



COMMUNITY ORCHARD & NATURE RESERVE PROPOSAL

| | | |
|----------|--|-----------|
| 1 | Opening Statement | 2 |
| | The historical and environmental importance of Wolds End Orchard | |
| 2 | Wolds End Orchard Management Plan | 5 |
| | Caring for the orchard and the wildlife | |
| 3 | Veteran Trees | 8 |
| 4 | Species List | 9 |
| 5 | People's Trust for Endangered Species Report on Wolds End Orchard | 10 |
| | A habitat of principal importance | |
| 6 | Bernwode Report on Wolds End Orchard | 13 |
| | A site of national importance | |
| 7 | Historical Context Report | 15 |
| | Wolds End Orchard - part of Campden's heritage | |
| 8 | Education Report | 20 |
| | An award-winning educational facility | |
| 9 | Community Benefit Report | 22 |
| | Connecting communities and improving health and wellbeing | |

APPENDIX

| | | |
|----------|---|-----------|
| 1 | Extracts from the Cotswolds AONB Management Plan (2018-23) | 27 |
| | The importance of conserving and enhancing biodiversity | |
| 2 | Extracts from Traditional Orchards - (UK Biodiversity Action Plan) | 31 |
| | Orchards - a hotspot for biodiversity | |
| 3 | Report on Orchards by The People's Trust For Endangered Species | 33 |
| | Traditional orchards are designated priority habitats. Unfortunately, we are seeing an alarming rate of loss of this amazing habitat. | |

OPENING STATEMENT

The historical and environmental importance of Wolds End Orchard

Wolds End Orchard forms part of the historic environment and cultural heritage of the town and is a tribute to our agricultural past.

The Orchard contains rare varieties of fruit trees and its distinctive ridge and furrow landscape is one of the town's last remaining examples of medieval farming methods. It has never been intensively farmed and its veteran trees, hedgerows, grassland and limestone soil create a unique and irreplaceable 'mosaic' habitat; an ideal environment for vulnerable species of plants, insects, bats and birds.

Wolds End Orchard holds a very special place in the hearts of many local people; to us, its history and unique status is of equal importance to Campden's iconic architecture and, as such, must be protected from development.

The importance of preserving orchards is recognised both nationally and locally:

1. They are now designated Priority Habitats under the **UK Biodiversity Action Plan (2011)** and play a vital part in providing protection for many endangered and vulnerable species.
2. Their biodiversity and heritage give them special status in the **Cotswolds AONB Management Plan (2018-23)** CE7 Biodiversity and CE6 Historic Environment and Cultural Heritage policies.
3. **The National Planning Policy Framework (February 2019)** has increased its protection for ancient and veteran trees and clearly states they may only be removed for "*wholly exceptional reasons*" as follows:

175. c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁵⁸ and a suitable compensation strategy exists...

Note 58 reads: For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

As a Community Orchard and Nature Reserve, Wolds End will:

- protect, and improve upon, the existing flora and fauna (See Veteran Trees and Species lists pgs 8 & 9)
- be the only accessible open space in Campden that prioritises wildlife (See People's Trust for Endangered Species Report pg 10).
- follow Chipping Campden's tradition of preserving the local landscape, traditional crafts, and historical context around the town for future generations (See Bernwode Report pg 13 & Chipping Campden Historical Context Report pg 15).
- provide a local resource for schools and others to learn about nature and rural skills (See Education Report pg 20).
- be a space for people to volunteer and to enjoy wildlife in its most natural form, providing numerous social & health benefits (See Community Benefit Report pg 22).

THE FRIENDS OF WOLDS END ORCHARD.

- We have the funding in place to purchase WEO at a non-speculative price and to manage it in the immediate future.
- We have a proven track record in fund raising and charity organisation.
- We have the expertise and volunteers to get the project off the ground and a wealth of experts/organisations to call upon when needed (See Wolds End Orchard Management Plan pg 5).

IMMEDIATE GOALS – FIRST MONTH

- Set up a Community Benefit Society to manage Wolds End Orchard.
- Set up management and volunteer teams.
- Raise money to fund day to day costs via local charities, donors and funds.
- Take over Public Liability Insurance and take advice on security.
- Consult with local experts e.g. Gloucestershire Wildlife Trust, The Orchards Project, PTES, RSPB, etc.

SHORT TERM GOALS – FIRST SIX MONTHS

- Carry out bio-diversity survey and assessment of the Orchard as a nature reserve and traditional orchard.

- Draw up a schedule of works for regular maintenance, management and replanting designed to preserve the orchard habitat along PTES guidelines. (See Management Plan Pg 5).
- Hold a ‘soft’ opening to the members of the public: Campden residents and Orchard supporters in the first instance.
- Communicate via local press, website, social media accounts with a diary of work in progress, creating a ‘blueprint’ to assist other community groups embarking on similar projects.
- Recruit Ambassadors to help raise the profile of the orchard and increase funding opportunities.
- Hold fundraisers and apply for funding as necessary from individuals and local/national charities for landscaping scheme and other projects (see below).

MEDIUM GOALS – SIX MONTHS – A YEAR

- Create a landscaping scheme that provides paths for visitors and natural seating, whilst also be being mindful of providing access for the less mobile.
- Set up educational programmes with local schools and nurseries.
- Create links with day care, nursing homes and other Campden support charities.
- Hold an open day and invite the general public; supporting organisations; and the media to attend
- Hold “low impact” community events at the orchard (eg. Apple Day, Wassail, etc.)
- Investigate registering the orchard as a community asset and with AONB.

LONG TERM GOALS (WITHIN 18 MONTHS).

- Explore using for the fruit, i.e. apple/cider production and liaise with local companies and Campden School.
- Investigate the possibilities of creating a wildlife pond, a bat house, a bird hide & a wildlife ‘corridor’ from surrounding fields and installing webcams and camera traps.

WOLDS END MANAGEMENT PLAN

Caring for the orchard and wildlife

Geoff Carr/2020

- to maintain the orchard in order to maximise biodiversity
- based on maintenance guidelines from People's Trust for Endangered Species (PTES), Gloucestershire Orchard Trust, Common Ground (they run the national Community Orchards scheme)
- based on experience of maintaining the orchard over 12 years on behalf of Chipping Campden School.

Low intensity maintenance

Traditional orchards are renowned for their biodiversity as they provide a large number of ecological niches and so can support many species. To this end, low intensity management is used, with no application of fertilisers, herbicides or pesticides.

Tree Management

A range of ages is ideal for traditional orchards, including veteran trees which can feature hollow trunks and split bark. These provide important microhabitats for invertebrates, a number of which are conservation priorities under the national biodiversity action plan (BAP). It is also important to continue to plant young trees to help maintain continuity. These can be bought in as saplings or made through grafting. Varieties chosen should be of heritage or local importance rather than modern commercial ones. Young trees must be protected from deer using tree guards and need watering during prolonged dry spells. They also need an area of ground around them (about 1m diameter) which is free from competing vegetation. This can be achieved by bark mulching or using old carpet or sheep fleece, which is also useful to nesting birds. New trees should be planted with the traditional orchard spacing of 25 feet and should be on long-lived vigorous M25 rootstock. Planting should incorporate mycorrhizal fungi.

