



## QUARRIES AND GRAVEL PITS

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### 1. INTRODUCTION

There has been a history of quarrying in the sub-region stretching back several centuries and exploiting a variety of deposits such as limestone, clay and ironstone in the south and east, coals, shales, quartzites and volcanic rocks in the centre and north, and sands and gravels in river valleys or areas of glacial drift deposits. Whilst some mineral sites have been land-filled and even built over, many large quarries, gravel pits, sand pits and their associated spoil heaps or sidings still remain. Many are abandoned or managed for nature conservation and a few quarries are still active. Wherever regular disturbance ceases, semi-natural habitats start to develop and can evolve into highly complicated habitat mosaics, often containing a variety of grasslands, wetlands, ruderal habitats, scrub and secondary woodlands. No other land-use in the sub-region has produced so many large, species-rich wildlife sites, or is so uniquely placed to help us create new ones for the future. The number of scarce plant and insect species found at some sites can be remarkable and the best are only matched in our area by the best ancient woods.



Bishop's Bowl © Steve Falk

Current data suggests that several hundred insect and plant species are mainly or entirely reliant on such sites, including a high proportion of our Red Data Book (RDB) and Nationally Scarce species of fly, bee, wasp, beetle and butterfly. Our limestone quarries now contain much of our better limestone grassland and the many attractive 'calicolous' plants this supports – also the Midland's top bumblebee site (with 9 species). Our gravel pits support most of the best wetlands, including most of our larger reedbeds and important water bird assemblages (including an important bittern site). Our strongest population of the internationally threatened white-clawed crayfish occurs at Ensor's Pool, an old brick pit. Yet some of these sites fall into the category of Previously Developed or 'brown-field' land, which is viewed as a more acceptable location for new development or landfill, than 'green-field' land. It is recognised that many of the habitats contained within this action plan are subject of other HAPs – but this HAP is geared towards promoting the diverse character of such sites and assisting the organisations that specifically own or manage them. Many of these sites have features of local geological importance. Any action for biodiversity should be harmonised with the geological management requirements of the site where possible. In fact in some instances the requirements may be the same.

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<b>2.</b>	<b>OUR OBJECTIVES &amp; TARGETS</b>	<b>Target</b>
<b>A.</b>	<b>To identify all ecologically important quarries, gravel pits and sandpits, and their ownership (including freehold or leasehold status).</b>	<b>by 2003</b>
<b>B.</b>	<b>To maximise our knowledge of such sites and ensure they are appropriately designated (e.g. SINC or SSSIs).</b>	<b>by 2005</b>
<b>C.</b>	<b>To maintain the extent and maintain / improve the condition of semi- natural habitats in and around mineral sites (with regard to any restoration plans and planning requirements already in place), with priority given to those holding UK BAP Priority Species, Red Data Book, Nationally Scarce and Regionally Scarce species.</b>	<b>2003-2015</b>
<b>D.</b>	<b>To promote the maintenance of extent and expansion of wildlife habitat following the completion of active quarrying and in planned new quarries and develop a policy framework for this in local planning documents.</b>	<b>2003-2015</b>
<b>E.</b>	<b>As above for landfill sites, promoting the importance of capping with locally-sourced subsoil and creating topographic features, wetlands etc.</b>	<b>2003-2015</b>
<b>F.</b>	<b>To promote the importance of quarries and gravel pits for wildlife; to promote good conservation management practice and to share knowledge.</b>	<b>2003-2015</b>
<b>G.</b>	<b>To promote closer dialogue between ecologists, planners, minerals operators and developers.</b>	<b>2005</b>
<b>H.</b>	<b>To integrate biodiversity schemes with geological conservation.</b>	<b>2005</b>

**ASSOCIATED HABITAT PLANS**

- Disused Industrial & Railway Land
- Ponds, Lakes & Reservoirs
- Reedbeds
- Fen & Swamp
- Lowland Grasslands (all types)
- Woodlands
- Scrub & Carr
- Rivers & Streams

**ASSOCIATED SPECIES PLANS**

- Small Blue
- Dingy Skipper
- Chalk Carpet
- Dotted Bee-fly
- Lapwing
- Great Crested Newt
- Snipe
- Otter
- Bittern

### 3. NATIONAL BAP OBJECTIVES & TARGETS

Whilst here are no specific BAP objectives for minerals sites, national BAP targets do exist for a number of the habitats contained within quarries and gravel pits e.g. reedbeds, calcareous grassland etc. Mineral sites also provide a unique opportunity to promote habitat creation within design proposals for the restoration of those sites, in a manner that helps address national targets. As such close liaison with developers/operators and the planning authority should be sought early in the planning process.

