scores, if for example it is not possible to separate High and Medium condition. Using the appropriate habitat condition sheet (see the Technical Supplement for details) the surveyor will need to assess the quality of each parcel of habitat for wildlife. Some parcels may need to be split, if quality varies across an area, into separate parcels. Each parcel needs to be recorded on the map and calculated separately using the metric. If using the calculation tool each parcel needs to be entered as a separate line in the tool. Identifying habitat condition will require some ecological knowledge in most circumstances. The detailed habitat condition assessment sheets can be found in the technical supplement published alongside this document.

Step 6: Supplementary habitat modules

If the site contains any of the following habitat types then an assessment using the relevant supplementary module of the metric is required:

Linear Habitats (see Chapter 8)

- hedgerow and lines of trees – this module uses length (kilometres), height and condition
- rivers or streams – this module uses length (kilometres), type and nearby habitat type

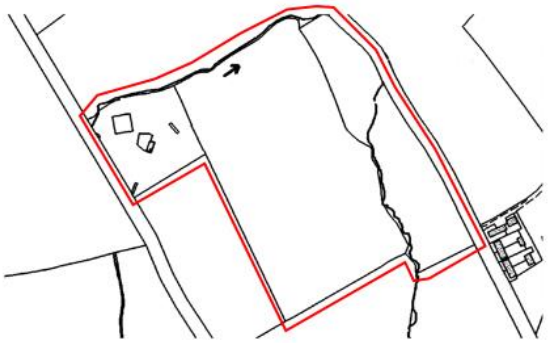
Urban Street Trees (see Chapter 7)

- urban street trees – this module uses stem diameter at breast height (centimetres) and the number of trees involved.

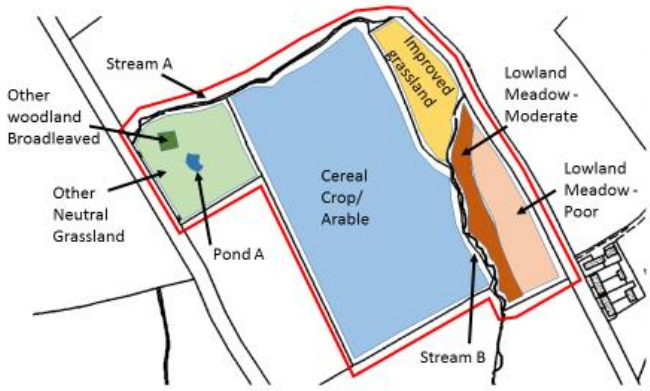
Step 7: Opportunities for onsite Habitat Creation & Enhancement.

It is generally advisable to use any site visits and surveys to also identify opportunities where existing habitats could be enhanced or new habitats created.

Site Plan



Map for Area Habitats



Map for Supplementary Habitats (hedgerow, streams)

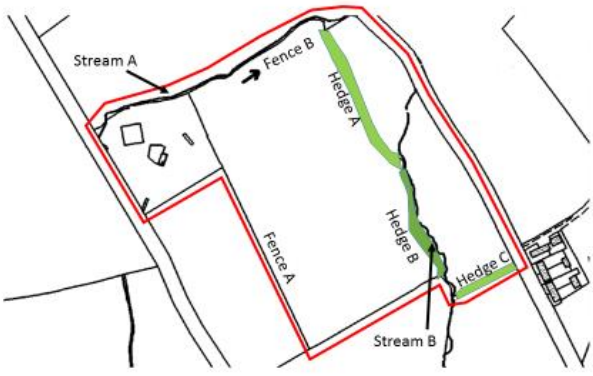


FIGURE 3-1: Examples of Data Collection Maps

TABLE 3-1: Simple data collection records for the maps shown in Figure 3-1

Baseline Area Habitat Data	Condition	Size (Ha)	Notes
Improved Grassland	N/A Agricultural	1.3	
Cereal Crops	N/A Agricultural	12.3	
Lowland Meadow	Poor	1.8	
Lowland Meadow	Moderate	1	
Pond A	Good	0.1	
Other Woodland Broadleaved	Good	0.2	
Other Neutral Grassland	Moderate	2	
etc			

Baseline Supplementary Habitat Data	Condition	Length (Km)	Notes
Stream A	Moderate	0.5	
Stream B	Poor	0.23	
Hedge A	Poor	0.18	
Hedge B	Moderate	0.130	
Hedge C	Poor	0.070	
etc			

4: How to use the Calculation Tool

4.1. The biodiversity metric 2.0 is accompanied by the '**Calculation Tool**'. This will help you calculate the biodiversity units for a site before (baseline) and after a development or management intervention. Summary guidance explaining how to use the calculation tool is also available. This section provides more detailed information and guidance on the calculation tool.

4.2. The tool is pre-populated with much of the key data that underpins the calculation. The majority of the data entry is via dropdown lists. There are separate data entry buttons for baseline and post development/management scenarios. The post development data entry is split into Creation, Enhancement and Accelerated Succession with separate buttons for each. There are also separate sheets for onsite and offsite data entry and calculation.

4.3. To use the calculation tool, users will need access to data which covers:

- habitat types
- area of habitats
- habitat condition
- connectivity of the habitat
- strategic significance

4.4. The tool provides an overview of headline results as well as detailed results, outputs and graphics.

STEP 1: Accessing and preparing the tool

4.5. Open the Calculation Tool[8] on any computer with spreadsheet software installed. The spreadsheet should open with the "Introduction" tab showing as in Figure 4-1.

FIGURE 4-1: Tool Introduction screen

[8] See http://nepubprod.appspot.com/publication/5850908674228224

4.6. The tool works best with macros and content enabled[9] so we recommend enabling content or macros if prompted by your spreadsheet software.

4.7. Click on the “Open Tool” button. This will open spreadsheet with the “Start page” visible showing as in Figure 4-2.

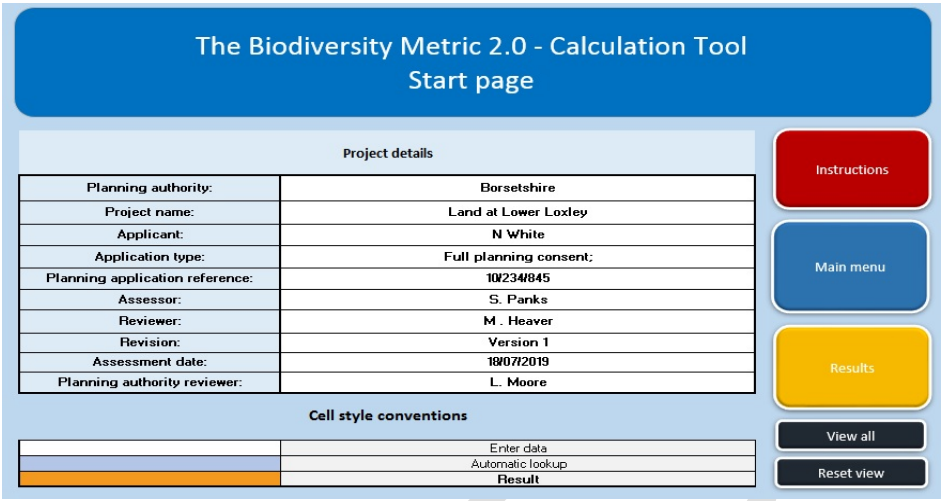


FIGURE 4-2: Calculation Tool start page

4.8. Under the header “Project details”, enter the required information into the relevant rows.

4.9. When this is complete, click the navigation button on the right labelled “Main menu” (See Figure 4.2). This page provides links to all pages of the calculation tool, including those for data entry and those that will display your assessment’s results. Note that very few projects will need to use all of the pages in the tool, and many will use only a few. To navigate between the worksheets in the tool, click the “Main menu” button to return to the main contents page (from which you can access every part of the tool). If you are using a macro free version use the tabs at the bottom or the screen.

[9] If your organisation has disabled macros or content in spreadsheets, it is still possible to use the tool but the navigation buttons will not work as intended. You will instead have to use the software’s default mode of shifting between worksheets/tabs.

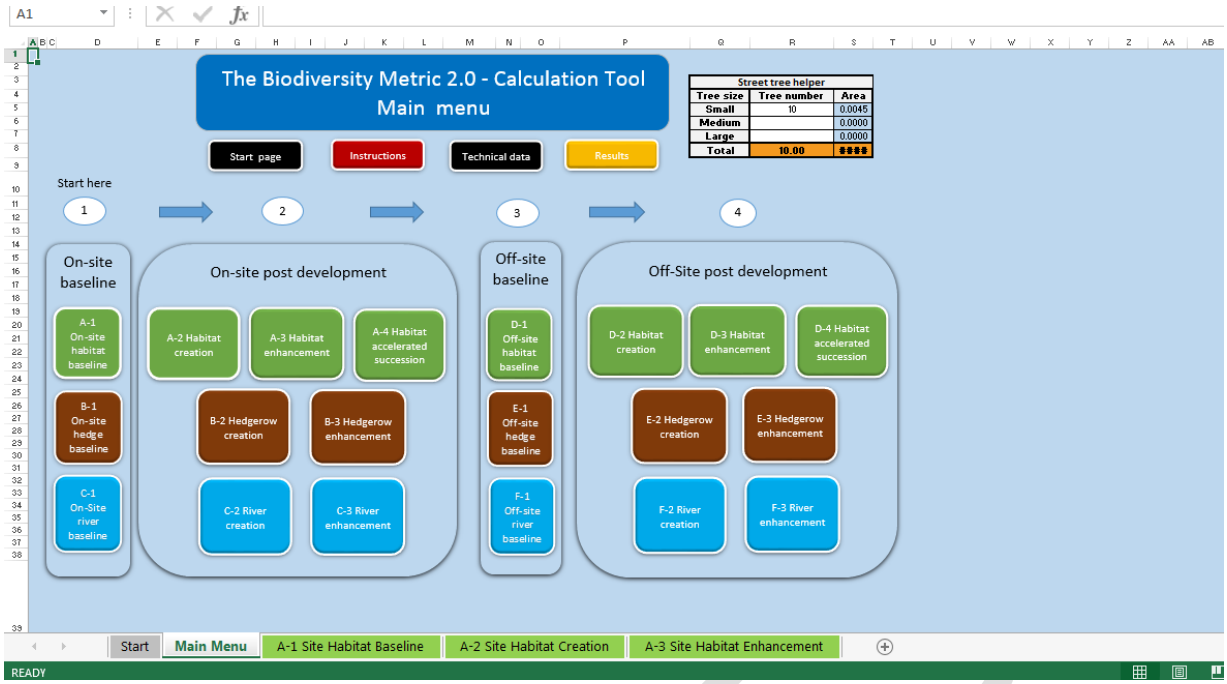


FIGURE 4-3: Calculation Tool Main menu

STEP 2: Baseline (pre-intervention) data entry

Entering baseline data

4.10. The information you will need to enter to complete your baseline assessment will depend on the type of habitats you have on your site, and whether you are using any off-site compensation (also referred to as offsets).

4.11. All the cells in the tool are colour coded according to the type of information that can be entered into them. The “Cell Style Conventions” box on the “Start” tab, and copied below, provides a key to the colour coding throughout the tool[10].

	Enter data
	Automatic lookup
	Result

FIGURE 4-4: Cell style conventions key from the tool. Any cells requiring data inputs will be shaded white, automated cells blue and results in orange.

4.12. Use the main menu and the information in “Step 1” to determine which tabs you will need to complete. In most cases, the first tab to complete will be “A-1 Site Habitat Baseline”.

4.13. Use the “Condense/show columns” button, and the equivalent for rows, to switch between views. In full view all the multiplier values are visible. In the condensed view

[10] This colour coding is designed to make it easier to quickly find input columns but is not essential to the use of the tool.

a more limited amount of information is presented which makes the screen easier to view, and which still allows the input of all necessary information. Users can toggle back and forth between views at any time.

Completing the baseline calculation

4.14. This section of the tool allows you to describe the habitats as they are before the planned development or other intervention takes place.

4.15. Tab “A-1 Site Habitat Baseline” allows you to enter the data for the habitats that are already present on your site.

You will need to enter:

- habitat type,
- habitat area,
- habitat condition,
- ecological connectivity assessment (low, med, high) N.B. For this version use a default value of ‘low’ accept for high or very high distinctiveness habitats which should be scored as ‘Medium’
- An appropriate strategic significance description

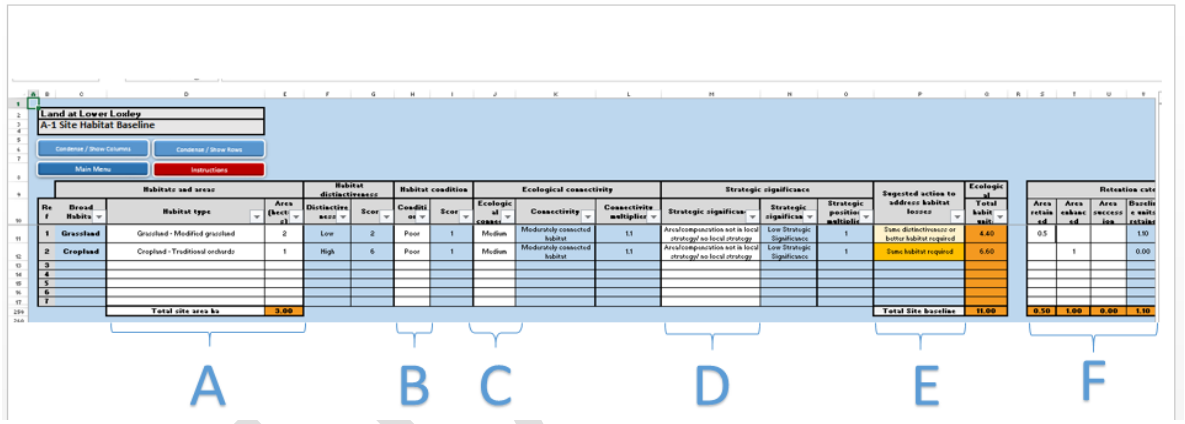


FIGURE 4-5: Data entry points on ‘A-1 Site habitat baseline tab’

A: Enter habitat type and area

4.16. To enter habitat data into the sheet, select the first empty row and select a habitat type from the dropdown list. Then enter the area, measured in hectares, of that habitat into the adjacent “Area” column.

