

# **Community Orchard Literature Review**

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## **1. Introduction**

This report discusses the academic literature in relation to community orchards. The basic definition of a community orchard is 'a collection of fruit trees which is open to the public' (England in Particular no date). They are usually owned or leased for or by the community, or held in agreement, by a community group, parish council, local authority or voluntary body (England in Particular no date). Unlike a commercial or traditional orchard, the economic production of fruit is not necessarily their most important purpose (King & Clifford 2008). This gives the opportunity for the local community to decide how and for what purpose they wish to manage their orchard (England in Particular no date).

The literature review discusses the history of orchards and how their composition has changed throughout the last century. It also looks at the loss of orchards in the UK and the subsequent recent revival in interest of orchard heritage which has led to the community orchard movement. It then proceeds to discuss the sustainability benefits of community orchards, both to the wellbeing of the local community as well as wider the social and environmental impacts. It concludes with a specific look at Ross-on-Wye in Herefordshire, the location of the research project and why it is thought a community orchard would help to improve the town's social, economic and environmental sustainability.

## **2. A history of orchards in the UK**

Orchards have long been a part of the British countryside with evidence for fruit cultivation dating back millennia (Roseff 2008). Orchards in the past were an important aspect of most farms, smallholdings and manor houses, growing a range of fruit such as apples, pears, plums, damsons and cherries (Rotherham 2008a; Porter 2010). Fruit would have been grown for domestic consumption as well as grown for market. Orchard owners grew a wide range of different varieties, selected to provide ripe fruit for the local market throughout

autumn, winter and spring (Porter 2010). This method of developing seasonal varieties has led to the cultivation of perhaps 3000 different varieties of apple alone (King & Clifford 2008).

With the industrial revolution, larger commercial orchards were planted, which began supplying distant urban populations with fruit by rail (Porter 2010). This naturally led to certain varieties of fruit falling out of favour to those which were more commercially viable. This became especially prevalent during the twentieth century, as the intensification of agriculture led to the development of commercial 'bush orchards'. These are orchards which are planted with trees at high densities, designed to allow machinery to be able to move between rows for spraying, pruning and harvesting (Copas & Umpleby 2002). These intensively managed commercial orchards have been designed to maximise yields and as such are planted with varieties which produce the largest volumes of fruit (Copas & Umpleby 2002). Varieties which keep well and have a long shelf life are also favoured by commercial fruit growers (Copas & Umpleby 2002). This helps to explain why usually only four or five varieties of apple are available in supermarkets, despite the large number of varieties potentially available.

An increase in global trade has also made growing a wide range of seasonal varieties less important, as fruit is now imported from countries such as New Zealand and South Africa. Indeed, around 90% of fruit consumed in the UK is now imported (Pinkerton & Hopkins 2009). This increase in competition to UK growers is one reason behind the loss of orchards in our countryside. Changes in farming practices, together with other factors such as neglect and pressure for housing have also led to a decline in the area under orchard cultivation (Fabrizio 2008, Hayes 2008). Until 1993 there were incentive payments for farmers to 'grub up' orchards and replace them with other crops (Porter 2010).

### 3. The extent of orchard loss

Porter (2010) reports that there were 95,000 ha of orchards in the UK in 1899. By 1950 the Defra Agricultural Census states that orchard area in England alone covered 108,555 ha (Robertson & Wedge 2008). This figure reduces by 63% to 39,600 ha in England according to the 2006 ordinance survey figure (Robertson & Wedge 2008). The total figure for UK orchards was estimated by Robertson & Wedge (2008) to be 42,300 ha in 2006.

These figures do not however distinguish between intensive and traditional orchards. Natural England's 2008 *State of the Natural Environment* report divides orchards into these two groups depending on the intensity of management for fruit production (Natural England 2008). Traditional orchards were designated a UK Biodiversity Action Plan habitat in 2007 and according to this definition they are usually grazed by livestock and chemical pesticides and fertilisers are rarely used (Natural England 2008). Intensively managed orchards are considered of less value to wildlife and are characterised by inputs of pesticides and fertilisers, frequent mowing of the orchard floor and short-lived, high density dwarf or bush trees (Natural England 2008). It is possible that both traditional and intensive orchards can be 'commercial' orchards in the sense that fruit from the orchards may be sold. However, the term 'commercial orchard' usually refers to intensively managed orchards.

