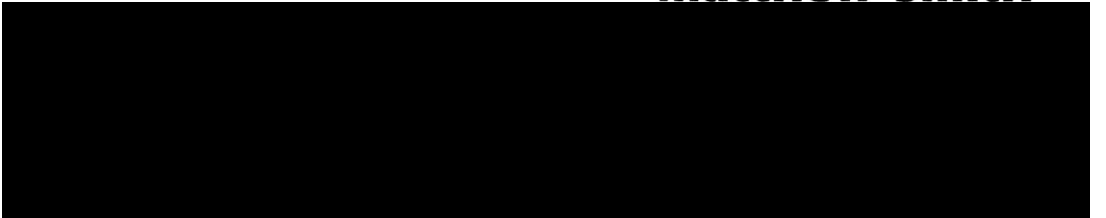


Bartons Road, Havant

Invertebrate Survey 2025

Matthew Smith



Bartons Road, Havant - Invertebrate Survey 2025

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Cover Photo: *Tipula maxima*, Warburg Reserve, May 2023

Introduction

This survey was commissioned to investigate the invertebrate fauna of a 1.7 Ha post industrial site at the west end of Bartons Road in Havant.

Method

The survey was carried out on 1 August 2025. The visit was made during warm, sunny weather when invertebrates were likely to be active. Samples were collected using both a butterfly net and sweep net. Beating was used to sample invertebrates visiting hedgerow flowers and foliage, and direct searching was used to look for invertebrates under debris or associated with dead wood.

Where possible, species identifiable in the field were recorded and released. Voucher specimens were killed with ethyl-acetate for subsequent identification, with specimens being identified to species. A collection of voucher specimens has been retained for the majority of the scarce and local species identified, the exceptions being Lepidoptera where field identification was used in all cases.

Conservation Status Categories

For the purposes of determining priorities for conservation action, invertebrates are assigned a conservation status. The rarest or most threatened species are usually included in a 'Red List' or 'Red Data Book'. These Red Lists may operate at an International, National or Regional level (e.g. County Red Data Books).

In the UK, the British Red Data Book for Insects was published in 1987 (Shirt, 1987). This marked the first attempt to produce a comprehensive statement on the status of the most threatened insects in the UK and introduced the various 'Red Data Book' categories (e.g. RDB 1, RDB 2) into UK insect conservation. The publication by the Joint Nature Conservation Committee (JNCC) of a series of reviews covering various groups of insects such as bees, wasps and ants (Falk, 1992) or some of the beetle families (Hyman & Parsons, 1992) extended the use of conservation statuses to the next tier of uncommon insects (Nationally Notable/Nationally Scarce species). All of these publications based their criteria for assigning conservation statuses on work produced by the International Union for Nature Conservation (IUCN).

In 1994 the IUCN produced revised criteria for assessing the conservation status of invertebrates and other animals. This system was adopted by the JNCC in 1995 as the new standard for Red Lists in Britain. Although broadly similar to the old system, some of the selection criteria have been amended and a revised set of conservation categories have been introduced, though classifications such as Nationally Scarce (Nationally Notable) are retained.

The first JNCC publication to make use of the revised status system is the review of water beetle species (Foster, 2000). This has since been revised and republished (Foster, 2010). It is planned that previously published reviews will be revised and republished using the new system. Accordingly, this report uses the new status categories for groups where new reviews have been published and the older status categories for all other invertebrates recorded during the survey.

Unfortunately, the revised system does not discriminate between those species that were previously included in the old Local or Common categories, and many of the new status categories are somewhat cryptic (e.g. LRnsB). In order to allow comparison between various invertebrate groups, for those species where the new status is used an equivalent 'old' status follows in parentheses. Criteria for the various revised categories are included in the report appendices.

Results

A total of 58 species of invertebrate were recorded during the survey. These included 2 Red Listed species, 1 Nationally Notable (Nationally Scarce) species and 12 species with Local distributions. Details of the criteria for the various conservation status categories are included in the report appendices. Table 1 gives a summary of the various species of invertebrate recorded during the survey by Order and conservation status. An overall species list and short notes for all of the Notable and Local recorded during the survey are provided in the appendices.

Table 1

Number of invertebrate species recorded from each Order.

