NORFOLK BIODIVERSITY ACTION PLAN
OPEN MOSAIC HABITATS ON PREVIOUSLY DEVELOPED LAND

Ref 2/H11	Habitat Action Plan 11
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This habitat is best defined in terms of structure and growth forms, rather than through specific vegetation communities. It comprises: mosaics of bare ground with very early pioneer communities on skeletal substrates; more established open grasslands, usually dominated by fine-leaved grasses with many herbs; areas of bare ground; areas of scrub; and patches of other habitats such as heathland, swamp, ephemeral pools and inundation grasslands.

To meet BAP criteria, a site should:

- Be at least 0.25 ha in size. The minimum size refers to the potential Open Mosaic Habitat, which might be a part of a larger site containing other habitats such as woodland or developed land;
- Have a known history of disturbance or evidence that soil has been removed or severely modified by previous use;
- Contain some vegetation (early successional communities);
- Contain unvegetated, loose bare substrate;
- Show spatial variation, forming a mosaic of one or more of the early successional communities plus bare substrate, within 0.25 ha.

1. CURRENT STATUS

National Status

- This habitat is primarily found in urban, urban fringe and former industrial landscapes. However, some examples can also be found on previously developed land in rural areas. It has not yet been mapped consistently at a UK level.

- Good quality examples of this habitat include unmanaged, flower-rich grasslands with sparsely-vegetated areas, developed over many years on poor substrates.

- The vegetation can have similarities to early/pioneer communities (particularly grasslands) on more ‘natural’ substrates. However, because of the poor soil conditions, succession occurs slowly and the habitat can often persist for decades without active management. Vegetation often occurs in small patches and may vary over relatively short distances, reflecting small-scale variations in substrate and topography.

- The habitat is particularly important for invertebrate species. Between 12 and 15 per cent of all nationally-rare and nationally-scarce insects are recorded from brownfield sites (Gibson, 1998; Jones, 2002).

- The habitat also supports a range of notable vascular plant, moss and lichen species, many of which are declining in the wider countryside. Non-native plant species are also frequently present.

- Some sites are important for birds such as ringed plover, skylark and grey partridge.

- The variety within sites reflects chemical and physical modification by previous uses and/or industrial processes. Exposed substrates, ditches and remains of built structures all influence the micro-topography of sites. Sealed and compacted surfaces contribute further variation and modify the hydrology of the habitat.

- Poor soil conditions - such as the presence of highly acidic or alkaline soils, poor nutrient availability, and water deficiency - can pose significant challenges to plant growth. Typical situations where such conditions arise include disused quarries, former railway sidings, extraction pits and landfill sites.

- The main criteria for identifying areas of high nature conservation value are:

    - Rich and/or large examples of habitats, which demonstrate mosaics of bare ground, pioneer communities, flower-rich grassland and other habitat patches;

    - Areas that have retained bare ground and pioneer communities over an extended period, demonstrating arrested succession;

    - Threatened areas that support either the last remaining examples where the habitat was formerly widespread/extensive, or rare/ specialised types of this habitat;

    - Presence of UK BAP priority species or Red Data Book/List species;

    - Importance for an exceptional assemblage of key species groups.

- In addition to their biodiversity interest, open mosaic habitats in towns may serve to mitigate the urban heat island effect; retention of vegetated sites may assist urban areas to adapt to warming.

Norfolk Status

- There is little information about the current extent, distribution or status of this habitat in Norfolk.

- All the major urban centres in the county (Norwich, King's Lynn, Great Yarmouth and Thetford) are likely to contain sites which meet the BAP definition. In the wider countryside, open mosaic habitats are likely to occur on old airfield sites, disused railway lines, former mineral sites and closed land-fill sites.

- The National Land Use Database provides information on the number of brownfield sites in each district. In addition, all local planning authorities have produced Strategic Housing Land Availability Assessments (SHLAA) for their areas, as part of their Local Development Frameworks (LDFs). These provide detailed information about the brownfield sites within their boundaries. This information should provide a useful starting point for mapping the habitat at a county level and developing a better understanding of its distribution and extent.

2. CURRENT FACTORS CAUSING LOSS OR DECLINE IN NORFOLK

Factors contributing to the loss and decline of this habitat include:

- The Government's target for 60 per cent of all new development to be built on brownfield sites;
- The designation of Norwich, Thetford and King's Lynn as growth points, and the expected increase in house building in Norfolk over the next 12 years;
- Insufficient awareness among planners and decision makers of the biodiversity value of brownfield sites;
- Public perception of brownfield sites as areas of antisocial behaviour;
- Insufficient information about the distribution, extent and status of the habitat, including information about the most important sites for biodiversity conservation;
- Lack of management, leading to scrub encroachment (although many sites are capable of maintaining their conservation interest for years without management);
- Mismanagement, including attempts to "tidy up and beautify" sites, for example, by grass seeding;
- Vandalism and fly tipping.

