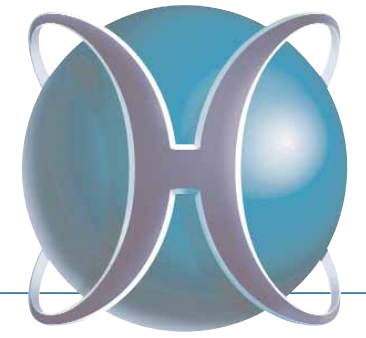


# EXPLORING HARWELL'S ECOLOGY



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HARWELL INTERNATIONAL BUSINESS CENTRE FOR SCIENCE AND



The nest-like seedheads of the wild carrot provide shelter for insects.

## Wildflower meadows

Wildflower grass mixtures have been used successfully to create diverse grassland. Species include alsike clover, sainfoin, kidney vetch, yellow and white melilots, black medick and wild carrot. More permanent plants include ox-eye daisy, lesser knapweed, yarrow, musk mallow, meadow buttercup, self-heal, marjoram and common St John's-wort. Common blue butterfly and grasshoppers can also be seen. Wild carrot seed-heads attract a variety of insects including ladybirds, earwigs and some spectacularly marked shield-bugs.

## Bird-spotting at Harwell

Sightings of more unusual birds have been made at Harwell. Skylarks can be seen in abundance where the site borders arable land and dunnock and yellowhammer make use of bordering hedgerows and other cover. Partridge (both native grey and the introduced red-legged species) and pheasant visit Harwell. Quail have also been recorded in the past, although not recently. Another transient visitor was an eagle owl while barn owls and kestrels have nested in various locations at Harwell. Bats have also been found in other areas, most recently during the decommissioning of ducts by Hangar 10. Care is taken during all projects to check resident fauna and seek specialist advice on handling. As part of its environmental management system UK Nirex has installed six nesting boxes on trees outside building

Bee orchids miraculously grow across the site.

587 in various sizes suitable for woodpeckers, tree creepers, robins, owls and bats.

## Mysterious orchids

Orchids require specific conditions to germinate so are not a commonly seen wildflower. However, several types of orchid have successfully established colonies around the Harwell site and their locations have been incorporated into the grass-cutting programme to ensure that their habitats are not disturbed at the wrong time of year. Impressive colonies of white helleborines which flower in late May can be seen opposite B424. Bee orchids which flower in late June have been found across the site including a recently discovered patch near B521. Both bee and pyramidal orchids grow on top of one of the disused RAF runways. To extend the orchid population still further some 250 common spotted orchids have been planted around the lagoon areas by members of the Hardy Orchid Society.



Lapwing favour this site.

## ECO-SITES

### A The mound

Measuring over six acres the 'mound' is believed to date back to RAF days when it was a spoil tip and has since seen the addition of soil excavated when the foundations were dug for new buildings at Harwell. In the 1950s it was planted with poplar, maple and horse chestnut trees creating a significant landscape feature at the south west end of the site.



Remedial work has opened up glades and paths across the mound.

In the late 1990s the woodland floor had been over-run with nettles and fallen trees so remedial action was taken to open up glades and lay out a path. Dead or fallen trees were removed selectively leaving some for fungi and invertebrates and others for woodpeckers to use as nesting.

A major planting operation has been completed to attract wildlife including oak and ash trees and dogwood, holly and blackthorn. Woodland wildflowers will complete the scheme and bluebells and violets have already been planted.

### B & C The Hangar 9 and Dido Road lagoons

These lagoons were built to balance rainwater surges on the site. The surrounds of the Hangar 9 lagoon have been planted with marsh marigold,



The Hangar 9 lagoon balances rainwater surges on site.

yellow flag iris and other aquatic and marginal plants. A wildflower meadow has been sown around the wider edge of the plot. In addition to butterflies and grasshoppers, the wetlands have attracted mallard and other water birds. Some goldfish and koi carp have been

introduced by site occupants. Although not ideal in a wildlife pond, due to their appetite for plants and insect larvae, the fish undoubtedly add interest to the lagoon.

The Dido Road lagoon has likewise been planted with mixed grasses and wildflowers, which have established well. It has provided a particular attraction to dragonflies and damselflies.

