



TRADITIONAL ORCHARDS IN TAYSIDE

a guide to wildlife and management

Traditional orchards are a much-loved part of our British heritage and countryside – from the pears of northern Scotland, to the plums of Westmorland and the mazzards (cherries) of Devon and Cornwall – and of course, the thousands of apple varieties across the UK. There is a rich history of fruit in Scotland – walled orchards and traditional orchards are known from Caithness to the Borders. Like the rest of the UK, there are local varieties, such as the Lass o’Gowrie apple from Perthshire and the *Lindorseii* pear from Fife. Plums grow exceptionally well in Eastern Scotland too.

In Tayside, there were for many years large orchards in Angus, Highland Perthshire and the Carse of Gowrie. The Carse has been well known for its apple, pear and plum orchards since the monasteries owned and farmed the grange lands in the 12th century. With the growing population of nearby Dundee in the 19th century the need for local food and cheap jam briefly revived the by then dwindling orchards. But a recent survey shows that out of 51 known documented orchards, 28 no longer exist and of the remaining orchards only 9 are of any particular value.

This finding mirrors the situation elsewhere in Tayside and the UK as a whole—some counties have lost 95% of their orchards since the 1970s—mostly due to changes in agriculture, development pressures and benign neglect. Once a common sight within the landscape, the traditional orchard habitat is now under serious threat and this is the

reason the UK Biodiversity Action Plan now includes Traditional Orchards in its list of priority habitats.

Supermarkets have long been importing cheap overseas fruit and this has led to orchard habitats becoming economically unviable and increasingly rare. The wish to lower food miles and enjoy locally-sourced produce is, however, now turning the tide of disinterest.

Local authorities, housing associations and private developers are now considering planting fruit trees as part of their greenspace contribution – school and college orchards are being planted, new housing developments are



uction

planning community orchards or a planting of two or three fruit trees in each individual garden of a development.

The Carse is notable for its heritage varieties of apples: Bloody Ploughman, Lass o' Gowrie, Tower of Glamis, Hoods Supreme, etc. There are some wonderful remnants of old orchards throughout the area, rich in biodiversity and cultural history. On the south side of the Tay rare pear varieties exist—it is likely this is also the case in the Carse.

Most orchards generally consist of large trees grown on vigorous rootstocks planted at low densities. Often occupying the same piece of land for centuries, and managed without chemical input, these sites are hotspots for biodiversity and have been shown to provide a refuge for over 1,800 species spanning the plant, fungi and animal kingdoms.

Whether you are managing your orchard for fruit production, or just enjoy having a few fruit trees in your garden, these areas are very important for wildlife and often harbour old, rare and locally significant fruit varieties.

In some cases reinvigorating the commercial side of an orchard will safeguard it and the Carse of Gowrie Historic Orchard Forum is leading the way in this respect. It is hoped other areas of Tayside – and central Scotland – will follow suit: there is now a huge interest in safeguarding what is left.

Orchard owners and managers can help protect the wildlife associated with orchards by following some simple steps shown in this booklet.





Traditional orchards tend to be small areas of land and ecologically resemble mini parklands, wood pasture or woodland edge as they often contain a mosaic of habitats important to wildlife. This includes open-grown fruit trees, fallen and standing deadwood (essential food for insects, nesting holes for birds); fruit (autumn and winter food for birds and insects); mature hedges and scrub (nectar and food for insects and birds, plus nesting sites); varied grass sward (rough grass for bumblebees and tall herbs for insect food and habitat); and ponds/ditches (breeding and feeding habitat). Bare soil and anthills are also just as important within the orchard habitat.

fungi

Fungi occur almost everywhere and play a vital role in the ecosystem. Many fungi are essential as decomposers and recyclers of plant remains and others are key transporters of nutrients for the optimum growth of trees and plants. The attractive waxcap fungi are intolerant of chemical fertilizers and are therefore indicators of high quality, unimproved grassland. They prefer frequently mown or grazed sites where the grass is short, and require a considerable time to develop; consequently they are becoming increasingly rare.