Robertson and Wedge (2008) estimated that there were 24,600 ha of traditional orchards in England in 2006, which was 62% of the total orchard area. Wales was estimated at 440 ha, Scotland 250 ha and Northern Ireland 60 ha (Robertson & Wedge 2008). However, a recent study by Burrough *et al.* (2011) has identified only 16,990 ha of traditional orchards in England. This lower figure may be due to the stricter definitions of a traditional orchard employed by the study which conforms to the Habitat Action Plan (HAP) definition (Natural England 2008). The study did not cover the other countries of the UK.

Figures published by Defra in 2010 report that commercial orchards covered 16,788 hectares of England and Wales in October 2009, a separate figure for England was not published (Defra 2010a). Table 1 shows the estimated orchard area covering England between 1950 and 2011.

Table 1. Estimated Orchard area in England 1950 - 2011

	England 1950 (Robertson and Wedge 2008)	England 2006 (Robertson and Wedge 2008)	England 2010/11
Traditional Orchard Area (ha)	-	24 600	16 990 (Burrough <i>et al.</i> 2011)
Commercial Orchard Area (ha)	-	15 000	16 788 including Wales (Defra 2010a)
Total Orchard Area (ha)	108 455	39 600	33 778

As the separate figure for England and Wales was not available for commercial orchard area in 2010, the combined figure has been used. This addition of Wales may account for the perceived increase in commercial orchards between 2006 and 2010; however this could also be due to the recent revival in the cider industry (National Association of Cider Makers 2011). The drop in traditional orchard area between 2006 and 2011 could be due to a combination of using a stricter definition of a traditional orchard by Burrough *et al.* in 2011 and less accurate figures by Robertson and Wedge using the ordinance survey in 2006.

Whilst there may be some debate over the definitions of intensive and traditional orchards, one thing these figures show is that there has been a large loss of orchards since the 1950's of around 68.9%. Furthermore, Burrough *et al.*

(2011) shows that 45% of England's remaining traditional orchards are in 'poor condition' due to neglect. Herefordshire, the location of this study, has more orchards than any other county in the UK, around 16% of the total orchard area of England (Marshall 2008). However, even here there has been a significant decline in the total area of land covered by orchards, around a 40% reduction in the last 70 years (Marshall 2008).

#### **4. Why the loss of orchards is significant**

As discussed, the intensification of agriculture, and neglect of traditional orchards, has led not only to a reduction in orchards, but also a change in their nature. Almost all orchards in 1899 would have been traditional orchards of standard trees; however a large proportion of commercial orchards are now intensive bush orchards (Porter 2010). This is significant as traditional orchards are often ancient features of the landscape, sometimes occupying the same spot for centuries (PTES 2011). They also tend to be repositories for rare and unusual fruit varieties which have fallen out of favour or are not as commercially viable (King & Clifford 2008). The grubbing up of a traditional orchard may well result in the loss of an old fruit variety. This natural heritage is an important part of the 'local distinctiveness' of an area. King & Clifford (2008) argue that 'if an old orchard is grubbed up for intensive agriculture or development, the loss for local distinctiveness goes deep'.

Tall standard trees live longer than dwarf and bush varieties, providing a greater continuity of habitat (Porter 2010). Traditional orchards have therefore become important for biodiversity and have been shown to provide a habitat for over 1800 species (PTES 2011). Work by Lush *et al.* (2009), Alexander (2008), Smart & Winnal (2006) and Andrew (2004) and have all highlighted the importance of traditional orchards for biodiversity, in particular for epiphytic lichens and invertebrates, including the rare noble chafer beetle *Gnorimus nobilis*. Alexander (2008) does however point out that newly planted community orchards are unlikely to replicate the necessary scale of habitat needed for *G.*

*nobilis* and other species associated with traditional orchards. Protecting existing traditional orchards should therefore be a priority over planting new community orchards. Community orchards do often however have a dedicated wildlife area (King & Clifford 2008).

Intensive commercial orchards in contrast to traditional orchards tend to use high levels of chemicals including inorganic fertilisers and rely on heavy machinery for mowing and harvesting (Robertson & Wedge 2008). This form of intensive management leads to less biodiverse habitats than traditional orchards. The conversion of traditional orchards to intensive orchards will therefore have a negative effect on biodiversity.

The widespread significance of fruit growing in the UK has led to the cultivation of perhaps 3000 varieties of apple alone (King & Clifford 2008). Each variety is a unique part of natural heritage to the locality that it was originally cultivated (Porter 2010). This natural heritage of fruit trees helps to contribute to the 'local distinctiveness' of a place, distinguishing one place from another through unique physical, social and economic characteristics (Pinkerton & Hopkins 2009, Clifford 2008). For example, King & Clifford (2008) state that in Gloucestershire 'there are about 100 perry pear varieties, and each parish would have produced its own single variety of perry'. Different regions have become famous for producing certain fruits. For example, Herefordshire and Somerset tend to be associated with cider apples, Gloucestershire with plums, Worcestershire with pears and Kent with cherries. This local distinctiveness has been to a large extent been lost with the intensification of agriculture.