### D Frome Road runway

The BBOWT (see front page) initially helped to identify the ecological richness of this area and ways of maintaining its diversity. For a number of years this diversity has been encouraged by minimal intrusive maintenance. While the development of the business centre may require changes in this area, these will be designed, as far as possible, to retain established flora.

A clear strategy exists to develop Harwell International Business Centre by decommissioning redundant facilities and constructing new buildings, site infrastructure and amenities. Within this strategy there is scope to respect the diverse wildlife present on the site in various habitats ranging from grassland, wetland and wooded areas to more formal landscapes.

The business centre is located in an Area of Outstanding Natural Beauty in the North Wessex Downs, within the celebrated Vale of the White Horse. At some 260 hectares or 640 acres, the UKAEA's estate can play a vital role in protecting and encouraging native plant and animal species. With growing interest in our natural and man-made environment, a new approach has been adopted to site management. This is designed to preserve areas of particular richness and to ensure that new landscaping does not stifle the natural environment created over many years. Quite apart from the benefit to wildlife this creates a more attractive workplace for everyone at Harwell.

The new approach means that an ecology plan has been integrated into the complex seasonal schedule of grounds work. It marks a departure from the old style of estate management. While there are still formal flower and shrub beds and close mown lawns, a better balance is being restored with more informal natural settings to encourage native flora and fauna.

In essence, the plan involves:

**Grassland** – The site has extensive grassland that requires a carefully planned mowing regime in harmony with the lifecycles of wildflowers. Colonies of various orchids across the site and some newly created wildflower meadows require grass-cutting at specific times to help flowering and seeding.

**Trees** – The large stock of mature trees (last recorded at over 7,000) in both formal and woodland settings will be managed to create the best possible habitat for wildlife. Deadwood

supports insects which, in turn, attract birds. Some standing and felled deadwood will therefore be kept in situ. Planting new trees will create further habitats and also provide screening and windbreaks.

**Hedges** – As more hedging disappears in farmland situations, Harwell can provide a vital link in the north-south 'corridor' for migrating and nesting birds. New hedges using native species will be created across the site.

**Wetlands** – Pond and wetland areas support their own rich diversity of wildlife. Lagoons have been created on the site with regard for the flora and fauna they can support.

**Nest boxes** – Small mammals living in the grass and scrubland provide food for birds of prey. Good sites for nest boxes have been identified.

**Eco-sites** – Four specific eco-sites have been earmarked across the site as specific projects, namely the lagoon on the site of Hangar 9, Frome Road grassland, the 'mound' behind B521, and the Dido Road lagoon. Plans are described on the back page of this brochure.

## Setting

The escarpment of the Downs rises immediately to the south and the lower-lying land fringing the Thames Valley spans out to the north. The surrounding countryside is characterised by sweeping arable farmland and, centred on Harwell village, orchards sustain the long tradition of local fruit-growing.

## Geology

The main underlying geology is Lower Chalk with several bands of harder ground known as Chilton Stone and Melbourn Rock. Soils have a high content of calcium carbonate and montmorillonite clays; these have high pH value – in excess of 7 – and are heavy in consistency. Being rich in mineral nutrients they have been favoured as



prime arable land since prehistoric times. At Harwell the construction of the RAF airfield and its subsequent role as the Atomic Energy Research Establishment, further altered the geological make-up. However, this is not entirely to its detriment ecologically. Land has escaped treatment with agro-chemicals allowing many wild plants to colonise parts of the site.

## Archaeology

Although there are no ancient monuments, the Icknield Way crosses the northern part of the site. Also the local parish boundaries of Harwell, Chilton and East Hendred meet up within the bounds of the campus. Other old tracks border and cross the estate. These include the old Hungerford road which is still clearly visible as a green track adjacent to the northern boundary of the estate.

*Note: Anyone visiting areas described in this leaflet, whether within or outside the fenced area, should note that these areas can be hazardous due to uneven or wet ground, extensive growth (especially in season) and similar natural hazards. A number of plant species at Harwell are protected by law and their unauthorised removal is an offence. Harwell International Business Centre is a private estate owned by UKAEA. Only authorised access is allowed and particular parts of the site may be further restricted.*

## A word from BBOWT...

UKAEA supports the Berks Bucks and Oxon Wildlife Trust (BBOWT) both as a corporate member and through sponsorship of local projects such as the creation of wetlands at Cholsey Marsh Nature Reserve. The Trust is delighted to see that UKAEA is managing its site at Harwell to benefit wildlife as well as encouraging staff to take an interest in their surroundings. We hope that the good relationship between our two organisations will continue and that the Trust's endorsement will further aid the ecological projects underway on site.