### 4. CURRENT STATUS

#### **Limestone/ironstone quarries and spoilheaps**

These are scattered throughout the south and east of the county with three important concentrations associated with the cement industry. The first is based upon the Bishops Hill-Bishops Bowl complex between Harbury and Bishops Itchington, which supports the largest continuous area of calcareous habitat in our area and is extremely diverse. It represents an abandoned quarry complex and associated large spoil heap. Harbury Spoilbank (a re-vegetated mound of limestone and clay produced by construction of the Leamington to Oxford Railway) lies only 0.75km away and Ufton Fields LNR (a long-abandoned shallow White Lias quarry) is only 1km beyond this. The second important concentration consists of Southam Quarry (an active and expanding RMC quarry with much habitat), Stockton Cutting (an inactive Blue Lias quarry and railway line) and Nelson's (Stockton) Quarry (an inactive Blue Lias quarry). These form a chain between Long Itchington and Stockton, linked by a disused railway line. The third concentration exists within suburban west Rugby and includes Newbold Quarry Nature Reserve and a quarry/spoil-heap complex around the Rugby Cement works (straddling Parkfield Road). There is far less semi-natural habitat associated with this third concentration than the previous two. Further important quarries include Cross Hands at the southern tip of the county (an old Oolite quarry that is being partially in-filled), Edgehill (Ratley Grange) Quarry (an active ironstone quarry), and abandoned ones at Napton Hill, Wilmcote (Gypsy Hall), Lighthorne and Avon Hill (near Avon Dasset). Harbury Spoilbank, Ufton Fields, and the Stockton Cutting-Nelsons Quarry complex are biological SSSIs. Harbury Spoilbank, Stockton Cutting, Ufton Fields and Newbold Quarry are wildlife trust reserves. Some sites also contain small geological SSSIs (usually small sections of quarry face) or RIGS (often much or all of the site). Most of our better limestone grassland is contained within limestone quarries and several contain open water and high quality wetlands.

#### **Gravel and sand pits**

The greatest chain of pits exists within the Tame Valley between Coleshill and Tamworth. It includes the huge Kingsbury Water Park complex (a Country Park) and adjacent Middleton Hall complex (private and partly active), Whitacre Heath (a SSSI and wildlife trust reserve), and the adjacent Ladywalk Reserve (a private nature reserve), Dosthill Pool, and the areas around Coton Hall (both private). A similar but smaller complex extends along the Blythe Valley between Bradnock's Marsh and Stonebridge and is augmented by the Cornetts End quarry complex (part of which is a landfill site) and the smaller, abandoned Cuttle Pool Lane Quarry near Temple Balsall. To the east of Coventry, in the Avon Valley, one finds the very diverse Brandon Marsh (a wildlife trust reserve and partial SSSI) and 2km south of this off the floodplain, the large Ryton Pools - Bubbenhall complex (a Country Park partially on landfill plus an active landfill site and expanding quarry). Smaller satellite sand pits such as

The Dell, Ryton and the Brandon Hall Sand Pit occur nearby. A less ecologically valuable one exists a few miles east at Lawford Heath (an active landfill site upon the Dunsmore Plateaux) and several further small sand pits of low value exist elsewhere within the plateaux. The only other substantial site in the county, Marsh Farm in the Arrow Valley, is still being actively worked but has developed limited vegetation and young wetlands. It is earmarked for long-term restoration back to farmland. Most of our largest and richest wetlands have developed in abandoned flood-plain gravel workings and are regionally important for birds, eg. Middle Tame and Blythe Valley and Draycote Water.