Order	Total Species	Red Listed Species	Notable Species	Local Species
Odonata - Dragonflies & Damselflies	1	-	-	-
Orthoptera - Grasshoppers & Crickets	1	-	-	-
Hemiptera - True Bugs	5	-	-	2
Lepidoptera - Butterflies & Moths	13	1	-	1
Diptera - Flies	17	-	-	3
Hymenoptera - Bees, Wasps & Ants	17	1	1	5
Coleoptera - Beetles	4	-	-	1
Total	58	2	1	12

Two species recorded during the survey, the Small Heath butterfly *Coenonympha pamphilus* (VU) and the Cinnabar Moth *Tyria jacobaeae* are BAP / Section 41 Species.

Discussion

Prior to 2016, the Bartons Road site was occupied by a central large office building with additional building and extensive car parking to the south. In 2016/2017, the buildings were demolished, with the resulting coarse rubble and concrete being left on site in the form of a large, approximately 2m high flat topped mound. Looking at photographs on Google Earth, it appears further site clearance works were undertaken in 2020.

Since 2020, the site appears to have had no major works carried out, allowing natural regeneration to produce an area of short grassy sward over the old car parking areas while the central mound of rubble remains mostly unvegetated. Scrub has developed on the south and west sides of the site where there used to be managed hedge lines prior to demolition.

The survey recorded a total of 58 species of invertebrate, including 2 Red Listed species, 1 Nationally Notable species and 12 species with Local distributions. The remaining species are mostly common, ubiquitous species that can be found in most situation in southern Britain.

With many invertebrate species, particularly the aculeate Hymenoptera, it is some time since a formal assessment of their conservation status has been published. The most recent information on the current distribution of the Median Wasp *Dolichovespula media* (Na), which was recorded during the survey, suggests its status is need of revision and the species should be regarded as Common. However, until the publication of a revised Red Data book or Species Status Review the current published statuses are those generally used for site assessment and comparisons between sites.

Brownfield sites can often support a large number of Hymenoptera species, particularly those ground nesting species that require hot, dry conditions in which to construct their nests. However, this survey only recorded 17 species of bees, wasp and ants, and only approximately half of these are ground nesting species. At this site, the large mound of demolition debris in the centre of the site is very coarse, with little in the way of areas of sands or soils that could be used for nest construction. Similarly, the very shallow sward developing over the old car parking areas offers little in the way of nesting potential for aculeate Hymenoptera. The small Red Listed solitary bee *Hylaeus incongruus* (RDB 3), recorded visiting the flowers of some ornamental shrubs on the east boundary, nests in hollow twigs and stems.

The survey also recorded the Small Heath butterfly *Coenonympha pamphilus* (VU). This record is derived from the sighting of a single individual observed for just a few minutes in the middle of the survey period. This species is normally found in small colonies, if a colony is present one would expect to see them throughout the day, particularly when investigating such a small site as this so it is not certain that the species is resident on site.

In some situations, the developing open habitat mosaic (OHM) of a "brownfield site" site such as this can become an important site for invertebrates. However, at Bartons Road, this appears not to be the case. The site itself is sparsely vegetated with limited floral resources, and offers little in the way of potential nesting sites for fossorial aculeates species. Overall, only 58 species were recorded, with only 17 species of Hymenoptera and 17 species of flies

recorded. In the experience of the surveyor, on OHM sites of high invertebrate quality one could reasonably be expected to record 2 or 3 times the number of species found at Barton Road, along with a significant increase in the number of Red Listed, Nationally Scarce or Local invertebrates. Overall, the results of the survey would suggest the site is of limited invertebrate interest.

Appendix I - Invertebrate Species List

The invertebrate species recorded from the survey are listed below. The current conservation status for each species is shown further details for each of the Rare, Notable and Local species are provided in the Species Notes section of the report.