In order to maintain tree vigour and health, formative and restorative pruning should be carried out at the appropriate time of year according to species and age. Dead and decaying wood should be left in piles at or near tree bases as food for invertebrates and to return the nutrients to the ground. Senescent trees should be pruned for safety to avoid the danger of falling limbs but the trunks of dead trees should be left standing as they provide habitat for many beetles which in turn feed birds. Mistletoe and ivy are present in the orchard in many trees and these should be left as an important winter food source for birds.

Pest management has not been a priority in the orchard, nor has it presented a real problem as the production of a financially rewarding crop is not the primary aim. Apple scab is common but blemishes do not affect the juicing quality. Trees can be protected from larvae by grease banding but we have not found this necessary.

Harvesting

Due to the range of varieties present in Wolds End, harvesting takes place over a long season, from August until early December. Plums are first, followed by pears, eating apples, cooking apples, cider apples and finally warden pears (Black Worcester). Fruit for table use should be hand picked from the trees. When ripe, fruit for juicing can be gently knocked from the tree using a panking pole and collected on a tarpaulin. Wear hard hats for this job! Windfalls should be left for the birds and small mammals. They can be piled around the base of the trees so that the nutrients are returned following decay.

Hedgerows, Sward and Weeds

The biodiversity of the orchard as a whole is important. Hedgerows contain many food sources for birds and provide shelter, protection from raptors and nesting sites. These should be controlled through a three year cycle of cutting sections of hedge so that there is always a winter source of berries and a variety of habitats. Some control of brambles, nettles, thistles and docks is necessary. However they should not be eliminated and patches of these should be allowed to remain around the orchard as they are important food sources for many invertebrates and birds and provide cover for small mammals, which in turn provide food for owls and predatory mammals. Excessive growth of nettles and docks can be controlled by hand cutting or strimming when still at a tender stage of growth (late April). Docks should not be allowed to seed freely as they can be very invasive. Brambles should be allowed to flower and fruit before controlling. Ants nests will form mounds. These should be left undisturbed as they are an important food source for green woodpeckers.

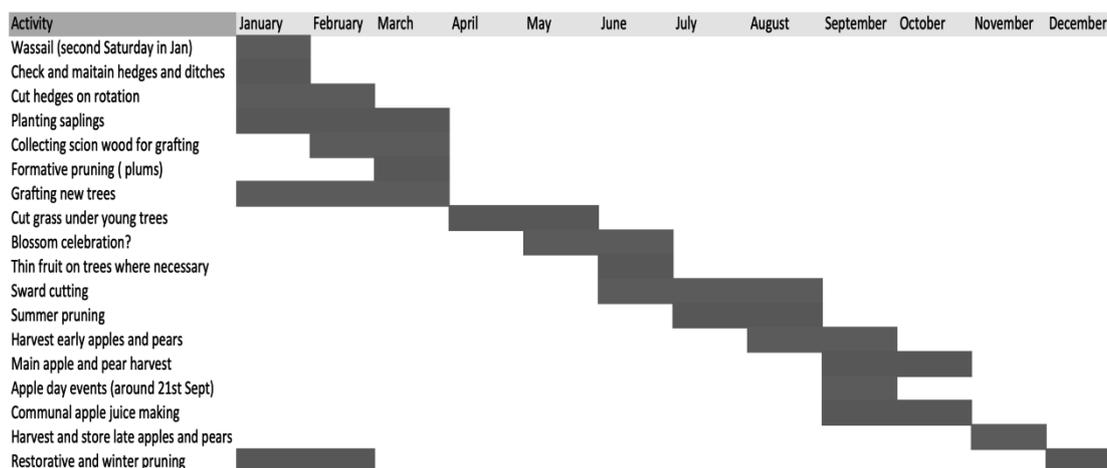
There are many natural nesting sites for birds and bats in the orchard but these can be augmented by the addition of suitable boxes. These could be monitored using battery CCTV cameras.

Sward control can be achieved by seasonal grazing by sheep, remembering to keep young trees well guarded. Overwintering of sheep in the orchard is not ideal as they poach the ground. Alternatively, the orchard can be mechanically topped, ideally in several stages so as to provide a constant range of grass heights. Spot planting of native wildflower species should be introduced to encourage pollinators. In the past bees have been kept in the orchard and an apiary would be a useful future addition.

Community involvement

Community involvement will be important in the future, if stewardship of the orchard is to change. In the past, the orchard has been studied and used for juice production by Chipping Campden School as well as local primaries and student ambassadors from Royal Agricultural University Cirencester. Public access has been limited to Wassail celebrations in January plus voluntary practical help from individuals in the town. Setting up communal juicing sessions and regular maintenance parties would be beneficial. Many community orchards have Apple Day celebrations on or around 21st September and blossom celebrations when the orchards are in full glory. It would be good to see more access for the town's residents and visitors as it is a special therapeutic place of natural beauty and tranquillity. However this access would have to be controlled to avoid abuse. For wildlife protection and hygiene reasons, dogs should not be allowed.

The attached chart shows the timing of maintenance activities.



TREE VARIETIES ON WOLDS END ORCHARD

Veteran Trees

Crab Apple. With a very high pectin content, Crab Apples are ideal for jams and jellies.

Newton Wonder. 19th Century apple tree. Good for juicing.

Bens Red. Good quality eating apple

Bramleys. Red/green cooking apple.

Dr Harvey. 16th Century cooking apple.

Star of Devon. Good for Chutney and Cider

Beurre Clairgeau (tbc). Excellent culinary and juicing pear.

Benheim Orange. Excellent local multi-purpose Apple Tree.

Ribston Pippin. 'Parent' of Coxes Orange Pippin.

Beurre Clairgeau. Excellent culinary and juicing pear.

Young Trees

Dymock Red. A very old vintage cider apple from Dymock, Glos.

Herefordshire Russet. Eating Apple. Excellent flavour

James Grieve. Dual purpose eating/cooking apple

Kingston Black. One of the premier English cider varieties; producing a bitter-sharp juice.

Black walnut. A vigorous, deciduous plant with excellent nuts

Winter Gem. An excellent eating apple with a rich flavour reminiscent of its famous parent variety 'Cox's Orange Pippin'

Taynton Codlin. An acidic cooking or cider apple from the village of Taynton, Oxon

Ashmead's Kernel. A firm, crisp, juicy, sugary, rich and highly aromatic apple.

Rhead's Reinette. Thought to be a cross between Peasgood's Nonsuch and Ribston Pippin. A large, sweet, early to middle culinary apple, good for baking and purees.

Chaceley Kernel. One of the finest aromatic flavoured apples with a sweet-sharp taste.

Black Worcester pear. A very old variety of uncertain origin possibly dating back to Roman times. Mainly used for cooking. A keeper which stays sound up to February.

NB: There are more than one of some varieties and a number of the veteran trees have yet to be identified.