It is good practice to put different habitat parcels on your site into different rows (e.g. recording two separate parcels of woodland on a site in two separate rows). However provided they are of the same habitat type, multiple habitat parcels containing habitat of the same condition and in the same location can be amalgamated into one row, and the total area for this habitat type entered.

B: Enter habitat condition

4.17. Enter the condition for each row of habitat using the dropdown list in the “Condition” column. The tool will then automatically apply the corresponding condition score.

4.18. If two parts of the same habitat are of markedly different condition, you should split them across two rows and record them as two separate parcels.

4.19. If a score for condition is shown as “Not possible”, it means that you are selecting a combination of habitat and condition that is not considered ecologically feasible, such as an arable field that is in good ecological condition. To remedy this, simply change your condition score to the appropriate level and the error message will disappear.

C: Enter ecological connectivity assessment

4.20. In the test version of the tool all High and Very High distinctiveness habitats should be assigned a Medium connectivity multiplier, other habitats a Low connectivity multiplier. A connectivity assessment is not appropriate for some habitats such as arable crops. In these cases select N/A and the tool will automatically apply a neutral to reflect this. A forthcoming update to the tool will enable a more sophisticated approach to connectivity to be used.

D: Enter strategic significance assessment

4.21. Select the appropriate description for the strategic significance of each habitat from the dropdown list. Select the option that best corresponds to information set out in local plans or policies. The tool will then automatically apply the corresponding strategic significance score. If no such plans or policies are available select the third option in the drop down list.

E: Suggested Action (no input required)

4.22. Some particularly biodiverse habitats call for like for like compensation if lost, and you should always try to avoid trading down; this means not replacing biodiverse habitats with large areas of less biodiverse habitats. The “Suggested action” column gives indicative advice that you might want to consider as you design your site and compensation plan. The action suggested does not constitute formal advice.

F: Area retained, enhanced or for succession

4.23. Users should use these cells to record how much, in hectares, of each habitat on the site is planned to be:

Area retained:	Kept on the site throughout any development or landscaping process and featuring in final site designs
Area enhanced:	Kept on the site throughout any development or landscaping process but enhanced (i.e. improved for wildlife) as part of the site design
Area succession:	A specific process, “accelerated succession”, in which habitat such as woodland is created on existing habitats such as grasslands. See sections 4.36 and 5.23 for more information.

4.24. The tool will use this information at later stages to automatically fill in baselines for habitat enhancement so it is important to record these areas correctly.

G: Assessor and Local Authority Reviewer Comments

4.25. At the right end of each row there is a pair of comment boxes where optional text can be added. This provides an opportunity for assessors and those reviewing the assessment or the planning authority to make any comments regarding a particular habitat. Use this section to record any additional justifications for the assessment of habitat type, condition or location if needed. If there are no specific points to raise it can be left blank.

Hedgerow, lines of trees and rivers and streams - baselines

4.26. If your site does not contain these habitats, proceed to Step 3. If your site contains hedgerows and lines of trees or rivers, streams or canals, you should complete the relevant worksheets for these habitats. For lines of trees use the 'hedgerows' buttons and tabs. Use the main menu or tabs to navigate to worksheets B-1 and C-1.

4.27. Enter the relevant data for these habitats, as you would for area-based (non-linear) habitats. However, habitat extent should be recorded as length in kilometres of the habitat feature rather than the area in hectares.

STEP 3: Post-intervention data entry

Navigating the post-intervention data entry tabs

4.28. The worksheets you will need to complete for your post-intervention assessment will depend on the type of habitats you include in your designs, and whether you are creating habitats, enhancing habitats or using accelerated succession (see paragraph 5.23). Use the 'Main menu' in the tool to determine which tabs you will need to complete. In most cases, the first tab to complete will be "A-2 Site Habitat Creation".

4.29. This section of the tool allows you to describe the habitats as they will be after the planned development or other intervention takes place.

Habitat creation

4.30. This tab allows you to enter the data for the habitats you plan to create. You will need to enter the proposed:

- habitat type,
- area,
- condition,
- ecological connectivity assessment (low, med, high) N.B. the test version of the tool uses default values of 'low' accept for high or very high distinctiveness habitats which are scored as 'Medium'
- strategic significance assessment
- spatial risk (only for off-site habitats)

4.31. These are entered in the same way as is done for the baseline assessment. The tool will then automatically apply the appropriate difficulty and temporal multipliers for the selected habitat types and condition, so no input from the user is required for those columns.

4.32. If a score for condition is shown as "Not possible", it means that you are selecting a combination of habitat and condition that is not considered ecologically feasible, such as an arable field that is in good ecological condition. To remedy this, simply change your condition score to the appropriate level and the error message will disappear.

4.33. The number of habitat units created is calculated automatically. At the far right of each row there is a comments box which provides an opportunity for assessors and planning authority reviewers to make any observations or comments.

Habitat enhancement

This tab allows you to enter the data for the habitats you plan to enhance. The habitat enhancement calculation factors in elements of the baseline data as the existing habitat is the starting point for enhancement. When you enter the area of habitat being enhanced into the "Area enhanced" column of the baseline sheet, the tool will automatically list the habitats you plan to enhance using the data you first put into the baseline sheets (See Figure 4-6). If they are not appearing correctly, check that you entered an area in the "Area enhanced" column of the baseline sheets (A-1 etc.).

Sugested action to address habitat losses	baseline				
	Total habitat units		Area retained	Area enhanced	su
Same distinctiveness or better habitat required	4.40			0.5	
Same habitat required	6.60			1	
Total Site baseline	11.00		0.00	1.50	

FIGURE 4-6: Input area enhanced on 'A-1 Site habitat baseline tab'

4.34. Enter the proposed:

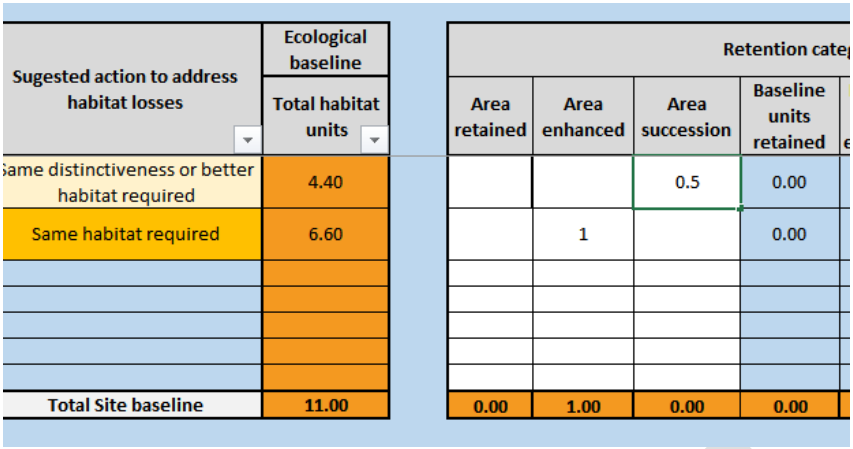
- habitat type (if you are not keeping the same habitat type)
- habitat condition
- ecological connectivity assessment (low, med, high) N.B. the test version of the tool uses default values of 'low' accept for high or very high distinctiveness habitats which are scored as 'Medium'
- strategic significance assessment
- spatial risk (only for off-site habitats)

in the same way as when you entered the baseline data.

4.35. The calculation tool identifies the change in distinctiveness and condition of the habitat. The enhancement formula references the baseline habitat data. Therefore if a trading down (See Rule 3) error occurs in either the Distinctiveness or Condition Movement cells, it will need to be resolved, otherwise it will prevent the tool delivering a biodiversity unit calculation.

Accelerated succession

4.36. The calculation tool uses elements of the submitted baseline data to calculate gains from habitat created through accelerated succession. For example, where woodland was being created on grassland the calculation tool would need to know what type of grassland was in situ beforehand. When you enter the area of the habitat to be created through accelerated succession into the "Area succession" column on the baseline sheet (See Figure 4-7) the tool will automatically populate the baseline data in accelerated succession sheet. If they are not appearing correctly, check that you entered an area in the "Area succession" column of the baseline sheets (A-1 etc.). Users then only need to enter the remaining data into the white columns.



Sugested action to address habitat losses	Ecological baseline	Retention cate			
	Total habitat units	Area retained	Area enhanced	Area succession	Baseline units retained
ame distinctiveness or better habitat required	4.40			0.5	0.00
Same habitat required	6.60		1		0.00
Total Site baseline	11.00	0.00	1.00	0.00	0.00

FIGURE 4-7: Input area accelerated succession on 'A-1 Site habitat baseline tab'

STEP 4: Off-site data entry

4.37. This tab can be used to calculate the contribution any off-site land towards the developments overall biodiversity change (loss or gain) calculation, If you need to use land off-site, you will first need to enter any baseline data for the off-site location. For example, if you were creating a woodland on an arable field away from the main development site, you would need to record the arable field in the off-site baseline tabs.

4.38. To do this select the 'Off-site baseline' tab from the 'Main menu' and enter the baseline data for off-site habitats in exactly the same way as for the on-site habitats by following the guidance at Step 2.

4.39. You will need to enter any data for off-site habitat creation or enhancement separately to that for on-site habitats. Use the Main menu to find the appropriate tabs and enter the baseline and post-intervention data for off-site habitats in exactly the same way as you did for the on-site habitats.

4.40. For habitat creation, enhancement and accelerated succession undertaken off-site, there is an additional spatial risk multiplier that must be applied.

STEP 5: Viewing and interpreting the results

Headline results tab

4.41. The headline results tab takes data from all the other tabs and provides the key results for the biodiversity metric 2.0 assessment. It highlights whether biodiversity losses or gains have been achieved across the main and supplementary metrics relevant for the project. A full dashboard of results is available in the detailed results tab.

Detailed results tab

4.42. The detailed results tab takes data from all the other tabs and provides a dashboard summarising the data contained in the other sheets. The results are displayed in tables and visual graphics.

Trading summary tab

4.43. The trading summary tab provides details of trading between habitat types and an indication of whether the development has abided by the trading rules (See Rule 3). It is designed to set out the available data in a way that allows assessors and reviewers to determine whether or not trading principles described in rule 3 (see chapter 2) have been adhered to.

Error checking

4.44. The tool contains a number of inbuilt error messages which are designed to identify errors in data entry. Typically they can be resolved by checking the input data and common causes of errors include:

- inappropriate condition ratings
- habitat areas that do not match
- aiming to create a habitat or condition type that is not considered ecologically feasible

STEP 6 (optional): Understanding and checking supporting data in the tool

4.45. All the technical data and multipliers underpinning the calculation can be accessed through the main menu in tabs G-1 to G-9 of the calculation tool. This is not required for normal operation of the tool but regular users of the tool might want to look at the underlying data to better understand the tool's outputs.

Connectivity scoring

4.46. In the beta version of the metric, low distinctiveness habitats should be afforded a connectivity score of 'low' and high and very high distinctiveness habitats afforded a connectivity score of 'medium'. A connectivity tool is being developed and will be available in future updates.

5: Detailed description of the biodiversity metric 2.0

5.1. This chapter provides explanations of the different components of biodiversity metric 2.0. The aim is to give a sense of the values used for different multipliers, why those multipliers are being used, and the assumptions and limitations around them. This chapter also outlines some the considerations that might be taken into account when designing a project underpinned by the metric.

5.2. This chapter focuses on the core components of the metric. Specific area habitat and urban tree components are detailed in chapters 6 and 7 respectively. Chapter 8 provides similar details and explanations for the additional supplementary metric modules covering hedgerows, lines of trees and rivers and streams.

Components of biodiversity quality

Distinctiveness

5.3. Habitats are assigned to distinctiveness bands. These are based on an assessment of the distinguishing features of a habitat or linear feature, including the consideration of species richness, rarity (at local, regional, national and international scales), and the degree to which a habitat supports species rarely found in other habitats.

5.4. The distinctiveness band of each habitat is preassigned in biodiversity metric 2.0. The bands are based upon the UK habitat classification system. A combination of simple rules and expert judgement have been used to assign each habitat type to the appropriate distinctiveness band. The distinctiveness categories used are tailored to habitat type and are explained later in this chapter for Area Habitats and in chapter 8 for habitats with supplementary modules.