King and Clifford (2008) argue that:

'Orchards are more than formal collections of fruit trees; they are a manifestation of our long relationship with fruit cultivation in different localities.'

When orchards are grubbed up, that relationship and link to the past is lost. Community orchards can therefore be a way of conserving local distinctiveness, by planting and retaining many of the traditional fruit varieties which may otherwise have been lost.



## **5. Revival of interest in orchards**

Orchards and fruit trees are not only of economic importance, but also hugely significant to the landscape, ecology and cultural heritage of the country (Rotherham 2008b). Rotherham (2008a) comments that there has been a surprising lack of recognition of their significance within the main works of historical ecology and landscape history. Alexander (2008) writes that there may be two reasons for this including: i) orchards tend to be on enclosed private land making historical recordings difficult, and ii) the reliance on human management has meant that less attention has been paid to their significance for biodiversity.

Recently however there has been a renaissance of interest in orchards starting with Common Ground in 1988 (Clifford 2008). Common Ground recognised the importance of traditional orchards to the culture and landscape as well as the alarming rate of loss. They advocate for the conservation of traditional orchards and invented 'Apple Day' in 1990 as a way of celebrating the significance of apples and orchards. Since 1992 they have also advocated for the establishment of community orchards. The aim of community orchards according to Common Ground are to 'create or conserve orchards by & for local people' (King & Clifford 2008).

Since then there has been significant interest in orchards with many regional orchard groups established such as the 'Cheshire Orchard Project', 'Marcher Apple Network', 'Gloucestershire Orchard Group' and 'East of England Apples Project' (Clifford 2008). There are over 300 Community Orchards now known to Common Ground, not including those orchards which have been planted in schools and hospitals (Clifford 2008).

There has also been a revival in the cider industry (National Association of Cider Makers 2011), which has prompted the planting of many new commercial orchards. The popularity of craft traditional ciders has also lead to the renewed use of fruit from traditional orchards which until recently may not have had commercial use (Lea 2008).

The revival of interest in orchards and the interest in community orchards in particular, goes beyond the provision of fruit. Many community orchard groups will agree a set of aims and objectives for what they would like their orchard to achieve. King & Clifford (2008) offer the following suggestions for community orchard objectives:

- Conserve traditional and local varieties (of fruit trees)
- Optimise the potential for wildlife
- Manage organically
- Accessible at reasonable times
- A place for recreation and contemplation
- Ensure that horticultural and wildlife management can be learnt and passed on
- Offer a harvest of fruit that can be shared
- Offer community involvement in its development and management
- Offer a host of activities from education to celebration

These suggested objectives show that there are many potential benefits to local residents of a community orchard. Some of these community benefits will now be discussed in further detail.

## **6. Community orchards and wellbeing**

'Community' is a word used regularly in reference to a large range of social situations. Gilchrist (2008) writes that the word community encompasses a sense of belonging to a place which shapes our personal identity. However, Yar (2003) argues that since the term seems to mean everything and anything, it is less than academically useful.

There has been much written about a decline in 'community cohesion' and a 'sense of civic malaise' which has arisen from the unravelling of local social bonds (Putnam 2001). Williams (2008) however dismisses the

assumption that there has been a breakdown in communities and instead argues that the term 'community' has been hijacked by politicians and pundits seeking to make a point about society.

Whether we live in a 'Broken Britain' (The Economist 2010) or not there is a growing body of evidence that suggests that there are advantages to being part of a strong social network (Gilchrist 2008). This includes evidence that community participation helps physical and mental health, increases happiness, provides emotional support and even enhances resistance to disease (Gilchrist 2008). Community orchards could therefore help to facilitate the means for engaging people with these positive attributes by providing social and recreational opportunities in the community.

Research by Quayle (2008) has investigated the 'True Value' of community food growing projects. Whilst not directly looking at community orchards, the types of activities offered by community food growing projects are very similar to those offered by community orchards. 100% of the participants in Quayle's (2008) research agreed that their project helped users integrate into the community. The communal effort of growing, harvesting and sharing food can therefore be an important method of improving community cohesion.