As well as grassland fungi, there are many species associated with both the living and decaying wood of orchard trees. The presence of fungal fruiting bodies has often led to concern: however few fungi are major pathogens and now, instead of being seen as detrimental, fungi are believed to be the key to prolonging the lives of trees and may often be of conservation value themselves.

lichens

Lichens are slow growing and the greatest abundance and diversity occurs where conditions are stable for long periods of time. As they are very sensitive to air pollution they act as indicators of air quality, particularly sulphur dioxide; only a few species are able to survive in areas of high pollution.

mistletoe

This is a semi-parasitic plant deriving water and nutrients from its host. It is found on over 200 different tree species, cultivated apple being by far the most common. It has separate male and female plants with the male producing golden flowers in spring and the female producing the characteristic white berries in winter. Does it occur in Tayside? It is known in Edinburgh and the Lothians, so it may well occur north of the Tay. As it plays host to 6 species of insect which occur solely on mistletoe, including the mistletoe tortrix moth, it would be good to know if this attractive plant is in Tayside.

plants

The orchard floor tends to be the most overlooked part of the habitat, yet it is the

our orchard

key to the diversity of species occurring throughout the orchard. If the grass has been cut for hay or lightly grazed and has not been treated with chemicals it is often species-rich. As well as generating a colourful display of wildflowers such as cowslips, primroses and orchids in spring to match the ephemeral beauty of the fruit tree blossom itself, there is the all-important nectar and pollen for a very wide range of insects at a vital time of year. Shadier orchards tend not to have the show of flowers but give rise to plant communities more typical of hedge bank flora; this can be just as important for invertebrates.

insects

Traditional orchards support an array of invertebrates owing to the diversity of the habitat and the presence of open, sunny sites. Bees – both honeybees and bumble bees - forage for nectar among the wildflowers and fruit blossom. They not only help to pollinate the orchard trees, but also the crops in adjoining fields, allotments and gardens.

Because fruit trees are relatively short-lived (c100 years for apple trees, c250 for pear trees), decaying wood is more quickly produced than in most native hardwoods. Older orchards are therefore very important refuges for saproxylic invertebrates, i.e. those insects dependent on decaying wood: rot holes, hollow trunks and split bark.

Decaying fruit is also very important for insects, especially moths, butterflies, ants, bees and sawflies. These, in turn, encourage hole-nesting and insectivorous birds into the area.

birds

Many bird species use orchards including tits, thrushes, finches, flycatchers and woodpeckers. Fruit provides important food sources in autumn and winter for birds, in particular thrushes and blackbirds which feast on the windfall apples and hedgerow fruit. In the spring many birds are attracted to the insects amongst the blossom; orchards also provide excellent nest sites in the older trees.

mammals

Many bat species rely on holes in old trees or mature ivy on trees/ adjoining walls to provide winter roosting sites. Together with unimproved grassland teeming with invertebrates for a good supply of food, the orchard habitat is ideal for these increasingly vulnerable mammals. Voles and mice also benefit from areas of rough, tussocky grass and their presence encourages predators such as owls and kestrels to hunt over the orchard. In a country setting, hares, badgers and the occasional fox will also explore an orchard for food.



Copyright: Hugh Clark

managing an orchard

Here are some simple, low-cost measures you can take in order to encourage or maintain wildlife in your orchard. These are based on four key principles: retaining decaying wood, ensuring a wide range of feeding and nesting habitats for an array of species and the reduction of chemical use. Low intensity management benefits wildlife and some pest species can be controlled naturally by encouraging their predators.

retain dead and decaying wood

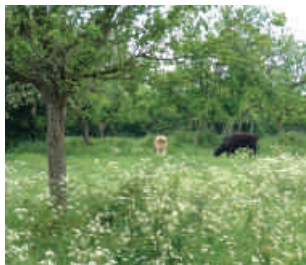
As a tree matures, it will naturally die back and begin to hollow out enabling it to remain standing, recycle nutrients and ultimately thrive for longer. Decaying and dead wood, therefore, does not necessarily mean that a tree is in poor health. Old fruit trees are extremely resilient and will continue to grow even if they are windthrown and horizontal: don't rush to chop down an old or angled tree. From a wildlife perspective, standing decaying wood is one of the most valuable elements of the orchard habitat. Hollow trunks, cracks in bark and rot holes can provide nesting areas for birds and bats and supports a wide variety of invertebrates.