### Hard rock quarries

A great chain of mostly very deep quarries exploiting Precambrian and Palaeozoic shales, quartzites and volcanic rocks exists within the Atherstone Ridge between Baddesley Ensor and Nuneaton. It includes quarries such as Purley, Oldbury, Boons (also known as Man Abel's), Jeas Woodlands, Midland and Judkins. Griff Quarry and Dosthill Brickpit resemble the above examples but are located a few miles away from the Ridge. Ensors Pool in Nuneaton is a particularly large and wildlife rich site which is designated as an SSSI and an LNR. Most are either still being worked or are subject to landfill operations or development proposals. They mostly lack calcareous soils and tend to produce neutral to acid grassland, progressing to gorse, broom and other types of scrub, then to birch-oak secondary woodland with bracken where allowed. Some support valuable habitat mosaics of county value, and occasionally patches of heathland (a scarce habitat in our area), though they fail to attain the quality of the best limestone ones, and generally lack high quality wetlands. Other small sandstone quarries historically exploited for building stone can be found in the northern half of the county, but have mostly become wooded over.

## 4.1 Legal and Policy Status

Brandon Marsh, Harbury Spoilbank, Stockton Cutting and Quarries, Ufton Fields, several sites within the Blythe valley and Whitacre Heath contain biological SSSIs and small geological SSSIs and RIGSs are present at several sites. Several further sites have been formally designated as SINCs, but the majority are informally-designated County Ecosites, including two of the best limestone sites (which are now confirmed as having nationally important insect assemblages). Newbold Quarry and Stockton Cutting are Local Nature Reserves. Kingsbury Water Park, Ryton Pools and Ufton Fields are Country Parks. Several sites support great-crested newt, which is specially protected under the Wildlife & Countryside Act and Ensor's Pool supports native crayfish, resulting in candidate SAC status (of International Significance).

## 4.2 Current Factors Affecting The Habitat

- **Lack of conservation management** – leads to encroachment of scrub, rank grassland, even secondary woodland at some sites, which can be serious if species rich grassland or ruderal habitats become too restricted (though the same process can help create valuable habitat mosaics where kept in check). Several rare orchids and insects have declined in the county due to loss of early successional stages at certain key sites (including several SSSIs). All sites require some management to maintain their value in the long-term, and some would benefit from the creation of wetlands and features such as humps, hollows and clifflets.

- **Excessive disturbance** – most of these sites benefit from light or piecemeal disturbance – it helps combat the previous factor. But catastrophic disturbance that destroys much habitat within a short time period can be very harmful.
- **Development and land-filling** – all these sites fall into the category of brown-field land, which is seen as a more desirable location for development than green-field land, and some are being actively land-filled in line with planning conditions for long-term restoration to other uses (which can include nature conservation).
- **Unsympathetic restoration and management.** Allowing natural regeneration of vegetation directly upon rock, sand or subsoil, which is far better for species diversity than using fertile top-soil or artificial seed mixtures. Tree planting is rarely appropriate within the body of the site (where wetlands or floristically-rich habitats are more desirable, or perhaps already present). On capped landfill, a final capping with infertile, locally sourced sub-soil, and the promotion of topographic and structural diversity e.g. humps, hollows, clifflets, can produce SINC-quality habitat in the long-term. Landscaping and restoration should be undertaken as part of an approved scheme. This issue needs to be considered in the context of minerals planning.
- **Recreational pressure** – can cause disturbance to nesting or wintering bird populations (e.g. on disused quarry sites with water sports or noisy vehicle activity) and excessive dog-fouling can promote species-poor rank grassland by enriching the soil. However, light disturbance can be beneficial as it favours early successional habitats.
- **Small total area of habitat** – a problem at some small sites resulting in small and vulnerable population sizes of key species there and a break down of metapopulations.
- **Isolation of sites** - leaving populations/metapopulations vulnerable with limited colonisation potential. This can sometimes be countered by improving the quality of the surrounding countryside. There is clear evidence from recent surveys that species breeding in quarries and pits will forage in surrounding hedgerows, flowery field margins, fallow fields, disused railways or nearby woodland rides and margins.