SPECIES LIST FOR WOLDS END ORCHARD

| Plants | Invertebrates | Birds |
|-------------------------|-------------------------|---------------------------|
| Common buttercup | Earthworms | Song thrush |
| Stinging nettle | Woodlice | Blackbird |
| Milk thistle | Spiders | Sparrow |
| Sow thistle | Centipedes | Great Tit |
| Couch grass | Millipedes | Blue Tit |
| Docken | Rove beetle | Blackcap |
| Goose grass | Peacock butterfly | Green woodpecker |
| Ragged robin | Tortoiseshell butterfly | Lesser spotted woodpecker |
| Campion | Meadow brown butterfly | Starling |
| Red & White dead nettle | Small white butterfly | Yellowhammer |
| Red clover | Burnet moth | Bullfinch |
| Bird's foot trefoil | Crane fly | Barn Owl |
| Crested dog's tail | Slugs | Little Owl |
| Timothy | Banded snails | Short eared Owl |
| Burdock | Thrips | Mistle Thrush |
| Red fescue | Springtails | Fieldfare |
| Sheep's fescue | Shield bugs | Robin |
| Bent | Wasps | Wood Pigeon |
| Spotted medick | Bumble bees | Pheasant |
| Blackberry | Honey bees | |
| Elder Sambucus | Mammals | |
| Bristly ox-tongue | Rabbits | |
| Shepherd's purse | Moles | |
| Dandelion | Mice | |
| Thale cress | Shrews | |
| Speedwell | Muntjac deer | |
| Self-heal | Foxes | |
| Plantain | Badgers | |
| Daisy | Weasels | |
| Moss | Bats | |
| Ground ivy | | |

REPORT FOR WOLDS END ORCHARD (UPDATED 2020)

A Habitat of Principal Importance

Report by Steve Oram, People's Trust for Endangered Species

I work for the People's Trust for Endangered Species (PTES) as a specialist on priority habitats, particularly traditional orchards. PTES created and manage the traditional orchard habitat inventory on behalf of Natural England and Defra. Traditional orchards are designated a Priority Habitat in the Habitats Directive, Section 41 (habitat of principal importance). They were awarded this status in 2007 for their high levels of biodiversity and importance on a national scale.

It has been brought to our attention that Wolds End Orchard, a sizable and important habitat parcel, is under threat of development.

The wholesale destruction of mature veteran fruit trees and the associated hedgerows and long-established grasslands beneath is of major concern due to high biodiversity, heritage, cultural and amenity value. Like ancient woodland sites, there is no mitigation that can feasibly compensate for the loss of the habitat provided by mature veteran fruit trees, short of planting another orchard nearby and managing it for 50+ years before removing the old one.

The orchard directly abuts a Conservation Area. The impact of its development on the character of the CA should not be underestimated. There has been an orchard on this site since before the 1st Edition OS maps were produced in the 1830s, and orchards are an important part of the cultural heritage of the town.

The local acreage of traditional orchard has declined roughly 92% since c.1930 more or less in line with the rest of the country, making this surviving example vital for both the unique range of habitats it provides and the landscape character of Chipping Campden. An on-site condition assessment of the orchard in 2008 recorded between 30 and 100 veteran mixed fruit trees, standing, fallen and canopy deadwood habitats, branch and trunk crevices and holes, fruiting fungi, notable old hedgerows, a significant lichen population, mistletoe, areas of scrub development and nearby non-

fruit veteran trees. This array of habitat types creates a ‘mosaic’ which serves to support more species than would each element alone.

Beyond the fact that ridge and furrow is an important landscape feature of the Cotswolds in and of itself, the lack of disturbance on this site indicated by its presence would have allowed time for a diverse grassland sward to develop.

Although this site may seem a convenient location for development, this is far outweighed by the impact on area character, biodiversity and heritage landscape.

Steve Oram | Orchard Biodiversity Officer | 020 7062 8618

People’s Trust for Endangered Species | 3 Cloisters House | 8 Battersea Park Road | London | SW8 4BG

ptes.org/orchards

WOLDS END ORCHARD: A SITE OF NATIONAL IMPORTANCE
Report by Derek Tolman, Bernwode Fruit Trees.

ABOUT BERNWODE FRUIT TREES

We have spent the past 30 years researching old orchards and re-discovering ‘lost’ old fruit varieties. Through our nursery, Bernwode Fruit Trees, we propagate, disseminate and re-establish these old varieties in their local places of origin and elsewhere. We work closely with orchard and conservation groups, enthusiasts, local councils, and national bodies, building up research into historical land use, local custom and specific local varieties, when it comes to fruit trees and orchards.

We hold one of the largest collections of traditional fruit trees, of national significance, and are currently working on the largest ever single work of description for old apples. Our work encompasses the whole of the UK and sometimes overseas, in search of varieties lost here.

WOLDS END ORCHARD

In our view, Wolds End Orchard is of national importance and ranks very highly in comparison to the many old orchards we have visited. Its importance is further amplified by its location within such a significant town as Chipping Campden. It comes as a great surprise, in the modern era, that it is being considered a useful piece of real estate for modern purposes, at complete variance with the increasing national acceptance that such rare orchards should be protected and enhanced, for local amenity, research and preservation of local history. From our view the loss of any part of the orchard would be a calamity.

The orchard is important for three significant reasons, but not only these reasons:

1. It is very old, well preserved and close to the heart of ‘old’ Chipping Campden, having a clear history in relation to the surrounding area, such as Weighbridge Court and Cider Mill Lane, as well as being part of the centuries old local industry of cider and perry making.
2. The land it occupies is some of the best preserved mediaeval ridge and furrow land we have seen and is equally of national importance, within the definitions of English Heritage, who record a catastrophic decline in such well preserved field systems. The National Planning Policy Framework (2019) requires the conservation of veteran trees and their historic context.
3. The orchard would, if left alone, probably reveal in time that it contains rare, if not unique, apple and pear varieties, now ‘lost’ or never recorded outside the locality. We have already learned enough from the site to suggest this. The method of grafting of some of the trees there

also presents some searching questions, with examples never previously observed by us or recorded. The trees and the site itself need long-term observation.

We have known of car parks that have been removed to make way for community orchards. It is also true that orchards are still being lost to development, but we have not encountered the destruction, even in part, of such an important orchard in such an important place. It is our guess that the orchard predates the 1790s Enclosure Act for Chipping Campden, and local research might confirm this.

Every part of the Wolds End Orchard is historically integral to the whole parcel of land, which is a remarkable survivor so close within an historic town.

