# HABITAT ACTION PLAN: Urban "Wasteland"

**Associated Species Action Plans**

Black redstart

Dingy skipper

Little ringed plover

Orchids

Skylark

Wall brown

**Associated Habitat Action Plans**

Buildings and the built environment

Gardens, allotments, parks and public open space

## 1. Current status

**1.1** Wasteland habitat is unmanaged land characterised by vegetation in the early stages of succession, from a thin covering of pioneer plant species through to dense swards of tall herbs with the occasional shrub or small tree. The term 'wasteland' has many negative connotations, implying land of no intrinsic ecological, environmental, social or economic value; land which is expendable; and land which may represent a visual intrusion into an ordered landscape. It is often associated with dereliction, dumping and danger. In terms of actual biodiversity, however, and with regard to its potential as a 'social positive', these are areas of importance in the urban landscape.

**1.2** Wasteland is particularly associated with inner city areas, though it is found in all but the most affluent parts of a town, and includes unused or vacant land such as areas of former industrial or mining land; abandoned factories and other large building areas such as demolished houses; and former railway land such as sidings and disused trackways. These are areas generally ranging from 0.1 to 10 ha in size that have essentially been left to nature.

**1.3** This kind of wasteland often represents a temporary land use since many such areas are scheduled to be re-developed for other uses. Where there is no change in land use wasteland will often develop through succession into other habitat types, e.g. grassland, scrub and woodland.

**1.4** Wasteland can also include corridor habitat such as cuttings and embankments associated with railway tracks and some urban roadsides.

**1.5** With the abandonment of a former land-use, some urban sites are given a minimum topsoil treatment and sown as amenity grassland but then neglected. Plant succession may then lead to a habitat similar to spontaneously-colonised sites.

**1.6** Wasteland is found on such a wide range of substrates and soils (see Section 2) that it is impossible to characterise the vegetation except in the most general of terms. Plants may colonise newly-created wasteland by dispersing from similar sites elsewhere; they not infrequently arrive as propagules in dumped soil; and they may germinate from the seed bank associated with previous land uses. Bare substrate is not uncommon, and there tends to be an abundance of pioneer lichens and mosses, annual and biennial plants (often of an ephemeral nature), and garden escapes.

**1.7** Invertebrate life can be abundant and species-rich. Common invertebrates in the early stages of succession include ground predators such as spiders, harvestmen and beetles, as well as lepidopteran visitors to nectar-producing flowers. As the site ages, earthworms and other soil-dwelling invertebrates become commoner, the former

in particular enhancing soil development. A few vertebrates may use these areas for breeding, especially where size and isolation permit. It is for feeding, however, that wasteland habitats are perhaps most important for birds and mammals.

**1.8** Because wasteland may be found on post-industrial sites with substrates providing environments that are uncharacteristic for towns, biodiversity is often quantitatively increased and qualitatively enhanced by the addition of rare and unusual floral and faunal elements.

**1.9** Many wasteland sites are eyesores that attract public abuse such as fly-tipping and bonfires. Nevertheless they have an intrinsic value to local and regional biodiversity and conservation, and with low levels of care many could be turned into sites of importance for local communities.

**1.10** To avoid the pejorative term 'wasteland', Oliver Gilbert has proposed that such areas be termed 'urban commons'.

## 2. Current factors affecting habitat

These are divided into environmental factors and threats.

### 2.1 Environmental factors

**2.1.1 Air pollution.** Urban areas are subjected to various forms of atmospheric pollution, including particulate pollution, but this is of little consequence to the wasteland flora or fauna, even on sites adjacent to busy highways.

**2.1.2 Previous and adjacent land use** Previous land use is particularly important in determining the substrate. Soil already present will contain a seed bank and will facilitate colonisation from outside. If an available flora is adjacent or close to a newly-available site the speed of colonisation and the range of potential colonisers becomes greater. Inhospitable adjacent habitat, including highways, may prevent or reduce the opportunities for colonisation by non-flying animals.

**2.1.3 Substrate, topography and drainage** After demolition of buildings, sites are typically graded as a slightly domed area of rubble set into a matrix of fine material which is dominated by lime-based mortar which leads to circumneutral to alkaline soils, pH values typically being 6.5-8.0. Such sites are generally free-draining, well-aerated and low in organic matter. Fertility will vary. Substrates are often high in phosphorus but low in available nitrogen. Substrates based on previously industrial land can also be alkaline, for example over slag, but acid conditions are also common, and these differences will be reflected in the flora and vegetation. Post-industrial sites may also be heavily polluted, especially by heavy metals, and the flora will be limited to pre-adapted pollution-tolerant species and varieties. Many post-industrial sites have a varied microtopography which in turn varies in permeability. A common result is of a patchwork of different plant communities on mounds, in permeable depressions, and in impermeable dips in the surface.

