

# Vision for Essex Traditional Orchards

Safeguarded, improved and extended habitats appreciated for their wealth of wildlife

The decline in orchards has been halted and sites are restored and recreated with appropriate traditional varieties and management techniques in place

Educational activities reconnect communities with their orchard heritage through creation of school and community orchards and other initiatives



## **Traditional Orchards**

### **National Description**

Habitat structure rather than vegetation type, topography or soils, is the defining feature of the habitat. 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 woodpasture 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 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. Spacing of trees in traditional orchard can vary quite widely (from c.3 m in some plum orchards and traditional cobnut plots to over 20 m in some large perry pear and cherry orchards. There is some overlap of density of planting with intensive orchards, but these orchards often have densities at least twice the density of the most closely-spaced traditional orchard.

Like wood-pastures and parklands, traditional orchards can occur on a wide range of soil types from slightly acid, relatively infertile soils to fertile river floodplain soils and lime-rich soils. Orchards can be found on slopes ranging from steep to level, and with any aspect. Generally, sites do not have badly impeded drainage, although locally, within sites, there may be wetter areas.

Orchards are found in the lowland landscape in the UK,

Traditional orchards are found in all countries of the UK although England has the bulk of the resource. Areas digitally mapped by the Ordnance Survey have been found to provide a relatively accurate estimate of total orchard area, through testing by ground-truthing and aerial photograph interpretation (English Nature in prep). Together with country information on extent of commercial orchards in agricultural census returns, digital Master Map polygons can be used to make initial estimates of the extent of the resource (see table below).

The estimated extent of traditional orchards in the UK (28,750ha), puts the habitat at the rarer end of the scale compared to other UK BAP priority habitats.

Traditional orchards can easily be distinguished from other wooded habitats based on the preponderance of domestic fruit and nut species: apple, plum, pear, damson, cherry, walnut and cobnut. Only in a very few cases will there be a significant number of other tree species in a traditional orchard, unless the orchard is becoming woodland through neglect. An arbitrary distinction of, say, 50% of trees should be domestic fruit or nut species in an orchard, is rarely likely to be invoked for distinguishing orchards from woodpasture/ parkland.

Traditional orchards, as distinct from non-traditional orchards are defined for priority habitat purposes as orchards managed in a low intensity way. They contrast with orchards managed intensively for fruit production, where there are inputs 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 (stems generally 75 cms or less).

The simplest visual indicator of intensive management is the presence of herbicided strips along the tree rows, where the ground is generally bare or with some annual plant regrowth, contrasting with the permanent grassland of the between-row spaces. Such strips are readily observable on aerial photographs. According to orchard pesticide usage surveys by the Central Science Laboratory, use of herbicide is associated with other pesticide use and intensive mowing between tree-rows, while in contrast, orchards with fully grassed floors can be considered traditional (Dr Joe Crocker, CSL, pers comm.). There may potentially be cases where other pesticides or inorganic fertilisers or other intensive management practices are used without herbicide. As a consequence, there may be occasionally instances for limited groundtruthing, for instance, where herbicide strips are not evident but the trees appear small and closely spaced, by checking density / spacing (see below) and stature of trees on the ground. Spacing of trees in traditional orchard can vary quite widely from around 3 m to over 20 m between trees (see above). There is some overlap of density of planting with intensive orchards, so a density distinction is not useful on its own. However, non-traditional orchards often have densities at least twice the density of the most closely-spaced traditional orchard, and density/planting distance (< 3m in many intensive orchards) can help in the distinction of intensive orchards as described above.

## **Status in Essex**

Essex was once a major contributor to orchard produce in England.

As we began to analyse the survey data it came as no surprise to discover that our findings confirmed Defra's own historical records for the county.

These state that between 1990 and 2007 the total orchard area has fallen by 81%, with losses continuing at a rate of 10-20% per annum. Essex has experienced the greatest decline of any county in the region.

Since 1990 Essex has seen the fastest reduction of orchard area in our region and the orchard area is still declining and that in at least five local authority areas orchards have virtually disappeared altogether from the local landscape. Higher-yielding spindle systems are becoming the favoured tree form across the county, threatening the survival of more biodiversity rich half-standard and standard orchards. Many half-standard orchards are already showing signs of neglect and, more worryingly, what little remains of the county's traditional orchard habitat is largely unmanaged and overgrown.

There are still a number of old orchards left in the county which pay tribute to this legacy and these make a substantial contribution to the local landscape, our cultural heritage and to the variety of animals and plants which they support. As well as providing habitat for birds,

invertebrates and small mammals, old orchards also hold the main genetic resource of old local fruit varieties that have otherwise virtually disappeared from production.