Charlotte Francis, fundraising manager, BBOWT.

Berkshire Buckinghamshire Oxfordshire



Harwell International Business Centre for Science & Technology

Published by UKAEA, 150 Harwell, Didcot, Oxon OX11 0RA  
Contact: Harwell PR Manager on 01235 436909

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## 1 Meashill plantation

A diverse collection of trees including beech, lime, horse chestnut, ash, hazel, elder and sycamore. The grass swards are quite rich in toadstools.

## 2 Specimen trees

A remarkable range of specimen and ornamental trees was planted about the site after the war.

## 3 & 4 Recent tree plantings

Examples of newer, well-varied tree plantings can be seen in the area between B540 and the bus park. Another area is by the southern stretch of Rutherford Avenue. This comprises young trees rescued by grounds staff from Snelsmore Common before construction of the Newbury by-pass.

## 5 Autumn colour

The foliage of trees creates a dramatic effect during autumn months, for example those on the mound by B521.

## 6 & 7 Established tree habitat

A mosaic of mature trees, hedges and orchards can be seen on the old garden plots of the 'pre-fab' estates to the north of Hillside (6) and towards Chilton (7). The planned housing development at Chilton provides for the retention of various species of mature trees.

## 6 & 7 Developing hedges

Garden or boundary hedges have grown into an attractive hedge of hawthorn, privet, hornbeam, willow, ash and beech.

Warm autumn shades can be seen on the 'mound' behind B521.



## 8 Blackthorn belt

A substantial belt of suckering blackthorn, providing prime nesting habitat, is spreading in the area outside the boundary fence where it skirts Dido Road.

## 9 Mixed scrub

A pleasing area of open and mixed scrub can be seen between the Icknield Way and the water treatment plant, including hawthorn, wayfaring tree, hazel and field maple, as well as cherry and oak.



A population of cowslips.



Ox-eye daisies and pyramidal orchid.

## 10 & 11 Diverse hedges

There are substantial hedges along various stretches of the estate boundary, particularly on the western side. An especially rich feature of both archaeological and ecological interest is the double hedge lining the old green track of Hungerford Lane.

## 12, 13, 14 & 15 Grassland communities

In addition to ryegrass and creeping bent, other more diverse species occur including fine-leaved fescues, crested dogstail, cocksfoot, Yorkshire fog and golden oat-grass. Herbs include daisy, yarrow, smooth hawksbeard, autumn hawkbit, ribwort plantain, white and red clovers, black medick and germander speedwell. Lady's bedstraw can be seen in abundance in one area opposite Down Side.

## 16 Cowslips

A successful population of cowslips can be seen on a fragment of grassland adjoining the boundary fence at the southern tip of the site.

## 17 Species-rich grassland, butterflies and insects

Where the chalk turf has lain undisturbed and uncultivated, grassland of prime ecological importance can be found. The best example is alongside Frome Road where soil was used to cover old runways after the war. As well as upright brome-grass, classic chalk downland species are present including quaking-grass, crested hair-grass, glaucous sedge, salad burnet, greater knapweed, marjoram, wild basil, self-heal, bird's-foot trefoil and the rare blue fleabane. Pyramidal orchids have also been abundant in past years.

The habitat is ideal for invertebrates including marbled white and small heath butterflies, the rare brown argus, the six-spot burnet moth, many kinds of hoverfly, social and solitary bees and wasps, and yellow and black meadow ants.

## 18, 19, 20 Arable flora

Field margins and areas which were previously under cultivation, have a specific collection of flora. Typical examples include blackgrass, field pansy, scarlet pimpernel, sow thistles, field bindweed, fool's parsley, corn poppy, forget-me-not, cleavers, Persian and wall speedwell. Other rarer species found are knotted hedge parsley and Venus's looking-glass.



Wild pansy or heartsease.

### ECO-SITES (see back page)

- A** The mound by B521
- B & C** Hangar 9 and Dido Road lagoons
- D** Frome Road runway area