Biodiversity Impact Calculator

Quick reference instruction
Habitat calculator - Linear calculator - Useful hints

For Local Planning Authority use only.

Please do not edit the formulae or structure of the calculator.
Please contact Environment Bank if you require additional rows or have feedback.

For a full guide on how to complete the calculator please see accompanying guidance document.

Habitat calculator

1. Enter all habitats found within the development red line boundary into the top section of the Biodiversity Impact Calculator - Linear features e.g. hedges to be entered on into the Linear Calculator.

2. For each habitat, enter area (hectares to 2d.p.), and existing condition (see accompanying guidance document) and complete relevant columns depending on whether the area of habitat will be retained, restored or lost with new habitat creation. As follows:

a. Area of existing habitat to be retained and maintained in current condition - enter under D.
No further entry required.
E.g. Area of existing scrub at development edge. To be retained and protected from damage during development works and to be managed in current condition thereafter.

b. Area of existing habitat to be retained and restored - enter under F.
Enter target habitat details into section 3. - Existing biodiversity units of area to be entered under V.
E.g. Existing species poor grassland to be retained and protected from damage during development works and to be subsequently enhanced with appropriate longterm management to restore to species rich grassland.

c. Area of existing habitat to be retained during development works with new habitat creation - enter under H.
Enter target habitat details into section 2. - Existing biodiversity units of area to be entered under V.
e.g. Existing improved grassland to be be protected from damage during development works and to be sensitively planted with new native woodland and managed thereafter.

d. Area of habitat to be lost to development works - enter under J.
Enter new habitat to be creation into section 1
E.g. Arable or grassland which can not be protected from damage from development works. Habitats to be recreated could include built environment, amenity area and new biodiversity compensation habitats.

3. If new habitat is to be restored/created as per 2.b/c above - It must be of equal or higher distinctiveness and condition compared with the existing habitat. If this is not the case the habitat should be entered in section 1 (as habitat loss and new habitat creation) as per 2.d.

4. Indirect negative impacts are when the construction works, or resultant development will cause a negative impact to a habitat, but not habitat loss - usually but not always adjacent to the site. - Measures may be able to be taken to avoid or mitigate these impacts.
E.G. construction pollution into an adjacent watercourse / future permanent light spillage into an adjacent woodland / increase public pressures to adjacent nature reserve.

6. Any land outside the development red line (i.e. adjacent blue line land ownership) may also be entered into the calculator as part of the onsite compensation package.

7. Any off-site land should not be entered here and must be assessed separately as part of a biodiversity offset proposal, as strategic location factors may apply - Environment Bank can assist with these calculations.

Linear calculator

1. The linear calculator accounts for linear features, such as the loss of hedges.

2. These features are assessed using length (m) and condition and must be compensated/offset by the creation of new hedges or other appropriate linear feature.

3. Linear features are particularly valuable with regard to connectivity. Their biodiversity net loss/gain is not able to compensate for net loss/gain of other habitats.

Useful hints

1. Utilise the comments column to provide reasoning for condition assessments and any amendments you have made to distinctiveness or risk factors.

2. When selecting 'other' habitats, enter the habitat type in the comments box - appropriate risk factors will also need to be entered. Provide reasoning for all.

3. Remember to carry-down and manually enter 'existing' biodiversity units in the lower boxes, of the retained areas of land where habitats are to be created or restored - sections 2-3.

4. The total area of habitat (ha) for each option above must equal the total ha of habitats in the appropriate following section.- E.G. The total area of habitat loss 'J' must equal the total area of habitat recreation 'Q1'

5. Low distinctiveness habitats should be entered as poor condition as standard or reasoning should be provided otherwise. They should only be recorded as in a good condition when strong evidence is presented.

6. Proposed gardens should be entered as low distinctiveness, poor condition.

7. Due to feasibility of creation and management of good quality habitat within the restraints of a development site, a good condition target should not be set for proposed habitat restoration or creation without strong supporting evidence, it may not be achievable within a typical development for high distinctivenes habitats.

8. Habitat option 'scattered trees' refers to discrete parcels mapped as scattered trees and does not refer to total combined canopy cover area of occasional trees found across a development site.

9. Do not include individual trees in the assessment - these should be considered separately within the planning process (but should still be valued and retained).