Order / Family / Species	Common Name	Status
Odonata		
<u>Aeshnidae</u>		
<i>Aeshna cyanea</i>	Southern Hawker	LRlc (Common)
Orthoptera		
<u>Acrididae</u>		
<i>Chorthippus brunneus</i>	Common Field Grasshopper	LRlc (Common)
Hemiptera		
<u>Miridae</u>		
<i>Adelphocoris lineolatus</i>		
<u>Pentatomidae</u>		
<i>Aelia acuminata</i>	Bishop's Mitre	LRlc (Local)
<i>Dolycoris baccarum</i>	Sloe Bug	LRlc
<i>Palomena prasina</i>	Common Green Shieldbug	LRlc
<u>Scutelleridae</u>		
<i>Eurygaster testudinaria</i>		LRlc (Local)
Lepidoptera		
<u>Arctiidae</u>		
<i>Tyria jacobaeae</i>	The Cinnabar	Common
<u>Lycaenidae</u>		
<i>Polyommatus icarus</i>	Common Blue	LRlc (Common)
<u>Nymphalidae</u>		
<i>Vanessa atalanta</i>	Red Admiral	LRlc (Common)
<u>Pieridae</u>		
<i>Colias croceus</i>	Clouded Yellow	Migrant
<i>Gonepteryx rhamni</i>	Brimstone	LRlc (Common)
<i>Pieris brassicae</i>	Large White	LRlc (Common)
<i>Pieris rapae</i>	Small White	LRlc (Common)
<i>Pyrausta aurata</i>	Mint Moth	Local
Order / Family / Species	Common Name	Status

Satyridae

<i>Coenonympha pamphilus</i>	Small Heath	VU (Local)
<i>Maniola jurtina</i>	Meadow Brown	LRlc (Common)
<i>Pararge aegeria</i>	Speckled Wood	LRlc (Common)
<i>Pyronia tithonus</i>	Gatekeeper	LRlc (Common)

Zygaenidae

<i>Zygaena filipendulae</i>	Six-spot Burnet Moth	Common
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Diptera

Calliphoridae

<i>Lucilia caesar</i>	Greenbottle	Common
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Conopidae

<i>Sicus ferrugineus</i>		Local
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Sarcophagidae

<i>Sarcophaga carnaria</i>		Common
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Syrphidae

<i>Episyrphus balteatus</i>		LRlc (Common)
<i>Eristalis arbustorum</i>		LRlc (Common)
<i>Eristalis tenax</i>	Drone Fly	LRlc (Common)
<i>Eupeodes luniger</i>		LRlc (Common)
<i>Myathropa florea</i>		LRlc (Common)
<i>Platycheirus angustatus</i>		LRlc (Common)
<i>Sphaerophoria scripta</i>		LRlc (Common)
<i>Syritta pipiens</i>		LRlc (Common)
<i>Syrphus ribesii</i>		LRlc (Common)
<i>Xanthogramma pedissequum</i>		LRlc (Local)

Tachinidae

<i>Eriothrix rufomaculata</i>		Common
<i>Phasia pusilla</i>		Local
<i>Thelaira nigripes</i>		Common

Tephritidae

<i>Urophora cardui</i>		Common
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Order / Family / Species	Common Name	Status
Hymenoptera		

Apidae

<i>Bombus lapidarius</i>	Large Red-tailed Bumblebee	Common
<i>Bombus pascuorum</i>	Common Carder Bee	Common
<i>Bombus terrestris</i>	Buff-tailed Bumblebee	Common

Colletidae

<i>Hylaeus incongruus</i>		RDB 3
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Eumenidae

<i>Ancistrocerus gazella</i>		Common
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Formicidae

<i>Lasius niger</i>	Small Black Ant	Common
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Halictidae

<i>Lasioglossum calceatum</i>	Slender Mining Bee	Common
<i>Lasioglossum morio</i>	Brassy Mining Bee	Common
<i>Sphecodes puncticeps</i>		Common

Megachilidae

<i>Osmia spinulosa</i>		Local
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Pompilidae

<i>Agenioideus cinctellus</i>		Local
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Sphecidae

<i>Cerceris rybyensis</i>	Ornate Tailed Digger Wasp	Local
<i>Ectemnius dives</i>		Local
<i>Trypoxylon attenuatum</i>	Slender Wood Borer Wasp	Common

Vespidae

<i>Dolichovespula media</i>		Notable A
<i>Vespa crabro</i>	The Hornet	Local
<i>Vespula vulgaris</i>	Common Wasp	Common

Coleoptera

Coccinellidae

<i>Coccinella 7-punctata</i>	Seven-spot Ladybird	Common
<i>Harmonia axyridis</i>	Harlequin Ladybird	Naturalised
<i>Sitona lineatus</i>	Pea and Bean Weevil	Common

Oedemeridae

<i>Oedemera lurida</i>		LRlc (Local)
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Appendix II - Notes for Rare or Notable invertebrate species.

Short notes for the Rare and Local species recorded from the survey are given below. Species are listed alphabetically within each order.