**2.1.4 Available flora** This is extremely variable and depends among other things on the presence of any seed bank, the proximity of similar sites, and habitat corridor effects. Earliest colonisers tend to be wind-pollinated, but plants whose propagules are spread by animals, especially transported internally by birds, soon become common.

**2.1.5 Available fauna** Three key factors interact to explain the early stages of colonisation of wasteland habitats: the dispersal ability of particular animal species, the proximity of similar habitats (and any corridor functions), and the habitat-specificity of species. Even mobile taxa such as butterflies and moths move relatively small distances, and ground-dwelling invertebrates such as carabid beetles have even greater problems in colonising new sites, especially when they are habitat specialists. A number of rare and endangered invertebrates require dry (xeric) habitats, and these conditions are often found in wasteland sites. The isolation of these sites, however, poses a problem in species with low dispersal abilities.

**2.1.6 Area**. Island biogeography theory suggests the importance of area (increasing area by an order of magnitude very approximately doubles the number of species of any particular group found within that site). Larger sites are important species reservoirs and play an important part in enhancing biodiversity in the urban environment. Linear wasteland sites are also important both because they are common in the built environment, especially along transport routes, and because of potential habitat corridor functions.

**2.1.7 Time**. Many wasteland sites are ephemeral, and redevelopment of some sort takes place within a few years. If **succession** is allowed to take place, a series of stages can often be discerned:

- An initial annual/biennial/short-lived perennial stage, the plants colonising an often bare inorganic substrate containing at best a few small patches where organic detritus or a thin soil is found. Nitrogen-fixing plants increase the amount of available nitrogen. Wind-blown species are characteristic.

- After perhaps 3-6 years, as the soil cover becomes greater in extent and depth, and with an increase in organic matter and available nutrients, the vegetation often becomes dominated by tall perennial herbs. Woody species begin to colonise, whether scrambling species such as bramble or small trees, but numbers and cover at this stage remain low.

- With time the proportion of grass in the vegetation increases, and after 8-10 years or so tall herb communities may give way to grassland, though a grassland in which some perennial, especially rhizomatous plants may persist, as well as woody species, and as more and more woody plants enter the tall herb or grassland community, these may eventually be replaced by scrub woodland.

## 2.2 Threats.

**2.2.1 Changes in land use** Many wasteland sites are subject to a change of land use within a few years of their creation. As former wasteland is developed, however, so - generally speaking - new wasteland sites are being created elsewhere. As long as

the rate of habitat creation more or less equals the rate of habitat destruction, and as long as the habitat characteristics of such sites remains more or less equivalent this may pose no problem. Indeed it may be a fortuitous means of retaining a series of habitat patches in early stages of succession within the region as a whole.

**2.2.2 Brownfield site development** Nevertheless brownfield site development poses a threat to wasteland habitats, especially in the light of current government policy for urban regeneration through which the rate of destruction of wasteland will probably not be offset by the provision of new equivalents. Brownfield sites are often of equivalent or greater wildlife value than intensively-managed greenfield sites.

**2.2.3 Habitat fragmentation and isolation** Development not only destroys wasteland sites but further isolates other such sites (as well as other habitats beneficial to biodiversity) and reduces the connectivity of habitat corridors.

**2.2.4 Inappropriate regeneration and reclamation** As a tidying process, a number of wasteland sites are landscaped and otherwise managed to 'enhance' their amenity value, but this is often done at the expense of wildlife value. Opportunities to enhance sites for both people and nature are ignored.

**2.2.5 Changes in industrial processes** The laissez-faire approach to dumping industrial waste has been halted, and some former waste disposal sites have been decontaminated, but this has led to fewer spoil tips of varying kinds which in the past have been colonised by a suite of often rare and interesting plants and animals. Such sites should be retained where they already exist provided there are no risks of contamination to humans.

**2.2.6 Increased fly tipping and vandalism** With the introduction of landfill taxes and other constraints on 'free' domestic, commercial and industrial waste disposal, there has been an increase in the amount of fly tipping on wasteland habitat. Vandalism of many kinds has also affected the habitat quality of such sites.