## 5. CURRENT LOCAL ACTION

- Survey work and designation - many sites have been subject to a long history of wildlife recording, although the data is of varying scope, detail and age. Recent entomological survey effort has been good at many – resulting in detailed, loosely comparable lists for many key insect groups. This is revealing the relative values of the different sites and should facilitate ongoing SINC designation and possibly raise the need for some new SSSIs. A few active quarries have had minimal recording, especially in the north.

- Established management - most active within the SSSIs, LNRs, wildlife trust reserves and country parks – most of which have management plans and a work programme of management activity. Some of the active quarries have land informally set aside for nature conservation e.g. Southam and Edgehill. The damaging effects of excessive scrub encroachment has now been recognised, and substantial scrub removal has recently taken place at Harbury Spoilbank, Stockton Cutting and Ufton Fields – improving conditions for various scarce flowers and insects.
- Habitat creation - a number of important schemes are in progress or at the planning stage. At Brandon Marsh, a substantial new reed bed is being created. At Middleton Hall, Hanson Aggregates are creating a 150ha wetland complex straddling the Warwicks/Staffs border. At Rugby Works, plans for a new quarry include final restoration to wildlife habitat. Ongoing extension of Southam Quarry and Bubbenhall Pit may create opportunities for substantial habitat creation in future years. At Berkswell, gravel workings operated by RMC Aggregates Western have been restored to a series of wetland habitats and won a Quarry Products Association award for nature conservation lakes, whilst at Edgehill Quarry preparation is being made for establishing a wildlife site within the main quarry itself.
- Education - the country parks and many of the wildlife trust reserves host educational events for all age groups, and Earth Science educational visits are also permitted at several sites.
- Planning Procedures - current planning procedure regarding Minerals licencing, afteruse and redevelopment of sites ensure that the County ecologists can request amendments to plans so that that wildlife and habitat interests are protected wherever possible. The earlier in the planning stages that biodiversity concerns are considered the better.
- Advice provision - available from a number of organisations and groups for a range of issues e.g. Warwickshire Museum and Warwickshire Wildlife Trust for various species and management aspects, Butterfly Conservation for butterflies, English Nature for SSSIs, FWAG and DEFRA for conservation schemes such as Countryside Stewardship, and the Environment Agency for various wetland or landfill-related issues. Warwickshire Museum maintains a geological sites database (the GLRC) which includes records of RIGS and geological SSSIs.

## 6. PROPOSED LOCAL ACTIONS (some dates amended – Core Steering Group – Feb 2008)

ACTION	Lead	Partners	By	Meets objective
<b>Policy &amp; Legislation</b>				
<b>PL1.</b> Ensure that all relevant habitat policy is included in Local Planning Documents (see ODPM Planning Policy Statement PPS9)	LBAPSG	LAs	2003-2015	B, D, E, H
<b>PL2.</b> Continue to publicise the high ecological value of some brown-field sites and lobby for appropriate policy-based protection of these.	WM	WWT NE	2003-2015	D, E
<b>PL3.</b> Promote policy-based support for the restoration of quarries and landfill sites to high quality wildlife habitat.	WM	WWT NE EA	2003	C, D, E
<b>PL4.</b> Ensure that any site meeting the relevant criteria is considered for designation as an SSSI.	NE	WWT WM	2005	B
<b>PL5.</b> Ensure that any site meeting the relevant criteria is considered for designations as a SINC .	WSP	WWT NE WM LAs	2005	B
<b>Site / Species Safeguard &amp; Management</b>				
<b>SM1.</b> Actively work with aggregate industries to ensure development proposals do not reduce the nature conservation value of existing sites, and formulate compensatory measures where such damage is unavoidable.	LBAPSG	WWT LAs	2003-2015	C, D, E
<b>SM2.</b> Actively work to ensure that 50% of SSSI-quality sites are the subject of up-to-date management plans that account for all the key areas of interest.	NE	WWT WM LAs	2005	B,C
<b>SM3.</b> Actively work to ensure that water level management plans prepared for all wetland SSSIs are designed to provide optimal water, including the water table and management conditions and implement fully.	NE	EA WWT LAs	2003-2015	C, F