Hemiptera - True Bugs

Aelia acuminata. Lower Risk least concern (Local). The Bishop's Mitre. A large plant feeding bug, usually found on dry grassland in a range of habitats. Most frequent in the south and east of England north to the Mersey - Humber line, largely coastal in the west.

Eurygaster testudinaria. Lower Risk least concern (Local). A Tortoise bug. Widespread but locally distributed across southern Britain. Prefers damper habitats where it feeds on rushes and sedges.

Lepidoptera - Butterflies & Moths

Coenonympha pamphilus. Small Heath. Vulnerable (Local). A BAP / Section 41 Species. The smallest of the "brown" butterflies, the caterpillars of the Small Heath feed on a range of fine grasses. It is found in a range of habitats and is particularly associated with areas of shorter sward. Widely distributed across Britain and Ireland and formerly regarded as a Local species, the 2022 UK Butterfly Red List classed the species as "Vulnerable" due to a 37% decline in distribution between 2010 and 2019.

Pyrausta aurata. Local. Mint Moth. A small purple and gold Pyralid moth. Most often found on chalk downland but also amongst waterside vegetation where the larva feeds on water mint. Other foodplants are mints, marjoram, calamint and clary (all Labiatae). Patchily distributed in England, Wales, southern Scotland to the Inner Hebrides, and the Channel Islands.

Diptera - Flies

Phasia pusilla. Local. A small (3-4mm) parasitic fly. The larvae are parasites of small heteropteran bugs in grassland. Recorded from southern Britain north to Yorkshire, but may be overlooked due to its small size.

Sicus ferrugineus. Local. A medium sized reddish-brown Conopid fly whose larvae are solitary internal parasites of bumblebees (*Bombus* sp.). Widely distributed in the UK but uncommon.

Xanthogramma pedissequum. Lower Risk least concern (Local). A distinctive black and yellow hoverfly. Scarce but widespread in grassland and in open woodland rides, especially where the turf is short and some bare ground is present. Larvae may be predatory on root aphids.

Hymenoptera - Bees, Wasps & Ants

Pompilus cinereus. Local. A small black and grey spider-hunting wasp found in sandy areas throughout Britain, particularly in coastal locations. Preys on ground-dwelling spiders.

Cerceris rybyensis. Local. A medium sized (8-12 mm), yellow and black solitary wasp which makes a deep nest burrow in flat, bare and often rather hard ground such as the edges of well trodden paths. Females of this species often nest in dense aggregations. Preys on solitary bees especially those of the genera *Hylaeus* and *Halictus*. Confined to southern Britain.

Dolichovespula media. Notable A. A large social wasp, first recorded from Britain from a site in East Sussex in 1980. Since then, the species has spread rapidly throughout southern Britain and can be found almost anywhere. Originally accorded RDB status, this species was redesignated as a Notable species in Falk (1991). Since then, the dramatic increase in the UK range of this species suggest that this species should be redesignated as a 'Common' species.

Ectemnius dives. Local. A black and yellow solitary wasp, possibly introduced in imported timber. Now found in England as far north as Cheshire and spreading northwards.

Hylaeus incongruus. RDB 3. A small, uncommon solitary bee, previously known as *H. gibbus*. Most often recorded in the vicinity of scrub and dead wood on heathland. Nesting probably occurs in old beetle burrows in dead wood in sunny situations. Confined to south and south-east, England, very few modern sites known.

Osmia spinulosa. Local. A small black solitary bee known previously as *Hoplitis spinulosa*. Females have orange pollen carrying hairs on the underside of the abdomen. The females nest in empty snail shells and partition the cells with dung or masticated leaves. Widespread but local.

Vespa crabro. Local. The Hornet. Britain's largest social wasp. This species prefers ancient deciduous woodland where there are plenty of old trees with rot holes suitable for it to nest in, though it will occasionally nest in chimneys, wall cavities, etc. Despite its impressive appearance, the Hornet is not aggressive and seldom causes any problems. It is a rather uncommon and local species very widely, though sporadically, distributed in southern Britain.

Coleoptera - Beetles

Oedemera lurida. Lower Risk least concern (Local). An elongate, dull metallic-green beetle. The larvae develop in plant stems and the adults frequent flowers, particularly hawthorn and umbellifers. Widely distributed and can be locally common in the south of England.

Appendix III - Red Data Book Status Category Definitions and Criteria.