**2.2.7 Public use**. The public has free and legal access to many wasteland sites, and many larger areas have become important areas for informal recreation. Sometimes this recreation is damaging to the habitat, for example the use of mountain and motor bikes, but in other cases, for example dog walking, these habitats are important accessible green space. Other sites are not legally accessible but are nevertheless used. They may pose risks to the users, for example on railway-owned land, and they are sometimes refuges for those participating in illegal or antisocial activities. Such uses also pose some threat to the habitats, for instance through the setting of fires.

# 3 Current action

## 3.1 Legal status

**3.1.1** Wasteland tends to be owned by the local authority, by a national institutional organisation such as Railtrack or British Waterways, or by a private individual or organisation. In all such areas there is generally no right of access, and in some cases

access is expressly prohibited. Some local authority wasteland is available under statutory provision for travellers.

**3.1.2** All sites are subject to national laws on wilful and criminal damage, and to civil law pertaining to trespass, though these are rarely evoked in most urban sites perceived as being derelict.

**3.1.3** By their nature, wasteland sites tend not to be included in any SLINC, SINC, LNR, SSSI or other designation, nor are any large trees normally subject to Tree Preservation Orders (TPOs). Some post-industrial sites are exceptions, having been designated LNRs (e.g. Doulton's Claypit in Dudley) or SSSIs (e.g. Clayhanger in Walsall).

### 3.2 Management, research and guidance

**3.2.1** By their nature, wasteland sites are not normally subject to management, though line-of-sight may be maintained for safety on rail track, roadside verges and some canal-side stretches.

**3.2.2** Little research has been undertaken on the biota of wasteland sites. A general review is provided in a study of accessible public green space in urban areas by Harrison et al. (1995), and a context for the incorporation of wasteland habitat in planning for nature in Birmingham is given in Jarvis (1996). The *Black Country Nature Conservation Strategy* (1994) and the *Birmingham Nature Conservation Strategy* (1997) contain information on the extent of wasteland in the region (in particular using data on habitats characterised by tall herbs) and places this habitat type into a strategic planning context. Work continues on data collection for the *Birmingham and Black Country Flora* (ed I.C. Trueman), with spatial records accumulating for species that might be used as indicators of wasteland. Part of the URGENT programme being undertaken at the University of Birmingham and University of Wolverhampton includes the examination of the use of urban sites, including wasteland sites, by ground beetles, and the implications of the characteristics of such sites for beetle dispersal, habitat specificity and species richness. Cognate work is being undertaken on butterfly metapopulations and on aspects of the urban flora.

**3.2.3** No guidance is currently associated with the provision of accessible public space regarding wasteland habitat. Indeed there is a great deal of pressure being imposed on wasteland habitat as part of the government's proposed development of brownfield sites.

## 4. Action plan objectives and targets

| Objective | Target |
|---|---|
| 1. Identify wasteland (including brownfield) sites of particular significance or importance to biodiversity by virtue of their biotic content and to ensure as far as practicable their survival. | Ongoing |
| 2. Identify wasteland (including brownfield) sites of particular significance or importance to biodiversity by virtue of their geographical location and therefore their contribution to an appropriate spatial network of green sites, and to ensure as far as practicable their survival. | Ongoing |
| 3. Raise awareness of the importance of wasteland sites to biodiversity via the media, involvement of local schools and community groups, and representation to local councillors. | Ongoing |
| 4. Where appropriate, increase the accessibility of wasteland sites on local authority land for public usage, and to seek ways which might formalise such arrangements, including basic maintenance (eg mowing of edges), wooden bollards or trip fencing to prevent vehicular access, and provision of litter bins. | Ongoing |
| 5. Provide for and encourage community use, sense of ownership and involvement in appropriate sites in their local area, and to instil a sense of ownership. | 5 such sites by 2010 |