3. The situation with regards to future development

It is recognised that development on brownfield sites may be preferable to development on sites with semi-natural habitats and both local and national planning policies encourage development on brownfield sites. In Norwich the proportion of new dwellings built on previously developed land has increased from 48% from 1995-1998 to 94% in 2007-2009 (HCA, 2010). It is not an intention of this HAP to restrict development on all brownfield sites. Many sites on formerly developed land in urban areas, particularly small ones, will not meet the BAP criteria for this habitat and could be developed; a scoping survey of potential habitat undertaken by NBIS in autumn 2011 in Norwich, Kings Lynn and Great Yarmouth found that 32 of 41 sites visited were highly unlikely to meet the criteria and a further 5 only had a low possibility of meeting the criteria.

Whilst there are examples of sites where this habitat has persisted for extended periods, this habitat tends to consist of pioneer communities which will decrease in abundance as succession proceeds and open ground is reduced. The ecology of some of the species associated with this habitat reflects this; many species are necessarily mobile so they can colonise new sites as their original ones become less suitable. So in considering this habitat, it should be recognised that sites may be transient; some will become less suitable whereas new sites may become available for colonisation. The availability of potential sites for colonisation in urban areas is therefore crucial.

4. CURRENT ACTION IN NORFOLK

There has been relatively little action dealing with this habitat in Norfolk. However, the following activities are of relevance:

- The Norfolk Biodiversity Information Service (NBIS) has begun mapping this habitat within Norwich, Great Yarmouth and King's Lynn. Information on potential sites has been obtained from the National Land Use Database. A survey methodology has been developed to help assess whether sites meet the BAP definition and ground-truthing has begun. The survey methodology will be refined in light of this experience and gradually rolled out to other urban areas and potentially, rural sites such as disused airfields and old railway sidings. The aim is to develop a tool (such as an "alert map") to flag up important OMHOPDL sites to planners.

- Norfolk Wildlife Trust has carried out a scoping study on the potential to develop an urban reserve in Norfolk, which included a preliminary assessment of brownfield sites (Chittenden, 2009);

- The Biodiversity Supplementary Planning Guidance for Norfolk includes case studies demonstrating ways of incorporating wildlife interests into brownfield development (NBP, 2004);

- A number of plans, policies and strategies have been developed which are of particular relevance to open mosaic habitats, including Local Development Frameworks and the Green Infrastructure Strategies for Greater Norwich, Thetford and King's Lynn.

5. ACTION PLAN OBJECTIVES AND TARGETS

National

- There are currently no national-level objectives or targets for this habitat.

Norfolk

<u>Objectives:</u>

- To develop an up-to-date and comprehensive understanding of the current extent, biodiversity value and planning status of this habitat across Norfolk;

- To protect locally and nationally important biodiversity found on this habitat;

- To promote habitat connectivity in line with the vision of the Norfolk ecological network, particularly from urban areas into the wider countryside;

- To secure inclusion of valuable sites as recognised natural open spaces within Green Infrastructure strategies;

- To develop protocols to allow land within new development to be left for natural colonisation to proceed to ensure that there are always potential opportunities for this habitat to develop;

- To raise public and professional awareness of the importance and value of this habitat for biodiversity, with a view to increasing local community recognition of and pride in key sites.

- To consider the potential of green and brown roofs can contribute to the overall availability of this habitat in Norfolk.

Targets

Target Type:	Target Text	Target Value	Units	Target Date
Maintain Extent	No net loss of this habitat in the county by ensuring continuity of opportunities for this habitat to develop	To be determined	ha	2016
Achieve Condition	To bring at least 75 per cent of County Wildlife Sites containing significant areas of this habitat into positive management.	To be determined	Sites	2016
Create	To create new habitat at one former mineral site or closed landfill, on an experimental basis.	2	Ha	2016

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NATIONAL ACTION		NORFOLK ACTION	LEAD ACTION BY:	PARTNERS:	DEADLINE:
5.1	**Policy and Legislation**				
5.1.1	No national action.	Develop criteria for identifying new County Wildlife Sites on open mosaic habitats on previously developed land.	CWS Partnership		2012
5.1.2	No national action.	Develop a dedicated project to survey potential County Wildlife Sites containing this habitat and designate new sites as appropriate.	NWT	NBIS	2013
5.1.3	No national action.	Ensure this habitat is recognised as a BAP habitat during validation of development applications.	LAs	NBIS	2012
5.1.4	No national action.	Develop protocols to allow land within new development to be left for natural colonisation to proceed to ensure that there are always potential opportunities for this habitat to develop.	NBP	LAs	2012
5.1.5	No national action	Incorporate additional information about the identification, protection and management of this habitat into the revised Norfolk Biodiversity Supplementary Planning Guidance	NBP	LAs	2012

		being prepared by NBP.			
5.1.6	No national action	Create at least one example of this habitat on a former mineral site of at least 2ha in extent as an experiment. Instigate a management plan to ensure continuity and a programme of monitoring.	Private mineral company	NWT, NBIS, NE	2016
5.1.7	No national action	Designate at least one key site (as identified by action 5.4.1b) as a Local Nature Reserve.	LAs	NE	2016