There is also a growing body of evidence that suggests that contact with nature and the outdoors is important for the health and wellbeing of individuals. Maller *et al* (2005) has suggested that contact with nature may help prevent mental ill health and Louv (2009) discusses the importance of the natural world to the development and education of children. Again, community orchards can help provide the opportunity for this vital contact with the outdoors. 100% of the participants in Quayle's (2008) research agreed that their community food project helped users to reconnect with nature.

## **7. Community orchards and sustainability**

Although King and Clifford (2008) play down the importance of fruit production as the *raison d'être* of community orchards, Hopkins (2000) and Woodin & Lucas (2004) both advocate the growing of food as locally to the consumer as possible. As has been discussed around 90% of fruit consumed in the UK is imported (Pinkerton & Hopkins 2008) therefore by planting orchards and encouraging the consumption of locally grown fruit, communities will be less reliant on the globalised food industry and its associated negative impacts (Woodin & Lucas 2004).

These negative impacts include the distance food has to travel before being consumed, known as 'food miles' (Defra 2005). The transportation of food is one of the fastest growing sources of carbon emissions worldwide due to the large amounts of fossil fuels burnt during transportation (Deneen no date). Refrigeration and packaging also contributes to high energy use. Reducing food miles by producing and consuming food locally will therefore help to reduce carbon emissions which are causing anthropogenic climate change. Other negative impacts of the globalised food industry includes the use of fossil fuel based pesticides and fertilisers, which are a feature of commercial fruit orchards discussed above (Robertson & Wedge 2008). Both can cause water pollution when washed away from farmland after rainfall. There is also some concern that pesticides can pose a risk to human health (Gregg-Elliott 2010). Pesticide and fertiliser use does however have the beneficial effect of increasing crop yields (Gregg-Elliott 2010). Increasing local small scale food production such as through community orchards will therefore help to reduce demand for intensively produced food.

There are also a number other reasons to produce food locally as well as for environmental considerations. Hopkins (2008, 2010), Fleming (2006) & Woodin & Lucas (2004) have all demonstrated the need for communities to 're-localise' and 'build community resilience'. Community resilience is an emphasis on a community to be able to provide for its own needs, without an over-reliance on factors outside of that community's control (Hopkins 2010). These factors

may include fluctuations in energy price and availability which could affect the supply and price of food in terms of both transportation and production (Hopkins 2008; Heinberg 2007). Heinberg (2007) foresees a possible limit to the access of cheap energy supplies as the defining problem of our age. Indeed, Fleming (2006) argues that relocalisation 'has the decisive argument in its favour in that there will be no alternative', in reference to the current systems reliance on finite energy sources. Fleming does acknowledge however that a mass scale 'relocalisation' stands at 'the limits of practical possibility'. It is highly unlikely that small scale community food growing such as community orchards will be able to supply food at a sufficient level to replace the globalised food industry; however they do manage to raise awareness of the environmental and social benefits of producing and consuming locally grown food. Quayle (2008) demonstrates that community food projects can help promote local action on global environmental problems such as through encouraging recycling, composting and organic methods of food production.

Community resilience is advocated by localism initiatives such as the Transition Network who also advocate the planting of community orchards (Pinkerton & Hopkins 2009). Donald (2008) however argues that:

'the idea of community resilience represents a withdrawal from wider society, and a retreat from the opportunities for engagement in the wider world as socially equitable partners'

This however does not address the practical problem of food security which the Soil Association (2008) argues is 'neither secure nor resilient'. The Transition Town movement advocates the planting of community orchards to help counter the 'looming threat of food insecurity' (Pinkerton & Hopkins 2009). Factors such as the growing global population, increased demand for animal products, increasing energy costs and conversion of land to produce biofuels have all contributed to food price inflation (Soil Association 2008). These rising food prices have exerted pressure on budgets in low income households and therefore the ability to access healthy sustainable food (Defra 2010b).

The Soil Association (2008) argues therefore that the UK should aim to become increasingly 'self sufficient' in its food production, of which one method would be to establish more community food growing initiatives such as community orchards. Defra appears however to play down the need for food self sufficiency in the UK stating that:

'food security is hugely more relevant for developing countries than the rich countries of Western Europe' (Defra 2006)

Yet in another government paper Defra states:

'The UK has a moral responsibility to ensure that we do not damage the natural resource base of developing countries, or the other services they derive from a healthy natural environment.' (Defra 2010b)

Increasing self sufficiency in food would mean that the UK would be less reliant on imports from developing countries, therefore liberating land for food production to feed the population of those countries instead of ourselves (Stuart 2009). Community orchards and community food growing projects in general can therefore be one method of increasing awareness and inspiring action to counter these environmental and social sustainability issues (Pinkerton & Hopkins 2009; Quayle 2008).