Diseases do exist which can reduce fruit yield or damage trees and consequently any wood affected with an identified disease should be removed and burnt. Where unsafe decaying wood must be removed, it should be stacked nearby for the benefit of fungi and invertebrates.

If you want to go a step further and create another interesting habitat within your orchard, place some decaying wood into a pond or puddle. Wet wood is home to an additional unique suite of important organisms.

plant young trees

As equally important as retaining veteran trees, the planting of new ones will ensure a succession of habitats for a variety of species. As the trees in your orchard age and die, replace them with young stock, preferably produced from grafted material from existing trees on to standard or half-standard rootstocks. This will not only help to preserve old and local varieties but these young trees will become the veteran trees of the future.



ard for biodiversity

boundary biodiversity

Fruit trees are not the only important component of the orchard habitat. Creating ponds, leaving wild corners, rough edges and retaining species-rich hedgerows will increase diversity. Trim hedges infrequently and do not cut them all in the same year; this will ensure availability of fruit and blossom for birds and insects. Retain hedgerow trees where possible. Ungrazed or uncut strips or corners of rough grass provide shelter and food for over-wintering insects, birds, small mammals and good hunting ground for birds of prey. Flowering trees, shrubs and plants within an orchard are important sources of nectar and pollen when insects are in their adult stage. Especially useful plants are members of the daisy family, native hogweed and other umbellifers.

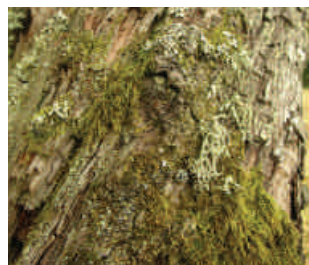
graze or cut for hay

Grazing and cutting for hay are the traditional ways of managing an orchard floor. Different animals and stocking densities will produce a different floral assemblage. However, by far the biggest contribution to increasing the biodiversity of an orchard is avoiding herbicide and fertilizer use. Reliance on natural soil fertility will favour meadow and woodland species rather than nutrient-hungry species such as docks and nettles.

Ponies and horses are detrimental to orchards and will kill trees by stripping the bark from them. Sheep, pigs and traditional breeds of cattle can all be put in an orchard, but the trees must be mature and have suitable tree guards. Geese are also traditionally grazed in orchards. If the orchard produce is to be sold or used for human consumption, it is essential to remove livestock at least two months before the fruit is harvested; windfalls must not be included. This will ensure that e-coli bacteria are not present on the fruit.

windfall

Fallen fruit provides an important autumn and winter food source for a range of wildlife and can help to ensure the survival of some species. Birds and mammals, butterflies, moths and bees will all be attracted to this rich natural larder.



Before any work is undertaken, it is important to assess the orchard and, if possible, prepare a simple management or action plan. Consider the following:

- Individual tree health and disease (bearing in mind previous comments regarding deadwood and tree decay being vital for wildlife);
- Causes of poor condition and the proposed management to correct it;
- Nutrient status of the soil; use of chemicals, etc.
- Weed competition and management of the orchard floor;
- Timing of any pruning or general restoration, including management of the boundary area.

pruning

Timing – malus (apples and pears): ideally when dormant, i.e. winter; prunus (cherries and plums): May to September (never when dormant).

The aim is to create a balanced tree with an evenly-spaced framework of large permanent branches, supporting horizontal fruit-bearing temporary branches.

- Check that soil, drainage and compaction are not issues;
- Remove diseased wood, i.e. canker, silverleaf;
- Remove damaged or crossing branches, any weak ones or badly placed branches;
- Remove suckers and any growth below the graft line;
- Consider reducing height where appropriate: shorten limbs to prevent windthrow;
- Make a few large cuts (avoid watershoots).