Essex mainly produced apples, predominantly the Cox's and Bramleys which are well suited to the windy and coastal aspects, and Worcesters in the chalkier regions of Uttlesford. A great many tall standard orchards were grubbed up between 1961 and 1995, in response to agricultural subsidies for intensification of land use, with a 45% decline in non-commercial orchards between 1970 and 1996. Now commercial orchards are intensively managed with dwarf varieties and abundant chemicals, which limits their wildlife habitat potential.

The Essex Biodiversity Project working with the EWT school Outreach staff have planted over 30 orchards in schools and run associated apple days where children learn about their orchard heritage, plant traditional tree varieties and learn how to care for them.

### **The Essex Orchard survey**

In 2008 the East of England Apples and Orchards Project (EEAOP) and Essex Biodiversity Project undertook countywide Phase 1 Orchards Survey of Essex with a number of volunteer surveyors. The objective was to record the extent and condition of the county's remaining orchard habitat and, in particular, to locate any traditional orchards. This led to a total of 251 sites being surveyed across 97 parishes.

The survey was designed to be carried out from Public Highways and Public Rights of Way, thus removing any need to gain permission to access any sites. OS Explorer 1:25 000 Millennium Edition maps were used to locate the orchards, although any other unmapped sites known to, or discovered by, surveyors were also included. In addition, sites identified from the Biodiversity Project's ongoing traditional orchards public questionnaire were also included, and some aerial photographs were consulted where sites were difficult to assess properly from the ground. All of the surveyors were trained to record fruit and field boundary species, different orchard tree forms and management systems, as well as to assess land-use on former orchard sites and surrounding intact ones. The survey data for each site visited was entered onto standard recording forms.

## **The Findings**

### **Loss and Gains in Essex**

Historically, the county's main commercial orchards were planted close to principal road and rail routes, enabling the produce to be taken quickly to markets. Today, parishes along the 'A12 corridor' are still the most likely places to find modern commercial orchards, with fruit being sent to London wholesale markets by road. Other findings included:

- 74 of the 97 parishes visited still contained orchards or orchard remnants
- Of the 251 orchard sites visited during the survey, 103 of them, or 41%, were no longer orchards
- 28% of the 148 remaining sites contained only orchard remnants
- 40% of the remaining orchards showed a reduction in area
- Only 2% of the remaining orchards showed an increase in area
- About 23% of the county's remaining orchards contain traditional orchard habitat
- 97% of the remaining orchards are found in just six districts - Basildon, Chelmsford, Colchester, Maldon, Rochford, Tendring and Uttlesford
- The districts showing the greatest orchard losses - all around 52% - were Chelmsford, Tendring and Uttlesford
- Only 64% of the county's orchards used trees as windbreaks, with poplar the most common, followed by alder, hawthorn and conifer. Poplar was the most common choice in intensive orchards whilst traditional orchards were most likely to have mixed native species hedges around them

### **Land use on former Essex orchards**

- 38% of the 'lost' and remnant sites had been returned to arable land, often with only the old orchard windbreaks remaining intact
- 4% of these sites were now being used for horticulture, particularly soft fruit production
- 43% of these sites had been converted partially or totally to grassland, either as set-aside, fallow land or paddocks. Grazing animals, mainly horses and ponies, were only recorded on 10 of the 173 sites in this category
- About 12% of these sites have been developed for residential or industrial use

### **Essex Orchard management**

- About 18% of the modern intensive orchards showed a lack of management, whereas 62% of the traditional orchard sites lacked management, varying from neglect to dereliction
- 75% of the county's remaining 148 orchard sites grew apples. Plums were the next most common fruit grown, followed closely by pears. Cherries were only seen growing on 11 sites, with 5 of these being traditional orchard sites
- Not surprisingly, the range of fruit types grown was greatest on the county's remaining 34 traditional orchard sites. Various types of nuts and quince were most often recorded here too
- Half-standard trees were the most commonly recorded tree-forms, followed closely by spindles. Standard trees were noted on just under 20% of all sites. New plantings, almost without exception, used spindle systems, often in multiple row beds

### **Current factors affecting the habitat in Essex**

Continued removal of orchards and individual fruit trees for agricultural intensification or development.

Neglect and loss of fruiting capacity, when surrounded by secondary woodland.

Lack of knowledge of traditional varieties.

Use for inappropriate grazing and amenity use which has led to tree damage.

## Targets

<b>National Targets</b>	<b>Traditional orchards</b>	<b>target date</b>
1	No net loss of area. There are currently c.28,000ha in England	ongoing
2	No specific National targets	

  

<b>East of England Targets</b>	<b>Traditional orchards</b>	<b>target date</b>
1	No specific East of England region targets	2015

  

<b>Essex Targets</b>	<b>Traditional orchards</b>	<b>target date</b>
1	No net loss of area. There are 33 known sites covering (EEAOP 2008) (this is an underestimate)	2020
2	Undertake restoration on 6 sites	2020
3	Create 4ha on a minimum of 20 sites with traditional Essex varieties	2020