With acknowledgement to Warwickshire County Council Ecological Services who's Biodiversity Impact Assessment, which was developed in partnership with Environment Bank, was used as a basis for the assessment tool.

Definitions

For the purposes of this calculator definitions are as follows:

Distinctiveness - The distinctiveness of a habitat includes parameters such as species richness, diversity, rarity (at local, regional and international scales) and the degree to which a habitat supports species rarely found in other habitats (Treweek et. al. 2010).
Condition - Refers to the condition of the habitat present. All habitats, including low distinctiveness habitats require condition assessments using the Farm Environment Plan (FEP) manual where applicable, along with ecological expertise. Please see accompanying guidance for more information.
Temporal factor - The time from commencement until the target condition will be reached.
Difficulty factor - The risk of failure for the habitat to reach its target.
Habitat protection - Areas which will be protected from development works, such that no negative impact
Habitat retention and maintenance - Existing habitats which are not to be negatively impacted by the development and will be maintained in the current condition.
Habitat loss - Areas to be negatively impacted by a development.
Habitat recreation - Habitats created on areas of negatively impacted by development works. E.G. built environment and amenity areas or new conservation habitats.
Habitat creation - New habitats or higher value, created on retained and protected areas. E.G. woodland creation on retained grassland.
Habitat restoration - Habitats which are retained and restored/enhanced to a higher value. E.G. Meadow restoration.
Indirect negative impacts - Habitats which are primarly off-site, which will be retained, but will have a loss in value due to indirect impacts such as light spillage, pollution or increased disturbance.
Gross biodiversity loss - The total biodiversity unit loss of direct and indirect impacts that will require compensation on or off-site.
Trading-down correction - Habitats can only be compensated for by the restoration/creation of habitat of the same, or higher value - for e.g. amenity grassland cannot compensate in any way for the loss of species-rich neutral grassland. High distinctiveness habitat must be compensated for like-for-like.
On-site compensation gain - The total biodiversity gain of all on-site habitats created and restored, but taking into account the downtrading correction.
Net biodiversity balance - The final net biodiversity impact once on-site habitat compensation has been taken into account. A +ve score = biodiversity gain on-site. A -ve score indicates a loss where a biodiversity offset would be recommended.
Percentage of gross impact loss - % of gross biodiversity loss which will not be compensated for through on site measures.
Percentage of site biodiversity loss - % Percentage of net biodiversity loss of existing site biodiversity units

Development Biodiversity Impact Summary

Local Planning Authority:	Cherwell
Site name:	Land at Tappers Farm
Planning application ref:	18/00792/OUT
Site grid reference:	SP 46180 38373
Assessor:	Thomas Fawley
Date:	16th August 2018

Biodiversity impact accounting	**Area (ha)**	**Units**
Existing site	2.01	4.22
Gross biodiversity loss	1.91	3.82
Onsite compensation gain		3.62
Net biodiversity balance		**-0.20**
Percentage of gross impact loss		**5.20**
Percentage of site biodiversity loss		**4.71**

Linear features	**Length (m)**	**Linear units**
Total existing length onsite	550.0	550.0
Linear loss	0.0	0.0
New proposed hedgerows	0.0	
Net linear balance	**0.0**	

Development biodiversity impact		**Units**
Habitats	Net biodiversity loss	-0.20
Linear	Neutral impact	0.0

Offsite conservation credit requirement to deliver no net loss to biodiversity

Habitat	**Conservation credit requirement**
Total habitats (units)	**-0.20**
Total Linear (m)	**0.00**

See adjacent sheet for habitat specific requirements

For any questions with regard to biodiversity impact and this development, or if there is an anticipated loss to biodiversity and no further ecological enhancements can be incorporated within the development it may be possible to compensate for this loss through a biodiversity offsetting scheme. Please contact us.