The methodology used for the for the selection of species for inclusion in various Red Data Book categories are based on criteria developed by the IUCN. In the UK, these follow the examples of Shirt (1987) and Hyman & Parsons (1992). Criteria for the selection of Nationally Notable species generally follow Eversham (1983). For the purposes of site evaluation for the selection of SSSIs, the term Nationally Notable is replaced by the term Nationally Scarce, but the selection criteria remain unchanged. These criteria have been superseded by the 1994 revisions to the IUCN system but are still used for species or groups of species where a review of the status has yet to be carried out using the new criteria.

Red Data Book Category 1. RDB I - ENDANGERED

Definition. Taxa in danger of extinction in Great Britain and whose survival is unlikely if casual factors continue operating.

Included are taxa whose numbers have been reduced to a critical level or whose habitats have been so dramatically reduced that they are deemed to be in immediate danger of extinction. Also included are some taxa that are possibly extinct.

Criteria. Species which are known or believed to occur as only a single population within one 10km square of the National Grid.

Species which only occur in habitats known to be especially vulnerable.

Species which have shown a rapid or continuous decline over the last twenty years and are now estimated to exist in five or fewer 10km squares.

Species which are possibly extinct but have been recorded this century and if rediscovered would need protection.

Red Data Book Category 2. RDB 2 - VULNERABLE

Definition. Taxa believed likely to move into the Endangered category in the near future if the casual factors continue operating.

Included are taxa of which most or all of the populations are decreasing because of over-exploitation, extensive destruction of habitat or other environmental disturbance; taxa with populations that have been seriously depleted and whose ultimate security is not yet assured; taxa with populations that are still abundant but are under threat from serious adverse factors throughout their range.

Criteria. Species declining throughout their range or whose populations are low.

Species in vulnerable habitats.

Red Data Book Category 3. RDB3 - RARE

Definition. Taxa with small populations that are not at present Endangered or Vulnerable, but are at risk.

These taxa are usually localised within restricted geographical areas or habitats or are thinly scattered over a more extensive range.

Criteria. Species which exist in only fifteen or fewer 10km squares.

Red Data Book Category K. RDB K - INSUFFICIENTLY KNOWN

Definition. Taxa that are suspected but not definitely known to belong to any of the above categories because of lack of information.

Criteria. Taxa recently discovered or recognised in Britain which may prove to belong to be more widespread in the future (although some recent discoveries may be placed in other categories if the group to which they belong is thought not to be under-recorded.)

Taxa with very few or perhaps only a single known locality, but which belong to poorly recorded or taxonomically difficult groups.

Species with very few or perhaps only a single known locality, inhabiting inaccessible or infrequently sampled but widespread habitats. Examples include some northern moorland species, ones associated with agricultural situations and ones which are adult only during the winter.

Species with very few or perhaps only a single known locality and of questionable native status, but not clearly falling into the category of recent colonists, vagrant or introduction,

Nationally Scarce (Notable) Category A. Na - Notable A

Definition. Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid.

Nationally Scarce (Notable) Category B. Nb - Notable B

Definition. Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain and thought to occur in between 31 and 100 10km squares of the National Grid.

Local

The term local is not rigidly defined, but loosely means species confined to a particular habitat type (usually associated with better quality examples of that habitat), a particular geographic area, or species that are too widespread to warrant Nationally Scarce (Notable) status but are nevertheless infrequently encountered.

Common

Common or very widespread species, frequently recorded.

Abstracted from Shirt (1987), Hyman & Parsons (1992) & Key (1994).

The 1994 Revised IUCN Red List Categories and the revised status system

The relationships between the various revised conservation categories are summarised in the dendrogram below (Figure 1). They have the advantage that the criteria are more rigorous than for the original system and are measures of threat rather than simply of localisation. This system was adopted in 1995 by the Joint Nature Conservation Committee as the new standard for Red Lists in Britain. These criteria can be applied both globally and nationally. Some of the criteria used to define the status of a taxa are inappropriate when considering most invertebrates, being based on estimates of decline or on predictions that assume a regular, detailed census. Those that are appropriate to invertebrates are listed below.