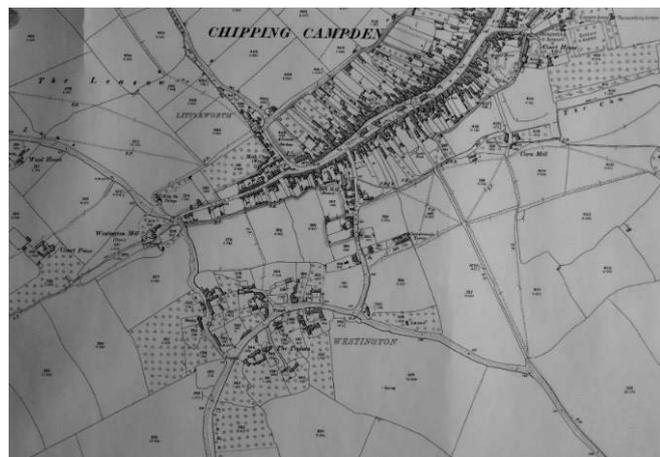
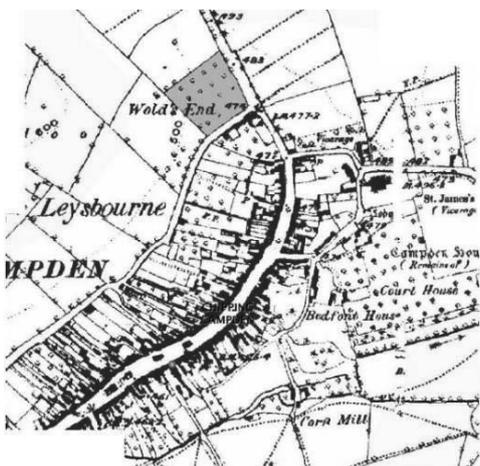
Derek Tolman 2020

For more information on Bernwode's conservation work visit <http://www.bernwodeplants.co.uk/>

The Gainsborough Estate map of 1818 details seven orchards in Westington, the wealthier part of town, including Cherry Orchard which later gave its name to housing. The map also describes Wolds End Orchard as 'House Ground', implying that it was land used for domestic purposes rather than farming, rearing pigs who would rootle amongst the fruit trees.

Many orchards are mentioned in Sales Particulars from the C18 and C19 as desirable sources of income. For example, this Sale of the Green Dragon in the Worcester Journal: ... *TO BE SOLD, all that extensive and well known PUBLIC HOUSE, known by the Sign of the GREEN DRAGON, ... with a large and commodious yard, garden, and a productive orchard planted with thriving young fruit trees.* Worcester Journal 16 Sept 1819.

An Ordinance Survey map of 1885 (below left) shows just how many orchards surrounded the town. This is the earliest evidence we have of Wolds End Orchard, which must have been well established before 1885 to be marked on the map.



The existence of local orchards continues with the 1902 the OS map (above right) showing them around Westington and at the backs of High Street houses.

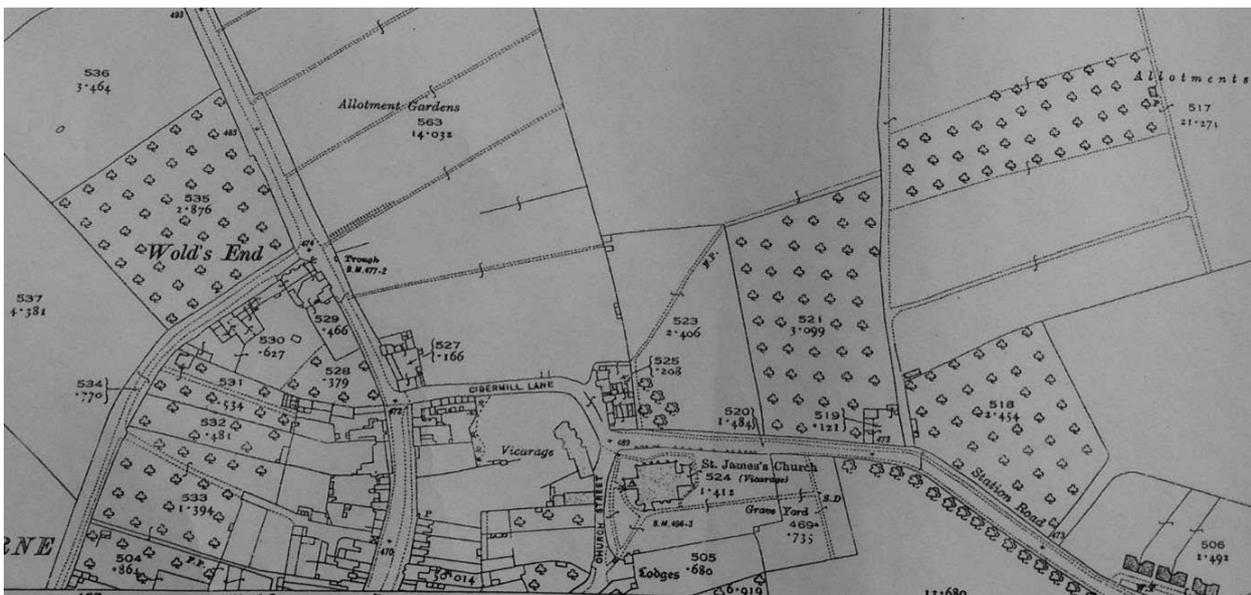
Some Campden orchards existed for centuries. For example, the Will of Innkeeper Nathaniel Tidmarsh written in 1782 mentions Littleworth Orchard (see overleaf) which was still in there when the new housing estate was built in the 1950s.



The development of larger orchards for commercial purposes happened in the latter half of the C19 and the Ordnance Survey map of 1923 (right) shows extensive holdings in Westington and Littleworth. Most of these fields are now built over with houses.



This detail of the same 1923 OS map shows the extensive orchards along Station Road, as well as Wold's End Orchard.



Local Memories

Fruit picking provided good employment for women and children as well as men in the summer months and was an integral part of the local economy.

“I loved it when I went with Dad to see Les Brodie in the cherry season. He'd be organising the pickers in his orchard down Station Road and I would 'help', eating as many as I could.” MF

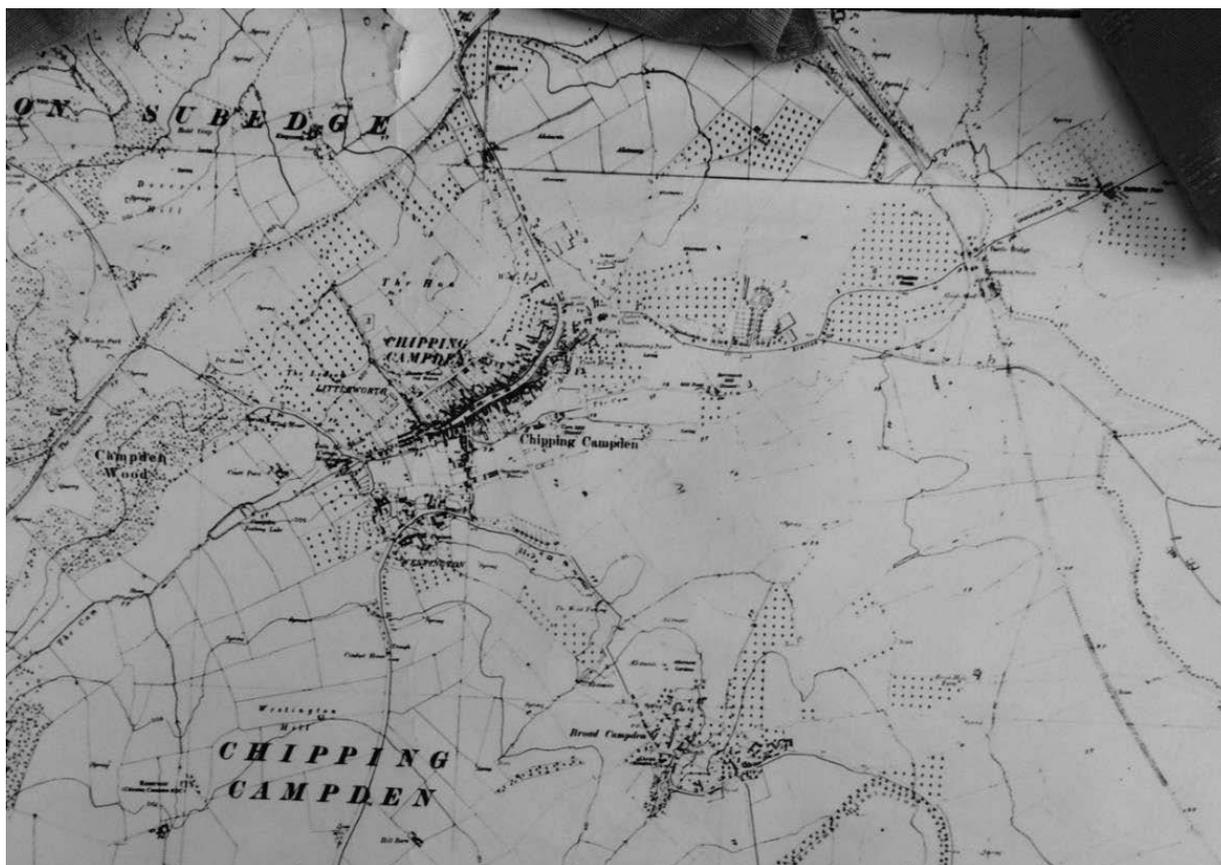
“When I was a lad growing up just after the war there were orchards all over, mostly cherry orchards, up Catbrook, and The Leasows that we got to from Dyers Lane. Old Campden House had the oldest fruit trees, on the slopes of the garden - apple, pear and cherry.” RG