Good structural features include:

- 25% deadwood in canopy
- Deadwood limbs attached
- Bark condition – patches dead, loose, missing
- Bark sap runs
- Tears, scars and lightning strikes
- Hollow trunks and major limbs
- Major rot sites
- Whole dead trees – to reduce Health and Safety risk, shorten branches using coronet cuts to mimic natural breakages

anagement

Grafting, winter pruning and summer pruning courses are regularly held in Tayside – further details from: www.taysidebiodiversity.co.uk.

new plantings and new orchards

If there is room in an existing orchard or garden, new plantings should be considered to ensure different aged trees. Grafting of existing trees is recommended, especially if they are local varieties, or unknown, but well-fruited, varieties. New orchards should reflect locally-grown varieties: in Tayside this includes plums, pears and apples.

New orchards should be sited to link existing habitats and enhance landscape character. Advice should be sought on which rootstock to grow the fruit on and how best to manage individual trees; cordons and espalier trees can be especially popular where space is a premium. Rows or avenues of trees should also be considered.

South or south-western facing ground is best for orchards; be aware of windy sites or where there is standing water at certain times of year. All tree planting should be avoided in areas of known archaeology. New trees planted into an existing orchard should follow the original historical pattern. Remember to choose the correct tree guards for the area, especially if livestock are likely to be in the vicinity.

Where a mixed orchard is being considered, remember that pears are longest lived (up to 250 years whilst apple trees are mature at 100 years old). Pear trees tend to blossom well before apple trees so can be more susceptible to frost and a lack of pollinators. This is where it is particularly important to encourage bee hives into the orchard.



fruit identification

With at least 6,000 different varieties of apple, 500 varieties of pear and 300 varieties of plum, identification is a very complex matter. Most fruit identification is carried out by only a handful of specialists who have accumulated a wealth of knowledge over a lifetime of experience and interest. Look out for Apple Day events in mid-October as this is often the time for “Fruit Roadshows” to take place locally. Information about Apple Days can be found on www.commonground.org.uk or www.taysidebiodiversity.co.uk

Brogdale

One of the best and most reliable ways to identify fruit varieties is to get help from Brogdale, home of the British National Fruit Collection. Non-members are charged “per variety” – enquire first before sending any fruit: Brogdale Farm, Brogdale Road, Faversham, Kent, ME13 8XZ
Tel: 01795 536250 Web: www.brogdalecollections.co.uk

RHS Garden Wisley

The Royal Horticultural Society has a similar fruit naming service which charges non-members. Before sending any fruit contact: Fruit Naming Service, RHS Garden, Wisley, Woking GU23 6QB Tel: 01483 224234

The National Orchard Forum Website

An apple identification key has been produced to enable non-experts become familiar with identifying apple varieties. This can be downloaded from www.nat_orchard_forum.org.uk.

further reading

Apples in Scotland

John Butterworth

The Book of Apples

Joan Morgan and Alison Richards

Apples: A Field Guide

Michael Clark

The Apple Book (Out of Print)

Rosanne Sanders

Apples: A Guide to the Identification of International Varieties

John Bultitude

Fruit: An Illustrated History

Peter Blackburne-Maze

Pears

Jim Arbury

The Grafters Handbook

R. J. Garner

RHS Pruning

Christopher Brickell

Orchards

Jonathan Latimer

The Apple Source Book

Sue Clifford and Angela King

A Harvest of Apples

Ruth Ward

The Common Ground Book of Orchards

Common Ground

Protecting our Orchard Heritage

Sustain 2008



“ You could make an apple pie every day for 16 or more years and not use the same variety twice...”

Common Ground, The Apple Source Book(1991)

useful information

Habitat Action Plans (national and local)

The Tayside Traditional Orchards Habitat Action Plan and Tayside Community Gardens, Orchards and Allotments Habitat Action Plan are available via Tayside.biodiversity@ukf.net or can be downloaded from www.taysidebiodiversity.co.uk.