Community orchards are an effective way of engaging local populations with environmental issues and encouraging the 'think global, act local' mentality. Many towns have prospered from the presence of a community orchard; the literature review now looks at the town of Ross-on-Wye, the location of the research project, in order to determine whether it would specifically benefit from a community orchard in the town.

## **8. A community orchard for Ross-on-Wye?**

This literature review has looked at the sustainability and wellbeing benefits to planting a community orchard. There are a number of national, regional and local policies which promote sustainability at the local level. This chapter discusses those policies in the context of Ross-on-Wye and how a community orchard may help to fulfil some of the objectives of those policies.

Ross-on-Wye is a small market town in Herefordshire with a population of around 10 000 people and a further catchment of around 26 000 people in the surrounding area (Ross-on-Wye Town Plan 2010). Tourism is important to the town's economy, as is its role as a centre for commercial and social activity in the area (Ross-on-Wye Town Plan 2010).

Nationally the previous Labour government has highlighted the need for a more sustainable food system including, increasing food production sustainably, reducing the food systems greenhouse gas emissions and encouraging people to eat healthily (Defra 2010b). Its strategy included supporting small scale local initiatives such as growing food in the community. The current coalition government has also continued the case for a robust local food system (Foresight 2011). These policies could potentially be deployed at the local level in Ross-on-Wye in the form of a community orchard. As discussed, local food production is an important method of reducing food miles and associated greenhouse gas emissions (Defra 2005).

Regionally the Sustainable Food Strategy for Herefordshire (2011) has identified the need for more community food projects. The strategy, which included a consultation of residents in Ross-on-Wye, shows that 58% of respondents thought that 'more allotments, community gardens & grow your own initiatives' were a high priority for addressing health issues through food and drink. 71% of respondents also thought that 'supporting community food initiatives' are a high priority to help enhance local distinctiveness (Sustainable Food Strategy for Herefordshire 2011). Again, a community orchard could help to provide the initiatives described in this strategy.

Like many rural towns, Ross-on-Wye has been affected by social, economic and agricultural change (West Midlands Regional Spatial Strategy 2008). The West Midlands Regional Spatial Strategy has emphasised the importance of market towns in providing 'a key role in helping to regenerate rural areas'. There are a number of ways that the town could go about this rural regeneration.

The Ross-on-Wye Town Plan (2010), a steering group of volunteers interested in the future of the town, has highlighted the need for the town to 'maximise the resilience of Ross-on-Wye by strengthening local communities, businesses and services' and recognises the 'value of the town's heritage and unique character'. As discussed, community resilience is an important benefit of a community orchard and could also help support local businesses and services. There is also a proposed need to 'improve leisure facilities' and 'build upon and improve the assets of the town' (Ross-on-Wye Town Plan 2010)

The town plan consultation has identified a number of key topics highlighted by local residents as priority objectives. These include economic development, leisure activities and services. As discussed above, the benefits offered by a community orchard could help fulfil these objectives to some extent. This could be done specifically by encouraging the purchase of local produce from the orchard or at orchard events, providing leisure opportunities in the form of celebrations such as Apple Day and by offering educational and the opportunity to learn useful skills (King and Clifford 2008).

There is limited academic research into the role of community orchards specifically; however there is a large amount of evidence to suggest that community orchards can be a highly beneficial sustainable asset to local communities. This is especially true for Ross-on-Wye which is actively seeking to improve its community resilience through its town plan. The research question for the sustainable development advocacy project therefore is 'to investigate the feasibility of establishing a community orchard in Ross-on-Wye'. The feasibility study will aim to uncover strengths and weaknesses,



opportunities and threats, the resources required to carry out, and ultimately the prospects for success of the proposed project (Georgakellos & Marcis 2009).

## **9. Conclusion**

The literature review has identified how community orchards can contribute to a sustainable society and why they could be an important part of a resilient food system. They also help to conserve and enhance the valuable orchard heritage and local distinctiveness of the area in which they are located. Whilst community orchards may not be the answer to all of society's problems, they can help provide valuable opportunities for community cohesion through shared events and celebrations, offer the chance to connect people with nature and the outdoors, improve biodiversity, provide educational and work experience opportunities, encourage a healthy lifestyle and diet and simply offer a quiet green space within a busy environment. It is for these reasons that it is thought a community orchard could significantly benefit the residents of Ross-on-Wye.

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