Fred Coldicott (born 1910), in his book **Memories of an Old Campdonian**, says: *“When I was a lad, there were five large orchards and two smaller ones in Campden and Broad Campden. at Broad Campden they were at Briar Hill Farm and W.N. Izod's, at the rear of his farmhouse. At Campden there was Hand's Orchard, opposite side of the road to the Coneygree; George Haines in Westington, and Attlepin Farm; then there was the smaller one in Gainsborough's, behind the old ruins, and Uncle Bob's at Catbrook”.*

Every orchard had to have a bird-minder for five or six weeks. This was usually someone who was not quite able-bodied enough to do regular work. 'Teapot' Williams (left in Rimell's Orchard, Old Campden House) was always on duty at Hand's Orchard in Station Road. It meant being there

from dawn to dark. They were provided with a gun and rattle. The cherry-picking season was always a boon to casual workers; for a few weeks they could earn good money: the more they picked, the more they earned.



This 1950 map shows the extent of the orchards around Campden, making fruit growing a considerable commercial business at the time.

Ridge and Furrow Feature

Excerpt from the Farmers & Wildlife Advisory Group (FWAG) Report, 2006

“The site mirrors the impressive ridge and furrow landscape that can be seen in the fields to the North and West of the site which combine to be a particularly striking example. Although not designated as a scheduled monument the ridge and furrow should be preserved as much as possible ... as the historic environment is considered to be of increasing importance.”

Excerpt from Cotswold Archaeological Ltd Topographical Survey, 1994

“The most significant earthworks recorded within the study area comprised substantial ridge and furrow ... the form of ridge and furrow seen within and around the study areas falls within the category known as ‘broad rig’ generally accepted as having origins in the medieval period.”

Source: Transcriptions of wills, maps, photographs, sales particulars and local reminiscences can be seen in the Chipping Campden History Society Archives.

EDUCATION REPORT

Award winning educational facility

By Geoff Carr former head of Rural Science, Chipping Campden School March 2020

Wolds End Orchard provides a unique and valuable resource for schools and other local groups to learn about nature and rural skills. This educational work has already spread out beyond the town and has been recognised by winning:

- Best School Food award from Cotswold Life magazine, 2010 (won)
- Enterprise and Innovation Award from School Farms Network, 2017 (won)
- School Farm Environmental Impact award, 2019 (runner up).

Below are examples of how the Orchard has been used – and can be used in the future - for educational purposes.

Chipping Campden School took on two consecutive six year leases of Wolds End orchard in 2008 for the following reasons:

- 1) To facilitate **practical teaching** in animal husbandry for both the GCSE in Environmental and Land-Based Science and the Diploma in Environmental and Land-Based Studies. The space in the orchard provided grazing space for the school flock of Cotswold Longwool sheep and a paddock for their Gloucester Old Spot pigs. As part of the diploma course, students from other schools worked and learned in the orchard. Student Ambassadors from Royal Agricultural University, Cirencester also helped.
- 2) To provide an area of significant biodiversity for **study by mainstream GCSE science classes and A level biology students.**
- 3) To enable students on the **Rural Crafts course** to gain experience of tree planting, grafting, coppicing and green woodwork.
- 4) To harvest, process and sell apple juice as a **joint project between the environmental, business and catering** sections of the school.
- 5) As a **public service project** for the town, to maintain the orchard for maximum biodiversity and replanting with new trees to ensure its continuity. **Duke of Edinburgh Award** students helped out for years, planting many replacement trees.
- 6) To provide a **knowledge base** for schools across the county. I organised many visits from all the local primary schools. I received training in orchard management and juice making and then

shared these, teaching grafting skills and establishing orchards in several secondary schools across Gloucestershire.

Business Background

The produce from the project (lamb, pork sausages and juice) was sold mainly in school to staff and through the canteen. The juice was also sold in Old Farm Dorn farm shop, Fillet and Bone delicatessen in Campden and we supplied the prestigious Chef's Dozen restaurant.

In addition each year, many kilos of apple crisps were made and distributed free to the students at our annual apple day celebrations, along with fresh fruit.

The business side of the project was registered as a Community Interest Company with the assistance of David Kingsmill from The Campden Society and Arthur Cunynghame from Campden Business Forum.

Local Support

Many local people also took an interest in the orchard, supplying trees and helping to plant them and undertaking maintenance work. We received several grants from local funding agencies to help with the cost of maintenance as well as donations from private individuals. For the last ten years we have also held a traditional Wassail ceremony in the orchard, celebrating the importance of orchards in a rural community.

The project brought great enjoyment and many learning opportunities as well as making much appreciated products. The staff, volunteers and students involved would I'm sure agree with me in saying that Wolds End orchard is a special place of peace and tranquillity: a haven for wildlife. I hope that others in the future will be able to have the joyful experience of spending time in such a lovely environment.

COMMUNITY BENEFIT REPORT

Connecting communities and improving health and wellbeing

REPORTS from the Department for Communities & Local Affairs, Mind, and Natural England.

A. Excerpts from **Community Orchards Case Studies: Department for Communities and Local Government**, August 2011

“The Government recognises the value for communities of green spaces – parks, orchards, allotments, gardens etc – and, as part of the localism and decentralisation agenda, has committed to measures that will enable individuals and communities to gain access to the land they need. Community orchards ... are places for people to come together and use the open space as a focal point for community activities. They also promote the health benefits of fresh produce and outdoor exercise for people of all age groups.”

Here are some of the statements, taken verbatim from the impact assessments of 10 community orchards:

1. Prevention or alleviation of loneliness:

The orchard group frequently receives e-mails from people wanting to thank them for the difference the orchard has made to their lives.