Condition

5.5. Parcels of habitat will be in different ecological conditions In addition, interventions to improve habitats will not always involve taking a habitat in poor condition and improving it to good condition. The metric therefore takes account of variants in habitat condition.

5.6. The approach to condition assessment is tailored to habitat type and is explained later in this chapter for Area Habitats and in chapter 8 for habitats with supplementary modules.

Strategic significance and connectivity

5.7. ‘The spatial location of a habitat is treated as a component of the quality of a habitat parcel in the same way as distinctiveness or condition. Two distinct spatial components are used strategic significance and connectivity. These are explained in more detail in section 5.29.

Dealing with risk

5.8. There are uncertainties and a risk of failure in any endeavour to create or improve the biodiversity unit value of a habitat. One way to deal with these risks is to complete the habitat improvements works in advance of the habitat losses occurring.

5.9. Where this is not possible risks can be mitigated by reducing the number of units generated by a unit of compensation habitat. This is done by using a **multiplier** in the metric to correct for disparity or risk. The use of multipliers to account for the risks associated with habitat restoration or creation has several benefits:

- it **provides flexibility** by allowing activities impacting habitats to proceed in advance of compensation being either provided or attaining its target quality in exchange for an increase in the magnitude of compensation provided;
- it **incentivises** the creation of compensation habitat in advance of loss. If the habitat is established before the impact then there is no need to apply risk multipliers to manage delivery risks or to take account of time differences. More units will therefore be available from a specific parcel of land, and
- it **creates a disincentive** for damaging habitats that are difficult or take a long time to recreate or restore (the case for many habitats in the Very High and High distinctiveness band), by increasing the area of habitat needed to compensate for the loss.

5.10. A typical consequence of applying risk multipliers is to increase the size (e.g. area or length for linear features) of habitat required as compensation such that it exceeds the size of habitat lost or damaged. This is necessary:

- to preserve the incentives and disincentives referred to above;
- to compensate for temporal losses of biodiversity (e.g. where there is a period of diminished biodiversity between the point in time when a habitat is impacted and it is replaced by habitat of equivalent biodiversity value);
- to protect against situations where habitats that are created, enhanced or restored fail to adequately compensate for the lost biodiversity. This is necessary because there is no requirement to provide additional compensation if interventions ultimately fail to deliver the predicted biodiversity outcome.

5.11. The following three risks are recognised in this metric.

Difficulty of creation and restoration

5.12. This risk associated with delivery of biodiversity creation or enhancement due to uncertainty in the effectiveness of management techniques used to restore or create habitat.

5.13. The level of risk differs between habitat types because of ecological factors (e.g. the different challenges posed by creating different habitat types) and due to the availability of techniques or know-how to create habitats in a realistic time-frame. Uncertainty in achieving the target outcome for each habitat is addressed by a habitat-specific 'difficulty' multiplier based on available science and expert opinion.

5.14. There is a growing body of experience and expertise associated with habitat creation and enhancement[11]. Nevertheless, it is important to recognise that it is impossible to exactly replicate habitat losses because of the unique physical and ecological features of every place. This point is of particular relevance to impacts on well-established semi-natural habitats and emphasises why it is so important that the mitigation hierarchy is adhered to so that impacts on such habitats occur only when there is no alternative.

5.15. The difficulty and uncertainty of successfully creating, restoring or enhancing a habitat is recognised in this multiplier.

[11] As the evidence base on the effectiveness of creation and restoration techniques grows and is reviewed the risk multipliers may be modified. A timetable for future updates/revision to the metric will be published.

TABLE 5-1: Difficulty categories and multipliers

Difficulty categories	
Category	**Multiplier**
Very High	0.1
High	0.33
Medium	0.67
Low	1

Temporal risk

5.16. In delivering compensation there may be a mismatch in the timing of the impact and compensation, i.e. the difference in time between the negative impact on biodiversity and the compensation reaching the required quality. This results in lower levels of biodiversity for that period of time.

5.17. This issue can be managed by the creation of compensation habitat ahead of the impact taking place: e.g. by starting the offset work well ahead of the development for projects with a long lead in or through the creation of a bank of habitat units.

5.18. However, this is not always possible and even where the management to create compensation habitat starts in advance, the time taken for habitats to mature means that there will almost inevitably be a time lag. Where a time lag does occur, a risk multiplier is applied. This is referred to as the '**Time to target condition'** multiplier.

5.19. The time period to use in applying the Time to Target Condition multiplier to a metric calculation is the length of time (in years) between the intervention and the point in time the habitat reaches the pre-agreed target quality (i.e. distinctiveness, condition, area). This time will vary between habitat types, between change scenarios (e.g. creation typically takes longer than enhancement) and due to way the habitat is managed. Time to target condition values – based on based on good practice and typical conditions are provided for all habitats used in biodiversity metric 2.0. These values are set out in detail in the Technical Supplement.

5.20. These time to target condition values then need to be discounted. Discounting over time is an economic technique used to compare costs and benefits that occur in different time periods based around the principle that, generally, people prefer to receive goods and services now rather than later. Where time discounting is used in compensation schemes a standard discount rate is typically used. The biodiversity metric 2.0 uses 3.5%, which is the value recommended in the Treasury Green Book[12](Table 5-2 shows the multipliers for a number of time periods using a discount rate of 3.5 %. It is important to use precise figures (at least to 3 decimal places).

5.21. To be practical, the metric:

- **assumes that there is a quality 'jump' from the baseline condition to the target condition** once the relevant number of years has elapsed. Metric

[12] more details on discounting can be found in the Treasury Green Book Guidance, HM Treasury, 2011).

calculations do not take into account incremental increases in quality of the habitat and do not need to be re-done annually, and

- **sets a limit on the discount rate used for temporal risk**. The metric sets a multiplier limit of x0.320 to take account of temporal risk. This equates to approximately 32 years, which is about the maximum time frame that most projects and plans can realistically plan ahead.

Monitoring is, however, recommended to confirm the actual number of biodiversity units delivered matches what was predicted.

TABLE 5-2: Time to target condition: multipliers for different time periods using a 3.5% discount rate.

Time to target condition			
Time (years)	**Multiplier**	**Time (years)**	**Multiplier**
0	1.000	17	0.546
1	0.965	18	0.527
2	0.931	19	0.508
3	0.899	20	0.490
4	0.867	21	0.473
5	0.837	22	0.457
6	0.808	23	0.441
7	0.779	24	0.425
8	0.752	25	0.410
9	0.726	26	0.396
10	0.700	27	0.382
11	0.676	28	0.369
12	0.652	29	0.356
13	0.629	30	0.343
14	0.607	31	0.331
15	0.586	>32	0.320
16	0.566		

Off-site risk multiplier

5.22. There are both ecological and social drivers for compensation habitat to be provided local to where losses occur: e.g. the cultural ecosystem services provided by an area of land to a community. When off site compensation is within the local planning authority area (LPA) or the same National Character Area (NCA)[13] it is considered

[13] Further information on NCAs can be found at: http://publications.naturalengland.org.uk/category/587130

that those drivers have been addressed. However there is a risk of compensation being delivered at distance from the impact site. Where this is the case the off-site risk multiplier is applied to those compensation parcels outside of the relevant LPA or NCA. This risk is applied to area habitat, hedgerow and river elements of biodiversity metric 2.0. Note – for rivers and streams different off-site risk multipliers called riparian loss. See Chapter 8 for more details.

TABLE 5-3: Off-site risk categories

Off-site risk categories			
Category	**Score**	**Point applied to calculation**	
		Pre-impact	**Post-impact**
Compensation inside LPA or NCA of impact site	1.0	No	**Yes**
Compensation outside LPA or NCA of impact site but in neighbouring LPA or NCA	0.75	No	**Yes**
Compensation outside LPA or NCA of impact site and beyond neighbouring LPA or NCA	0.5	No	**Yes**

Biodiversity change scenarios

5.23. Different biodiversity change scenarios carry different levels of risk and the multipliers are applied differently to reflect this. Three distinct biodiversity habitat change scenarios (illustrated in Figure 3.1) are recognised in the biodiversity metric 2.0:

- **Habitat creation or recreation.** Where one habitat type is replaced by another or the habitat is destroyed (e.g. by development works) and the same habitat is recreated.
- **Habitat restoration or enhancement** of an existing habitat to improve its distinctiveness and / or condition. An example of restoration would be the transformation of a derelict chalk grassland dominated by scrub and coarse grasses to a continuous area of chalk grassland with isolated woody species and an abundance of fine-leaved grasses.
- **Accelerated habitat succession**. This recognises that certain interventions are comparable with ecological succession processes which result in a more distinctive habitat type (for example, grassland changing into scrub and ultimately woodland).The biodiversity value of the original habitat is not abruptly lost, but gradually changes as the new habitat type emerges. Accelerated succession interventions are subject to 'trading down' principles. Accelerated succession is a purposeful sustained intervention and it is envisaged that there are a limited number of situations where this would apply. For example, the planting of an existing grassland with thorny shrubs to facilitate natural tree regeneration to establish a woodland without removing the grassland.

5.24. Under the above scenarios different portions of the biodiversity value of a habitat may have different risk multipliers applied to it. So, as illustrated in Figure 5-1, in the

case of a straightforward habitat creation, you lose all the original habitat, so the risks apply to the whole value of the habitat being created. Whilst in the case of restoration or enhancement the habitat starts with and retains a certain biodiversity value that interventions increase. The risk multipliers are applied to this uplift (improvement) of the habitat. In accelerated succession the situation is more complex. Recognising that the original habitat retains a biodiversity value while the new habitat emerges the metric applies risk only to the uplift in value resulting from succession.

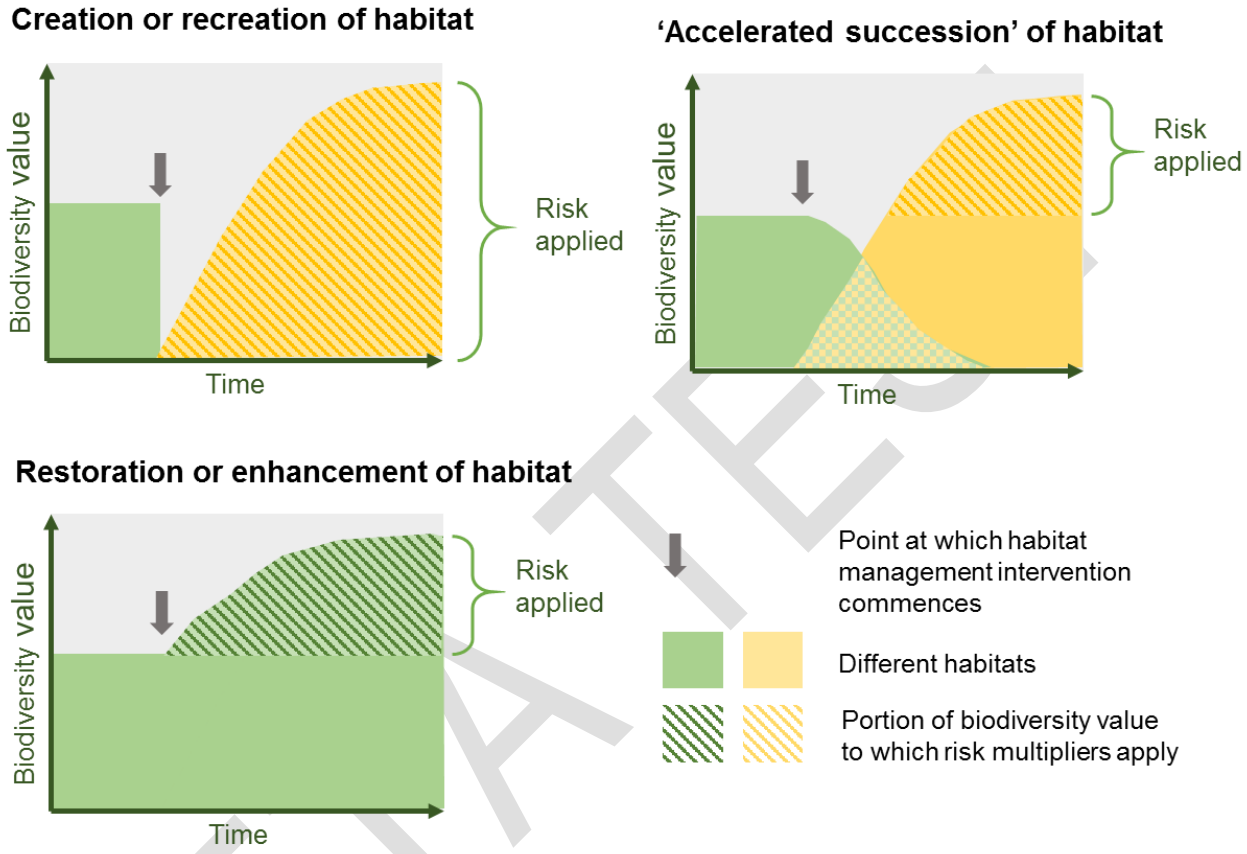


FIGURE 5.1: The biodiversity habitat change scenarios recognised in the metric

5.25. This leads to three different equations being used to generate biodiversity unit values pre and post intervention.

5.26. It is important to select the appropriate change scenario for each management intervention. This choice is an ecological judgement and is determined by the ecological consequences of the change, not where the habitat is located.