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NATIONAL ACTION		NORFOLK ACTION	LEAD ACTION BY:	PARTNERS:	DEADLINE:
5.2	**Site Safeguard and Management**				
5.2.1	No national action	Bring at least 75 per cent of CWS containing significant areas of this habitat into positive management.	NWT	Landowners, CWS Partnership	2016
5.3	**Advisory**				
5.3.1	No national action.	Organise a dedicated training session for planners and developers on open mosaic habitats on previously developed land highlighting the importance of this habitat and how it can be incorporated into development plans.	NBP	SBP	Dec 2013
5.3.1	No national action.	Organise a seminar for developers and planners on green and brown roofs highlighting successful case studies and emerging best practice. Include guidelines and best practice in the revised SPG, or as a supplement to the SPG.	NBP	SBP	2014
5.4	**Future Research**				

	and Monitoring				
5.4.1	No national action	Map brownfield sites at a county-wide level and identify those areas that qualify as BAP habitat.	NBIS		Dec 2012
5.4.2	No national action	Identify the highest priority sites for biodiversity, using an objective methodology and a defined set of criteria.	NBIS		Dec 2013
5.4.3	No national action	Monitor availability of opportunity of this habitat to become established by repeating survey in 5.4.1.	NBIS		2016
5.4.4	No national action	Create an “alert layer” in GIS, for use by local authorities in determining planning applications.	NBIS	LAs	Dec 2013

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NATIONAL ACTION		NORFOLK ACTION	LEAD ACTION BY:	PARTNERS:	DEADLINE:
5.5	**Communications and Publicity**				
5.5.1	No national action	Raise awareness of the importance and value of this habitat by:			
		• Preparing at least one article for *Tern* or a similar publication;	NBP		2012
		• Organising a programme of guided walks etc.	NWT		2013
		• Presenting at a Biodiversity and Planning Seminar	NBP		2013
5.6	**Links with Other Action Plans**				
5.6.1	No national action.	This plan should be considered in conjunction with several other Habitat Action Plans, including the plans for Lowland Meadows, Lowland Calcareous Grasslands and Mixed Deciduous Woodlands.	Farmland Topic Group, Woodland Topic Group		Ongoing

Abbreviations

BDC	Broadland District Council
CWS	County Wildlife Site
LAs	Local Authorities
NBIS	Norfolk Biodiversity Information Service
NBP	Norfolk Biodiversity Partnership
NE	Natural England
NWT	Norfolk Wildlife Trust
SBP	Suffolk Biodiversity Partnership

NORFOLK DISTRIBUTION

The distribution of Open Mosaic Habitats on Previously Developed Land has yet to be mapped at a county level in a consistent manner; a mapping exercise to address this knowledge gap is one of the priority recommendations of the current action plan. However, it is clear that all the major urban centres in the county (Norwich, Great Yarmouth, King's Lynn and Thetford) contain a significant number of brownfield sites, a proportion of which will qualify as BAP habitat. Brownfield sites are also present in other parts of the county, including market towns.

MANAGEMENT GUIDANCE

(*This guidance is a general summary; for more detailed information or advice, please consult the references or contacts below*.)

Brownfield sites are most valuable when kept as open habitat, rather than being planted with trees or grass mixtures; ideally, a proportion of the site should be scoured at intervals of several years to refresh the surface and remove scrub.

Buglife (2009) has developed a best-practice guide on planning for brownfield biodiversity. The guide recognises that brownfield biodiversity presents a particular challenge to planners and emphasises the importance of:

- Having better ecological information about the biodiversity value of brownfield sites;
- Protecting key sites through local authority planning policy or statutory designation;
- Considering the wider environment, and in particular, the role that brownfield sites can play in contributing to ecological networks and the delivery of ecosystem services;
- Considering the potential role that biodiversity-rich brownfield sites can play in the provision of green infrastructure;
- Retaining existing habitats by integrating wildlife features into new development, rather than attempting to recreate them later;
- Managing brownfield sites appropriately. (The guide notes that turning brownfield sites into 'pretty' greenspace by importing topsoil, seeding grassland and planting trees can be as devastating to brownfield biodiversity as development.);
- Incorporating new biodiversity features into new development on brownfield land, including innovative structures such as living roofs and green walls;
- Securing long-term management and monitoring of sites, through the use of planning conditions and Section 106 agreements.

CONTACTS

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Websites

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http://www.englishpartnerships.co.uk/brownfieldstrategy.htm

http//www.essexfieldclub.org.uk/portal/p/Assessment+of+value+of+brownfield+sites

http://www.lincsbiodiversity.org.uk/docs/LWS/LWS%20factsheet%20%20Brownfield_Urban.pdf

http://www.naturalengland.org.uk/ourwork/enjoying/health/ournaturalhealthservice/default.aspx

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http://www.sustainablebuild.co.uk/BrownfieldSites.html

http://www.norfolkbiodiversity.org.uk