## 5. Proposed action with partners to meet objectives

| ACTION | POTENTIAL DELIVERERS | | YEAR | | | | | | | Meets objective number |
|---|---|---|---|---|---|---|---|---|---|---|
| | Lead | Partner | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2011 | |
| **5.1 Policy and legislation** | | | | | | | | | | |
| Seek the inclusion of appropriate habitat measures in Unitary Development Plans and other policy documents to ensure, where appropriate, that development proposals on 'urban waste land' incorporate features which will enhance a site for wildlife. | **LAs** | **WT** | • | • | • | • | • | • | • | **1, 2** |
| Encourage the proper consideration of present and future potential for wildlife and community use on 'urban waste land' when determining planning applications. | **LAs** | **WT** | • | • | • | • | • | • | • | **1, 2** |
| **5.2 Site and species safeguard and management** | | | | | | | | | | |
| Identification of sites of especial value to biodiversity and/or for which conservation management might be important, eg. sites on which succession is taking place. | **WT** | **LAs, LOs** | | • | • | • | • | • | • | **1, 2** |
| Identification of sites for which basic maintenance might be appropriate. | **WT** | **LAs, NNP, NCP** | | • | • | • | • | • | • | **4** |
| Introduction of appropriate maintenance. | **LAs** | **NNP, NCP** | | • | • | • | • | • | • | **4** |

| ACTION | POTENTIAL DELIVERERS | | YEAR | | | | | | | Meets objective number |
|---|---|---|---|---|---|---|---|---|---|---|
| | Lead | Partner | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2011 | |
| Improve the connecting network between green spaces, and between green spaces and residential areas, paying particular attention to accessibility. | **LAs** | **NCP, WT** | • | • | • | • | • | • | • | **4** |
| Safeguard and manage sites for the protection of any locally, regionally or nationally rare species. | **LAs** | **EN, WT** | • | • | • | • | • | • | • | **1** |
| **5.3 Advisory** | | | | | | | | | | |
| Advisory input to UDPs and other policy documents. | **WT** | **LAs, EN** | **As UDPs and other policy documents are prepared and reviewed** | | | | | | | **1, 2** |
| Responses to planning applications as appropriate. | **WT, EN** | **LAs** | • | • | • | • | • | • | • | **1, 2** |
| **5.4 Future research and monitoring** | | | | | | | | | | |
| Continued survey and collation of data | **WT, LAs** | **ER, others** | • | • | • | • | • | • | • | **1, 2** |
| Use of EcoRecord to maintain and update records of plants and animals on wasteland sites. | **ER** | **All** | • | • | • | • | • | • | • | **1** |
| Production of GIS material as appropriate | **ER** | **WT, LAs** | • | • | • | • | • | • | • | **1, 2** |
| Support of relevant URGENT programme research | **Eds** | **All** | **In line with research programme** | | | | | | | **1, 2, 3** |

| ACTION | POTENTIAL DELIVERERS | | YEAR | | | | | | | Meets objective number |
|---|---|---|---|---|---|---|---|---|---|---|
| | Lead | Partner | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2011 | |
| **5.5 Publicity** | | | | | | | | | | |
| Raise awareness of the importance of 'waste' sites to wildlife and the community | **WT** | **LAs, LA21, NNP** | • | • | • | • | • | • | • | **3** |
| Encourage local communities to identify suitable nearby wasteland sites as community resources by fostering a sense of 'ownership', eg. by giving the site a name and erecting appropriate signage. Target: one such sites per authority by 2010 | **WT, LAs** | **LA21, NNP, NCP** | • | • | • | • | • | • | • | **3, 4, 5** |
| Involve schools in appropriate local areas | **NNP, NCP** | **WT, LAs** | • | • | • | • | • | • | • | **3** |
| **5.6 Links to other action plans** | | | | | | | | | | |
| Buildings and the built environment, Gardens, allotments, parks and public open space | | | | | | | | | | |

## 6 Co-ordination and review

This Biodiversity Action Plan will be implemented over 10 years with a first review after 5 years. A group will be set up to co-ordinate implementation and to report to the Biodiversity Steering Group. This group will meet at a minimum on a yearly basis.

Review will be carried out in conjunction with related Habitat and Species Action Plans as appropriate.

Review will consist of measuring achievement of targets. The group will, with the support of the Steering Group, develop and implement appropriate monitoring methods which will inform the review process.

The Action Plan will be revised and updated in the light of review results and any relevant changes in circumstances and/or additional information which becomes available during the review period.

In line with national guidance, the Steering Group will report to the UK Steering Group.

## References

Birmingham Nature Conservation Strategy (1997)

Black Country Nature Conservation Strategy (1994)

HARRISON, C. et al. (1995) *Accessible natural greenspace in towns and cities. English Nature Research Reports*, **153**

JARVIS, P.J. (1996) Planning for a green environment in Birmingham. In: Gerrard, A.J. & Slater, T.R. (ed), *Managing a conurbation: Birmingham and its region* (Brewin, Studley): 90-100