5.27. Compensation habitats can be created, restored or enhanced, or subject to accelerated succession on-site as well as off-site. Measures taken to generate biodiversity units by improving existing habitats must provide a significant and demonstrable uplift in distinctiveness or condition.

5.28. Good management practice does not, by itself, constitute restoration or enhancement, or accelerated succession.

The spatial component

5.29. In biodiversity metric 2.0 there are two core spatial components. First, the **strategic significance** of a place for biodiversity, its geography. Second, ecological **connectivity**, the relationship of a habitat in a defined place to its immediate surroundings in respect of biological and ecosystem flows. While these concepts are not completely independent of each other they do represent different qualities of a habitat.

Strategic significance

5.30. The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives. Ideally these aspirations will have been summarised in a local strategic planning document which articulates where biodiversity is of high priority and the places where it is less so. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such Nature Recovery Areas, local biodiversity plans, National Character Area[14] objectives and green infrastructure strategies. Table 5-5 shows the multiplier scores for both impact and compensation sites based on its place in a strategic plan.

5.31. In the absence of a locally or nationally relevant strategic documentation indicating areas of significance for biodiversity, the value of **1** should be used in pre and post development calculations. Use of a score of 1 does not penalise a proposal.

TABLE 5-5: Strategic significance categories and scores

Strategic Significance categories			
Category	**Score**	**Point applied to calculation**	
		Pre-impact	**Post-impact**
High strategic significance High potential & within area formally identified in local policy	1.15	**Yes**	**Yes**
Medium strategic significance Good potential but not in area defined in local policy	1.1	**Yes**	**Yes**
Low Strategic Significance Low potential and not in area defined in local policy	1	**Yes**	**Yes**

Connectivity

5.32. The focus of connectivity in biodiversity metric 2.0 is the relationship of a particular habitat patch to other surrounding **similar** or **related** semi-natural habitats. These help facilitate flows of species and ecosystem services increases habitat resilience.

[14] For more details of National Character Areas see: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles

By **similar** habitats we mean, for example, multiple patches of calcareous grassland. By **related** habitats we mean habitats often found in association as part of a dynamic complex, for example lowland heath and scrub. The same approach is applied to impact and compensation sites.

5.33. In the beta version of biodiversity metric 2.0 all High and Very High distinctiveness habitats should be assigned a Medium connectivity multiplier, other habitats a Low connectivity multiplier (see Table 5-5).

5.34. A connectivity tool will be published in an updated version of biodiversity metric 2.0. which will use an approach based upon the habitat fragmentation or 'structural connectivity' model with the National Biodiversity Climate Change Vulnerability Model (NBCCVM)[15] to assess connectivity and will generate connectivity categories from highly connected to low connectivity. It encompasses the ideas of:

- Larger habitat patches being less susceptible to extreme events;
- Accommodation of a wider range of soil types, topography and microclimate affords greater niche variation;
- Potential for species dispersal and local re-colonisation to be facilitated; and
- Patch size and permeability of surrounding landscape being important for persistence of biodiversity.

TABLE 5-5: Beta version Connectivity multipliers assigned by habitat distinctiveness.

Connectivity Multipliers		
Habitat distinctiveness	**Connectivity**	**Multiplier**
Very high distinctiveness	Medium	1.1
High distinctiveness	Medium	1.1
Medium and low distinctiveness	Low	1

Moderating the influence of spatial components

5.35. So that strategic significance and connectivity elements do not have a disproportionate effect on the calculation outputs the specific scores are restricted in range in the beta version of biodiversity metric 2.0 to: strategic significance 1 – 1.15, and connectivity 1 – 1.1.

6: Area Habitat biodiversity unit calculations

6.1. Areas habitats are perhaps the most familiar ecological currency in the UK, they are the woodlands, grasslands, wetlands and other types that are widely recognised by ecologists and the public alike. The habitats we recognise comprise a community of different species populations living in a place. There is usually a sub-group of those

[15] For more information about the NBCCVM see: TAYLOR, S., KNIGHT, M. & HARFOOT, A. 2014. National biodiversity climate change vulnerability model. Natural England Research Report NERR054. Natural England. ISBN 978-1-78354-084-6.

populations that give a habitat its' defining characteristics, for example trees in a woodland, grasses in a meadow, or reeds in a wetland.

6.2. There are a number of habitat classification systems for habitats, for example Phase 1[16] and UKHAB[17] a new unified habitat classification system which features a more detailed nomenclature for urban areas. Whichever habitat classification you use for an intervention you need to consistently use it for the whole project to maintain comparability.

Distinctiveness

6.3. Distinctiveness refers to the relative scarcity of the habitat and its importance for nature conservation. The distinctiveness categories used for Area Habitats and examples illustrating the types of habitats assigned to each category are shown in Table 6-1. The actual values assigned to each habitat type used in the metric are given in the Technical Supplement.

TABLE 6-1: Distinctiveness categories used for Area Habitats. Values assigned for each habitat type are given in the Technical Supplement.

Distinctiveness categories		
Category	**Scores**	**Multiplier**
Very High	8	Priority habitats as defined in Section 41 of the Natural Environment and Rural Communities (NERC) Act that are highly threatened, internationally scarce and require conservation action e.g. blanket bog
High	6	Priority habitats as defined in Section 41 of the NERC Act requiring conservation action e.g. lowland fens
Medium	4	Semi-natural habitats not classed as a Priority Habitat
Low	2	Habitat of low biodiversity value. Temporary grass and clover ley; intensive orchard; rhododendron scrub
Very Low	0	Little or no biodiversity value e.g. hard standing or sealed surface

Condition

6.4. The condition categories used for Area Habitats are given in Table 6-2, while details of how condition should be assessed for each habitat type is explained in the condition assessment sheets in the Technical Supplement.

TABLE 6-2: Condition categories used for Area Habitats. Guidance on how to assess the condition of each habitat type is provided in the Technical Supplement.

[16] JNCC (2010) Handbook for Phase 1 habitat survey - a technique for environmental audit (revised 2010)

[17] UK Habitat Classification: http://ecountability.co.uk/ukhabworkinggroup-ukhab/ (Accessed 20/06/2019)

Condition categories	
Category	**Multiplier**
Good	3
Fairly Good	2.5
Moderate	2
Fairly Poor	1.5
Poor	1
N/A – Agriculture	1
N/A - Other	0

Calculating Area Habitat Biodiversity Units (AHBUs)

6.5. Box 6-1 shows the formulae used to calculate biodiversity unit values for area habitats. A freely available calculation tool is available to download which simplifies the metric calculations.

BOX 6-1: Calculating Area Habitat biodiversity units (AHBUs)

Equation 1: Pre-impact (t_0) biodiversity value

$$t_0 \ \textit{Baseline AHBU} = \left(A^{t0} \times Q_D^{t0} \times Q_C^{t0}\right) \times \left(Q_{SC}^{t0} \times Q_{SS}^{t0}\right)$$

Equation 2: Post-impact (t_1) biodiversity value for habitat creation

$$t_1 \ \textit{Creation AHBU} = \left\{\left[A^{t1} \times Q_D^{t1} \times Q_C^{t1}\right] \times \left[R_D \times R_T\right] \times \left[Q_{SC}^{t1} \times Q_{SS}^{t1}\right]\right\} \times R_{OS}$$

Equation 3: Post-impact (t_1) biodiversity value for habitat restoration and enhancement

$$t_1 \ \textit{Enhancement AHBU} = \Big[\left[\left(\left[\left\{A^{t1} \times Q_D^{t1} \times Q_C^{t1}\right\} - \left\{A^{t0} \times Q_D^{t0} \times Q_C^{t0}\right\}\right] \times \left\{R_D \times R_T\right\}\right) + \left\{A^{t0} \times Q_D^{t0} \times Q_C^{t0}\right\}\right] \times \left\{Q_{sc}^{t1} \times Q_{ss}^{t1}\right\}\Big] \times R_{OS}$$

Equation 4: Post-impact (t1) biodiversity value for accelerated succession habitat

$$\mathbf{t1\ Accelerated\ Succession\ AHBU} = \{(\Big[\Big\{\left\{\mathbf{H1A^{t0} \times H1Q_D^{t0} \times H1Q_C^{t0}}\right\} \times \left\{\mathbf{H1Q_{SC}^{t1} \times H1Q_{SS}^{t1}}\right\}\Big\} \times \left(\mathbf{0.5}\left(\mathbf{1 - H2}R_T^{ti}\right)\right)\Big] + \{[(\{\left(\mathbf{H2A^{t1} \times H2Q_D^{t1} \times Q_c^{t1}}\right) - \left(\mathbf{H1A^{t0} \times H1Q_D^{t0} \times H1Q_C^{t0}}\right)\} \times \left\{\mathbf{H2R_D^{t1} \times H2R_T^{t1}}\right\}) + \left(\mathbf{H1A^{t0} \times H1Q_D^{t0} \times H1Q_C^{t0}}\right)] \times \left\{\mathbf{H2Q_{sc}^{t1} \times H2Q_{ss}^{t1}}\right\}]\})\} \times R_{OS}$$

A	Area of habitat (hectares)	R_T	Time to target condition (a risk factor)
Q_C	Condition (a quality measure)	R_{OS}	Off-site Risk
Q_D	Distinctiveness (a quality measure)	t0	Before intervention

Q_{SC}	Connectivity (a quality measure)	t1	Post intervention
Q_{SS}	Strategic Significance (a quality measure)	H1	Area habitat type before intervention
R_D	Difficulty (a risk factor)	H2	Area habitat type post intervention

Applying multipliers to different interventions

6.6. To properly reflect the different risks it is necessary for Area Habitat biodiversity unit calculations to distinguish between creation, enhancement / restoration, and accelerated succession of habitats (see paragraph 5.23). The implication for calculations and application of the multipliers is shown in Table 6-3. A baseline (t_0) and post-intervention (t_1) calculation is needed for each habitat parcel within a scheme.

6.7. Even though the full range of multipliers are applied in the post intervention (t_1) scenarios the detail of the calculations are different so risks are only applied to uplifted area habitat biodiversity units, and residual area habitat biodiversity units are accounted for.

TABLE 6-3: Which scores and multipliers to apply in calculations

Multiplier application								
	Area	Distinctiveness	Condition	Connectivity	Strategic Significance	Difficulty to Create	Time to Target Condition	Off-site risk
t_0 Baseline Units	Yes	Yes	Yes	Yes	Yes	**No**	**No**	**No**
t_1 Creation Units	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
t_1 Enhancement Units	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
t_1 Accelerated succession	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

6.8. The Technical Supplement includes details of quality attributes and risk multipliers used for each Area Habitat type.

7: Urban Street Trees

7.1. The size and type of street tree will make a difference to how important it is to biodiversity, as such any removal of street trees without replacement needs to be factored in biodiversity metric 2.0. Street trees were not included in the original Defra biodiversity metric. They require a slightly different approach to the Area Habitat biodiversity unit calculation. The following sets out how street trees are dealt with in biodiversity metric 2.0.

7.2. Street trees have been given a low distinctiveness score in biodiversity metric 2.0 as they vary in the species that are planted, sit in stressed environments and would only be considered a single component of a habitat like woodland.

7.3. Street trees are split into small, medium and large trees with a corresponding condition score that is assumed to be of Moderate condition (score 2). These are then converted into an area calculation so that it can be used in the metric.

7.4. The area calculation for street trees is worked out using a Root Protection Area (RPA)[18] formula:

7.5. Within the biodiversity metric 2.0 calculation tool a 'street tree helper' is provided to automate this calculation.

TABLE 7.1 Street tree sizes by girth and their area equivalent

Size	Breast Height Girth (cm)	Stem Diameter (cm)	RPA (radius in metres)	Area equivalent (ha)	Tree equivalent for a ha
Small	30cm	10cm	1.2m	0.0005 ha	2,000 trees
Medium	90cm	30cm	3.6m	0.0041 ha	244 trees
Large	150cm	50cm	6 m	0.0113 ha	89 trees

7.6. Once the area equivalent has been calculated street trees are then treated as an Area Habitat within the metric for pre and post impact calculations and should be calculated as per the area habitat calculation approach set out in Chapter 6. The condition of street trees is assumed to Moderate (score 2). The mitigation hierarchy applies and where possible like for like compensation is the preferred approach.

[18] For more information see: Hodge. SJ. 1991. Urban trees: a Survey of street trees in Britain. Forestry Commission Bulletin 99. HMSO, London. Available from: https://www.forestresearch.gov.uk/research/archive-urban-trees-a-survey-of-street-trees-in-britain/ (Accessed 21/06/2019)

8: Supplementary habitat module calculations for linear habitats

8.1. Treating linear habitats like other habitats and accounting for their biodiversity value using the Area Habitat approach alone would undervalue their biodiversity value and would fail to ensure adequate compensation for losses. It is therefore necessary to take separate account of these habitat types so that their contribution to biodiversity is properly acknowledged (Principle 4).