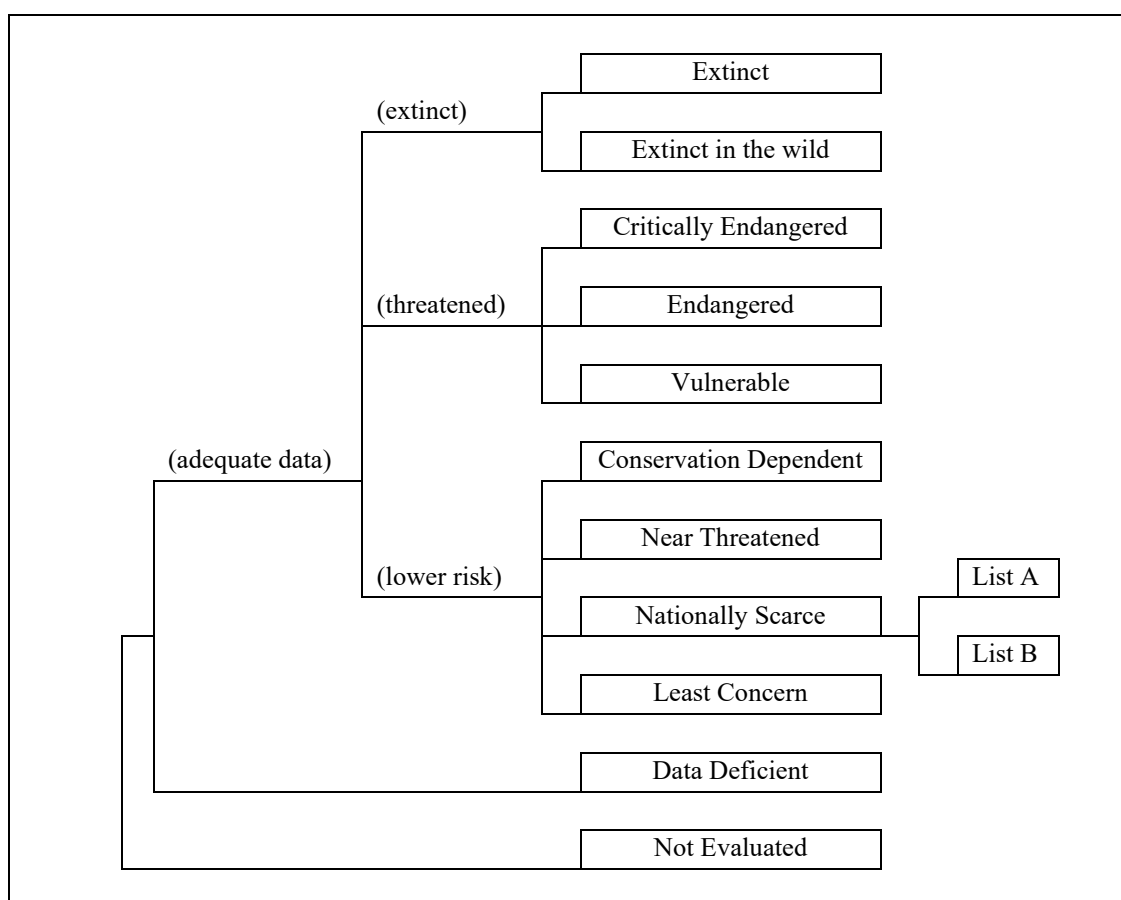


Figure 1. Decision tree for IUCN Conservation categories.

Extinct in the Wild - (Ex)

Definition. A taxon is considered extinct if there is good reason to believe that the species has become extinct in the wild in Britain. No precise threshold date is specified whereas the past definition was based on lack of records in the 20th Century.

Critically Endangered - (CR)

Definition. A taxon is critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the following criteria [C-D omitted]:

- A. Population reduction in the form of either of the following:
 - 1. An observed, estimated, inferred or suspected reduction of at least 80% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:
 - (a) direct observation
 - (b) an index of abundance appropriate for the taxon
 - (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
 - (d) actual or potential levels of exploitation
 - (e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.
 - 2. A reduction of at least 80%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.
- B. Extent of occurrence estimated to be less than 100 km² or area of occupancy estimated to be less than 10 km², and estimates indicating any two of the following:
 - 1. Severely fragmented or known to exist at only a single location.
 - 2. Continuing decline, observed, inferred or projected, in any of the following:
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) area, extent and/or quality of habitat
 - (d) number of locations or subpopulations
 - (e) number of mature individuals.
 - 3. Extreme fluctuations in any of the following
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) number of locations or subpopulations
 - (d) number of mature individuals.
- E. Quantitative analysis showing the probability of extinction in the wild is at least 50% within 10 years or 3 generations, whichever is the longer.