... fostering neighbourly cooperation which will be enhanced through the exchange of horticultural tips and recipes, and the shared appreciation of the beauty of the fruit trees in a valued green space.

There has been an increase in the community working together since the orchard was created with local children showing an interest in where food comes from and older people getting out of their homes more and becoming less socially isolated.

A new community of people who contribute to the work in the orchard has developed. People work together and families with children attend events which are put on by the orchard group.

Enhanced community cohesion has been created by working in the orchard. New friendships have been formed and new skills developed.

2. Building Mental Resilience in Children:

The Forest Schools scheme [based at the orchard and run by trained leaders] aims to help people by allowing them to participate in engaging, motivating and achievable tasks and activities in a woodland environment each participant has an opportunity to develop intrinsic motivation, sound emotional and social skills. These skills can then be developed to allow individuals to reach their personal potential. Forest Schools has demonstrated success with children of all ages who visit the same local woodlands on a regular basis and through play, who have the opportunity to learn about the natural environment, how to handle risks and most importantly to use their own initiative to solve problems and co-operate with others. ... Children use full sized tools, play, learn boundaries of behaviour; both physical and social, establish and grow in confidence, self-esteem and become self motivated.

Forest Schools develop: • self awareness • self regulation • intrinsic motivation • empathy • good social communication skills • independence • a positive mental attitude, self-esteem and confidence.

3. Support for vulnerable people:

The heritage orchard provides people with learning disabilities with stability and support so that each person has the opportunity to develop their skills and confidence, fulfil their potential and gain a sense of personal achievement.

4. Well-Being for the General Population

The orchard also helps raise people's awareness and understanding of the contribution that physical activity and a good diet, using home grown organic produce, can make to everyone's wellbeing and good health. The space creates respite away from the hustle of daily life. The public are welcome to walk around the orchard, bring their families, dogs and soak up the peace and quiet.

B. There is also a move away from prescription medicines to nature-based remedies. The charity **Mind** reports: *"In the UK an estimated one in four people experience a 'significant' mental health problem in any one year. With the prescription of anti-depressants at record levels and a huge demand for Cognitive Behaviour Therapy and other psychological therapies, health and social care commissioners are examining and commissioning different options for cost effective services for mental health. At the same time there is increasing recognition of the importance of nature and place as a determinant of individuals' mental health. Nature-based interventions are operating throughout the UK, working with a wide range of vulnerable groups helping to positively benefit health and wellbeing outcomes. Doctors are prescribing a range of green therapies and green care to their patients."*

Evaluations of schemes such as **Green Gyms**, a nation-wide scheme that has been operating through **The Conservation Volunteers** for 20 years, report these benefits:

- significant increases in mental health state scores
- a reduction in depression
- a trend towards weight loss
- positive changes to lifestyle.

Green Gyms also enhance mental wellbeing through increased contact with nature, the social benefits of group activity and helping people contribute something positive to their community. TCV work closely with partners, including mental health charity Mind, to continually innovate Green Gyms to ensure that they maximise the benefits for participants.

C. **Natural England**, the government's advisor for the natural environment in England, state the varied benefits of nature to the general population. Note that 5 of these 9 points specifically refer to trees.

1. **Improving air quality** - Trees, woodland and other green infrastructure improve air quality by intercepting harmful particulates, which are a contributing factor to respiratory conditions such as asthma. (1)
2. **Reducing stress** – Urban residents suffering from stress experience less anxiety when they have a view of trees. Physical signs of stress such as muscle tension and pulse rate are also measurably reduced when moving into green surroundings (2)
3. **Aiding recovery** – Hospital patients with a view of greenery have been shown to recover more rapidly, and require less pain killing medication than those who only have a view of buildings (3)

4. **Alleviating depression** - Taking part in nature-based activities helps people who are suffering from mental ill-health and can contribute to a reduction in levels of anxiety and depression (4)
5. **Shading us from the sun** – Thinning of the protective ozone layer coupled with more extreme weather patterns is being linked to the increase in skin melanomas, the most rapidly increasing form of cancer in the UK. Dappled shade of trees provides a useful barrier to harmful ultra-violet radiation (5)
6. **Encouraging physical activity**- Green spaces provide space to exercise which improves memory and cognitive function. (6) People who use parks and other green spaces are three times more likely to reach the recommended level of physical activity than nonusers. (7)
7. **Saving lives** - In the United States of America, trees help reduce or prevent more than 670 000 cases of severe respiratory diseases per year and thereby save more than 850 lives annually (8)
8. **Reduce obesity** - Children living in areas with good access to green spaces have been shown to spend less time in front of television screens, computers and smart phones and to have 11-19 percent lower prevalence of obesity compared with children limited or no access to green spaces (9)
9. **Bringing people together** – Trees and woods can help to bring people together and strengthen communities, reducing loneliness and isolation (10)”

In addition to these benefits to the general population, there is substantial and growing evidence of other health benefits to people living with various mental health issues

The same Natural England report states: *“as approximately two-thirds of people living with **dementia** currently live in their own homes and tend to be at the earlier stages of dementia, the interaction of this group with nature should be the focus of any future intervention.”*

There have been initiatives to provide this contact with nature for those at the early stages of the disease, and it has been found to produce benefits including: (quoted from the report)

- improved emotional state;
- reduced stress, agitation, anger, apathy and depression;
- improved sleeping and eating patterns;
- improved verbal expression, memory and attention;
- improved awareness,
- sense of well-being,
- independence,
- self-esteem and control; as well as
- improved social interaction and a sense of belonging.

Sources, documentation and websites

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NECR204 edition 1 A Review of Nature-based interventions for Mental Health Care
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8. Nowak et al., 2014
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10. Kaplan R & Kaplan S (1989) *The Experience of Nature - A Psychological Perspective*, Cambridge University Press

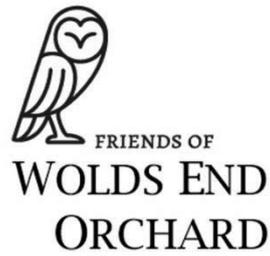
Relevant websites:

GreenGyms - <https://www.tev.org.uk/>

Natural England <https://www.gov.uk/government/organisations/natural-england>

Mental Health Charity and Organic Farm <https://www.growingwell.co.uk/>

Campaign for the Preservation of Rural England <https://www.cpre.org.uk/discover/peace-of-mind/>



APPENDIX

1. **Extracts from the Cotswolds AONB Management Plan (2018-23)** 27
The importance of conserving and enhancing biodiversity
2. **Extracts from Traditional Orchards - (UK Biodiversity Action Plan)** 31
Orchards - a hotspot for biodiversity
3. **Report on Orchards by The People's Trust For Endangered Species** 33
'Traditional orchards are designated priority habitats.
Unfortunately, we are seeing an alarming rate of loss of this amazing habitat'

EXTRACTS FROM THE COTSWOLDS AONB MANAGEMENT PLAN 2018-23

The importance of conserving and enhancing biodiversity

The Cotswolds AONB Management Plan has a policy to conserve and enhance biodiversity (CE7), focusing on a list of priority habitats and species. That list includes ‘Wood pasture, parkland and veteran trees’ which covers old orchards. There is also a policy on the historic environment and cultural heritage (CE6) which is also relevant to Wolds End Orchard.