## Warwickshire, Coventry and Solihull Local Biodiversity Action Plan

<b>SM4.</b> Recommend that that mineral and landfill industries account for nature conservation at the earliest possible stage in any mineral planning application, including flexible restoration plans and phased extraction, and that interim landscaping requirements do not impede later conservation value.	LBAPSG	LA LECs	2003- 2015	C, D, E
<b>SM5.</b> Continue monitoring key species.	WBRC	BC WWT	2003- 2015	A, B, C
<b>SM6.</b> Produce a list of potential projects from which the Aggregates Sustainability Levy Fund and Countryside Stewardship can be bid for.	WM	NE WWT	2003	C, F, H
<b>SM7.</b> Actively promote up-to-date management plans that account for all the key areas of interest for 50% of SINC-quality sites.	WSP	WWT WM LAs	2005	B,C
<b>Advisory</b>				
<b>A1.</b> Inform landowners/managers of the ecological significance of their sites and advise accordingly, including information on suitable grant aid. Establish annual liaison meetings where possible.	WM	RSPB EA BC NE WWT FWAG	2004	C, D, E, F
<b>A2.</b> Produce an introductory leaflet for quarry and gravel pit owners listing sources of advice and grants.	WM	WWT EA FWAG	2004	B, H
<b>A3.</b> Extend the previous target to cover owners/managers of adjacent land, where it is likely that this will benefit vulnerable species or assemblages, or produce 'stepping stones' between sites.	WM	WWT EA FWAG	2005	C
<b>Research &amp; Monitoring</b>				
<b>RM1.</b> Continue to survey and monitor sites, especially where BAP species are present, and attempts to secure access to those not yet surveyed. Establish photography, quadrat, NVC and Phase 1 methodologies wherever possible to monitor changes in the habitat.	HBA	RSPB NE WWT EA WM BC	2003- 2015	E
<b>RM2.</b> Monitor losses and gains of habitat at a broad, quantitative level.	HBA	WM NE WWT	2005	A

Communication & Publicity				
<b>CP1.</b> Increase public awareness of the importance of, and threats to wildlife habitats within quarries, gravel pits and sand pits and the need for conservation action	WWT	NE WM EA BC RSPB FWAG	2003- 2015	B, H
<b>CP2.</b> Organise annual liaison meetings with site owners/managers.	LBAPSG	EA WWT RSPB NE FWAG WM	2003	B, H
<b>CP3.</b> Raise profile of the biodiversity value of quarries, gravel pits and sand pits in the county to local authority planners and statutory agencies.	WWT	RSPB FWAG WM	2003- 2015	B, H

**Abbreviations:** BC- Butterfly Conservation, EA - Environment Agency, NE – Natural England, FWAG – Farming & Wildlife Advisory Group, HBA – Habitat Biodiversity Audit, LEC – Local Extraction Company, LA – Local Authority, LBAPSG – Local Biodiversity Action Plan Steering Group, RSPB - Royal Society for the Protection of Birds, WBRC – Warwickshire Biological Record Centre, WM – Warwickshire Museum, WSP – Wildlife Sites Project, WWT – Warwickshire Wildlife Trust ,

## 7. REFERENCES (see LBAP Bibliography web page)

## 8. FURTHER INFORMATION (see separate Links web page for links to web sites)

Marsh Lane Nature Reserve  
Quarry Products Association

RSPB (2007) '*Habitat Creation Handbook for the Minerals Industry*'. How mineral sites can play a central role in delivering the UK BAP vision of landscape-scale habitat creation. £24.99 (plus P&P) from [publications @rspb.org.uk](mailto:publications@rspb.org.uk) or visit [www.afterminerals.com](http://www.afterminerals.com) and click on 'Habitat advice'.

Buglife (2008) '*Managing Aggregate Sites for Invertebrates – A Best Practice Guide*' can be downloaded from [www.buglife.org.uk](http://www.buglife.org.uk) or ordered by emailing: [info@buglife.org.uk](mailto:info@buglife.org.uk). For further information contact Andrew Whitehouse on 01733 201210.

Buglife (2004) Information on the habitat-management requirements of key invertebrates . CD-Rom £34.99 from Beverley Doyle by email at: [beverley.doyle@buglife.org.uk](mailto:beverley.doyle@buglife.org.uk)

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