Endangered - (EN)

Definition. A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the following criteria [C-D omitted]:

- A. Population reduction in the form of either of the following:
 - 1. An observed, estimated, inferred or suspected reduction of at least 50% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:
 - (a) direct observation
 - (b) an index of abundance appropriate for the taxon
 - (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
 - (d) actual or potential levels of exploitation
 - (e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.
 - 2. A reduction of at least 50%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.
- B. Extent of occurrence estimated to be less than 5000 km² or area of occupancy estimated to be less than 500 km², and estimates indicating any two of the following:
 - 1. Severely fragmented or known to exist at no more than five locations.
 - 2. Continuing decline, observed, inferred or projected, in any of the following:
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) area, extent and/or quality of habitat
 - (d) number of locations or subpopulations
 - (e) number of mature individuals.
 - 3. Extreme fluctuations in any of the following
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) number of locations or subpopulations
 - (d) number of mature individuals.
- E. Quantitative analysis showing the probability of extinction in the wild is at least 20% within 20 years or 5 generations, whichever is the longer.

Vulnerable - (VU)

Definition. A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a very high risk of extinction in the wild in the medium-term future, as defined by any of the following criteria [C and D1 omitted]:

- A. Population reduction in the form of either of the following:
 - 1. An observed, estimated, inferred or suspected reduction of at least 20% over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:
 - (a) direct observation
 - (b) an index of abundance appropriate for the taxon
 - (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
 - (d) actual or potential levels of exploitation
 - (e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.
 - 2. A reduction of at least 20%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d) or (e) above.
- B. Extent of occurrence estimated to be less than 20,000 km² or area of occupancy estimated to be less than 2000 km², and estimates indicating any two of the following:
 - 1. Severely fragmented or known to exist at no more than five locations.
 - 2. Continuing decline, observed, inferred or projected, in any of the following:
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) area, extent and/or quality of habitat
 - (d) number of locations or subpopulations
 - (e) number of mature individuals.
 - 3. Extreme fluctuations in any of the following
 - (a) extent of occurrence
 - (b) area of occupancy
 - (c) number of locations or subpopulations
 - (d) number of mature individuals.
- D. Population very small or restricted in the form of either of the following [only 2 relevant]:
 - 2. Population is characterised by an acute distribution in its area of occupancy (typically less than 100 km²) or in the number of locations (typically less than 5). Such a taxon would thus be prone to the effects of human activities (or stochastic events whose impact is increased by human activities) within a very short period of time in an unforeseeable future, and is thus capable of becoming Critically Endangered or even Extinct in a very short period.
- E. Quantitative analysis showing the probability of extinction in the wild is at least 10% within 100 years.

Lower Risk - (LR)

Definition. A taxon is Lower Risk where it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the LR category can be separated into four subcategories.

1. **Conservation Dependent (LRcd).** Taxa, which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.
2. **Near Threatened (LRnt).** Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable - in Britain, defined as occurring in 15 or fewer hectads but not CR, EN or VU. The absolute count of hectads is, in this review, considered subordinate to evidence of decline on an extent not qualifying the species for CR, EN or VU.
3. **Nationally Scarce (LRns).** Taxa which do not qualify for Conservation Dependent or Near Threatened - in Britain defined as species occurring in 16 to 100 hectads but not CR, EN or VU. Nationally Scarce species are usually divided into lists A (**LRnsA** 16-30 hectads) and B (**LRnsB** 31-100 hectads) as in the previous system. This subcategory associates a level of threat with rarity status, whereas the previous National Scarcity listings were based solely on rarity. Those species, the populations of which occasionally occupy more than 30 or 100 hectads as LRnsA and LRnsB respectively, can still be listed if it is thought that their baseline populations frequently fall below these thresholds, or if the habitats occupied are considered under threat.
4. **Least Concern (LRlc).** Taxa, which do not qualify for Conservation Dependent, Near Threatened or National Scarce subcategories - in Britain, this covers all species found on evaluation not to fit into any of the other categories.

Data Deficient - (DD)

Definition. A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution is lacking. Data Deficient is therefore not a category of threat or Lower Risk. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever

data are available. In many cases great care should be exercised in choosing between DD and threatened status. If the range of a taxon is suspected to be relatively circumscribed, if a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

Not Evaluated - (NE)

Definition. A taxon is Not Evaluated when it has not yet been assessed against the criteria.

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