Traditional Orchards are now included in the UK Biodiversity Action Plan. Further information is available via www.ukbap.org.uk.

Common Ground

Founders of Apple Day, Common Ground have been working to save old orchards since the 1980's - www.commonground.org.uk.

People's Trust for Endangered Species

As an international organisation, volunteers are encouraged to take part in practical action for specific species and habitats. As Lead Partner of three invertebrate Biodiversity Action Plans, they are now mapping the traditional orchards of England: www.ptes.org.

National Orchard Forum

Pools information and expertise from around the country and provides information of national interest: www.nat-orchard-forum.org.uk.

Grazing Animals Project (GAP)

Provides a wide range of information on conservation grazing in the UK: www.grazinganimalsproject.org.uk.

National Farmers' Retail & Markets Association

Co-operative of producers selling on a local scale and farmers' markets organisers: www.farma.org.uk.

Central Core Orchard Network

A member of the National Orchard Forum; working to revive interest in the importance of orchards and local fruit varieties across Central and Northern Scotland: www.centralcoreorchardnetwork.co.uk. Fruit tree and orchard survey form available (with the aim to create an Apple Map of Scotland). The Natural England Technical Information Notes on Orchards can be downloaded from this website. Although they have

a southern bias much of the information is relevant to Scotland.

East of Scotland Orchard Group

A new group of organizations and individuals working together to raise the profile of orchards old and new: www.taysidebiodiversity.co.uk.

Carse of Gowrie Historic Orchard Forum

A group of local orchard owners, land managers and organisations keen not only to safeguard the Carse orchards, but to create a local market for the produce, encourage new school and community orchards to be planted and to celebrate the unique eco-tourism opportunities of the area with orchard trails, etc. Further details: www.taysidebiodiversity.co.uk and www.cogg.org.uk.

Perth & Kinross Countryside Trust

One of the key organisations in Tayside working via the Big Tree Country Project to safeguard and enhance local orchards: www.pkct.org.

Angus Council

Plans are afoot to create a large number of school and community orchards throughout the county: www.taysidebiodiversity.co.uk.

Dundee City Council

An Orchard Trail throughout the city is being discussed for the local schools and communities to enjoy: www.taysidebiodiversity.co.uk.

Slow Food UK

There are over 40 convivia in Britain, including Perth; the expanding membership helps preserve the heritage of food: www.slowfood.com. The international Slow Food Foundation for Biodiversity defends local food traditions and protection of local biodiversity: www.slowfoodfoundation.com.

Perth & Kinross Cittaslow

Perth is Scotland's first Cittaslow town. It has an ongoing "Buy Local, Eat Local" initiative: <http://www.pkc.gov.uk/Promoting+Perth+and+Kinross/Cittaslow>

This project is being part-financed by the Scottish Government and the European Community Rural Tayside Leader 2007-13 Programme



The Scottish
Government



The European Agricultural Fund
for Rural Development:
Europe investing in rural areas



people's trust for **endangered species** |

Published in association with the People's Trust for Endangered Species
(registered charity no. 274206)

A new version of this leaflet covering England and Wales is available from
Tel: 020 7498 4533 Web: www.ptes.org

With thanks to Anita Burrough of PTES for agreeing to a Tayside version of the original leaflet and to Rachael Higgins for her clerical assistance. The Tayside version was compiled by Catherine Lloyd, Tayside Biodiversity Co-ordinator, Tayside Biodiversity Partnership.

Images Copyright:
PTES - C A G Lloyd - Hugh Clark

Tayside Biodiversity Partnership
c/o Dundee City Council, Floor 13, Tayside House, Dundee. DD1 3RA
Tel: 01382 433042 Email: Tayside.biodiversity@ukf.net Web: www.taysidebiodiversity.co.uk



Forestry Commission
Scotland



Published 2009
Printed on 80% Recycled Gloss Greencoat

Printed by **fairprint** Tel: 01382 400150 Web: www.fairprint.co.uk