Policy CE7: Biodiversity

1. Biodiversity in the Cotswolds AONB should be conserved and enhanced by establishing a coherent and resilient ecological network across the Cotswolds AONB and in its setting, focussing on the priority species and habitats listed in Appendix 8. This should be achieved by implementing the following principles

- **Better:** Existing wildlife sites should be protected, in line with national policy and guidance, and be brought into good condition through effective and appropriate management.
- **Bigger:** The size of existing wildlife sites should be increased.
- **More:** More wildlife sites should be created.
- **Joined:** Connectivity between wildlife sites should be improved by creating new wildlife corridors and ‘stepping stone’ sites and the provision of green infrastructure. The pressure on wildlife should be reduced by improving the wider environment, including the provision of less intensively managed ‘buffer zones’ around wildlife sites.

2. Proposals that are likely to impact on the biodiversity of the Cotswolds AONB should provide a significant net-gain in biodiversity, particularly with regard to the species and habitats listed in Appendix 8. 3. Biodiversity – in particular, the priority species and habitats listed in Appendix 8 – should be a key component of future agri-environment, land management and rural development support mechanisms in the Cotswolds AONB.

Despite investment for many years in conserving and enhancing biodiversity, habitats and species have continued to decline, notably on ancient, semi-natural habitats. Many of the AONB’s most important habitats rely on traditional practices that are no longer economically viable. Extensive grazing of species-rich grasslands has reduced due to a downturn in the livestock industry and diseases such as tuberculosis. Woodland management has also declined as imported wood products have become cheaper.

The reduction in size and fragmentation of habitats has led to populations of species becoming more vulnerable to population decline or extinction. Climate change is likely to result in changes to the areas that are climatically suited to host particular species. The fragmentation of habitats will make it more difficult for species to move to these new climatically suitable areas. Climate change is also likely to change the timing of seasonal events, leading to a loss of synchrony between species and the resources that they depend on, notably for food and production. Changes in farming and forestry practices could also affect some species. Policy CE7 should help to provide an environment that enables species and habitats to better adapt to climate change. Additional measures relating to climate change are provided in Policies CE7 and CE8. Lack of continuity of funding and resources, bureaucracy, diseases in specific species and the sheer scale of the task at hand are some of the additional factors leading to continued declines in biodiversity. Development and recreational pressures have also played a role in this decline. In the wider landscape, the conservation and enhancement of habitats and species is largely reliant on payments from agri-environment schemes. However, the UK's exit from the EU could see fundamental changes to these support mechanisms and to the legislative requirements relating to biodiversity. These changes pose significant risks to the future conservation and enhancement of biodiversity but they also provide significant opportunities.

The Government's 25 Year Environment Plan and the National Planning Policy Framework provide some positive biodiversity-related measures which should help to address declines in biodiversity. These measures include delivering net-gains in biodiversity, increasing the level of protection afforded to irreplaceable habitat such as ancient woodland, creating more green infrastructure and identifying, mapping, conserving and enhancing ecological networks.

Although Policy CE7 focusses on the AONB and its setting, consideration will also need to be given to ecological networks in the wider environment, for example, river corridor ecological networks where the rivers start in the AONB but extend well beyond its boundaries.

Appendix 8: Priority Habitats and Species

This list of priority habitats and species for the Cotswolds AONB is adapted from Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, which lists the habitats and species that are of principal importance for the conservation of biodiversity in England. The habitats and species listed below are considered to be: (i) characteristic of the Cotswolds; and/ or (ii) those for which the Cotswolds AONB is considered to a stronghold of those particular habitats or species.

There are other priority habitats and species within the AONB, which merit an appropriate level of protection, but which do not meet the two criteria outlined above. Habitats with an asterisk (*) are not

on the NERC Act list but have been identified, by the Board and relevant stakeholders, as priorities for the Cotswolds AONB.

Habitats

- Lowland mixed deciduous woodland
- Lowland beech and yew woodland
- Wood pasture, parkland and veteran trees
- Lowland calcareous grasslands
- Flushes, streams and rivers
- Arable field margins important for birds and plant species
- Hedgerows
- Common box woodland
- Areas important for bats ('batscapes')*
- H7720 petrifying springs with tufa formation (Crataneurion)*

Species

• Cotswold pennycress • Bats • Dormouse • Water vole • Brown hare • Limestone grassland butterflies • Marsh fritillary • Violet click beetle • White clawed crayfish • Native brown trout • Bath asparagus* • Common box* • Rockrose pot beetle • Rugged oil beetle • Ancient woodland ground flora.

Policy CE6: Historic Environment and Cultural Heritage

1. The historic environment and cultural heritage of the Cotswolds AONB, both designated and undesignated²⁵, should be conserved and enhanced through effective management.
2. Designated historic environment sites, such as Scheduled Monuments and listed buildings, should be protected, in line with national policy and guidance.
- 3. Proposals that are likely to impact on the historic and cultural heritage of the Cotswolds AONB should have regard to these features and seek to conserve and enhance them. This should include respecting historical features, buildings, sites, layout and context, including the relationship between the existing feature or settlement and the landscape.**

4. Historic Environment and Cultural Heritage should be a key component of future agri-environment, land management and rural development support mechanisms in the Cotswolds AONB.

Historic Environment and Cultural Heritage. ‘Undesignated’ covers the full spectrum of undesignated assets related to the historic environment and cultural heritage, for example, ranging from archaeological sites to sites associated with the Arts and Crafts movement of the late 19th and early 20th centuries.

The historic environment is a finite resource and is continuing to decline and be lost due to development, changes in land management and a lack of understanding and management, particularly with regard to the wider historic landscape and the less visible and undesignated sites which have no protection. The need to understand and promote the connectivity of historic sites and their settings as part of the wider landscape character is vital in order to effectively conserve and manage the historic environment and Historic Landscape Character.

Source: extracts from <https://www.cotswoldsaonb.org.uk/planning/cotswolds-aonb-management-plan/>

EXTRACT FROM TRADITIONAL ORCHARDS - UK BIODIVERSITY ACTION PLAN

Orchards - a hotspot for biodiversity

Traditional orchards are structurally and ecologically similar to wood-pasture and parkland, with open-grown trees set in herbaceous vegetation, but are generally distinguished from these priority habitat complexes by the following characteristics: the species composition of the trees, these being primarily in the family Rosaceae; the usually denser arrangement of the trees; the small scale of individual habitat patches; the wider dispersion and greater frequency of occurrence of habitat patches in the countryside. Traditional orchards include plantings for nuts, principally hazel nuts, but also walnuts. Management of the trees is the other main feature distinguishing traditional orchards and wood-pasture and parkland. Trees in traditional orchards are, or were, grown for fruit and nut production, usually achieved through activities such as grafting and pruning; whereas timber has been the main product from trees in wood-pastures and parkland, mostly derived from pollarding or selective felling. Grazing or cutting of herbaceous vegetation are integral to orchard management, as they are in wood-pastures and parkland. The presence of scrub, mostly in the form of hedgerows on the site boundaries, or sometimes, especially in unmanaged orchards, among the orchard trees, is analogous to the frequent occurrence of scrub in wood-pastures and parkland and plays a similar ecological role (see under biodiversity characteristics described below). Ponds and other wetland features are often present; being used now, or in the past, for watering livestock.