8.2. Biodiversity metric 2.0 includes two distinct supplementary modules for linear habitats:

- Hedgerows and lines of trees
- Rivers and streams

8.3. The biodiversity unit values calculated for area and linear habitats cannot be summed together and both need to be retained as separate biodiversity accounts. Similarly, the different metrics used for each type of supplementary habitat cannot be summed together and these also need to be accounted for separately (Rule 4). For example, hedgerow biodiversity units cannot be added to river and stream biodiversity units.

Hedgerows and lines of trees

8.4. Hedgerows are a feature almost unique to the British Isles and an example of a linear habitat. They were treated separately in the Defra biodiversity metric and the biodiversity metric 2.0 further refines that approach. A key revision is the inclusion of 'lines of trees'. These can display some of the same functional qualities of hedgerows.

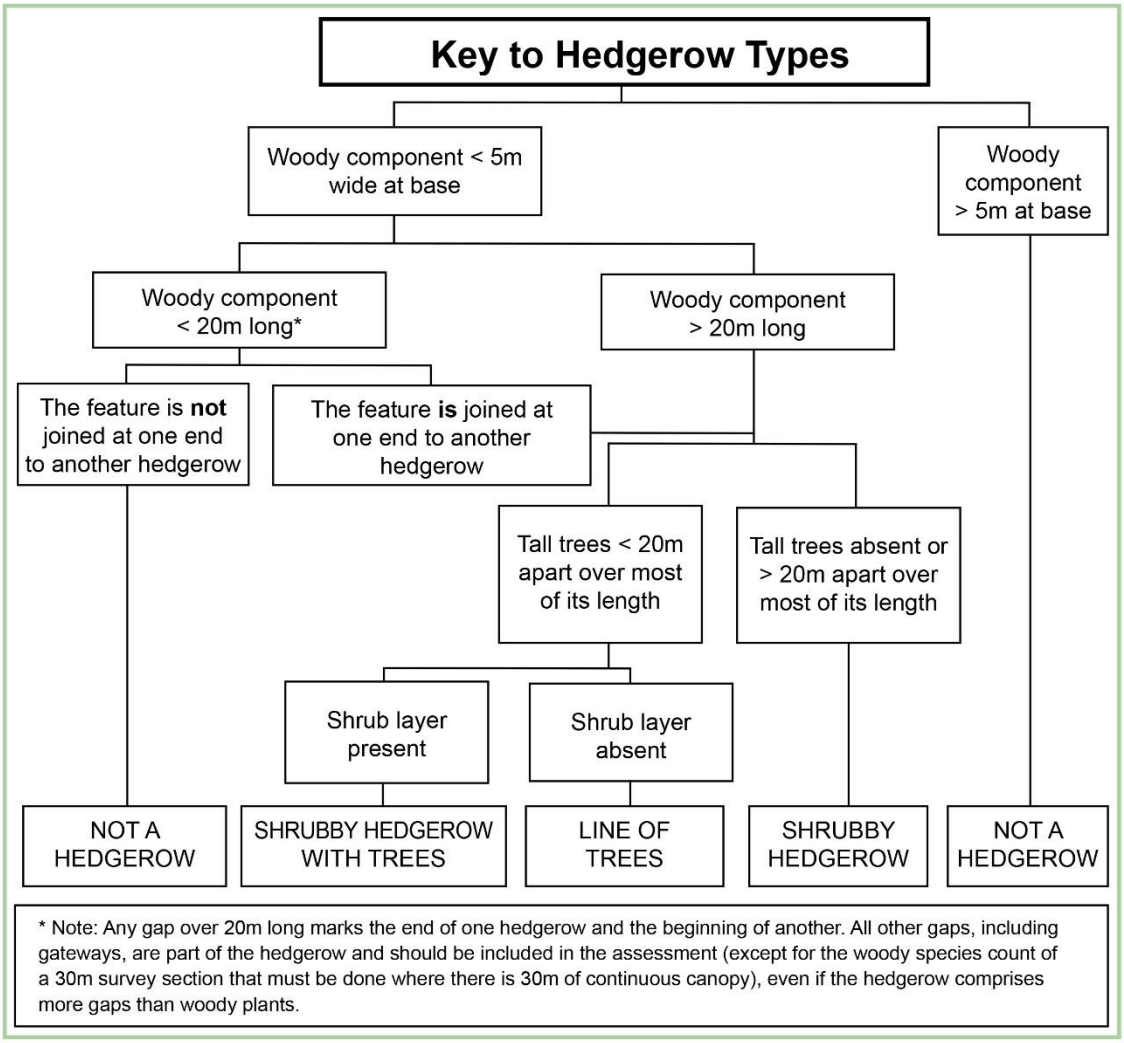
Types of hedgerow and lines of trees recognised

8.5. We recommend use of the key and descriptions provided in the Defra 'Hedgerow Survey Handbook'[19] to determine whether or not a feature is a hedgerow (see Box 8-1). This key recognises three different types of hedgerows: 'shrubby hedgerows', 'shrubby hedgerows with trees' and 'lines of trees'. Street trees are considered to be something different to a line of trees, occurring in an urban environment and often surrounded by pavement. For information on how urban street trees are considered in biodiversity metric 2.0 see chapter 7.

[19] DEFRA. 2007. Hedgerow Survey Handbook. A standard procedure for local surveys in the UK. Defra, London. PB1195. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69285/pb11951-hedgerow-survey-handbook-070314.pdf

BOX 8-1: A key for determining if a feature is a hedgerow and the hedgerow type

A simplified key to determine whether or not a feature is classed as a hedgerow, and if so, what type of hedgerow, is given below. This key is taken from Figure 4 of the 'Hedgerow Survey Handbook.



Calculating Hedgerow and Lines of Trees Biodiversity Units (HBUs)

8.6. Box 8-2 shows the formulae used to calculate biodiversity unit values for hedgerows and lines of trees. The details of each element including the value ranges are explained in detail through the remainder of this chapter.

8.7. We use 'Hedgerow Biodiversity Unit' (HBU) as the unit of measurement for hedgerows and lines of trees to clearly differentiate values from those representing area habitats and other linear habitats.

BOX 8-2: Calculating Hedgerows and Lines of Trees biodiversity units (HBUs)

Equation 1: Existing (pre-intervention) (T_0) biodiversity value

$$T_0\ Baseline\ HBU = \left(L^{t0} \times Q_D^{t0} \times Q_C^{t0}\right) \times \left(Q_{SC}^{t0} \times Q_{SS}^{t0}\right)$$

Equation 2: Post-intervention (T_1) biodiversity value for hedgerow creation

$$T_1\ Creation\ HBU = \left[L^{t1} \times Q_D^{t1} \times Q_C^{t1}\right] \times \left[R_D^{t1} \times R_T^{t1}\right] \times \left[Q_{SC}^{t1} \times Q_{SS}^{t1}\right] \times R_{OS}$$

Equation 3: Post-intervention (T_1) biodiversity value for hedgerow restoration and enhancement

$$T_1\ Total\ HBU\ after\ Enhancement = \{\left[\left(\left[\{L^{t1} \times Q_D^{t1} \times Q_C^{t1}\} - \{L^{t0} \times Q_D^{t0} \times Q_C^{t0}\}\right] \times \{R_D \times R_T\}\right) + \{L^{t0} \times Q_D^{t0} \times Q_C^{t0}\}\right] \times \{Q_{sc}^{t1} \times Q_{ss}^{t1}\}\} \times R_{OS}$$

L	Length of hedge (kilometres)	R_T	Time to target condition (a risk factor)
Q_C	Condition (a quality measure)	t0	Before intervention
Q_D	Distinctiveness (a quality measure)	t1	Post intervention
Q_{SC}	Connectivity (a quality measure)	R_{OS}	Off-site Risk
Q_{SS}	Strategic Significance (a quality measure)		
R_D	Difficulty (a risk factor)		

Assessing the quality of hedgerows and lines of trees

8.8. Intervention sites (e.g. development sites) and proposed compensation sites need to be surveyed and mapped. The unit of measurement for linear habitats that must be used is kilometres.

8.9. Hedgerows bounding green lanes and double hedgerows should be treated as two hedgerows rather than a single hedge. This distinction recognises that double hedges are known to be particularly important for wildlife[20,21] Lost double hedgerows are to be compensated with a double hedge, typically a path or track width apart.

Distinctiveness

8.10. Hedgerows are assigned a 'distinctiveness' weighting. This is based on their physical structure and the species composition of the woody element of the hedgerow, and

[20] WALKER, M.P., DOVER, J.W., HINSLEY, S.A. & SPARKS, TH. 2005. Birds and green lanes: Breeding season bird abundance, territories and species richness. Biological Conservation, 126: 540–547.

[21] WALKER, M.P., DOVER, J.W., SPARKS, T.H. & HINSLEY, S.A. 2006. Hedges and green lanes: vegetation composition and structure. Biodiversity and Conservation, 15:2595–2610

their association with physical features (ditches and banks) that may enhance their ecological value by providing additional niches or enhanced capacity to provide habitat connectivity. For the purposes of the metric, 'shrubby hedgerows' and 'shrubby hedgerows with trees' are regarded as sufficiently similar in their ecological distinctiveness to be given the same weighting.

8.11. Following the approach established by the Hedgerow Survey Handbook, a hedgerow is regarded as species rich where the structural species making up a 30m section of hedgerow includes at least five (or at least four in northern and eastern England, upland Wales and Scotland) woody species that are regarded as either native or ancient introductions somewhere in the UK. Climbers and bramble do not count towards the total except for roses[22]. A list of ancient introduction species (known as archaeophytes) in given in Appendix 11 of 'Hedgerow Survey Handbook'.

8.12. There is no attempt to evaluate the biodiversity unit value of the ground flora associated with hedgerows – despite its potential relevance. This is because the limited survey window and the level of botanical expertise required are incompatible with the aim of a simple and practical metric (Principle 3).

8.13. We draw a distinction between lines of trees recognised as being of ecological value and other lines of trees. 'Ecologically valuable' lines of trees may be characterised as mainly comprising native species in a mature state with a well-developed, possibly, continuous canopy along the length of the line. This is distinct from say an over-grown or derelict hedge or line of Lombardy poplar. Ecological expert judgement may be required to distinguish 'ecologically valuable' lines of trees in a locality.

8.14. The distinctiveness weightings assigned to different hedgerow types are set out in Table 8-1, below.

TABLE 8-1: Distinctiveness categories and weightings (scores) for different hedgerow types (with or without emergent trees) and lines of trees

Distinctiveness categories of hedgerows and lines of trees					
Associated features	**Woody plant structural composition**				
	Species rich hedgerow (inc. hedgerow with trees)	Native species hedgerow	Other hedgerow (ornamental / non-native species)	Line of Trees (Ecologically Valuable)	Line of trees
Associated earth bank or ditch	High 6	Medium 4	Low 2	Medium 4	Low 2
None	Medium 4	Low 2	Very Low 1	Medium 4	Low 2

[22] Climbers are an important feature of hedgerows, but are excluded from this criterion as its objective is to ensure a minimum number of species capable of contributing to the woody structure and form of a hedge.

Condition

8.15. To assess condition we assess the dimensions and other physical characteristics of a hedgerow or line of trees against a set of minimum requirements for a hedgerow or line of trees to be considered in a 'favourable' condition. Hedgerows and lines of trees are assessed separately. The condition assessment methodology for hedgerows and lines of trees is based upon the 'Hedgerow Survey Handbook'. The detailed methodology can be found in the condition assessment annex in the technical supplement.

Condition assessment of hedgerows

8.16. A series of eight 'attributes', representing key physical characteristics, are used for this assessment. The attributes, and the minimum criteria for achieving a 'favourable condition' in each, are set out in Table 8-2. The attributes use similar favourable condition criteria to the 'Hedgerow Survey Handbook' and the handbook is the recommended source of reference for assessing hedgerow attributes.

TABLE 8-2: Hedgerow attributes and criteria for meeting 'favourable condition'

Hedgerow favourable condition attributes		
Attributes and functional groupings (A, B, C & D)	**Criteria (the minimum requirements for 'favourable condition'**	**Description**
A1. Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice) A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height)
A2. Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four

		years (if undertaken according to good practice[23])
B1. Gap – hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook)
B2. Gap - hedge canopy continuity	• Gaps make up <10% of total length and • No canopy gaps >5 m	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate)
C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length ○ measured from outer edge of hedgerow, and is present on one side of the hedge (at least)	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate)
C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (*Urtica* spp.), cleavers (*Galium aparine*) and docks (*Rumex* spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.
D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management

[23] HedgeLink (http://hedgelink.org.uk/index.php) provides a resource of management advice for hedgerows.

		practices (e.g. excessive hedge cutting)

8.17. Each attribute is assigned to one of four functional groups (A – D), as indicated in Table 7-2 and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria according to the approach set out in Table 8-3.

8.18. Hedgerow and line of trees condition assessment generates a weighting (score) ranging from 1-3, which is used within the biodiversity metric 2.0. The scores for each are set out in tables 8-3 and 8-4 below.