Environment Bank
email: admin@environmentbank.com
tel: 07527 035359
web: www.environmentbank.com

Offset requirement habitat details

Distinctiveness	Habitat	Conservation credit requirement	
Linear Features	Hedgerows and trees	0.0	like-for-like
	Ditches	0.0	
	Other	0	
Low	**TOTAL**	**-0.20**	Trade up
Medium	**TOTAL**	**0**	Same or better
High	**TOTAL**	**0.00**	Like-for-like
	Arable: Arable field margins	0	
	Arable: Other high distinctiveness arable	0	
	Other Features: Other high distinctiveness feature	0	
	Grassland: Calaminarian grasslands	0	
	Grassland: Lowland dry acid grassland	0	
	Grassland: Other acid grassland	0	
	Grassland: Lowland calcareous grassland	0	
	Grassland: Upland calcareous grassland	0	
	Grassland: Other calcareous grassland	0	
	Grassland: Lowland meadows	0	
	Grassland: Upland hay meadows	0	
	Grassland: Marsh/marshy grassland	0	
	Grassland: Purple moor grass and rush pastures	0	
	Grassland: Other high distinctiveness grassland	0	
	Woodland: Native broadleaved woodland	0	
	Woodland: Lowland Beech and Yew woodland	0	
	Woodland: Lowland mixed deciduous woodland	0	
	Woodland: Upland mixed Ashwoods	0	
	Woodland: Upland Oakwood	0	
	Woodland: Wet woodland	0	
	Woodland: Native Pine woodlands	0	
	Woodland: Wood-pasture and parkland	0	
	Woodland: Scattered trees some veterans	0	
	Woodland: Traditional orchard	0	
	Woodland: Bracken with diverse flora	0	
	Woodland: Other high distinctiveness woodland	0	
	Heathland: Lowland heathland	0	
	Heathland: Mountain heaths and Willow scrub	0	
	Heathland: Upland heathland	0	
	Heathland: Wet heath	0	
	Heathland: Other high distinctiveness heathland	0	
	Freshwater: Aquifer fed naturally fluctuating water bodies	0	
	Freshwater: Standing water	0	
	Freshwater: Priority ponds	0	
	Freshwater: Rivers and streams	0	
	Freshwater: Other high distinctiveness freshwater	0	

Wetland: Blanket bog	0
Wetland: Lowland raised bog	0
Wetland: Lowland fens	0
Wetland: Upland flushes, fens and swamps	0
Wetland: Coastal and floodplain grazing marsh	0
Wetland: Reedbeds	0
Wetland: Other high distinctiveness wetland	0
Coastal & Estuary: Coastal saltmarsh	0
Coastal & Estuary: Coastal sand dunes	0
Coastal & Estuary: Coastal vegetated shingle	0
Coastal & Estuary: Maritime cliff and slopes	0
Coastal & Estuary: Saline lagoons	0
Coastal & Estuary: Other high distinctiveness coastal	0
Inland Rock: Open mosaic habitats on prev. dev. land	0
Inland Rock: Inland rock outcrop and scree habitats	0
Inland Rock: Other high distinctiveness rock	0

Biodiversity Impact Calculator - Habitats

v1.2 - December 2014

Local Planning Authority:	Cherwell
Site name:	Land at Tappers Farm
Planning application reference number:	18/00792/OUT
Site grid reference:	SP 46180 38373
Assessor:	Thomas Fawley
Date:	16th August 2018
Edit comments:	

KEY	
	No action required
	Enter value
	Drop-down menu
	Calculation
	Automatic lookup
	Result

							Existing bidiversity units								
							Areas to be retained and protected during development						**Habitats to be lost and subsequent recreation**		
	Existing site habitats Please enter all existing habitats within the development site.		**Existing habitat distinctiveness**		**Existing habitat condition**		**Habitats to be maintained** No further calculation		**Habitats to be restored** Enter target in section 3		**New habitat creation** Enter target in section 2		Enter target in section 1		
Parcel ID	Existing habitat baseline	Habitat area (ha)	Distinctive	Score	Condition	Score	Area (ha)	Units maintained	Area (ha)	Units to be enhanced	Area (ha)	Units to be enhanced	Area (ha)	Units lost	**Comment**
	Direct Impacts and retained habitats	A		B		C	D	DxBxC = E	F	FxBxC = G	H	HxBxC = I	J	JxBxC = K	
1	Grassland: Improved grassland	1.50	Low	2	Poor	1	0.00		0.00		0.00		1.50	**3.00**	
2	Woodland: Scattered trees	0.10	Medium	4	Poor	1			0.10	0.40					
3	Built Environment: Buildings and hardstanding	0.20	Low	2	Poor	1							0.20	**0.40**	
4	Other Features: Bare ground	0.21	Low	2	Poor	1							0.21	**0.42**	
	Total	2.01				Total	0.00	0.00	0.10	0.40	0.00	0.00	1.91	3.82	L
														∑(A x B x C)	
													Existing site biodiversity units	4.22	