Orchards are hotspots for biodiversity in the countryside, supporting a wide range of wildlife and containing UK BAP priority habitats and species, as well as an array of Nationally Rare and Nationally Scarce species. The wildlife of orchard sites depends on the mosaic of habitats they encompass, including fruit trees, scrub, hedgerows, hedgerow trees, non-fruit trees within the orchard, the orchard floor habitats, fallen dead wood and associated features such as ponds and streams. A feature of the biodiversity of traditional orchards is the great variety of fruit cultivars that they contain. For example, Luckwill and Pollard (1963) list 101 varieties of perry pear distributed across the parishes of Gloucestershire. This agricultural biological diversity is not an explicit part of the current UK BAP, although the UK Government is a signatory to the Global Strategy for Plant Conservation (2001). The Government response (Cheffings and others 2004) includes a target for conserving crop diversity.

Traditional orchards are defined for priority habitat purposes as orchards managed in a low intensity way, in contrast with orchards managed intensively for fruit production by the input of chemicals such as pesticides and inorganic fertilisers, frequent mowing of the orchard floor rather than grazing or cutting for hay, and planting of short-lived, high-density, dwarf or bush fruit trees.

From: UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008.

<http://data.jncc.gov.uk/data/2829ce47-1ca5-41e7-bc1a-871c1cc0b3ae/UKBAP-BAPHabitats-56-TraditionalOrchards.pdf>

Note: The Joint Nature Conservation Committee (JNCC) is the public body that advises the UK Government and devolved administrations on UK-wide and international nature conservation.

<https://jncc.gov.uk/our-work/uk-bap-priority-habitats/#list-of-uk-bap-priority-habitats>

REPORT ON ORCHARDS BY THE PEOPLE'S TRUST FOR ENDANGERED SPECIES

**‘Traditional orchards are designated priority habitats.
Unfortunately, we are seeing an alarming rate of loss of this amazing habitat’**

Orchards are a mosaic habitat: The habitat contains elements of woodland, pasture, meadow grassland, is often bordered by hedgerows and can also include areas of scrub. As good as each of these habitats are on their own, they combine in your orchard to create a wildlife haven more than the sum of its parts. These vegetation types add to the plant diversity and create a mosaic of habitats to support a vast range of species.

Orchard trees and dead wood: Wood decay is part of the natural ageing process of a tree, and old fruit trees have a particular way of aging with hollow trunks, cracks in bark and rot holes that provide an incredible habitat for all manner of invertebrates, fungi, birds, bats and other small mammals. From a wildlife perspective, standing decaying wood is one of the most valuable elements of the orchard habitat, veteran or even dead trees provide some of the best habitats especially for fungi and invertebrates.

Ageing trees naturally die-back (senesce) and begin to hollow out helping them to remain standing, recycling nutrients and ultimately thriving for longer. Dead and decaying wood, therefore, does not necessarily mean that a tree is in poor health. It will still be able to survive and produce fruit for many years to come whilst providing valuable habitat.

A well-managed established orchard has a mixture of tree ages. Young trees allow plenty of light to reach the grassland and older trees provide shelter and food thus further adding to the diversity of habitat available for nature.

Unimproved grassland: The grasslands in many traditional orchards have been undisturbed for decades if not longer and have escaped agricultural improvement. Both the nitrogen and the phosphorous from fertilisers contribute to the loss of plant diversity in grasslands common in traditional orchards. Woodland and meadow wildflowers are often species adapted to nutrient poor soil and are more sensitive to these nutrients. In some cases this sensitivity means the addition of fertiliser is directly toxic to them.

As well as this, plant species found in nutrient poor soils are often shorter in stature than those adapted to nutrient rich conditions and are less able to cope with shading. This means adding nutrients to your orchard soil alters the competition balance and most of the small wildflowers will be outcompeted by nutrient loving plants such as docks and nettles. Don't let the word 'poor' in 'nutrient poor' put you off, this soil type is fantastic for plant diversity. It is not only plant diversity that is directly affected by

nutrient enrichment, it reduces the diversity of mycorrhizal fungi in the soil. As nearly 80% of plants require these mycorrhizal fungi to thrive, this can add to the loss of plant diversity.

Orchards occur on a wide range of soil types from acidic infertile soils to fertile river floodplains and lime rich soils. This influences the plant communities that grow, and so also affects the invertebrates you can find.

Minimal soil disturbance: Because it is impossible to plough an orchard without running the risk of damaging the tree roots, the soil in orchards have often been left undisturbed for as long as the orchard has been standing. Unlike most forms of cultivation which lead to a gradual decline in soil structure, the structure of orchard soil is left largely intact, and the complex ecosystem of the subterranean world undisturbed. The result is reduced soil erosion and less damage to fungal hyphae networks. Whilst some plants thrive in disturbed soil there are others that prefer this undisturbed soil structure. Among these are native orchids which require the mycorrhizal soil fungi present in healthy, unimproved and undisturbed soils for germination and growth.

Minimal use of herbicides and pesticides: When you use herbicides and pesticides in any ecosystem you end up reducing the overall biodiversity of the site, not just the pest species. Not only this, but clearing this ecological space opens it up for colonisation by more competitive and aggressive species. Weed plants, for example often achieve this status because of their exceptional ability to disperse and colonise. This means that the species composition will be altered from it can take a long time to recover.

This is not to say that these treatments don't have their place in agriculture or even in your orchard, just that the low levels of spraying typical in traditional orchards affords lower levels of impact on the resident biodiversity.

Forage for pollinators: In spring when your orchard is in full blossom your trees provide a feast for local pollinator communities. Not only does this make sure you get a good harvest (blossom needs to be pollinated to set fruit) but it gives pollinators a good supply of nectar and pollen. Depending on how you manage your orchard grassland, this will also provide good forage for pollinator communities through the whole of the summer.

The UK is seeing a worrying decline in wild pollinators. Although there are many compounding factors for this decline, two of the largest are the overwhelming loss of wildflower-rich grasslands in the UK, and the intensification of modern agriculture.

The fruit: No matter how much of the fruit in your orchard you use yourself, there is almost always a good amount left over for biodiversity. Even if this is just the overripe, bruised, holed or slightly rotten fruit that we don't want to eat ourselves.

This fruit source benefits all manner of birds like thrushes and fieldfares, mammals such as hedgehogs, hares and badgers and a huge variety of invertebrates such as butterflies, beetles, and wasps (which for much of the year do us a favour as natural pest controllers).

Habitat connectivity: Orchards increase habitat connectivity in fragmented landscapes. Habitat loss and fragmentation are two of the main threats to much of our wildlife. Orchards, hedgerows and woodlands act as stepping stones or corridors, helping many species to disperse, interact and avoid isolation which can otherwise lead to local extinction. This network of habitats is also important at the landscape scale to sustain scarce species that require continuity of habitat through time.

Each Traditional Orchard is unique: Each orchard is different, with its own set of characteristics and features, and each can provide a refuge for wildlife, both endangered and not.

source: <https://ptes.org/campaigns/traditional-orchard-project/orchard-biodiversity/>