TABLE 8-3: Hedgerow condition assessment and weighting

Condition categories for hedgerows		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table 5.2**	**Weighting (score)**
Good	No more than 2 failures in total and no more than 1 in any functional group.	3
Moderate	No more than 4 failures in total and fails both attributes in a maximum of one functional group. e.g. fails attribute 1 & 2, 5 &7 = Moderate condition.	2
Poor	Fails a total of more than 4 attributes or both attributes in more than one functional group.	1

Condition assessment of a line of trees

8.19. Condition assessment for a line of trees is based on continuity of the canopy only, as set out in Table 8-4.

TABLE 8-4: Line of tree condition assessment and weighting

Condition categories for lines of trees		
Category	**Continuity of tree canopy**	**Weighting (score)**
Good	Mature trees with continuous canopy Definition: • a 'mature tree' in this context is one that is at least 1/3 expected fully mature height • gaps make up <10% of total length and there are no canopy gaps >5 m	3
Moderate	Continuous canopy	2

	Definition: • trees < 1/3 expected fully mature height • gaps make up <10% of total length and there are no canopy gaps >5 m	
Poor	Broken canopy Definition: • gaps make up >10% and / or gaps are >5 m in length.	1

Strategic significance and connectivity

8.20. In biodiversity metric 2.0 spatial components are treated as a quality of a habitat, and this also applies to hedgerows and lines of trees. The two components of 'strategic significance' and 'connectivity' need to be evaluated when calculating the biodiversity unit value for both existing and newly created or enhanced hedgerows and lines of trees.

Dealing with risk

8.21. Where new hedgerows are being created or existing hedgerows restored / enhanced, multipliers are used to manage delivery risks. Risks do not apply where hedgerows have been created, restored or enhanced if the target quality (judged in terms of distinctiveness and condition) has been successfully achieved before the hedgerow it is intended to compensate. In these cases a risk multiplier value of '1' is used in calculations. See chapter 5 for further detail.

Difficulty of creation and restoration

8.22. The technical difficulty of creating and restoring hedgerows is given a default value of 'Low' (x 1 multiplier)[24]. Application of this risk multiplier does not, therefore, change the number of biodiversity units generated by a proposed intervention to compensate for losses.

8.23. While a 'Low' rating will be appropriate for most hedgerow replacement schemes, there may be instances where a higher rating will better reflect the difficulty of recreating a particular type of hedgerow[25]. For example, to replace a particularly species-rich hedgerow, or to replace a local hedge type with features that are more difficult to recreate, such as the hedges associated with tall, steeped-sided banks commonly found in Devon, or where there are management challenges such as a high deer population. Expert ecological advice should be obtained where such an exception may apply.

Temporal risk

8.24. Recommendations for the time it takes hedgerows to achieve a pre-agreed target quality are given in Table 8-5. The multipliers cited are calculated using the 3.5% annual discounting rate (see section 5.16 for more details).

[24] This is unchanged from the Defra biodiversity metric.

[25] The range of 'difficulty' categories available (and the relevant multipliers) are: Very High (x0.1); High (x0.33), Medium (x0.67) and Low (x1).

TABLE 8-5: Time to target condition (years) and multipliers for different time periods using a 3.5% discount rate.

Hedgerow compensation measure	Time to target condition (Multiplier in brackets)	
	Moderate condition	**High condition**
Newly planted hedgerow	5 years (x 0.837)	10 years (x 0.700)
Newly planted hedgerow with emergent trees	10 years (x 0.700)	20 years (x 0.490)
Newly planted 'line of trees'	20 years (x 0.490)	30 years (x 0.320)
Restored or enhanced hedgerow	3 years (x 0.899)	5 years (x 0.837)

Applying risks to different interventions

8.25. To properly reflect the different risks it is necessary for hedgerow and line of trees biodiversity unit calculations to distinguish between creation and enhancement or restoration (see chapter 5 for explanations). Accelerated succession is not a change scenario recognised for hedgerows in the metric. A baseline (t_0) and post-intervention (t_1) calculation is needed for each hedgerow or line of trees within a scheme.

8.26. The biodiversity metric 2.0 calculation tool simplifies the hedgerow and lines of trees calculation.

Rivers and Streams

8.27. Rivers and their associated floodplains are natural ecological networks used by multiple species. They are diverse and biologically rich, defined by their climate, geology and land cover. They are linear features with a high degree of landscape connectivity, as hydrological, geomorphological and biological processes create connectivity between channel, floodplain and terrestrial habitats. The channel, riparian zone (the land alongside the top of the river bank) and the floodplain are all inter-connected in a naturally functioning river system. They act as an area of dispersal and migration for aquatic and riparian species. There are a large variety of river types in Britain, from active upland boulder-bed rivers to slower-flowing lowland systems, including internationally rare Chalk Streams.

8.28. Most British rivers have been significantly affected by human intervention, in the form of land drainage, flood defence structures, development and direct habitat loss. This has, in some cases, fragmented the river corridor and changed the structure and function of the river channel, riparian zone and floodplain.

8.29. In the biodiversity metric 2.0 rivers and streams are defined as those classified as 'Main River' or 'Ordinary Watercourse'[26]. This classification includes all types of watercourses with a hydraulic function, which includes canals, canalised rivers and rivers with an ephemeral (temporary) nature, such as Chalk Streams. Coastal, tidal and inter-tidal reaches are not measured within the rivers and streams component of the biodiversity metric. These are covered in their own inter-tidal section. See chapter 9.

Calculating River and Streams Biodiversity Units (RBU)

8.30. We use 'River Biodiversity Unit' (RBU) as the unit of measurement for rivers and streams to clearly differentiate values from those representing area habitats and other linear habitats.

8.31. The equations used to calculate River biodiversity unit values are given in Box 8-3.

BOX 8-3: Calculating River Biodiversity Units (RBUs)

Equation 1: Existing (pre-intervention) (T_0) biodiversity value

$$\boldsymbol{T_0\ Baseline\ RBU} = \left(\boldsymbol{L^{t0}} \times \boldsymbol{Q_D^{t0}} \times \boldsymbol{Q_C^{t0}} \times \boldsymbol{Q_{SS}^{t0}}\right) \times \boldsymbol{R_{LBU}^{t0}}$$

Note: where the riparian zone has been measured as separate lengths of the river

Equation 2: Post-intervention (T_1) biodiversity value for river or stream creation

$$\boldsymbol{T_1\ Creation\ RBU} = \left[\boldsymbol{L^{t1}} \times \boldsymbol{Q_D^{t1}} \times \boldsymbol{Q_C^{t1}} \times \boldsymbol{Q_{SS}^{t1}}\right] \times \left[\boldsymbol{R_D^{t1}} \times \boldsymbol{R_T^{t1}}\right] \times \left[\boldsymbol{R_{OS}} \times \boldsymbol{R_{LBU}^{t1}}\right]$$

Equation 3: Post-intervention (T_1) biodiversity value for river or stream enhancement

$$\begin{aligned}\boldsymbol{T_1\ Total\ RBU\ after\ Enhancement} &= \left\{\left[\left(\left[\left\{\boldsymbol{L^{t1}} \times \boldsymbol{Q_D^{t1}} \times \boldsymbol{Q_C^{t1}}\right\} - \left\{\boldsymbol{L^{t0}} \times \boldsymbol{Q_D^{t0}} \times \boldsymbol{Q_C^{t0}}\right\}\right] \times \left\{\boldsymbol{R_D} \times \boldsymbol{R_T}\right\}\right)\right. \\ &\left. + \left\{\boldsymbol{L^{t0}} \times \boldsymbol{Q_D^{t0}} \times \boldsymbol{Q_C^{t0}}\right\}\right] \times \left\{\boldsymbol{Q_{ss}^{t1}}\right\} \times \left[\boldsymbol{R_{OS}} \times \boldsymbol{R_{lBU}^{t1}}\right]\end{aligned}$$

[26] Main Rivers are regulated by the Environment Agency, Ordinary Watercourses are regulated by Local Authority or Internal Drainage Boards.

L	Length of river or stream (kilometres)	R_T	Time to target condition (a risk factor)
Q_C	Condition (a quality measure)	t0	Before intervention
Q_D	Distinctiveness (a quality measure)	t1	Post intervention
R_D	Difficulty of creation or enhancement (a risk factor)	R_{OS}	Off-site Risk
		R_{LBU}	Riparian Loss of Biodiversity Unit modifier

Distinctiveness

8.32. Rivers and streams are important ecological features, both at a local and landscape level. The distinctiveness categories for rivers and streams are based on two classifications: Priority Habitats, as defined under section 41 of the Natural Environmental and Rural Communities Act 2006, and 'River Naturalness'.

8.33. Priority River Habitat include a number of river types[27]:

- Chalk Rivers
- Watercourses with water crowfoot assemblages (Habitats Directive Annex I habitat H3260)
- Active shingle rivers
- Headwater streams

8.34. The extent of physical modification, water quality, water availability and chemical status are parameters used to classify those rivers which have a high hydromorphological and ecological status. These rivers are defined as Priority River Habitat[28].

8.35. 'River Naturalness Assessment' has been created to highlight rivers and streams that should be classified as Priority River Habitat. The River Naturalness Assessment derives a number of class scores based on their perceived naturalness, ranging from 1 (natural systems) to 5 (modified).

8.36. Biodiversity metric 2.0 has used both Priority River Habitat and the River Naturalness Assessment to categorise distinctiveness due to the known lack of coverage of priority river habitat, particularly for headwater streams. The metric also includes those rivers which are classified as Priority River sub-types as High, to capture their intrinsic value (see Table 8-6).

8.37. The distinctiveness assessment should be a desk based exercise, using existing available information. If River Naturalness Assessment[29] class scores are not available then a naturalness survey will be need to be completed on site (Figure 8-1).

[27] See: http://jncc.defra.gov.uk/page-5706
[28] See: http://publications.naturalengland.org.uk/publication/6266338867675136
[29] See: http://priorityhab.wpengine.com/

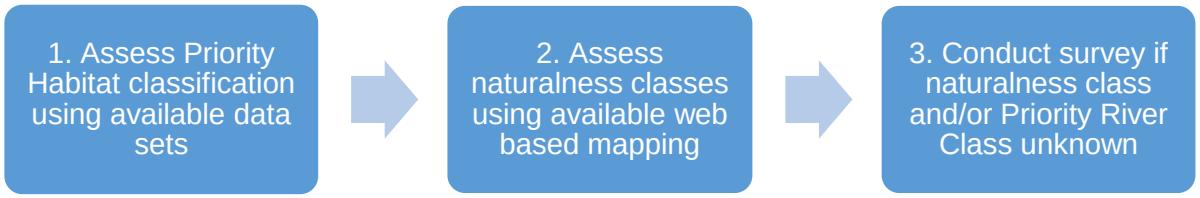


FIGURE 8-1: Recommended stages to follow when assessing Distinctiveness[30]

TABLE 8-6: Distinctiveness weightings for rivers and streams

Distinctiveness	Description	Weighting	Metric description
Very High	Is on the Priority Habitat Rivers map. OR Meets Class 1 on the River naturalness assessment system.	8	Rivers – Priority Habitat Rivers and Streams of very high hydromorphological & ecological status
High	Meets Class 2 or 3 on the River naturalness assessment system. and/or Is a River Priority habitat Sub-type • Headwater Streams • Chalk Rivers • Rivers with an abundance of water-crowfoots • Active Shingle Rivers	6	Rivers – Rivers & Streams of high distinctiveness and/or naturalness status.
Medium	Meets Class 4 or 5 on the River naturalness assessment system	4	Rivers & Streams (Other)

Condition

8.38. The rivers and streams condition assessment is used to describe on-site physical habitat diversity. To understand the condition of the river, we have to understand how the 'river type' should operate in a near-natural state, and the habitat features that are typical of that river type. We can then assess how far the current river system has departed from those conditions. This will also allow an understanding of how improvements to river channel, banks and riparian zone could improve condition.

8.39. Biological assessments, for example fisheries and macro-invertebrate, and water quality surveys, are useful complements to this assessment. However, their use

[30] Links to guidance on each stage:
1: http://publications.naturalengland.org.uk/publication/6266338867675136
2: http://priorityhab.wpengine.com/rivers-data/
3: http://priorityhab.wpengine.com/wp-content/uploads/River-naturalness-assessment-guidance-document-February-2019.pdf

should be scaled to the magnitude of impact and assessed by a competent freshwater ecologist.

The Rivers and Streams Condition Assessment

8.40. The rivers and streams condition assessment is based on the extent and diversity of observed physical features in the river channel and riparian zone (including the physical structure of vegetation) as well as the extent and types of any human modifications. The physical state of a river reach is a useful proxy for determining overall riverine ecological quality but it needs to be attuned to the type of river under consideration.

8.41. The rivers and streams condition assessment is based on geomorphic principles that are an extension of established citizen science surveys[31]. The assessment, called the River Metric Survey, is implemented in two parts[32]. A largely desk-based reach-scale assessment indicates the current river type. A subreach scale assessment based entirely on field survey captures physical features / habitats, vegetation structural features, and human interventions to assess the condition of the river at the development site, taking into account the type of river.

Important: the rivers and streams condition assessment requires accreditation and training

Part 1 - Reach scale desk-based assessment

8.42. The river is assigned to one of 13 river types that are likely to be encountered in England (Figure 8-2). These are a subgroup of 22 broad types of river that have been identified for Europe[33,34], including the United Kingdom[35]. The river type is determined firstly by identifying a homogenous reach that contains the proposed intervention site. This reach is identified using the latest Ordnance Survey (1:10,000 scale) maps or air photographs (e.g. Google Earth) and searching upstream and downstream from the proposed intervention site. To delimit the start and end point, a homogeneous river reach will show a reasonably consistent planform with no major tributary streams, on-line large lakes or reservoirs, as these could cause a marked change in the flow regime and sediment load.