	Indirect negative impacts Including off site habitats	M	Distinctiveness B		Condition C		Value of loss from indirect impacts MxAxB = Oi, Oii	Oi - Oii	
Before									Offsite habitats unlikely be affected negatively as use is already similar as to what the are expected to be post developmen t.
After									

Before										
After										
Before										
After										
Before										
After										
	Total	0.00						0.00	P	GBL = L + P
										Gross biodiversity loss 3.82

Parcel ID	**Proposed habitats on site** Development, mitigation and onsite compensation		**Target habitats distinctiveness**		**Target habitat condition**			**Temporal factor**		**Difficulty factor**		**Biodiversity units generated**	**Comment**
	Target habitat	Area (ha)	Distinctive	Score	Condition	Score		Time (years)	Score	Difficulty	Score		
	1: Habitat recreation Enter target habitat to be recreated on area of development habitat impact	Q1		R1		S1			T1		U1	(Q1 x R1 x S1) / T1 / U1	
1	Grassland: Other high distinctiveness grassland	0.13	High	6	Good	3		5 years	1.2	Low	1	**1.95**	
2	Built Environment: Buildings and hardstanding	1.47	None	0	Good	3		5 years	1.2	n/a	1	**0.00**	
3	Grassland: Amenity grassland	0.30	Low	2	Moderate	2		5 years	1.2	Low	1	**1.00**	
4	Freshwater: Sustainable Urban Drainage Systems	0.01	Medium	4	Good	3		5 years	1.2	Low	1	**0.10**	
	Total	**1.91**									Total	3.05	W
	2: Habitat creation Enter new target habitat to be created on land protected during development. To be of higher value than existing	Q2		R2		S2	Existing value V2 (= I)		T2		U2	((Q2 x R2 x S2) - V2) / T2 / U2	
	Total	**0.00**									Total	0.00	X
	3: Habitat restoration **Enter target habitat of retained areas to be restored**	Q3		R3		S3	Existing value V3 (= G)		T3		U3	((Q3 x R3 x S3) - V3) / T3 / U3	
1	Woodland: Scattered trees	0.10	Medium	4	Good	3	**0.40**	10 years	1.4	Low	1	**0.57**	
	Total	**0.10**									Total	0.57	Y
											Trading down correction	0.00	Z
											Onsite compensation gain	**3.62**	OCG = W + X + Y - Z
												NBB = OCG - GBL	
											Net biodiversity balance	**-0.20**	Net loss and biodiversity off
											Percentage of gross impact loss	5.20	
											Percentage of site biodiversity loss	4.71	

setting requirement

Biodiversity Impact Calculator - Linear Features

v1 - October 2014

Local Planning Authority:	Cherwell
Site name:	Land at Tappers Farm
Planning application reference number:	18/00792/OUT
Site grid reference:	SP 46180 38373
Assessor:	Thomas Fawley
Date:	06/08/2018
Edit comments:	

KEY	
	No action required
	Enter value
	Drop-down menu
	Calculation
	Automatic lookup
	Result

	Existing Linear Features		**Existing Linear Condition**		**Development Impact**		**Compensation length requirement**
Linear ID	Existing linear baseline	Existing length (m)	*Condition*	*Score*	Length to be retained and managed (m)	Length to be removed (m)	
		A		B	C	A - C = D	D x B = E
1	Hedges/trees: Hedgerows	170.0	Poor	1	170.0		**0.00**
2	Hedges/trees: Hedgerows	100.0	Poor	1	100.0		**0.00**
3	Hedges/trees: Hedgerows	110.0	Poor	1	110.0		**0.00**
4	Hedges/trees: Hedgerows	30.0	Poor	1	30.0		**0.00**
5	Hedges/trees: Hedgerows	30.0	Poor	1	30.0		**0.00**
6	Hedges/trees: Hedgerows	80.0	Poor	1	80.0		**0.00**
7	Hedges/trees: Hedgerows	30.0	Poor	1	30.0		**0.00**
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
	Total	550.0			550.0	0.0	0.0

	Proposed Linear Features On S
Linear ID	New linear features created
	Total

Gross linear loss
Onsite linear compensation gain

Net linear balance
(accounting downtrading)

site
Proposed length (m)
A
0.0

0.0
0.0


0.0