8.43. Once the reach is determined, its gradient and 4 properties of its planform are measured to support an initial assessment of the river type. This is further refined using 4 properties of the river bed sediments observed in field surveys of sub-reaches (see below). The assignment of this indicative river type is automatically carried out within the River Metric Survey information system.

[31] See: https://modularriversurvey.org/river-metric
[32] For further information on the method please visit (https://modularriversurvey.org/river-metric).
[33] GURNELL ET AL., 2016. A multi-scale hierarchical framework for developing understanding of river behaviour to support river management. Aquatic Sciences, 78(1): 1-16.
[34] RINALDI, M., GURNELL, A.M., GONZÁLEZ DEL TÁNAGO, M., BUSSETTINI, M. & HENDRIKS, D., 2016. Classification of river morphology and hydrology to support management and restoration. Aquatic Sciences, 78(1): 17-33.
[35] ENGLAND AND GURNELL, 2016. England, J. and Gurnell, A.M. (2016) Incorporating Catchment to Reach Scale Processes into Hydromorphology Assessment in the UK. Water and Environment Journal, 30: 22–30.

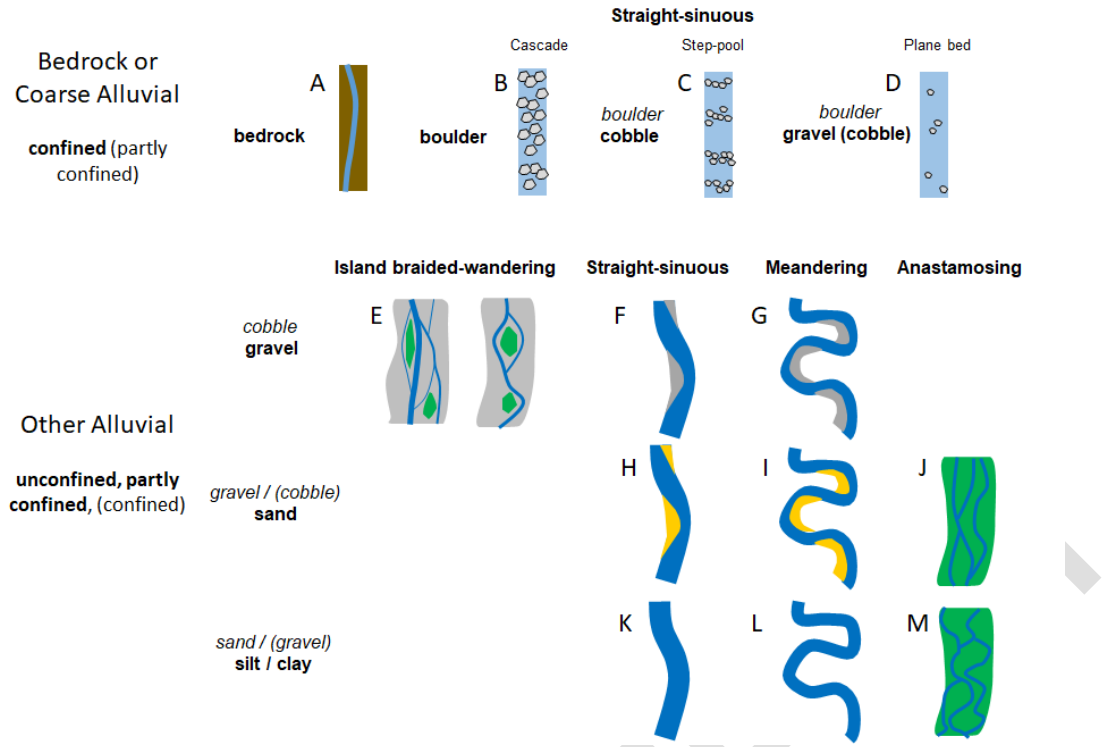


FIGURE 8-2: 13 river types found in Britain based on valley confinement, planform and bed material size (Gurnell et al., 2016, Rinaldi et al., 2016)

Part 2 - Sub-reach scale field assessment

8.44. The field element employs the MoRPh survey[36,37], which is applied to short lengths of river. For the River Metric Survey, 5 MoRPh field surveys are conducted on contiguous lengths (modules) of river. Each MoRPh module covers a river length that is approximately twice the river width (typically 10, 20, 30 or 40 m in length). Completing 5 contiguous modules provides information for a 50 to 200 m long sub-reach. Depending on the size of the development, the sub-reach survey of 5 modules is repeated to capture at least 20% of the total river length under consideration (i.e. 1 sub-reach survey every 250 to 1000 m). The River Metric Survey captures information on sediments, vegetation, morphological and water-related features; and the extent and severity of physical modification within the channel, channel margins, banks and riparian zone (to 10 m from the bank tops).

8.45. Once each set of observations for 5 contiguous modules is entered into the River Metric Survey information system, indicators of the condition of the sub-reach are automatically provided as well as an overall condition score (Table 8-7). The condition score is scaled to a range that is achievable by the particular river type. In addition, guidance is given on which specific geomorphic features are expected, or

[36] SHUKER, L.J., GURNELL, A.M., WHARTON, G., GURNELL, D.J., ENGLAND, J., FINN LEEMING, B. & BEACH, E., 2017. MoRPh: a citizen science tool for monitoring and appraising physical habitat changes in rivers. Water and Environment Journal, 31(3): 418-424.

[37] GURNELL, A.M., ENGLAND, J., SHUKER, L., WHARTON, G. (in review). The contribution of citizen science volunteers to river monitoring and management: International and national perspectives and the example of the MoRPh survey.

highly likely, to be observed in the field surveys if the river is functioning according to river type.

- The extent of the River Metric Survey is only required within the red line boundary of the intervention site (on-site and off-site).
- Surveyors are required to be accredited to use the River Metric Survey and be suitably qualified / experienced to identify the sources of modifications on the site and their potential solutions.
- A low risk condition assessment can be used in situations where the impact on the river reach is considered low, see below in section, Riparian Zone.

TABLE 8-7: Condition weightings for rivers and streams

Classification	Weighting
Good	5
Fairly Good	4
Moderate	3
Fairly Poor	2
Poor	1

Offsetting and River Type

8.46. The principles of the mitigation hierarchy should be applied. When seeking to achieve biodiversity net gain for River biodiversity metric units opportunities to create or enhance habitats within the development site should be explored in the first instance before offset habitat sites are considered.

8.47. The River Metric Survey information system can support scenario modelling of changes proposed within the surveyed sub-reaches to inform potential mitigation options (**See condition survey example**).

8.48. Offsetting locations can only be used on the same river type. This is to ensure condition scores and mitigation/compensation are consistent.

CASE STUDY 8-1: Improving condition

Tokynton Park, River Brent, River Restoration Project

	Habitat description	Condition Score	
Before	*Canalised section of river with no/limited in channel habitat diversity, hard revetment and low habitat diversity riparian zone.*	*Fairly Poor (2)*	
After	*Re meandered channel re-instating varied flow types and in channel features, such as riffles and pools. Hard revetment removed and banks re - profiled.*	*Fairly Good (4)** **the presence of invasive species and some sections of hard revetment limit this section achieving Good (5).*	

Riparian Zone

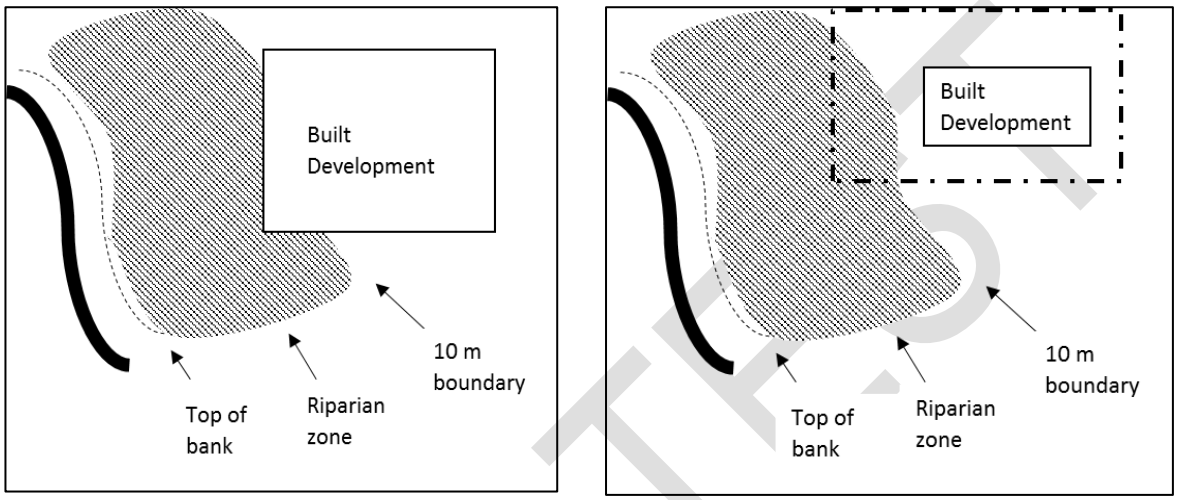
8.49. The riparian zone is an important feature of the river system. It is a highly functional unit that provides direct inputs and outputs of materials to and from the river channel, such as organic matter and sediments, as well as providing lateral and longitudinal connectivity for species movement.

8.50. In biodiversity metric 2.0 the riparian zone is defined as a 10m zone from top of the river bank, which would naturally be periodically flooded, and which directly influences the hydrological, geomorphological and biological functions and processes within the river corridor. As the riparian zone is an intrinsic part of the river system it is not considered as a separate habitat type but as a linear feature within the rivers and streams module of the metric. The state of the riparian zone needs to be taken account of in pre and post development calculations.

8.51. The condition of the riparian zone is assessed within the river metric survey using bank top data captured by the field survey. If built development is proposed within the riparian zone, a full condition assessment is required. A low risk condition assessment can only be used where built development is proposed where the riparian zone can be proved not to be a functional part of the river channel (Figure 8-3(a)) i.e.

- it does not contribute to the life cycle of aquatic or riparian species,
- it does not provide a role in sediment and flood management,
- it is not part of the active river system (i.e. there are areas of deposition of organic material)

8.52. Where the development (red line boundary) is within the riparian zone but no built development is proposed (Figure 8-3(b)) a low risk condition assessment can be used. The low risk calculator enters a default condition score of Moderate.



(a) (b)

FIGURE 8-3: Assessing condition in the riparian zone

(a) Built development is indicated within the riparian zone. Top of bank is denoted by dotted line, riparian zone is denoted by patterned stripes. Use full River Metric Survey condition assessment if the riparian zone is a functional part of the river system, use low risk assessment if riparian zone is not a functional part of the river system.

(b) Red line boundary (denoted by black line and dot) falling within the riparian zone. Top of bank is denoted by dotted line, riparian zone is denoted by patterned stripes. No built development is indicated within the riparian zone. Use low risk condition assessment

8.53. At the post-development assessment stage, if development encroaches into the riparian zone (or increases the footprint of development if development is already existing) this is measured as length of river impacted. This is calculated as Loss of River Biodiversity Units. The loss is measured in the distance (linear metres) that the development is within the riparian zone.

8.54. As the loss of River Biodiversity Units in the riparian zone is not calculated as an 'area' based unit, the metric needs to account for differing degrees of encroachment within the riparian zone. For example, a building that encroaches 5 m into the riparian zone requires a greater offset than one that encroaches by 1 m. The rivers and streams component of biodiversity metric 2.0 adds a multiplier for every 2 m that development encroaches into this zone. The closer the development is to the watercourse, the greater the River Biodiversity Units required (see Table 8-8).

TABLE 8-8: Encroachment weightings for rivers and streams

Encroachment	Multiplier
0 m	1
0.1 -2 m	0.95
2.01-4 m	0.9
4.01-6 m	0.85
6.01-8 m	0.8
8+	0.75
Watercourse*	0.1

8.55. The riparian zone can be enhanced through improvements in the condition of the riparian zone. For example, by removing hard standing or other structures, appropriate planting that improves riparian habitat complexity, reconnecting channel–riparian interactions, installing green roofs/walls, and/or the inclusion of wetland features such as backwaters and ponds.

8.56. Offsetting losses which are created through encroachment into the riparian zone are not restricted to creating riparian betterment. Gains can also be achieved through improvements to the condition of the river. For example, removing toe boarding or installing in-channel deflectors.

* We have also added a multiplier for encroachment into the watercourse. This would include culverting.

Spatial Location

8.57. Spatial Location has been included as a quality element of the rivers and streams module as a connectivity and strategic importance spatial multiplier (Table 8-9). Spatial location tools applied to other habitats within the biodiversity metric 2.0 are not applicable for rivers and streams.

TABLE 8-9: Spatial multiplier for rivers and streams

Description of multiplier	Spatial multiplier
Within waterbody	1.0
Outside waterbody	0.75
Outside catchment	0.5

Strategic significance

8.58. The purpose of the strategic significance multiplier is outlined in chapter 5. For the Rivers and Streams module we use the delivery of identified actions within River Basin Plans, Catchment Plans and Local Plans to represent delivery in priority areas.

TABLE 8-10: Strategic significance multipliers for rivers and streams

Description of multiplier	Strategic multiplier
Delivery of River restoration actions within: • **Local Plans** • **River Basin Management Plan** • **Catchment Plans** • **Catchment Planning System**	1.15
Low potential/ action not identified in any plan.	1

Risks

Difficulty of creation and enhancement

8.59. Rivers, by their nature, cannot be created. However, as many rivers and streams have been artificially moved or severely modified, the ability to change the character, processes and features within the channel and floodplain enables habitat to be 'created'. Here we define creation and enhancement for rivers and streams:

'Habitat creation, in this context, is defined as happening if, when you commence work on a site, you could not reasonably classify the habitat as being in 'Good condition'[38] based on the plant and animal communities present, but when you have completed the work you are confident that that habitat will, with the agreed management in place and all other things being equal, develop into river system exhibiting near-natural conditions.'

- An example of habitat creation: realigning a river which had previously been severely modified and channelised, to a natural course within its original floodplain
- An example of habitat enhancement: the introduction of large wood deflectors, brash berms, or works to the complexity or connectivity of the riparian zone.

8.60. With rivers and streams the risk associated with creation and enhancement are different from those for other habitats within the rest of the biodiversity metric 2.0. Difficulty of creation is defined as High, and difficulty of enhancement is scored as Moderate. This reflects the technical difficulty of habitat creation, which can often be limited by dispersal pathways of aquatic invertebrates, and achieving channel gradients that correctly allow process-form interactions.

TABLE 8-11: Difficulty of creation and enhancement multipliers for rivers and streams

Description of multiplier	Creation and enhancement multipliers
High difficulty	0.33
Moderate difficulty	0.67

[38] 'Good Condition' is defined through the River Metric Survey.

Time to create, enhance or restore

8.61. The time to target condition is related to the condition classification, and how far restoration efforts change the classification status. For example, moving from Poor to Good would take 10 years, moving from Moderate to Good would be 5, and so on. The time is based on the complexity of intervention needed to raise condition and the lag time needed for the biological communities to re-establish (Table 8-12).

Table 8-12: Time to target condition.

Classification	Time (years) to target condition
Good	**10**
Fairly good	**8**
Moderate	**5**
Fairly poor	**2**
Poor	**-**

Case Study 8-2: Results through Planning

Cornmill Gardens, River Ravensbourne

The river restoration scheme formed part of the 'Urban Renaissance in Lewisham' programme which aimed to create a new public open space within the Town Centre. The objective of the scheme was to remove the river from its concrete banks and create an attractive public open space. The river was restored by removing the concrete walls, regarding banks and improving riparian habitat and marginal planting, and installing gravels in the river channel. The scheme has improved this section of river for people, wildlife and flood risk.

Before

After

9: Coastal and Intertidal biodiversity unit assessment

9.1. Biodiversity metric 2.0 is an evolution of the original Defra biodiversity metric. Coastal and inter-tidal habitats will be added as an update to biodiversity metric 2.0 later in 2019. The intertidal and coastal environments are defined as:

- **Coastal:** all habitats above spring high tide limit (or above mean water level in non-tidal waters) occupying coastal features and characterised by their proximity to the sea, including coastal dunes and wooded coastal dunes, beaches and cliffs. Includes free-draining supralittoral habitats adjacent to marine habitats.
- **Intertidal habitats:** habitats located between the mean high water and mean low water mark and directly connected to marine waters. Marine waters may be fully saline, brackish or almost fresh. It includes those below spring high tide limit (or below mean water level in non-tidal waters) and enclosed coastal saline or brackish waters, without a permanent surface connection to the sea but either with intermittent surface or sub-surface connections (as in lagoons).

9.2. We are in the process of developing biodiversity metric 2.0 parameters so that it can be applied on these habitats. A variety of factors are being considered to reflect the differences between terrestrial and intertidal/coastal environments. For example, a suitable classification is needed as UKHABs classification used in the terrestrial biodiversity metric does not cover the habitats in coastal and intertidal environments to the required level. EUNIS[39] classification has been chosen as it has the required level of detail and is commonly used.

9.3. This supplementary metric will be area-based for simplicity, although it is recognised that area measurements can present challenges when considering ephemeral habitats such as biogenic reefs, or vertical habitats such as sea cliffs and caves.

9.4. Distinctiveness levels of habitats will be based on the nature conservation value of the habitat. The condition of habitats, is being defined so that it can be readily evaluated by a surveyor but in accordance with the established assessment of condition within coastal sites.

9.5. The way connectivity is defined for habitats that are covered and inter-connected by highly dynamic tidal water bodies will also differ from terrestrial environments. Finally, alternative ways of defining other parameters such as spatial significance or the risk factors are also being considered.

9.6. The accompanying calculation tool will be updated later in 2019 to include the inter-tidal and coastal habitats to enable ease of calculation of biodiversity losses and gains for these habitat types.

9.7. The intertidal zone between mean high water and the mean low water mark is covered by marine and land-use planning systems. Therefore we are also looking at the join up and interaction of the different planning systems and delivery mechanisms in this area.

[39] The European Nature Information System (EUNIS) habitat classification is a pan-European system, developed by the European Environment Agency (EEA) in collaboration with experts from throughout Europe. Further information can be obtained from the EEA (https://www.eea.europa.eu/data-and-maps/data/eunis-habitat-classification) and from JNCC pages including correlation sot other classifications (http://jncc.defra.gov.uk/page-3365)

10: Using biodiversity metric 2.0 with other metrics

10.1. There may be situations where a project wishes to use metrics to quantify other environmental factors, such as other ecosystems services or use a metric for a specific species. It is perfectly acceptable to use the biodiversity metric 2.0 alongside other metrics so long as you to remember that each metric is a distinct entity and the units of each metric must be kept separate in any metric 'account'. You cannot sum the units of different metrics to give an overall value.

Species Metrics

10.2. As previously stated, biodiversity metric 2.0 uses habitats as a proxy for wider biodiversity. It does not explicitly seek to measure or meet the needs of individual species although many can expect to benefit from the creation of new or enhanced habitats.

10.3. Where a species metric is used in a project the rules set out below should be followed to ensure their use is compatible with the biodiversity metric 2.0 habitat metric. Box 10-1 illustrates how a species metric can be used alongside biodiversity metric 2.0.

Species Rules	
Species Rule 1	Species metric(s) are a distinct entity and an evaluation of 'species biodiversity units' must be kept separate in any 'account' of the effects of an intervention on biodiversity. You must not sum habitat and species units to derive a total biodiversity unit value.
Species Rule 2	Species metric(s) can be used as an additional source of information to compliment the information provided by the biodiversity metric 2.0. It is important that the habitat-based metric is used as the primary tool for evaluating biodiversity change. Using a species metric in isolation can result in a significant risk of a net loss in biodiversity.
Species Rule 3	A species metric needs to be consistent with all key principles of the biodiversity metric 2.0, particularly the principle the metric does not change the protection afforded to biodiversity (Principle 1).
Species Rule 4	The legal provisions that apply to protected species (and habitats) take precedence in designing and planning the approach used to mitigate or compensate for impacts on species. An acceptable design must – first and foremost - satisfy these legal requirements, even if this does not result in the best possible biodiversity unit outcome (based an evaluation using the biodiversity metric 2.0).
Species Rule 5	It is acceptable for the same area of habitat to be separately scored using the biodiversity metric 2.0 and one or more species metrics. Because each metric describes the value of that area of habitat from a distinct perspective the corresponding outputs represent a different 'biodiversity currency' and must not be summed together.

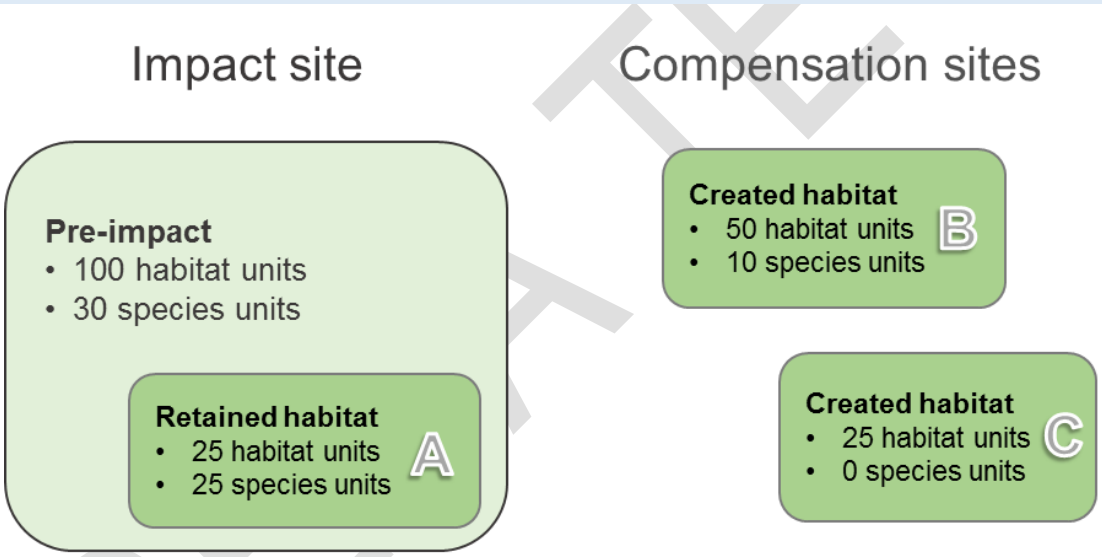
BOX 10-1: Using species and habitat metrics together

Where species metrics are used by a project they should be used alongside biodiversity metric 2.0 to give a broad understanding of the impact of an intervention on biodiversity.

The effects of an intervention on both a species present on a site and on the habitats at that site should be scored separately using their respective metric. Although the outputs of the two metrics are recorded separately this does not increase the level of compensation required. The need to satisfy a target level of units for each (e.g. to achieve non-net-loss) may, however, have a bearing on design and location of compensation.

If, for example, a development destroys an area of grassland that provides an important terrestrial habitat for a protected species population, it may be that compensating for the grassland loss at an off-site location can satisfy the biodiversity metric 2.0 unit requirement to achieve no-net-loss, but be too remote or unsuitable for the protected species population. By the same measure, locating the new grassland habitat at a location that is ecologically more important to protected species could create a greater net benefit for the species for the same number of biodiversity metric units.

The example below illustrates how species and habitat metrics can work in parallel.



Biodiversity unit accounts	Pre-impact site units	Site A units	Site B units	Site C Units	Overall change Compensation – Impact	Outcome
Habitat units	**100**	50	25	25	**(50+25+25)-100=0**	**NNL**
Species units	**30**	10	0	25	**(10+0+25)-30=+5**	**Net Gain**

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Glossary

BIODIVERSITY	Biological diversity means the variability among living organisms from all sources including, inter alia, 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. Source: Convention on Biological Diversity
COMPENSATION	Measures to recompense make good for loss of biodiversity caused by a project. A more general term than biodiversity offset, which is one type of compensation. Compensation may achieve No Net Loss (in which case it is an offset) or it may involve reparation that falls short of achieving no net loss (and is therefore not an offset). Source: adapted from IUCN (2016)
ECOLOGICAL EQUIVALENCE	In the context of biodiversity offsets, this term is synonymous with the concept of 'like for like' and refers to areas with highly comparable biodiversity components. This similarity can be observed in terms of species diversity, functional diversity and composition, ecological integrity or condition, landscape context (e.g., connectivity, landscape position, adjacent land uses or condition, patch size, etc.), and ecosystem services (including people's use and cultural values). Source: BBOP (2012a).
ECOLOGICAL FUNCTIONALITY	The role and function that a habitat and supporting processes play in supporting an ecosystem. A habitat may be considered to have achieved ecological functionality when it fully supports all of the typical or target species.
ECOSYSTEM	a biological community of interacting organisms and their physical environment
FEP	Farm Environment Plan
HABITAT	The place or environment in which plants and animals live
HBU	Hedgerow Biodiversity Unit. The unit of measurement used for hedgerows and lines of trees.
IRREPLACEABLE HABITATS	Habitats that cannot be recreated within a specified time frame (typically, the timescale of the project)
METRICS	A set of measurements that quantifies results
NET GAIN	Net gain is an approach to development, and/or land management, which aims to leave the natural

	environment in a measurably better state than beforehand.
NO-NET-LOSS NNL	Impacts caused by a project are balanced by biodiversity gains through compensation measures implemented in the locality of the project. The biodiversity changes need to be evaluated against a baseline (e.g. a reference point or trajectory without the project occurring, or prior to the project occurring) of the relevant biodiversity features (in this case the habitats) being impacted by the project. From a conservation perspective, achieving a NNL goal for a given project ultimately (i.e. in the long-term) means no net reduction in the: • diversity within and among species and vegetation types; • long–term viability of species and vegetation types; and • functioning of species assemblages and ecosystems, including ecological and evolutionary processes.
OFF-SETS	Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is to achieve No Net Loss and preferably a Net Gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity. Source: BBOP (2012).
SSSI	Sites of Special Scientific Interest. Sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features.